

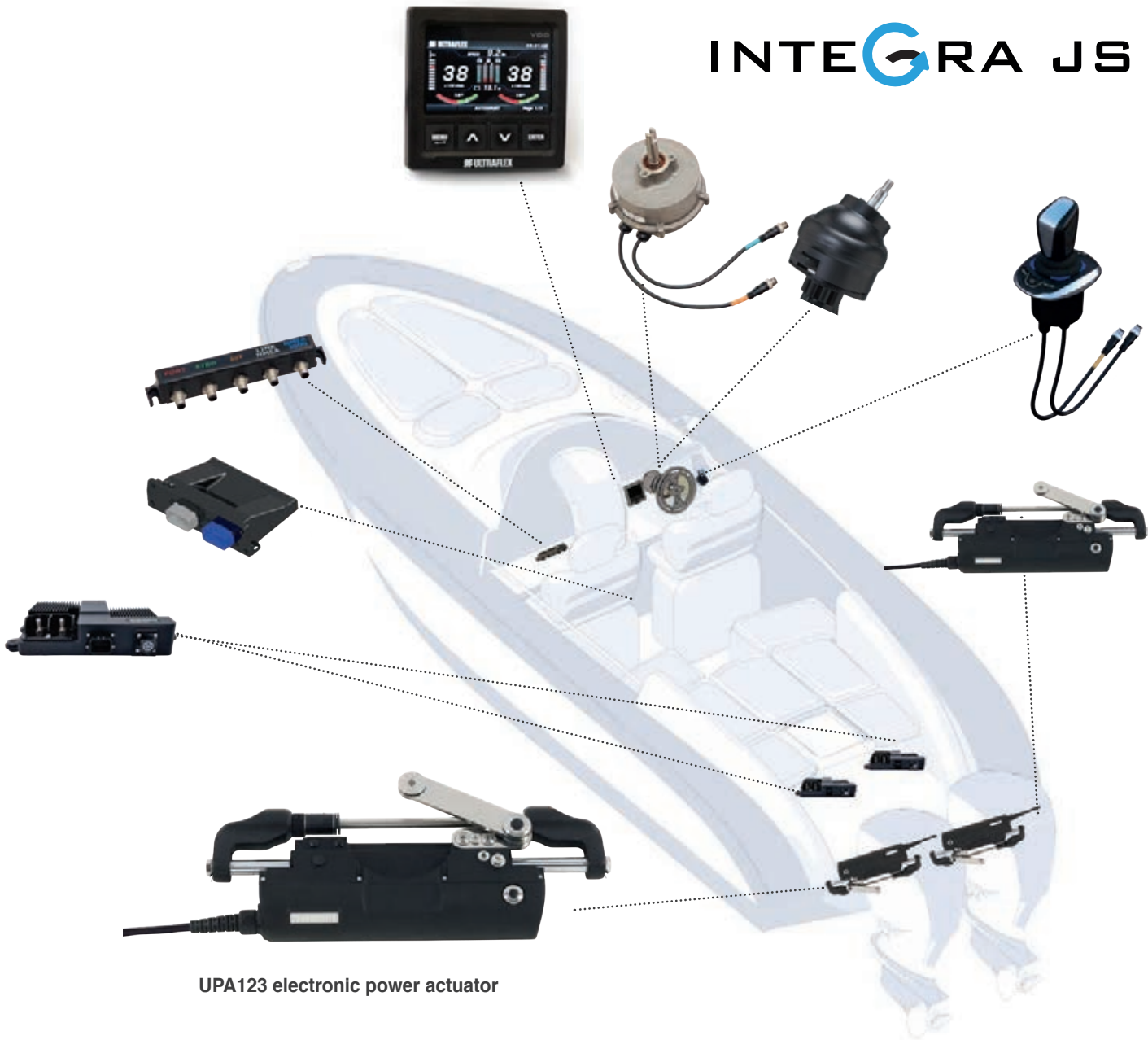


# **ULTRAFLEX**

*Leader in Marine Product Innovation*

2024

INTEGRA JS



UPA123 electronic power actuator

INTEGRA™ equipped with UPA123 Electronic power system

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UC120EP Electronic port cylinder

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UC120 Hydraulic cylinder

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# HIGHLIGHTS



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Rack and pinion steering system for ski boats

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**KEYWEST PCK**

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**KEYWEST BLCK**

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# ULTRAFLEX GROUP

## 89 years

1935-2024



### 1935 - 2024

Ultraflex Group has 88 years of experience in manufacturing and distributing the highest quality and most innovative products. The Ultraflex Group affiliate Companies that design and produce widely known equipments in the marine, industrial, architectural, Led technology and alternative energy fields.



Steering and control systems for pleasure boats



Manufacturing of steering wheels and distribution of technical marine accessories



**UFLEX - Renewable Energy**  
Systems and accessories for alternative energy applications



### ULTRAFLEX CONTROL SYSTEMS

Window and skylight remote controls. Building automation



### INDUSTRIA di LEVI

Mechanical remote controls in the industrial field



### UFLEX USA

Steering and control systems for pleasure boats

#### MANAGEMENT SYSTEM CERTIFICATE

**ULTRAFLEX S.p.A. - Sede Legale e Operativa**

Via Crome, 2 - 16013 Casale (CS) - Italy and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Environmental Management System standard: **ISO 14001:2015**

This certificate is valid for the following scope: Design and construction of mechanical, hydraulic and electronic systems and accessories for nautical, through electromechanical assembly, mechanical machining and plastic molding (IAP 18, 19)

Evaluated according to the requirements of Technical Regulations RT-09

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**ULTRAFLEX - Factory in Casella**



**UFLEX & ULTRAFLEX - Headquarter in Busalla**



**UFLEX - Factory in Tregnago**



**UCS - UFLEX - Factory in Borgo Fornari**



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## Management System

The Ultraflex and Uflex Management Systems are certified in conformity with the UNI EN ISO 9001:2015 and UNI EN ISO 14001:2015 rules and involve all the company resources and processes starting from the design, in order to:

- Define and comply with the customer requirements
- Set up the actions to maintain and improve the quality standards constantly
- Pursue a continuous process improvement to meet the market needs, through research, innovation and developing products and processes.
- Maintain and verify conformity with ABYC requirements.
- Pursuing environmental protection, including pollution and continuous improvement aimed at environmental performance
- Constantly test the products to verify their conformity with the 2013/53 EU and ABYC (American Boat and Yacht Council) requirements.

## GUARANTEE CONDITIONS AND EXCLUSIONS

**Power A Mark II™.** The “Power A Mark II™ - User and Installation Manual” describes activities, operations, technical specifications which must be followed during the installation and/or usage of the product, in order to keep a valid warranty. Descriptions and drawings in that manual are suitable to allow installation and use of the product to skilled persons. In case of doubt and/or for any information, please contact our Technical Service.

### **ULTRAFLEX mechanical, hydraulic and electronic steering systems**

are all marked **CE** in compliance with the EEC Directive and marked **UKCA** in compliance with UK RCR (Recreational Craft Regulations) 2017, in conformity with the following harmonised standards:

- ISO 8848 for mechanical steering systems and steering cables
- ISO 23411 for steering wheels
- ISO 10592 for hydraulic steering systems
- ISO 25197 for Integra electronic steering systems
- 

### **Electronic system components and engine start-up protection devices**

are all marked **CE** in compliance with the EEC Directive EMC 2014/30/EU (electromagnetic compatibility), in conformity with EN 60495 standard and in conformity with ISO 11547 standard concerning requirements to prevent an outboard motor from being started in gear.

We kindly remind you that on the boats marked CE it is compulsory to install steering systems with components marked CE (see art. 4 and 5 of Directive 2013/53/EU).

**We inform you the ULTRAFLEX guarantee is null and void if some ULTRAFLEX components are installed on a steering system together with products of other brands, with the exception of those brands clearly specified in our catalogue.**

The descriptions and guidelines shown in this catalogue should be used as general reference only. For any further information please contact our Technical Service.



# CERTIFICATIONS - GUARANTEE CONDITIONS AND EXCLUSIONS

DNV-GL

## MANAGEMENT SYSTEM CERTIFICATE

Certificate No: 249264-2017-AE-ITA-ACCREDIA Initial certification date: 27 January 2006 Valid: 26 January 2021 - 25 January 2024

This is to certify that the management system of

### ULTRAFLEX S.p.A. - Sede Legale e Operativa

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**ISO 14001:2015**

This certificate is valid for the following scope:  
**Design and construction of mechanical, hydraulic and electronic systems and accessories for nautical, through electromechanical assembly, mechanical machining and plastic molding (IAF 18, 19)**  
**Evaluated according to the requirements of Technical Regulations RT-09**

Place and date:  
Vimercate (MB), 16 November 2020



For the issuing office:  
DNV GL - Business Assurance  
Via Energy Park, 14 - 20871 Vimercate (MB) - Italy

Zeno Beltrami  
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.  
ACCREDITED UNIT: DNV GL Business Assurance Italia S.r.l., Via Energy Park, 14 - 20871 Vimercate (MB) - Italy, TEL:+39 66 99 905, www.dnvgl.it

DNV-GL

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This certificate is valid for the following scope:  
**Design and construction of marine systems and accessories (IAF 18, 19)**

Place and date:  
Vimercate (MB), 19 October 2020



For the issuing office:  
DNV GL - Business Assurance  
Via Energy Park, 14 - 20871 Vimercate (MB) - Italy

Zeno Beltrami  
Management Representative

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Ultraflex products are guaranteed against defects in material or workmanship for a period of two years following the date of manufacture. If the Ultraflex products are installed and used on commercial boats the guarantee is limited to one year following the date of manufacture.

Defective products should be returned freight prepaid to the Ultraflex facility and must be accompanied by an Ultraflex issued Return Goods Authorization number.

Upon receipt, the product will be examined to determine the cause of defect. If the product is determined to have a defect in workmanship or material, it will be repaired or replaced at the Ultraflex discretion.

This guarantee does not cover labor.

This guarantee does not cover products that have been misinstalled or misapplied. Furthermore, it does not cover claims for direct or indirect damage.

We decline liability and exclude guarantee if products are improperly installed, misapplied, or misused.

Our products are not intended to be used in racing applications, therefore this guarantee does not cover our products if they are used for racing purposes.

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The descriptions and guidelines shown in this catalogue should be used as general reference only.

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**ISO 9001:2015**  
This certificate is valid for the following scope:  
**Design and construction of marine systems and accessories  
(SAP 18, 19)**

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# MECHANICAL STEERING SYSTEMS

## Suggestions and warnings

### Selecting a mechanical steering system

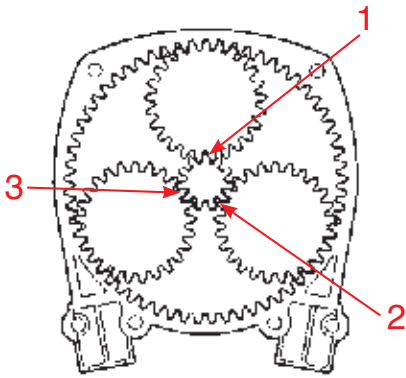
Selection of the appropriate mechanical steering system is an important factor for the safety and functionality of your boat.

The combination of engine power, hull type and boat speed influence the correct selection of the steering system. The load on the steering system increases with the boat speed and engine power; the torque generated by the propeller rotation in high power outboard applications can make it hard to steer.

Big boats with displacement hulls and inboard or non power assisted stern drive engines, can generate high rudder loads: in these cases a mechanical steering system will be inadequate and we suggest the use of an Ultraflex hydraulic steering system.

We always recommend consulting qualified personnel when selecting, installing and maintaining a steering system for your boat.

### Advantages of a Planetary Gear Design

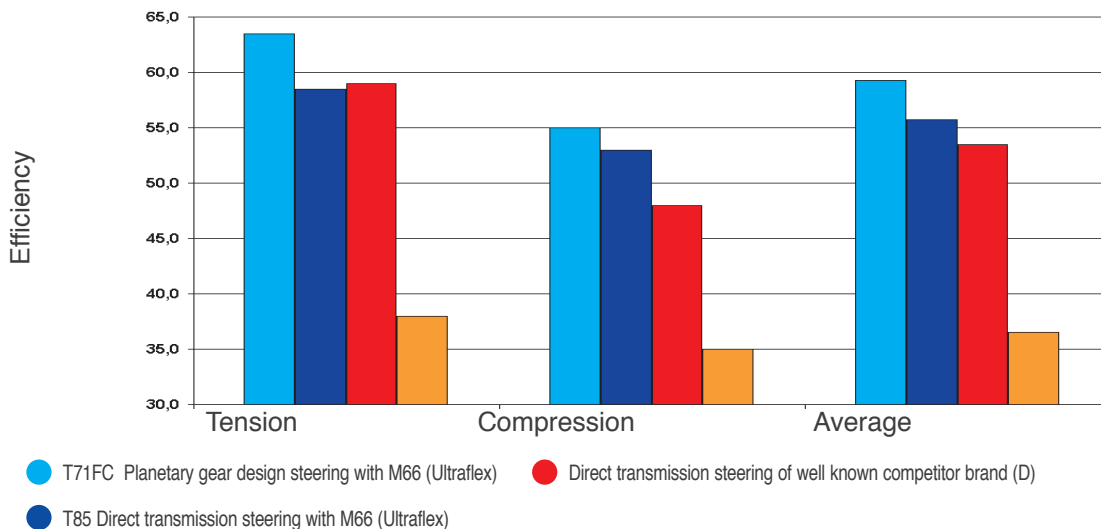


Ultraflex mechanical steering helms T71FC, T73NRFC, T91, T93ZT as well as dual cable versions and tilt wheel versions use a **Planetary Gear Design**.

A Planetary Gear Design has three satellite gears that rotate on their axis and at the same time rotate around the central helm axis. This allows for equal distribution of engine torque over three points of the central gear, dividing and balancing the system loads.

The benefits of this special design are increased system longevity, increased efficiency and less engine feedback compared to single pinion gear helms.

### Efficiency comparison tests



Test configuration 3 bends at 90°; 1000N load

**NOTE:** indicated figures have been obtained after 500 cycles of running from samples bought from after-market sources

### The importance of Zero torque steering system for increased safety



The steering system of a boat is the mechanism that determines the boat direction when the steering wheel is turned.

If, for any circumstance, the driver does not hold the steering wheel, a dangerous situation may occur caused by a sudden change of direction of the boat due to external forces (waves, currents, etc.) or internal forces such as rudder torque originated by the way of rotation of the propeller.

Engine torque usually generates a load on the steering system that must be continually compensated for by the driver even when the boat is going straight.

The additional effort by the driver to maintain a true course can often cause fatigue.

With **Ultraflex Zero torque** steering helms T73NRFC, T83NRFC, TM87SSZT, TM87OZT, T93ZT, T103ZT, the loads applied to the steering system are no longer a problem.

A special patented device allows the helm shaft to lock until turned by the driver, maintaining the boat direction and neutralizing the feedback loads on the steering cable.

This mechanism is engaged when the driver is not turning the wheel and is automatically disengaged as soon as the driver applies pressure on the wheel to change direction of the boat.

The **Ultraflex Zero torque** mechanism makes driving a boat safer and easier.

### Use and Maintenance

The steering cable must be installed avoiding excessive and/or tight bends. This will provide the driver with easy handling at all speed, helping to reduce inefficiency and excess play in the system.

Marine corrosion may cause the materials to deteriorate affecting maneuvering efficiency and in the worst case, system failure. By following the engine manufacturer specifications, the steering cable end fittings and the engine cable support must be cleaned and greased periodically; these simple operations minimize wear and corrosion in the system.

The steering cable must be regularly inspected. If steering becomes hard, inconsistent, cuts on the conduit surface are noticed, or any other component found damaged, the cable must be replaced immediately.

When storing your boat for an extended period of time we recommend removing the steering cable end fitting from its engine side support and cleaning it adequately.

### Warning:





A **Killing Switch** to unpower the engine is highly recommended in any type of application



# SELECTION OF STEERING SYSTEM

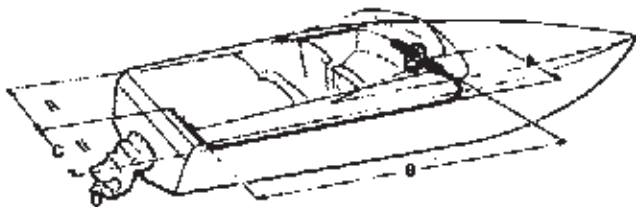
## and cable length measurement

- Speed, hull, horsepower, engine type, displacement and size are major factors in boat performance and handling characteristics. The above selection guide should be used as a general reference only.
- One of the major factors in selecting a steering system is proper cable length. Due to specific routing in each boat, these approximate lengths will vary. Final selection should be made with the assistance of a qualified technician.
- Ultraflex mechanical steering systems should not be used on boats equipped with engines that exceed the maximum horsepower rating of the boat.

| APPLICATIONS  | ENGINE POWER       | STEERING SYSTEM   |  |
|---|--------------------|---|--|
| OUTBOARD<br>                   | up to 40 kW (55cv) | T67   | Ultraflex hydraulic steering systems are recommended for boats that exceed 50 mph. Always follow engine manufacturer's instructions. |
|   | BOAT LENGTH        |   |  |
| INBOARD<br>                    | up to 30' (9m)     | T85 - T71FC - T81FC - T73NRFC - T83NRFC - TM87O - T91 - T93ZT - T101 - T103ZT |  |
|   |                    | Twin cable rotary steering systems  |  |
| STERNDRIVE POWER ASSISTED<br> |                    | T71FC - T81FC - T73NRFC - T83NRFC - TM87O - T91 - T93ZT - T101 - T103ZT       |  |
|   |                    | Twin cable rotary steering systems  |  |
| JET BOATS or SKI BOATS<br>   |                    | T85<br>T71FC - T81FC - TM87O - T91 - T101                                     |  |
|   |                    | Twin cable rotary steering systems  |  |
|   |                    | TM87J (jet boats)<br>TM87SS (ski boats)                                       |  |

**NOTE:** sterndrive engines not equipped with power steering can create very high steering loads. Our hydraulic steering systems are recommended for these type of boats. For any further information please contact our Technical Service Department.

### How to measure for new steering cable installation



Add. A + B + C and subtract 10 cm (4") for each 90° bend in the cable.  
 For installation through the engine tilt tube, add 30,5 cm (1 ft) to the measure calculated above.  
 To order in foot length, divide by 30,5 and round off to next whole foot.

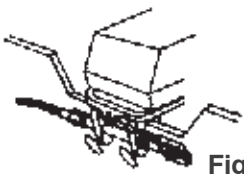


Fig. 1



Fig. 2

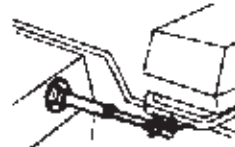


Fig. 3


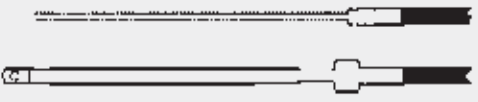
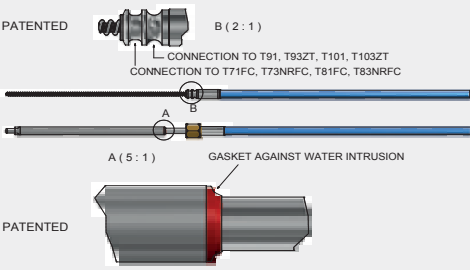

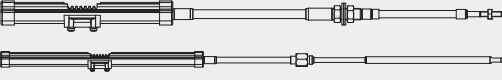
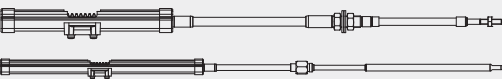
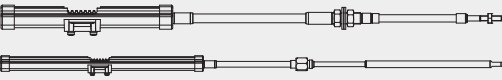

#### TILT TUBE MOUNTING - Fig. 1

Example (dimensions in cm):  
 $A (50) + B (250) + C (80) = 380 - 20$  for two 90° bends = 360 + 30,5  
 For a thru-tube installation 390,5 cm : 30,5 = 12,8 ft; round off to 13 ft

#### TRANSOM SUPPORT OR SPLASHWELL MOUNTING - Fig. 2-3

Example (dimensions in cm):  
 $A (50) + B (250) + C (80) = 380 - 20$  for two 90° bends = 360 : 30,5 = 11,8 ft; round off to 12 ft

# REPLACEMENT STEERING CABLES

| ULTRAFLEX REPLACEMENT STEERING CABLE  | STEERING HELM   | ADAPTOR REQUIRED   |
|---|---|--|
| <b>M58</b><br>                   | T67 Ultraflex<br>C230/C231 Morse®<br>Compac - T® Teleflex®<br>805 TX®   | none   |
| <b>M66</b><br>                   | T85 - T71FC - T72FC - T73NRFC<br>T81FC - T83NRFC -<br>Ultraflex Safe - TQC® - NFB Safe<br>-TII® - NFB 4.2®<br>Teleflex® - D290 Morse®                               | none   |
| <b>M90 Mach</b><br>             | T91 - T93ZT<br>T101 - T103ZT<br>T85 - T71FC - T72FC - T73NRFC<br>T81FC - T83NRFC<br>Ultraflex<br>Safe - TQC® - NFB Safe TII® NFB<br>4.2®<br>Teleflex® - D290 Morse® | <b>K66 - 38432Q</b><br> |
| <b>TM87O</b><br>               | G87 - G87ZT - G89 - G89ZT<br>Ultraflex.<br>Not compatible with TM86<br>TM87O compatible with Teleflex®<br>SSC134, SSCX154   | none   |
| <b>TM87SS</b><br>              | G87 - G87ZT - G89 - G89ZT<br>Ultraflex.   | none   |
| <b>TM87J</b><br>               | G87 - G89<br>TM87J compatible with Teleflex®<br>SSC145, SSC146  | none   |
| <b>TM86 - DISCONTINUED</b><br> | G86 - G88NR - G96 - G98NR<br>Ultraflex.<br>Not compatible with TM87J and<br>TM87O and TM87SS<br><b>NOTE: Will not work with dual cable helms</b>                    | none   |

## Warnings:

We inform you the ULTRAFLEX guarantee is null and void if some ULTRAFLEX components are installed on a steering system together with products of other brands, with the exception of those brands clearly specified in the above chart.

## How to measure for replacement steering cables

**ORDER LENGTH:** "D" dimension + 56 cm

To order in foot length, divide for 30,5 and round up to the next whole foot.

Example: D= 305 cm + 56 cm= 361 : 30,5 = 11'8". Round up to 12 ft.

D = Conduit length



# T67 Rotary steering system



T67



T67W

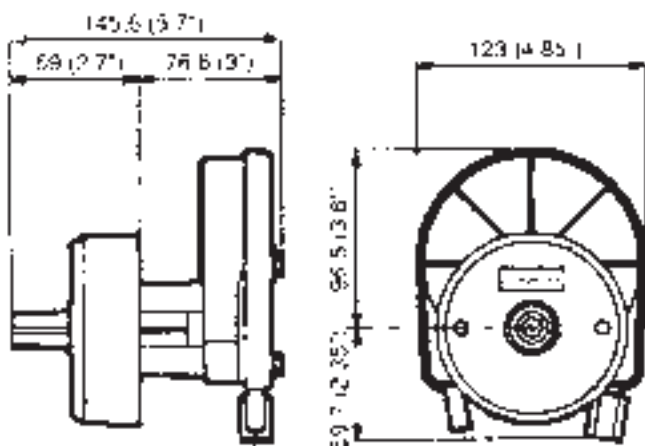
- All stainless steel output end of cable as per ABYC P17 safety standards
- Made of corrosion resistant materials
- Standard friction externally adjustable
- Four optional helm positions to facilitate steering cable installation
- Available in package with ROTECH-IV
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

• **APPLICATIONS:** for use with outboard engines up to 40 kW (55 hp) with the exception of EVINRUDE E-TEC™ 50 where the use of T85, T71FC or T91 is recommended

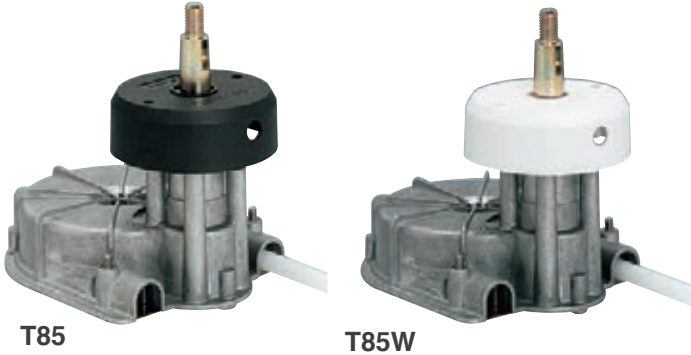
## COMPONENTS - TO BE ORDERED SEPARATELY

| Model          | Part No. | Description                                 |
|----------------|----------|---|
| T67            | 35809J   | Steering helm with friction and black bezel |
| T67W           | 37925M   | Steering helm with friction and white bezel |
| M58            | -        | Steering cable                              |
| Steering wheel | -        | See steering wheels section                 |
| Accessories    | -        | See accessories section                     |

|                                   |                |
|-----------------------------------|----------------|
| Installation                      | 90°            |
| M58 steering cable stroke         | 230 mm (9")    |
| Lock-to-lock steering wheel turns | approx 2,5     |
| Max. steering wheel diameter      | 380 mm (15")   |
| Min. steering cable bend radius   | 200 mm (7.87") |



M58

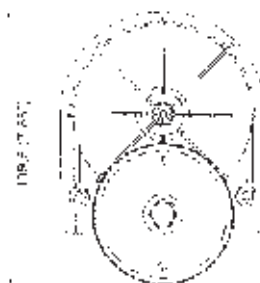
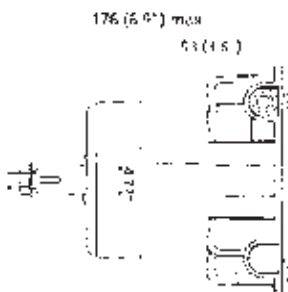


- All stainless steel cable output ends
- Made of corrosion resistant materials
- Particularly suitable where clearance is limited
- Minimal feedback
- T85 steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

### COMPONENTS - TO BE ORDERED SEPARATELY

| Model          | Part No. | Description                    |
|----------------|----------|--------------------------------|
| T85            | 38439Z   | Steering helm with black bezel |
| T85W           | 39213M   | Steering helm with white bezel |
| M58            | -        | Steering cable                 |
| Steering wheel | -        | See steering wheels section    |
| Accessories    | -        | See accessories section        |

|                                   |               |
|-----------------------------------|---------------|
| Installation                      | 90°           |
| M66 steering cable stroke         | 228 mm (9")   |
| Lock-to-lock steering wheel turns | approx 3      |
| Max. steering wheel diameter      | 406 mm (16")  |
| Min. steering cable bend radius   | 200 mm (7.9") |



M66

# T71FC - T72FC Rotary steering systems



T71FC



T72FC

- Fast connect, simple installation
- All stainless steel cable output ends
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- Minimal feedback
- T71FC and T72FC steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- For boats faster than 50 mph our hydraulic steering systems are recommended
- T71 is available in package with ROTECH-I
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

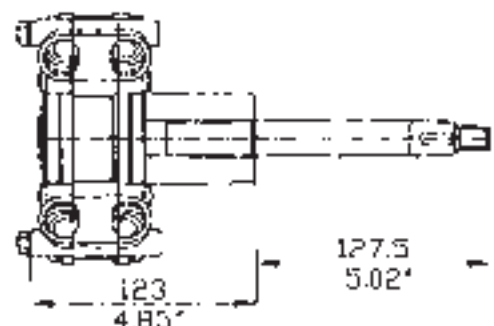
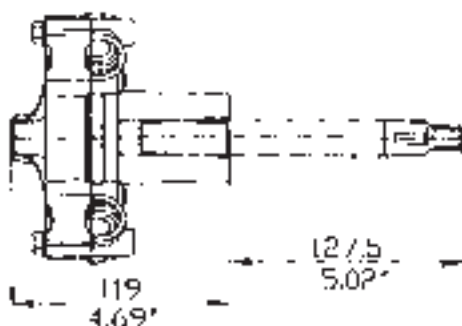
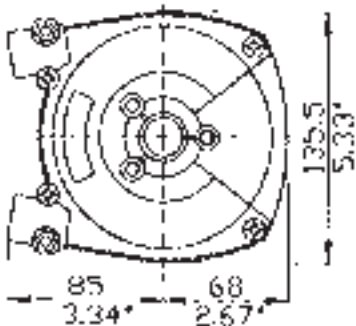
**NOTE**

T72FC steering system requires 2 cables

**COMPONENTS - TO BE ORDERED SEPARATELY**

| Model          | Part No. | Description                       |
|----------------|----------|-----------------------------------|
| T71FC          | 38867H   | Single cable steering Helm        |
| T72FC          | 38868K   | Dual cable steering Helm          |
| X34            | 36654B   | Black bezel, 90° mounting         |
| X34W           | 40654C   | White bezel, 90° mounting         |
| X91            | 42850N   | Chrome plated bezel, 90° mounting |
| X35            | 36655C   | Black bezel, 20° mounting         |
| M66 or M90     | -        | Steering cable                    |
| Steering wheel | -        | See steering wheels section       |
| Accessories    | -        | See accessories section           |

|                                   |               |
|-----------------------------------|---------------|
| Installation                      | 90° or 20°    |
| M66 - M90 steering cable stroke   | 228 mm (9")   |
| Lock-to-lock steering wheel turns | approx 3,8    |
| Max. steering wheel diameter      | 406 mm (16")  |
| Min. steering cable bend radius   | 200 mm (7.9") |



# T73NRFC Zero torque rotary steering system



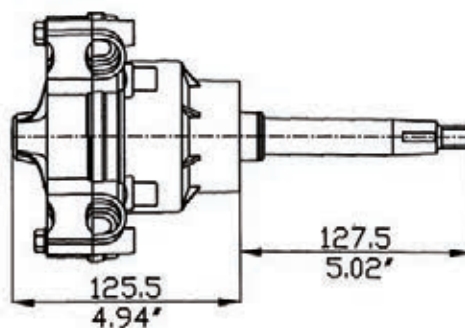
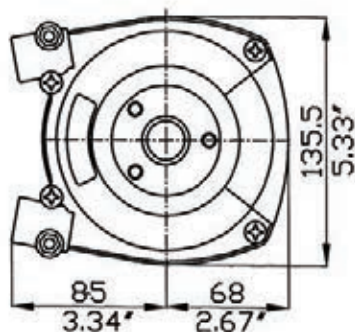
**T73NRFC**

- Easy and safe steering: a patented zero torque mechanism eliminates the continuous load on the driver caused by the propeller torque
- Fast connect, simple installation
- Most suitable where clearance is limited
- Ideal for outboards and surfacing propellers
- Standard 3/4" tapered shaft
- All stainless steel cable output ends
- Made of corrosion resistant materials
- T73NRFC steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- For boats faster than 50 mph our hydraulic steering systems are recommended
- T73NRFC is available in package with ROTECH-III
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

## COMPONENTS - TO BE ORDERED SEPARATELY

| Model          | Part No. | Description                            |
|----------------|----------|--|
| T73NRFC        | 38869M   | Zero torque single cable steering helm |
| X34            | 36654B   | Black bezel, 90° mounting              |
| X34W           | 40654C   | White bezel, 90° mounting              |
| X91            | 42850N   | Chrome plated bezel, 90° mounting      |
| X35            | 36655C   | Black bezel, 20° mounting              |
| M66 or M90     | -        | Steering cable                         |
| Steering wheel | -        | See steering wheels section            |
| Accessories    | -        | See accessories section                |

|                                   |               |
|-----------------------------------|---------------|
| Installation                      | 90° or 20°    |
| M66 - M90 steering cable stroke   | 228 mm (9")   |
| Lock-to-lock steering wheel turns | approx 3,8    |
| Max. steering wheel diameter      | 406 mm (16")  |
| Min. steering cable bend radius   | 200 mm (7.9") |



# T81FC - T83NRFC (zero torque) Rotary tilt steering systems



T81FC with X52



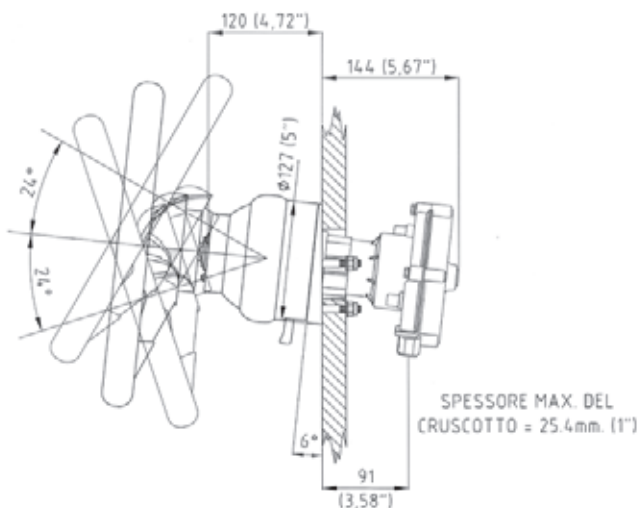
X52

- Tilt range of 48° and five locking positions
- Fast connect, simple installation
- Tilt device eliminates underdash movement
- Standard 3/4" tapered shaft – stainless steel
- All stainless steel cable output ends
- Made of corrosion resistant materials
- T81FC and T83NRFC steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- X52 tilt mechanism fits Ultraflex tilt mount rotary and rack and pinion steering helms as well as Ultraflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems
- For boats faster than 50 mph our hydraulic steering systems are recommended
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

## COMPONENTS - TO BE ORDERED SEPARATELY

| Model          | Part No. | Description                            |
|----------------|----------|--|
| T81FC          | 38957J   | Single cable steering helm             |
| T83NRFC        | 38868K   | Zero torque single cable steering Helm |
| X52            | 39250U   | Tilt mechanism                         |
| M66 or M90     | -        | Steering cable                         |
| Steering wheel | -        | See steering wheels section            |
| Accessories    | -        | See accessories section                |

|                                   |               |
|-----------------------------------|---------------|
| Installation                      | with Tilt X52 |
| M66 - M90 steering cable stroke   | 228 mm (9")   |
| Lock-to-lock steering wheel turns | approx 3,8    |
| Max. dash depth                   | 25,4 mm (1")  |
| Max. steering wheel diameter      | 406 mm (16")  |
| Min. steering cable bend radius   | 200 mm (7.9") |



# T91 High Performance rotary steering system



T91 high performance



T91 with X91 bezel

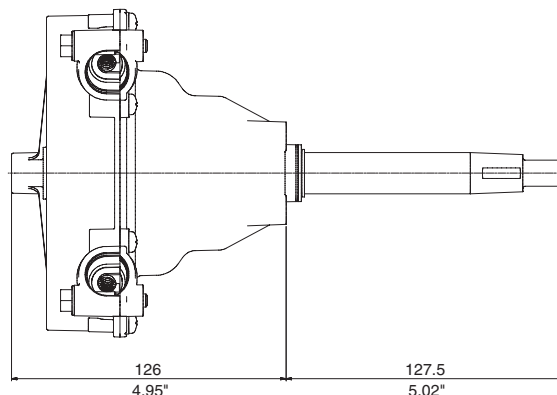
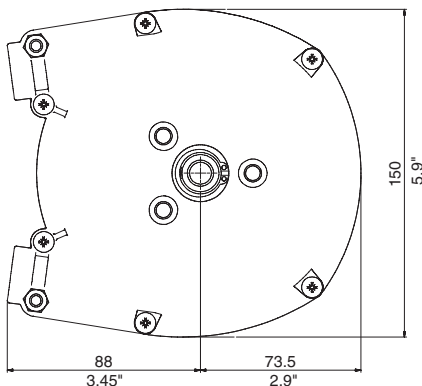


M90 Mach (Patented)

- Specifically designed for high performance and high efficiency applications
- M90 Mach cable (patented): performance, flexibility and durability increased by top quality materials and construction.
- Fast connect, simple installation, patented end fitting.
- Stainless steel cable output end featuring patented gasket, engine side
- Made of corrosion resistant materials
- Particularly suitable when clearance is limited.
- Standard 3/4" tapered shaft
- Minimal feedback
- T91 steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- For boats faster than 50 mph our hydraulic steering systems are recommended
- T91 is also available in package with FOURTECH-I
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

## COMPONENTS - TO BE ORDERED SEPARATELY

| Model                                | Part No. | Description  |
|--------------------------------------|----------|--|
| T91                                  | 42647S   | Single cable steering helm                         |
| X34                                  | 36654B   | Black bezel, 90° mounting                          |
| X34W                                 | 40654C   | White bezel, 90° mounting                          |
| X91                                  | 42850N   | Chrome plated bezel, 90° mounting                  |
| X90                                  | 42646P   | Chrome plated bezel, 90° mounting with lock device |
| X35                                  | 36655C   | Black bezel, 20° mounting                          |
| M90                                  | -        | Steering cable                                     |
| Steering wheel                       | -        | See steering wheels section                        |
| Accessories                          | -        | See accessories section                            |
| Installation                         |          | 90° or 20°   |
| M90 steering cable stroke            |          | 228 mm (9")  |
| Lock-to-lock steering wheel turns    |          | approx 4,2   |
| Max. steering wheel diameter         |          | 406 mm (16")                                       |
| Suggested steering cable bend radius |          | 200 mm (7.87")                                     |
| Min. steering cable bend radius      |          | 150 mm (5.9")                                      |





# T93ZT (zero torque) High performance rotary steering systems



T93ZT high performance



T93ZT with X91 bezel

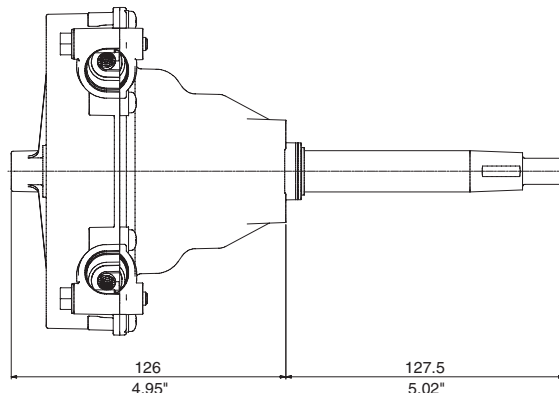
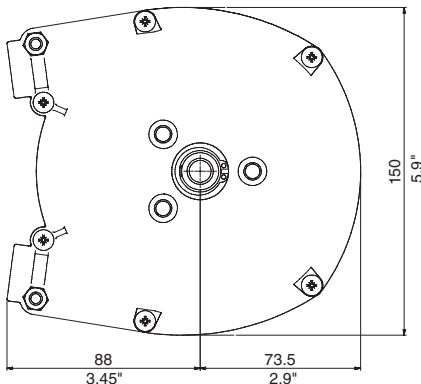


M90 Mach  
(Patented)

- Specifically designed for high performance and high efficiency applications
- M90 Mach cable (patented): performance, flexibility and durability increased by top quality materials and construction.
- Fast connect, simple installation, patented end fitting.
- Stainless steel cable output end featuring patented gasket, engine side
- Made of corrosion resistant materials
- Particularly suitable when clearance is limited.
- Standard 3/4" tapered shaft
- Minimal feedback
- T93ZT steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- For boats faster than 50 mph our hydraulic steering systems are recommended
- T93ZT is also available in package with FOURTECH-II
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

## COMPONENTS - TO BE ORDERED SEPARATELY

| Model                                | Part No. | Description  |
|--------------------------------------|----------|--|
| T93ZT                                | 42648U   | Zero torque single cable steering helm             |
| X34                                  | 36654B   | Black bezel, 90° mounting                          |
| X34W                                 | 40654C   | White bezel, 90° mounting                          |
| X91                                  | 42850N   | Chrome plated bezel, 90° mounting                  |
| X90                                  | 42646P   | Chrome plated bezel, 90° mounting with lock device |
| X35                                  | 36655C   | Black bezel, 20° mounting                          |
| M90                                  | -        | Steering cable                                     |
| Steering wheel                       | -        | See steering wheels section                        |
| Accessories                          | -        | See accessories section                            |
| Installation                         |          | 90° or 20°   |
| M90 steering cable stroke            |          | 228 mm (9")  |
| Lock-to-lock steering wheel turns    |          | approx 4,2   |
| Max. steering wheel diameter         |          | 406 mm (16")                                       |
| Suggested steering cable bend radius |          | 200 mm (7.87")                                     |
| Min. steering cable bend radius      |          | 150 mm (5.9")                                      |



# T101 - T103ZT (zero torque) High performance tilt steering systems



T101 high performance



T101 shown with X52 tilt mechanism



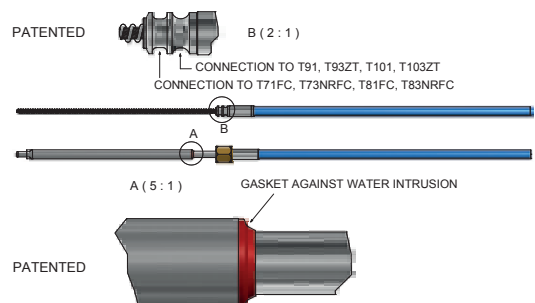
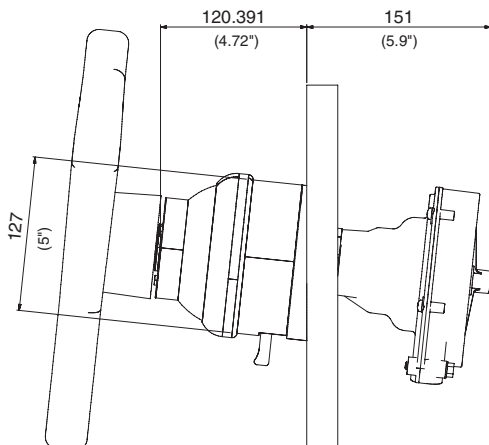
T103ZT high performance

- Specifically designed for high performance and high efficiency applications
- M90 Mach cable (patented): performance, flexibility and durability increased by top quality materials and construction.
- Tilt range of 48° and five locking positions
- Fast connect, simple installation, patented end fitting.
- Tilt device eliminates underdash movement
- Standard 3/4" tapered shaft – stainless steel
- Engine side stainless steel cable output end featuring patented gasket
- Made of corrosion resistant materials
- T101 and T103ZT steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- For boats faster than 50 mph our hydraulic steering systems are recommended
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

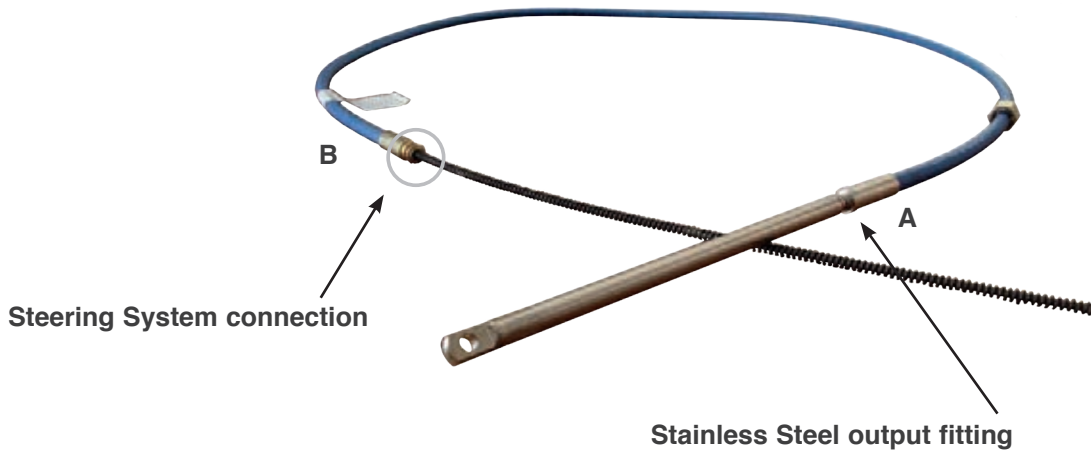
## COMPONENTS - TO BE ORDERED SEPARATELY

| Model          | Part No. | Description                            |
|----------------|----------|--|
| T101           | 42839B   | Single cable steering helm             |
| T103ZT         | 42840K   | Zero torque single cable steering helm |
| X52            | 39250U   | Tilt mechanism                         |
| M90            | -        | Steering cable                         |
| Steering wheel | -        | See steering wheels section            |
| Accessories    | -        | See accessories section                |

|                                      |   |
|--------------------------------------|---|
| Installation                         | with Tilt X52                           |
| M90 steering cable stroke            | 228 mm (9")                             |
| Lock-to-lock steering wheel turns    | approx 3,8                              |
| Max. steering wheel diameter         | 406 mm (16")                            |
| Tilt mechanism- X52                  | Not included - to be ordered separately |
| Suggested steering cable bend radius | 200 mm (7.87")                          |
| Min. steering cable bend radius      | 150 mm (5.9")                           |



# M90 High efficiency and flexibility steering cable



PATENTED

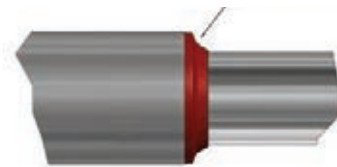


Connection to:  
T91, T93ZT, T101, T103ZT

Connection to:  
T71FC, T73NRFC,  
T81FC, T83NRFC

GASKET AGAINST WATER INTRUSION

PATENTED



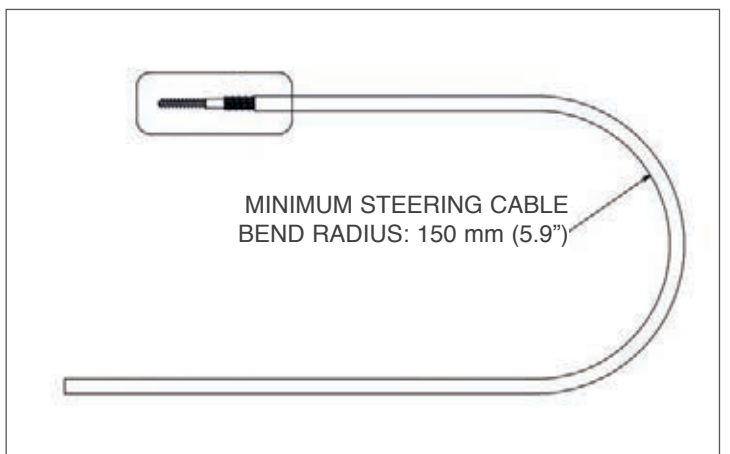
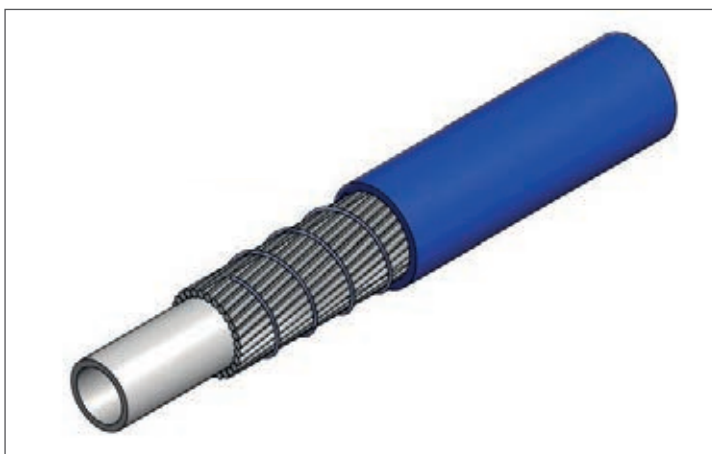
Specifically designed for high performance and high efficiency applications, M90 Mach cable (patented) offers increased flexibility and durability by top quality materials and construction.

- Ideal solution for long cable runs and tight bend applications
- Corrosion resistant materials, stainless steel engine side output fitting
- Minimal feedback
- Fast connect, simple installation, patented end fitting
- Stainless steel cable output end featuring **patented gasket**, engine side

**WARNING:**

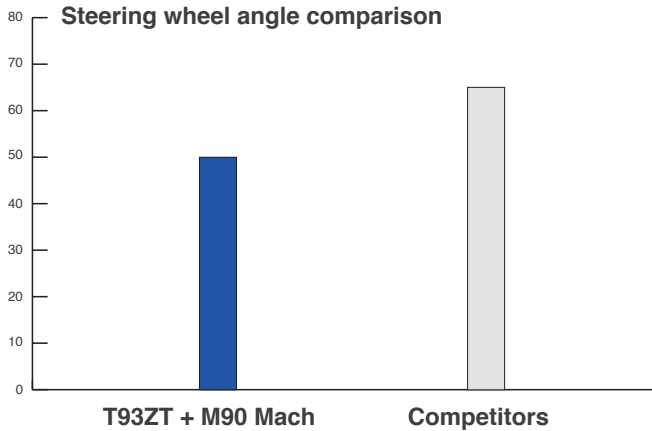
M66 cable will **not** fit the following steering systems: T91, T93ZT, T101, T103ZT

|  |   |
|--|---|
| <b>Min. steering cable bend radius</b> | 150 mm (5.9")   |
| <b>Suitable for use with</b>           | T91, T93ZT, T101, T103ZT, T71FC, T72FC, T73NRFC, T74NRFC, T81FC, T82FC, T83NRFC, T85. |



# T91 -T93ZT (zero torque) High Performance steering systems - Torque Comparison

## Backlash on the steering system comparison

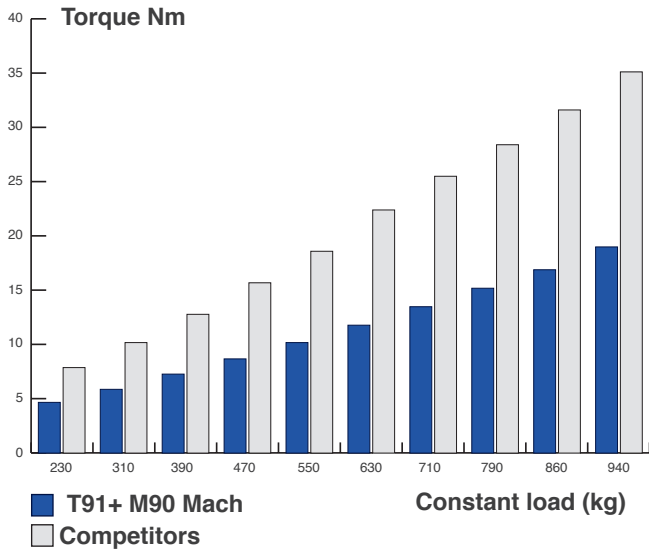


The quality of a mechanical steering system depends on its efficiency (less driving effort) in push & pull load and low backlash on the steering wheel.

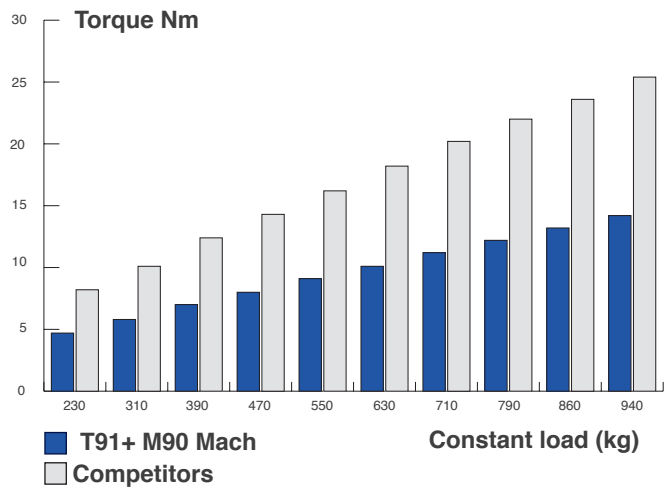
Ultraflex **T91** and **T93ZT** steering systems, fitted with the M90 Mach single-cable, are the best mechanical steering systems on the market today. They combine a minimal backlash with higher efficiency and they guarantee results with very narrow cable bends.

## Torque comparison with Push & Pull load - radius 200m

### Push load:

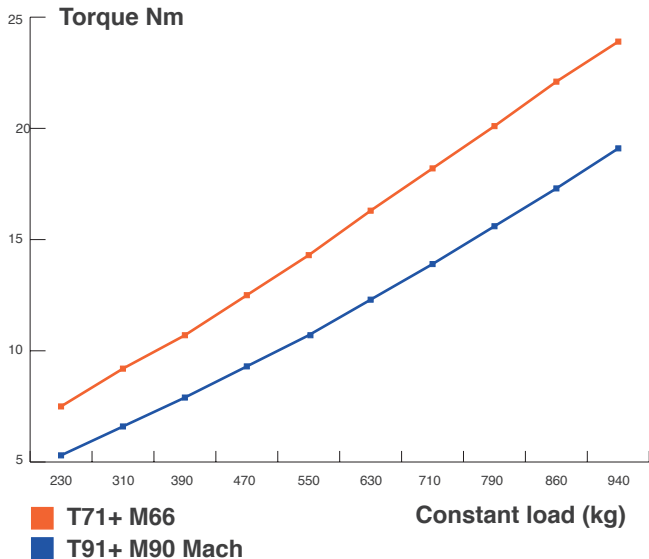


### Pull load:

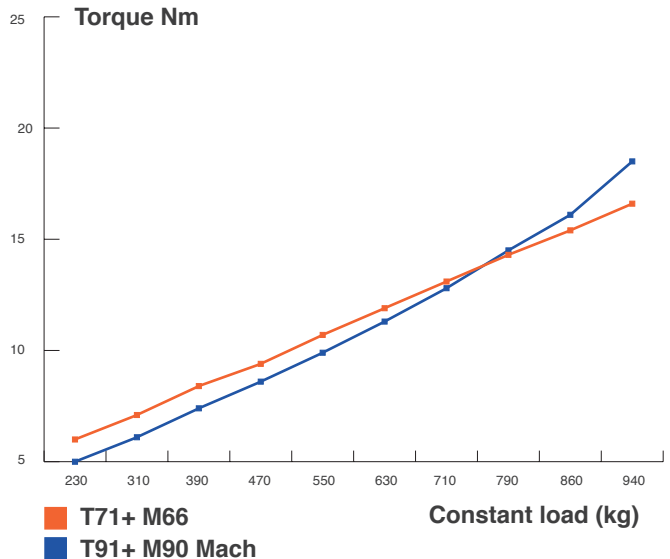


## Torque comparison with Push & Pull load - radius 100m

### Push load:



### Pull load:



# TM87O - TM87OZT (zero torque) Rack and pinion steering systems



G87



G87ZT

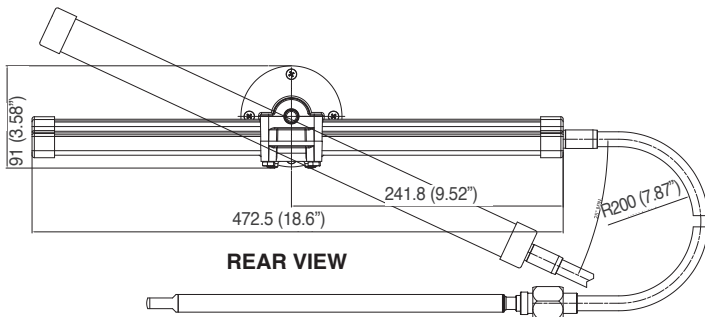


- All stainless steel cable output ends
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, equipped with a zero torque patented mechanism, eliminates the continuous load on the driver caused by the propeller torque
- TM87O steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Optional steering wheel
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

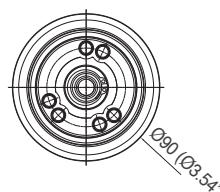
## COMPONENTS - TO BE ORDERED SEPARATELY

| Model          | Part No. | Description  |
|----------------|----------|--|
| TM87O          | -        | Preassembled helm with steering cable              |
| G87            | 43838E   | Standard helm                                      |
| G87ZT          | 43837C   | Zero torque helm                                   |
| X34            | 36654B   | Black bezel, 90° mounting                          |
| X34W           | 40654C   | White bezel, 90° mounting                          |
| X91            | 42850N   | Chrome plated bezel, 90° mounting                  |
| X90            | 42646P   | Chrome plated bezel, 90° mounting with lock device |
| X35            | 36655C   | Black bezel, 20° mounting                          |
| Steering wheel | -        | See steering wheels section                        |
| Accessories    | -        | See accessories section                            |

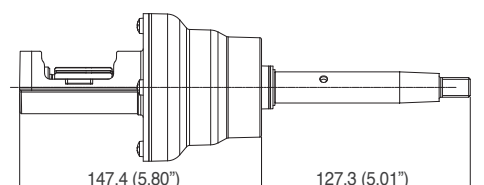
|                                   |                |
|-----------------------------------|----------------|
| Installation                      | 90° or 20°     |
| TM87O stroke                      | 200 mm (3.7")  |
| Lock-to-lock steering wheel turns | approx 3,3     |
| Max. steering wheel diameter      | 420 mm (16.5") |
| Min. steering cable bend radius   | 200 mm (7.9")  |



TM87O



G87 and G87ZT



# TM870 - TM870ZT (zero torque) Rack and pinion tilt steering systems

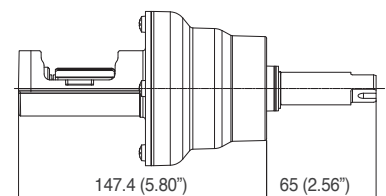
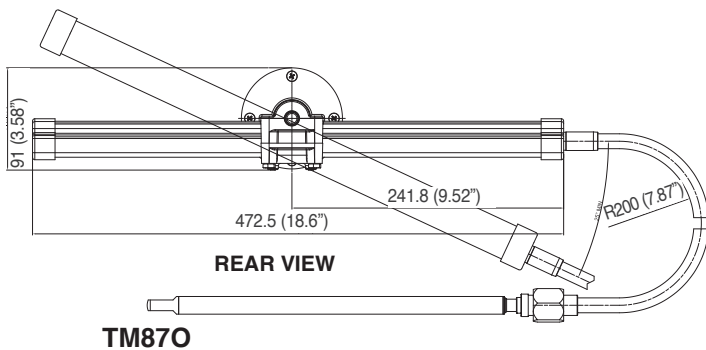


## COMPONENTS - TO BE ORDERED SEPARATELY

| Model          | Part No. | Description                                      |
|----------------|----------|--|
| TM870          | -        | Preassembled helm with steering cable            |
| G89            | 43844Z   | Standard helm suitable for X52 tilt mechanism    |
| G89ZT          | 43845B   | Zero torque helm suitable for X52 tilt mechanism |
| X52            | 39250U   | Tilt mechanism                                   |
| Steering wheel | -        | See steering wheels section                      |
| Accessories    | -        | See accessories section                          |

- All stainless steel cable output ends
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, equipped with a zero torque patented mechanism, eliminates the continuous load on the driver caused by the propeller torque
- TM870 steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Optional steering wheel
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

|                                   |                |
|-----------------------------------|----------------|
| Installation                      | 90° or 20°     |
| TM870 stroke                      | 200 mm (3.7")  |
| Lock-to-lock steering wheel turns | approx 3,3     |
| Max. steering wheel diameter      | 420 mm (16.5") |
| Min. steering cable bend radius   | 200 mm (7.9")  |



# TM87SS - TM87SSZT (zero torque) Rack and pinion steering systems for ski boats



**new**



**G87**



**G87ZT**

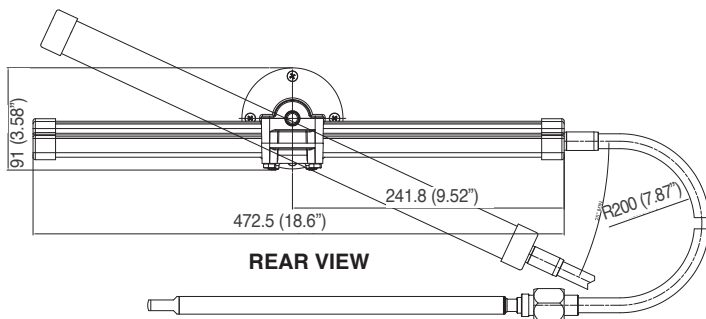


- Armoured stainless steel cable, armoured conduit
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, equipped with a zero torque patented mechanism, eliminates the continuous load on the driver caused by the propeller torque
- TM87SS steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Optional steering wheel
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

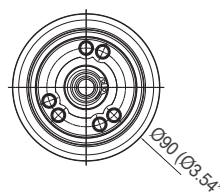
## COMPONENTS - TO BE ORDERED SEPARATELY

| Model          | Part No. | Description  |
|----------------|----------|--|
| TM87SS         | -        | Preassembled helm with steering cable              |
| G87            | 43838E   | Standard helm                                      |
| G87ZT          | 43837C   | Zero torque helm                                   |
| X34            | 36654B   | Black bezel, 90° mounting                          |
| X34W           | 40654C   | White bezel, 90° mounting                          |
| X91            | 42850N   | Chrome plated bezel, 90° mounting                  |
| X90            | 42646P   | Chrome plated bezel, 90° mounting with lock device |
| X35            | 36655C   | Black bezel, 20° mounting                          |
| Steering wheel | -        | See steering wheels section                        |
| Accessories    | -        | See accessories section                            |

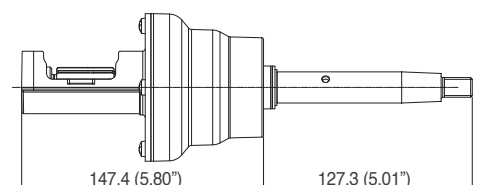
|                                   |                |
|-----------------------------------|----------------|
| Installation                      | 90° or 20°     |
| TM87SS stroke                     | 200 mm (3.7")  |
| Lock-to-lock steering wheel turns | approx 3,3     |
| Max. steering wheel diameter      | 420 mm (16.5") |
| Min. steering cable bend radius   | 200 mm (7.9")  |



**TM87SS**



**G87 and G87ZT**



# TM87SS - TM87SSZT (zero torque) Rack and pinion tilt steering systems for ski boats



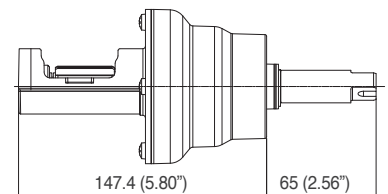
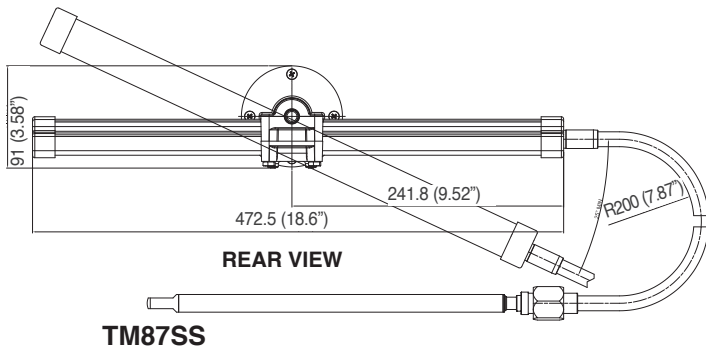
**new**



- Armoured stainless steel cable, armoured conduit
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, equipped with a zero torque patented mechanism, eliminates the continuous load on the driver caused by the propeller torque
- TM87SS steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Optional steering wheel
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

## COMPONENTS - TO BE ORDERED SEPARATELY

| Model          | Part No. | Description                                      |
|----------------|----------|--|
| TM87SS         | -        | Preassembled helm with steering cable            |
| G89            | 43844Z   | Standard helm suitable for X52 tilt mechanism    |
| G89ZT          | 43845B   | Zero torque helm suitable for X52 tilt mechanism |
| X52            | 39250U   | Tilt mechanism                                   |
| Steering wheel | -        | See steering wheels section                      |
| Accessories    | -        | See accessories section                          |



|                                   |                |
|-----------------------------------|----------------|
| Installation                      | 90° or 20°     |
| TM87SS stroke                     | 200 mm (3.7")  |
| Lock-to-lock steering wheel turns | approx 3,3     |
| Max. steering wheel diameter      | 420 mm (16.5") |
| Min. steering cable bend radius   | 200 mm (7.9")  |



# TM87J

## Rack and pinion steering systems for jet boats



G87

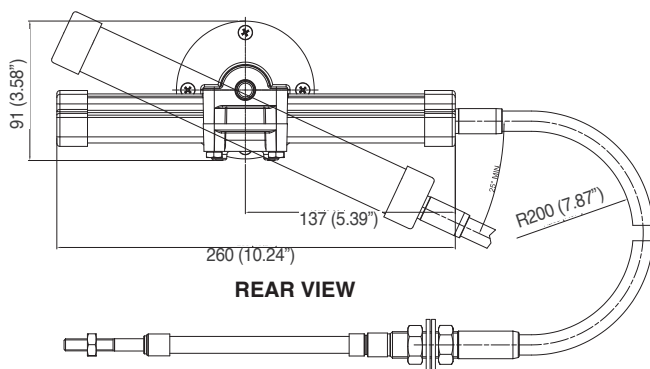


- Armoured stainless steel cable
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- TM87J steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Optional steering wheel
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

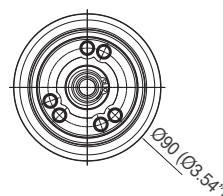
### COMPONENTS - TO BE ORDERED SEPARATELY

| Model          | Part No. | Description  |
|----------------|----------|--|
| TM87J          | -        | Preassembled helm with steering cable              |
| G87            | 43838E   | Standard helm                                      |
| X34            | 36654B   | Black bezel, 90° mounting                          |
| X34W           | 40654C   | White bezel, 90° mounting                          |
| X91            | 42850N   | Chrome plated bezel, 90° mounting                  |
| X90            | 42646P   | Chrome plated bezel, 90° mounting with lock device |
| X35            | 36655C   | Black bezel, 20° mounting                          |
| Steering wheel | -        | See steering wheels section                        |
| Accessories    | -        | See accessories section                            |

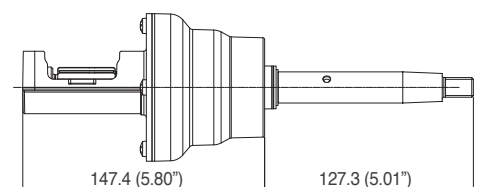
|                                   |                |
|-----------------------------------|----------------|
| Installation                      | 90° or 20°     |
| TM87J stroke                      | 93 mm (3.7")   |
| Lock-to-lock steering wheel turns | approx 1,5     |
| Max. steering wheel diameter      | 420 mm (16.5") |
| Min. steering cable bend radius   | 200 mm (7.9")  |



TM87J



G87

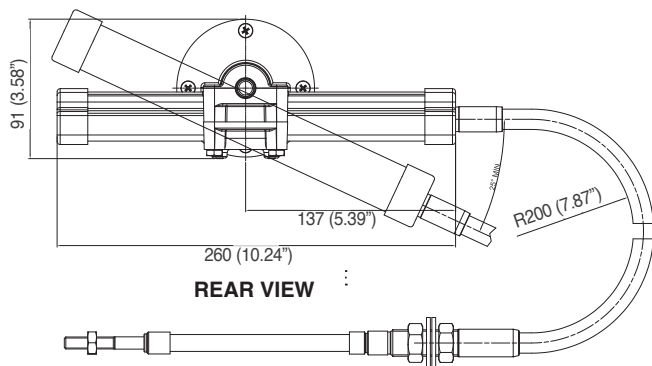




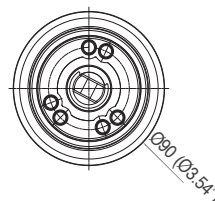
- Armoured stainless steel cable
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- TM87J steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Optional steering wheel
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

### COMPONENTS - TO BE ORDERED SEPARATELY

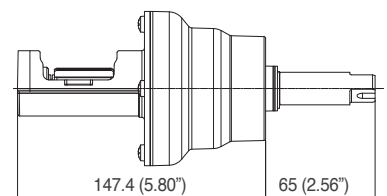
| Model          | Part No. | Description                                   |
|----------------|----------|---|
| TM87J          | -        | Preassembled helm with steering cable         |
| G89            | 43844Z   | Standard helm suitable for X52 tilt mechanism |
| X52            | 39250U   | Tilt mechanism                                |
| Steering wheel | -        | See steering wheels section                   |
| Accessories    | -        | See accessories section                       |



**TM87J**



**G89**



|  |                |
|--|----------------|
| <b>Installation</b>                      | 90° or 20°     |
| <b>TM87J stroke</b>                      | 93 mm (3.7")   |
| <b>Lock-to-lock steering wheel turns</b> | approx 1,5     |
| <b>Max. steering wheel diameter</b>      | 420 mm (16.5") |
| <b>Min. steering cable bend radius</b>   | 200 mm (7.9")  |

## MECHANICAL STEERING SYSTEM MOUNTING BEZELS



|             |        |                           |
|-------------|--------|---------------------------|
| <b>X34</b>  | 36654B | Black bezel, mounting 90° |
| <b>X34W</b> | 40654C | White bezel, mounting 90° |

|            |        |                           |
|------------|--------|---------------------------|
| <b>X35</b> | 36655C | Black bezel, mounting 20° |
|------------|--------|---------------------------|



|            |        |                                   |
|------------|--------|-----------------------------------|
| <b>X91</b> | 42850N | Chrome plated bezel, mounting 90° |
|------------|--------|-----------------------------------|

|            |        |   |
|------------|--------|---|
| <b>X90</b> | 42646P | Chrome plated bezel with steering lock device, mounting 90° |
|------------|--------|---|

| Model   | Bezel included | X34 / X34W | X35 | X90 | X91 |
|---------|----------------|------------|-----|-----|-----|
| T67     | X              | -          | -   | -   | -   |
| T85     | X              | -          | -   | -   | -   |
| T71FC   | -              | X          | X   | -   | X   |
| T72FC   | -              | X          | X   | -   | X   |
| T73NRFC | -              | X          | X   | -   | X   |
| T91     | -              | X          | X   | X   | X   |
| T93ZT   | -              | X          | X   | X   | X   |
| TM87O   | -              | X          | X   | X   | X   |
| TM87SS  | -              | X          | X   | X   | X   |
| TM87J   | -              | X          | X   | X   | X   |

# PACKAGED MECHANICAL ROTARY STEERING SYSTEMS

## ROTECH

A convenient kit form, especially suitable as replacement steering, that includes helm, bezel and cable. The cable is available in 1-ft increments from 8 to 30 feet (specify cable length when ordering)  
The wheel is not included



**ROTECH - I**

|                |                 |
|----------------|-----------------|
| Helm           | T71FC           |
| Bezel          | X34 - 90° bezel |
| Steering cable | M66             |



**ROTECH - III**

|                |                            |
|----------------|----------------------------|
| Helm           | T73NRFC - zero torque helm |
| Bezel          | X34 - 90° bezel°           |
| Steering cable | M66                        |



**ROTECH - IV**

|                |                                 |
|----------------|---------------------------------|
| Helm           | T67                             |
| Bezel          | included in the steering system |
| Steering cable | M66                             |

## FOURTECH

Featuring high performance helms with a Planetary Gear Design, especially suitable as replacement steering, that includes helm, bezel and cable. The cable is available in 1-ft increments from 8 to 30 feet (specify cable length when ordering)  
The wheel is not included



**FOURTECH - I**

|                |                      |
|----------------|----------------------|
| Helm           | T91 High Performance |
| Bezel          | X34 - 90° bezel      |
| Steering cable | M90 Mach             |

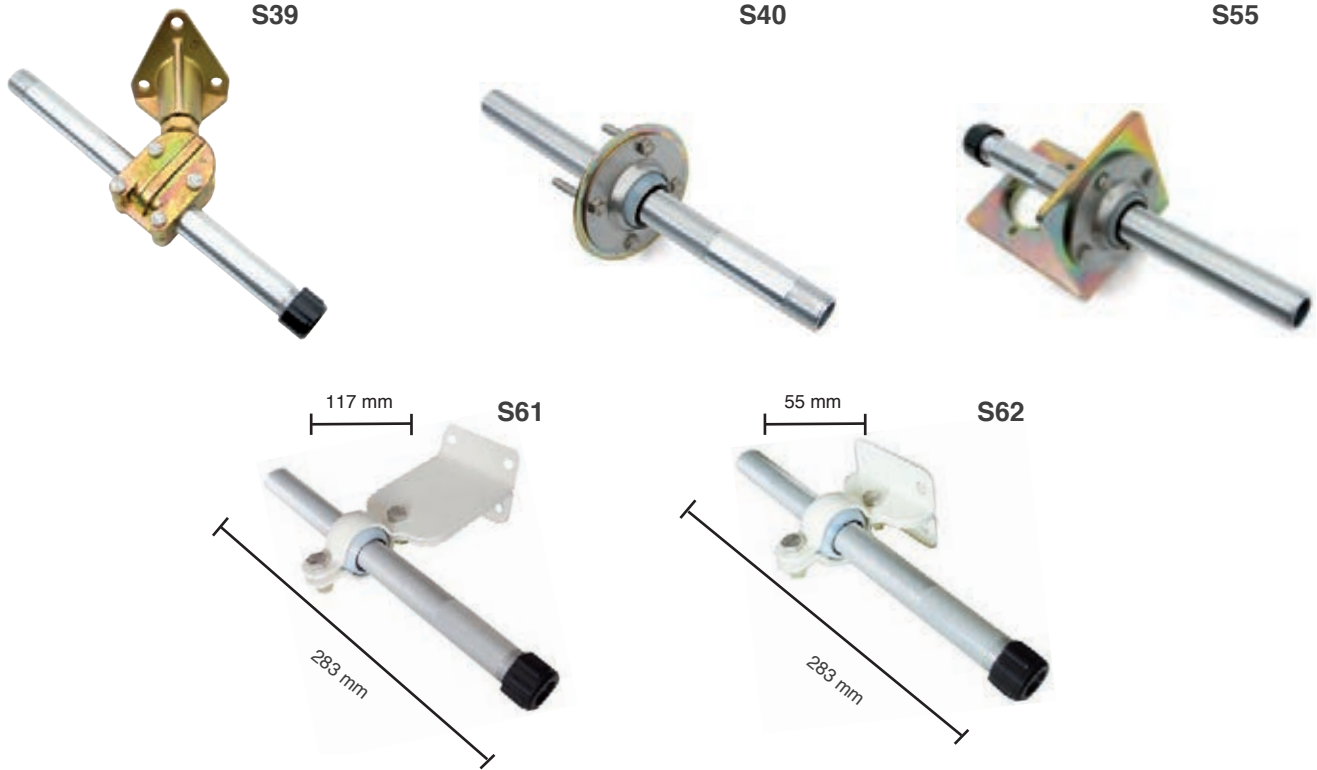


**FOURTECH - II**

|                |                                    |
|----------------|------------------------------------|
| Helm           | T93ZT zero torque High Performance |
| Bezel          | X34 - 90° bezel                    |
| Steering cable | M90 Mach                           |

# ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

## Steering cable supports



|               |        |  |
|---------------|--------|--|
| <b>S39</b>    | 31916F | Clamp block and aluminum anodized tube       |
| <b>S39SS</b>  | 41551X | Clamp block and stainless steel tube         |
| <b>S39T</b>   | 53930J | Tube only for S39                            |
| <b>S39TSS</b> | 72971W | Stainless steel tube for S39SS               |
| <b>S55</b>    | 34744A | 90° rudder support, SS flange, aluminum tube |
| <b>S55SS</b>  | 41553B | 90° rudder support, SS flange, SS tube       |

|               |        |  |
|---------------|--------|--|
| <b>S40</b>    | 31917G | Splashwell mount flange, aluminum tube           |
| <b>S40SS</b>  | 41552Z | Splashwell mount flange, stainless steel tube    |
| <b>S40T</b>   | 53935O | Tube only for S40                                |
| <b>S40TSS</b> | 72972Y | Stainless steel tube for S40SS                   |
| <b>S61</b>    | 36191S | Clamp block, corrosion resistant painted steel   |
| <b>S61SS</b>  | 41554D | Clamp block, corrosion resistant stainless steel |
| <b>S62</b>    | 38830H | Same design as S61, smaller dimensions           |
| <b>S62SS</b>  | 41555F | Same design as S61SS, smaller dimensions         |

## Engine connection kits



|              |        |   |
|--------------|--------|---|
| <b>A75</b>   | 34459X | Clevis  |
| <b>A73SS</b> | 41255T | Stainless steel tiller arm for some Mercury® engines                  |
| <b>A74SS</b> | 41256V | Stainless steel tiller arm for some Johnson®, Evinrude®, BRP® engines |

**Warning:** A73SS and A74SS tiller arms are recommended for mechanical steering systems only

## Steering cables adaptors

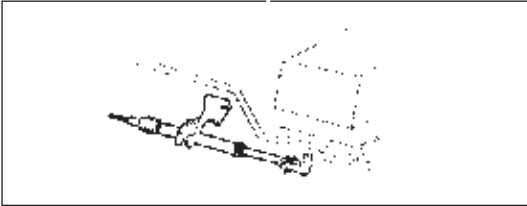

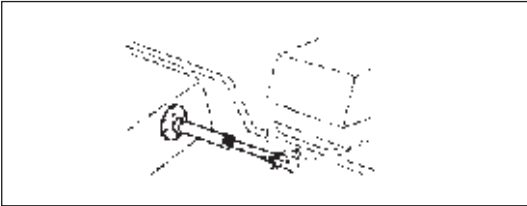
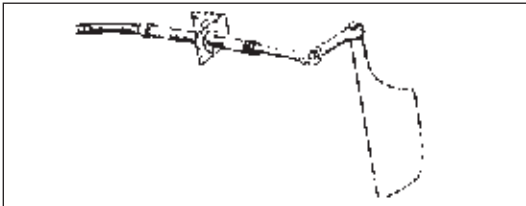


# ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

## Typical installations

| INSTALLATION | CABLE SUPPORT + ENGINE CONNECTION KIT | INSTALLATION | CABLE SUPPORT + ENGINE CONNECTION KIT |
|--------------|---------------------------------------|--------------|---------------------------------------|
| <b>A</b>     | S39 or S61 or S62 + A75               | <b>C</b>     | A73SS or A74SS                        |
| <b>B</b>     | S40 + A75                             | <b>D</b>     | S55 + A75                             |

|   |  |
|---|--|
|  |  |
| A = With clamp block  | C = With tiller arm  |
|  |  |
| B = With splashwell   | D = With 90° rudder support  |

## A88 - A92 Tie bars for Twin outboard engines

Universal tie bars applicable to twin outboard engines using mechanical steering **up to 300 hp of maximum power**. For applications with hydraulic steering systems please refer to the hydraulic steering system section.

### A88

Universal tie bar applicable to twin outboard engines using mechanical and hydraulic steering up to 300 hp maximum total power.

- All stainless steel components
- Kit includes all mounting hardware

**Engine center** Adjustable from 650 mm (25.6") to 950 mm (7.4")

**A88** 40128E Tie bar

**WARNING:** On those applications where the clearance between engine tiller arm and cowling is not sufficient for the use of the **A88**, the **A92** tie bar is recommended

### A92

Universal tie bars applicable to twin outboard engines using mechanical or hydraulic steering up to 300 hp maximum total power.

- Easily adjustable before or after installation
- All stainless steel components

**A92/700 Eng center** Adjustable 550 mm (21.6") 700 mm (27.5")

**A92/950 Eng center** Adjustable 700 mm (27.5") 700 mm (37.4")

**A92/700** 40892V Tie bar

**A92/950** 40893X Tie bar



**A 88**



**A 92**

# ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

## Wire type Steering grommets and rings

| Black | Part No. | Description                            |
|-------|----------|--|
| R1 B  | 38060I   | Ø 152 mm (6") - h.110 mm (4.3")        |
| R2 B  | 38061J   | Ø 105 mm (4.1"); h 65 mm (2.5")        |
| R3 B  | 38062K   | 2 holes- Ø 105 mm (4.1"); h 52 mm (2") |
| R4 B  | 38827V   | Adj. Ø 105 mm (4.1"); h 68 mm (2.6")   |



| White | Part No. | Description                            |
|-------|----------|--|
| R1 W  | 38953A   | Ø 152 mm (6") - h.110 mm (4.3")        |
| R2 W  | 38954C   | Ø 105 mm (4.1"); h 65 mm (2.5")        |
| R3 W  | 38955E   | 2 holes- Ø 105 mm (4.1"); h 52 mm (2") |
| R4 W  | 38956G   | Adj. Ø 105 mm (4.1"); h 68 mm (2.6")   |



| Grey | Part No. | Description                            |
|------|----------|--|
| R1 G | 39279V   | Ø 152 mm (6") - h.110 mm (4.3")        |
| R2 G | 39280D   | Ø 105 mm (4.1"); h 65 mm (2.5")        |
| R3 G | 39281F   | 2 holes- Ø 105 mm (4.1"); h 52 mm (2") |



## Profilament polyester braided sleeves for cables

- Temperature class: F
- Continuous working temperature rating: -50°C +155°C with peaks at +180°C
- Halogen free
- Flammability: self extinguishing
- Good mechanical resistance
- Excellent resistance to abrasion
- Good resistance to solvent
- Non watertight
- Very flexible
- Expansion ratio: from 1 to 2
- Use: hot cutting to avoid fraying
- Colour: black



### Applications:



Available in UFLEX

### STANDARDS:

- Compliant with RoHS 2002/95/CE specifications
- NF EN 60684-1 (10-2003)
- NF EN 60684-2 (01-1998) modified by NF EN 60684-2/A1 (12/2003), NF EN 60684-2/A2 (05/2006)
- NF EN 60684-3 sheets 340 to 342 (4-2003)

| NOMINAL INTERNAL DIAMETER | PART No. 1 m length | PART No. 10 m length | PART No. 20 m length | BULK PART No. 100 m length | ROLL WEIGHT Kg |
|---------------------------|---------------------|----------------------|----------------------|----------------------------|----------------|
| 10 mm (0.39")             | 23622S              | 24853T               | 24858D               | 68180N                     | 8,0            |
| 15 mm (0.59")             | 23623U              | 24854V               | 24859F               | 20540Y                     | 12,16          |
| 20 mm (0.78")             | 23624W              | 24855X               | 24863W               | 20542C                     | 17,8           |
| 25 mm (0.98")             | 23625Y              | 24856Z               | 24861S               | 20543E                     | 20,2           |
| 30 mm (1.18")             | 23626A              | 24857B               | 24862U               | 20544G                     | 27,0           |



**OUTBOARD AND STERNDRIVE  
HYDRAULIC STEERING SYSTEMS**



## Packaged hydraulic steering systems

| MAX HORSEPOWER | KIT  | HELM  | CYLINDER (1) | FLEXIBLE HOSES (2)    | OIL litres | WHEEL TURNS | OPTIONAL   |
|----------------|--|-------|--------------|-----------------------|------------|-------------|--|
| 115 hp         | GOTECH-OBF   | UP18  | UC81-OBF     | KIT OB-GT/M-60        | 2          | 4,5         | Steering wheel<br>Thru hull R5; R5SS                       |
|                | GOTECH-OBS   | UP18  | UC68-OBS     | KIT OB-GT/M-60        | 2          | 3,7 / 5,5   |  |
|                | GOTECH-I   | UP18  | UC69-I       | KIT OB-GT/M-60        | 2          | 3,8         |  |
| 150 hp         | HYCO-OBS   | UP20F | UC68-OBS     | KIT OB                | 2          | 3,4 / 5,0   | Steering wheel<br>Flange X74                               |
|                | HYCO-I   | UP20F | UC69-I       | KIT OB                | 2          | 3,5         |  |
|                | HYCO-OBS/M   | UP20F | UC68-OBS     | KIT OB/M-60 (90)      | 2          | 3,4 / 5,0   | Thru hull R5; R5SS; R8; R9                                 |
|                | HYCO-I/M   | UP20F | UC69-I       | KIT OB/M-60 (90)      | 2          | 3,5         |  |
| 175 hp         | HYTECH-OBF   | UP20F | UC95-OBF     | KIT OB                | 2          | 4,7         | Steering wheel<br>Flange X74<br>Thru hull R5; R5SS; R8; R9 |
|                | HYTECH-OBF/M   | UP20F | UC95-OBF     | KIT OB/M-60 (90)      | 2          | 4,7         |  |
| 300 hp         | NAUTECH-1  | UP28F | UC128-OBF    | KIT OB                | 2          | 4,3         | Steering wheel<br>Flange X64; X57                          |
|                | NAUTECH-3  | UP25F | UC128-OBF    | KIT OB                | 2          | 4,8         |  |
|                | NAUTECH-1/M  | UP28F | UC128-OBF    | KIT OB/M-60 (90, 150) | 2          | 4,3         | Thru hull R5; R5SS; R8; R9                                 |
|                | NAUTECH-3/M  | UP25F | UC128-OBF    | KIT OB/M-60 (90, 150) | 2          | 4,8         |  |
| >300 hp        | SilverSteer™ and MasterDrive™ steering systems are recommended |       |              |                       |            |             |  |

**NOTE:**

- 1) Please refer to cylinder application chart
- 2) See available lengths on hydraulic hose section

## Packaged hydraulic steering systems

**GOTECH™**



**GOTECH-OBF**



**GOTECH-OBS**



**GOTECH-I**



**HYCO-OBS**



**HYCO-I**



**HYCO-OBS/M**



**HYCO-I/M**

**HYTECH™**



**HYTECH-OBF**



**HYTECH-OBF/M**

**NAUTECH™**



**NAUTECH-1  
NAUTECH-3**



**NAUTECH-1/M  
NAUTECH-3/M**

**NOTE:**  
GOTECH, HYCO, HYTECH and NAUTECH kits are also available without hydraulic hoses

# Packaged hydraulic steering systems



| HORSEPOWER   | KIT    | HELM      | CYLINDER (1) | FLEX HOSES (2) | OIL litres | WHEEL TURNS | OPTIONAL         |
|--|--------|-----------|--------------|----------------|------------|-------------|------------------|
| > 300 hp<br>(please refer to max power applicable) | SVS-28 | UP28F-SVS | UC130-SVS    | KIT OB-SVS     | 2          | 4,6         | Steering wheel   |
|  | SVS-33 | UP33F-SVS | UC130-SVS    | KIT OB-SVS     | 2          | 3,9         | Thru hull R8; R9 |



| HORSEPOWER   | KIT    | HELM   | POWER UNIT/<br>USER INTERFACE | OIL litres | WHEEL TURNS | ORDERED SEPARATELY  |
|--|--------|--------|-------------------------------|------------|-------------|---|
| > 300 hp<br>(please refer to max power applicable) | MD32-F | UH32-F | UPMD/UCMD                     | 4          | 4,1         | - Outboard cylinder UC130-SVS (1)<br>- Inboard cylinder (1)<br>- X66 tilt mechanism<br>- Flex hoses: KIT OB-SVS (2) |
|  | MD32-T | UH32-T | UPMD/UCMD                     | 4          | 4,1         |   |
|  | MD40-F | UH40-F | UPMD/UCMD                     | 4          | 6,5         |   |
|  | MD40-T | UH40-T | UPMD/UCMD                     | 4          | 6,5         |   |

**NOTE:**

- 1) Please refer to cylinder application chart
- 2) KIT OB-SVS: see available lengths on appropriate section



SILVERSTEER™



MASTERDRIVE™

# How to choose an outboard hydraulic steering system - Cross reference

All the components of Ultraflex hydraulic steering systems are made specifically for the marine environment, using materials and working process which offer long life and safety for the most extreme conditions.

## How the system works

A hydraulic steering system consists of a steering pump, a cylinder tied to the rudder or to the outboard or sterndrive engine and the connecting nylon or copper tubing.

Under normal operating conditions, a turn of the steering wheel will send the oil from the helm unit into one of the two connecting hydraulic lines.

The oil will be pumped into one of the chambers of the cylinder and either extend or retract the cylinder rod, depending on the steering wheel rotation. The fluid going out from the other chamber of the cylinder is returned to the helm via the other hydraulic line.

There are two basic components in all the hydraulic steering systems: the helm unit and the cylinder, connected by nylon or copper tubing. The helm unit consists of both a hydraulic pump and a valve assembly.

The valve assembly prevents outgoing fluid from returning along the same line, isolates each steering station, locks the rudder and eliminates rudder "feedback" to the helm. The cylinders are double acting and may be balanced or unbalanced (in which case the rod extends through only one end of the cylinder).

## Suggestions and warnings when selecting an hydraulic steering system

The strength required to drive a boat equipped with a hydraulic steering system is inversely proportional to the number of turns of the wheel lock-to-lock. The wheel turns are determined by the ratio between the cylinder volume, pump displacement.

With the same type of cylinder installed on the engine, the less are the turns, the faster is the response but higher is the effort; more wheel turns, slower is the response and lower is the effort.

Other factors that can influence steering effort are:

- Vessel speed
- Rudder dimension, or engine power
- Propeller selection
- Hull type (displacement, planing, etc.)
- Sea conditions
- Oil viscosity

## Cross reference

The above Cross Reference chart has been drawn to facilitate a functional comparison among brands and should be used as general reference only.

For any further information please contact our Technical Service

|            | HELM PUMPS |                       | CYLINDERS  |                      |
|------------|------------|-----------------------|------------|----------------------|
|            | ULTRAFLEX® | SEASTAR®              | ULTRAFLEX® | SEASTAR®             |
| UP18       |            | BayStar™ HH4311       | UC81-OBF   | -                    |
| UP20 F     |            | BayStar™ HH4314       | UC95-OBF   | Baystar™ HC4645      |
| UP20 T     |            | BayStar™ HH4315       | UC128-OBF  | Seastar™ HC5345      |
| UP25 F     |            | Seastar™ 1.4 HH5269   | UC130-SVS  | Seastar™ HC6345      |
| UP25NV F   |            | -                     |            |                      |
| UP25 T     |            | Seastar™ 1.4 HH6544   | UC68-OBS   | -                    |
| UP28 F     |            | Seastar™ 1.7 HH5271   | UC132-OBS  | Seastar™ HC5370/5328 |
| UP28 T     |            | Seastar™ 1.7 HH6541   |            |                      |
| UP 28 R    |            | Seastar™ 1.7 HH5261   |            |                      |
| UP33 F     |            | Seastar™ 2.0 HH5273   | UC69-I     | Baystar™ HC4461-3    |
| UP33NV F   |            | Seastar™ 2.0 HH5760   | UC116-1    | Seastar™ HC5312      |
| UP33 T     |            | Seastar™ 2.0 HH6543   | UC168-I    | Seastar™ HC5314      |
| UP33 R     |            | -                     | UC215-I    | Seastar™ HC5319      |
| UP39 F     |            | Seastar™ 2.4 HH5272   | UC293-I    | -                    |
| UP39 T     |            | Seastar™ 2.4 HH6542   | UC378-I    | -                    |
| UP39 R     |            | Seastar™ 2.4 HH5262   |            |                      |
| UP45 F     |            | Seastar™ 3.0 HH5283   |            |                      |
| UP45 T     |            | -                     |            |                      |
| UP45 R     |            | Seastar™ 3.0 HH5265   |            |                      |
| UP28 F-SVS |            | Seastar™ PRO - HH5779 |            |                      |
| UP28 T-SVS |            | Seastar™ PRO - HH6573 |            |                      |
| UP33 F-SVS |            | Seastar™ PRO - HH5770 |            |                      |
| UP33 T-SVS |            | Seastar™ PRO - HH6574 |            |                      |
| UP39 F-SVS |            | Seastar™ PRO - HH5772 |            |                      |
| UP39 T-SVS |            | Seastar™ PRO - HH6188 |            |                      |

# How to select an outboard hydraulic steering system

## Suggestions and warnings

### OUTBOARD CYLINDERS Maximum power rating applicable

| Cylinder model | Single engine single cylinder | Double engine single cylinder   |                             | Double engine double cylinder   |                             |
|----------------|-------------------------------|---------------------------------|-----------------------------|---------------------------------|-----------------------------|
|                |                               | NON counter rotating propellers | Counter rotating propellers | NON counter rotating propellers | Counter rotating propellers |
|                |                               | Max hp power                    | Max hp power                | Max hp power                    | Max hp power                |
| UC81-OBF       | 115                           | not applicable                  | not applicable              | not applicable                  | not applicable              |
| UC95-OBF       | 175                           | 175                             | 175                         | not applicable                  | not applicable              |
| UC68-OBS       | 150                           | not applicable                  | not applicable              | not applicable                  | not applicable              |
| UC128-OBF      | 300                           | 300                             | 500                         | 500                             | 600                         |
| UC130-SVS      | 350                           | 350                             | 600                         | 600                             | 700                         |
| UC132-OBS      | 250                           | 250                             | 300                         | 300                             | 300                         |

**WARNING:** These recommendations should be used as a general reference only. Final selection should be made with the assistance of a qualified installation technician. For any further information please contact our Technical Service

### STEERING WHEEL TURNS single cylinder

| Cylinder model | UP18 18cc | UP20 20cc | UP25 25cc | UP28 28cc | UP33 33cc | UP 39 39cc | UP45 45 cc | UP28-SVS 28cc | UP33-SVS 33cc | UP39-SVS 39cc |
|----------------|-----------|-----------|-----------|-----------|-----------|------------|------------|---------------|---------------|---------------|
| UC81-OBF       | 4,5       | -         | -         | -         | -         | -          | -          | -             | -             | -             |
| UC95-OBF       | -         | 4,7       | -         | -         | -         | -          | -          | -             | -             | -             |
| UC128-OBF      | -         | -         | 5,1       | 4,3       | 3,6       | 3,1        | -          | -             | -             | -             |
| UC130-SVS      | -         | -         | -         | -         | -         | -          | -          | 4,6           | 3,9           | 3,3           |
| UC68-OBS       | -         | 3,4/5,0   | -         | -         | -         | -          | -          | -             | -             | -             |
| UC132-OBS      | -         | -         | 5,6/6,9   | 4,7/5,8   | 4,0/4,9   | 3,4/4,2    | 2,9/3,6    | -             | -             | -             |
| UC133-IOB      | -         | -         | 5,6       | 4,7       | 4,0       | 3,4        | 2,9        | -             | -             | -             |

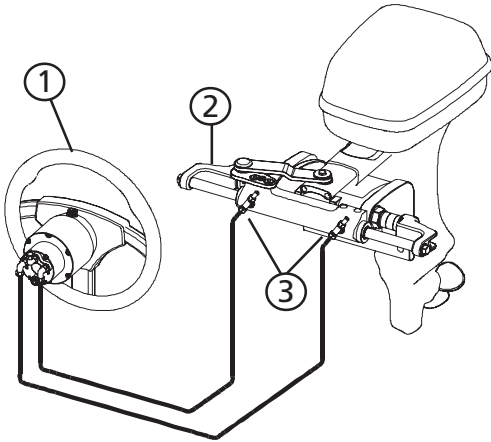
 Recommended

### STEERING WHEEL TURNS double cylinder

| Cylinder model | UP28 28cc | UP33 33cc | UP39 39cc | UP45 45cc | UP33-SVS 33cc | UP39-SVS 39cc |
|----------------|-----------|-----------|-----------|-----------|---------------|---------------|
| UC128-OBF      | -         | 7,3       | 6,2       | 5,3       | -             | -             |
| UC130 -SVS     | -         | -         | -         | -         | 7,9           | 6,7           |
| UC132-OBS      | -         | 8,0/9,8   | 6,8/8,4   | 5,8/7,2   | -             | -             |
| UC133-IOB      | -         | 8,0       | 6,8       | 5,8       | -             | -             |

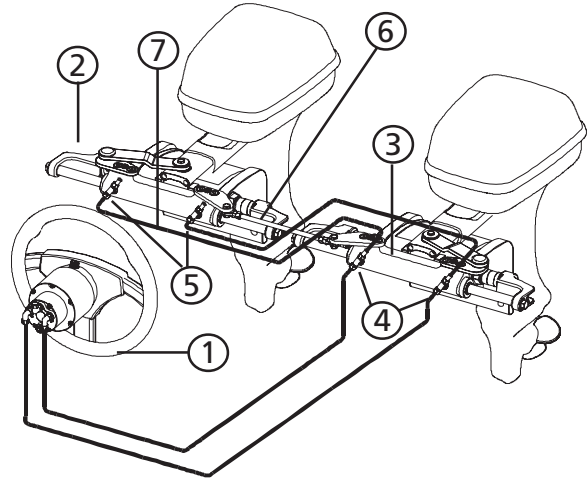
 Recommended

## SINGLE STATION / SINGLE ENGINE:



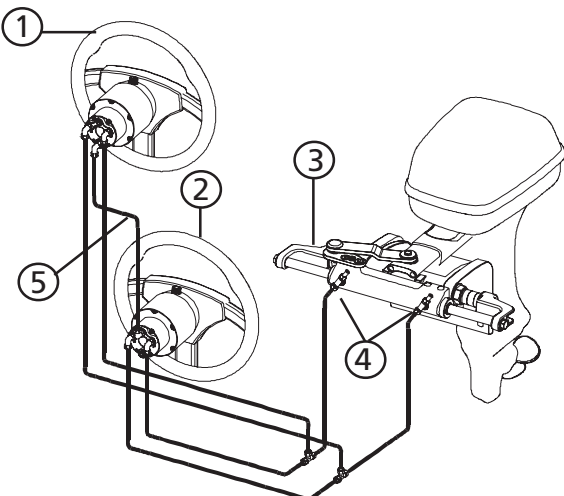
1. helm
2. starboard cylinder
3. bleed valves

## SINGLE STATION / DUAL ENGINE:



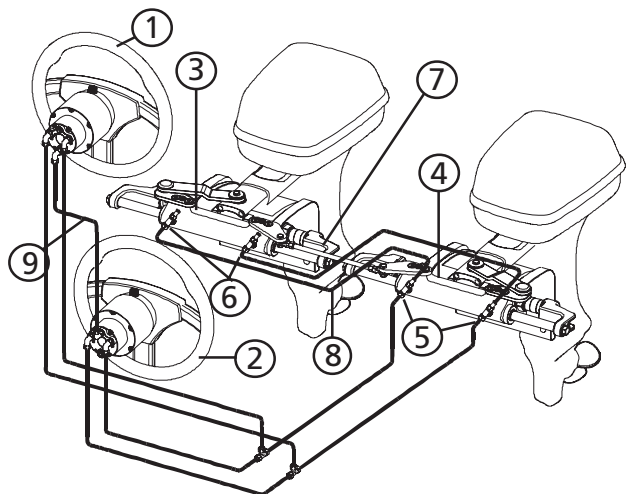
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

## DUAL STATION / SINGLE ENGINE



1. upper station helm
2. lower station helm
3. starboard cylinder
4. bleed valves
5. kit OB-2S

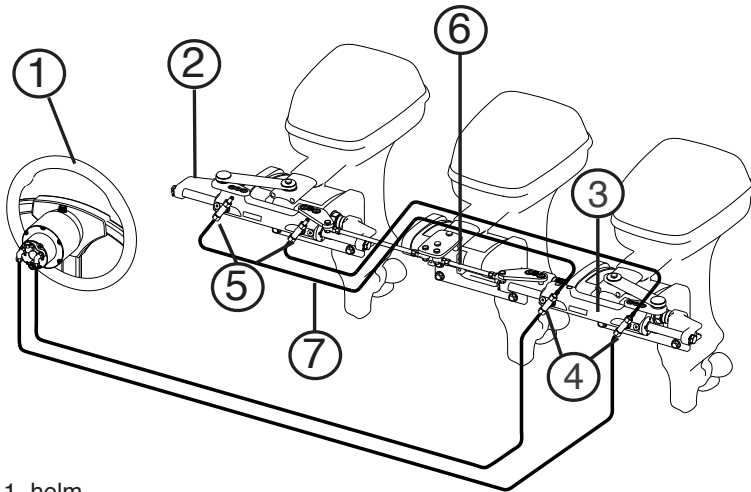
## DUAL STATION / DUAL ENGINE



1. upper station helm
2. lower station helm
3. starboard cylinder
4. port cylinder
5. "T" fittings
6. bleed valves
7. tie bar
8. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)
9. kit OB-2S

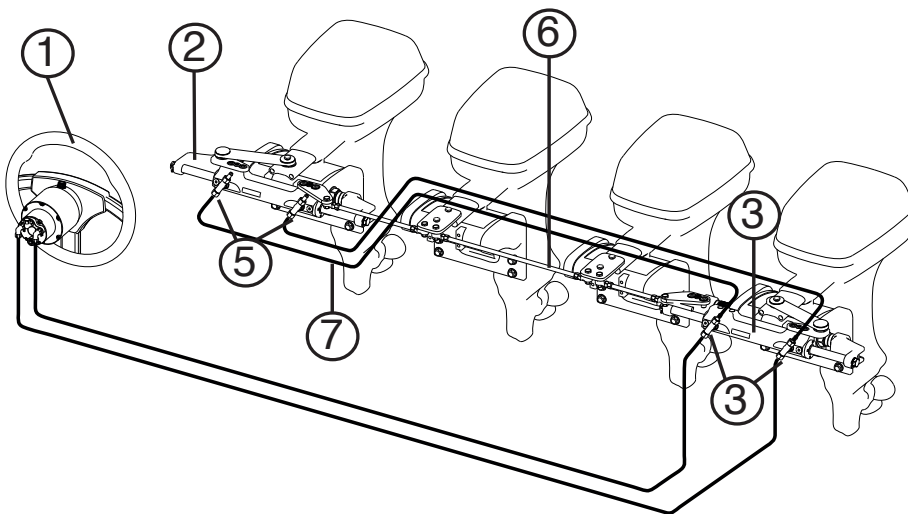
# Outboard hydraulic steering systems

## SINGLE STATION / THREE ENGINES



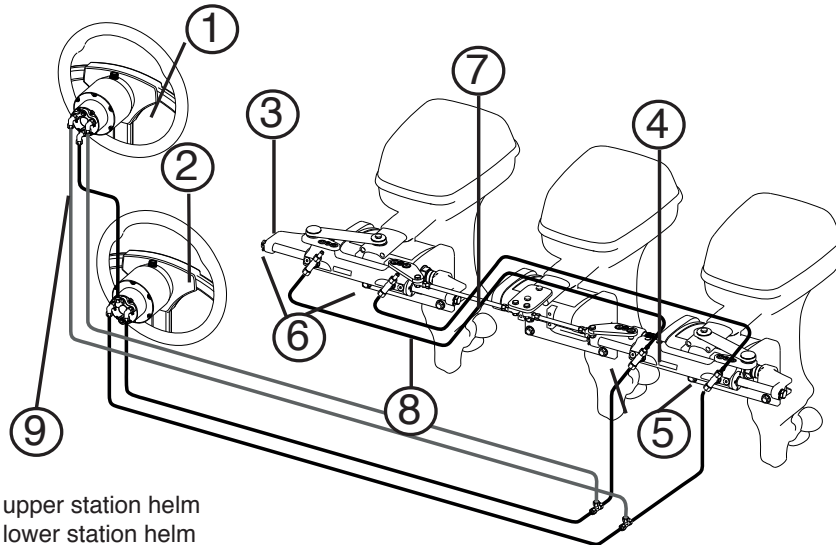
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

## SINGLE STATION / FOUR ENGINES



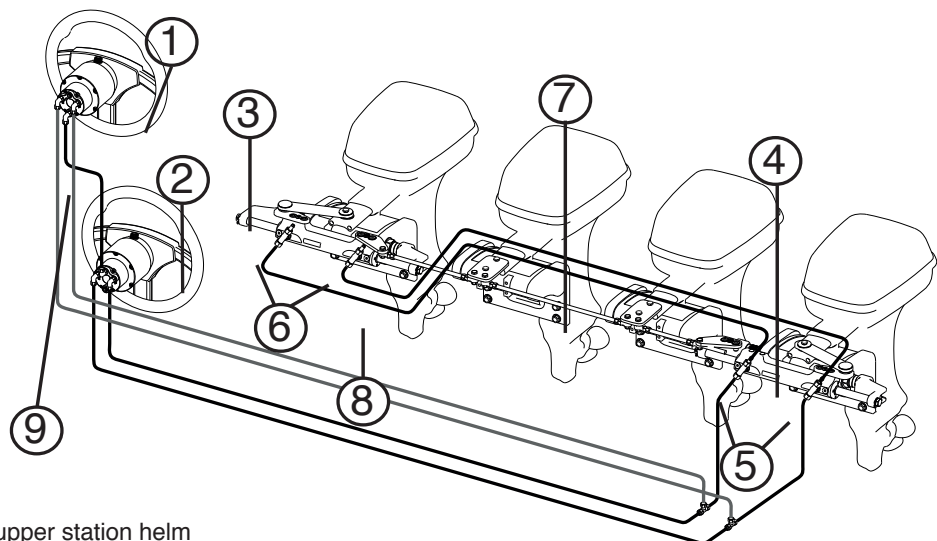
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

## DUAL STATION / THREE ENGINES



1. upper station helm
2. lower station helm
3. starboard cylinder
4. port cylinder
5. "T" fittings
6. bleed valves
7. tie bar
8. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)
9. kit OB-2S

## DUAL STATION / FOUR ENGINES



1. upper station helm
2. lower station helm
3. starboard cylinder
4. port cylinder
5. "T" fittings
6. bleed valves
7. tie bar
8. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)
9. kit OB-2S



# Adjustable steering wheel position mechanisms

## Tilt mechanisms

Tilt mechanisms suitable for tilt mount helms



Tilt range of 48° and five locking positions



X52

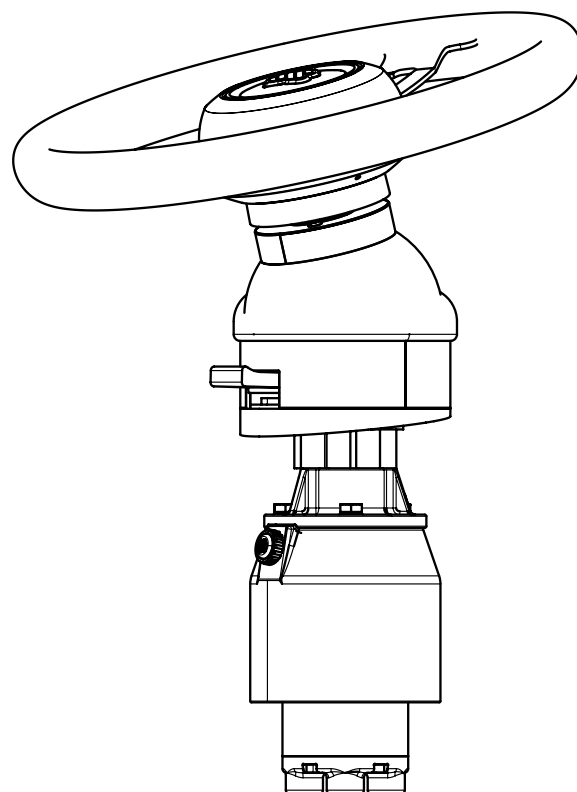


X66



X70-SVS

| Model   | Part No. | Description   |
|---------|----------|---|
| X52     | 39250U   | Tilt mechanism for mechanical hydraulic and electronic steering systems |
| X66     | 40613M   | Tilt mechanism for Masterdrive™ steering systems                        |
| X70-SVS | 41880T   | Tilt mechanism for Silversteer™ steering systems                        |



X52, X70-SVS, X66

# Adjustable steering wheel position mechanisms

## Tilt mechanisms

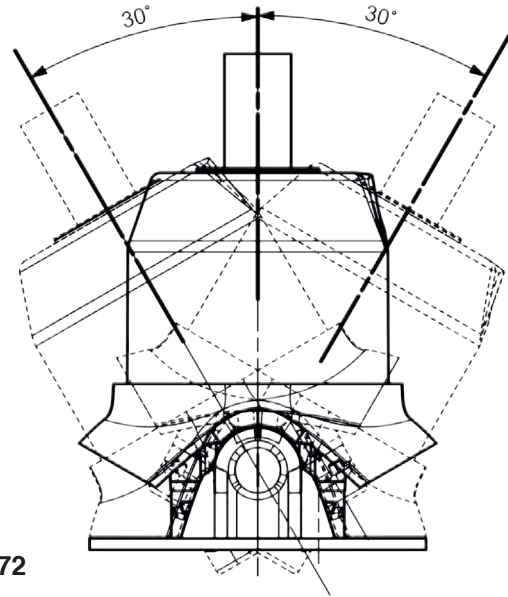
### Tilt mechanism suitable for front mount helms



The only available tilt in the market which can upgrade your standard front mount helm.  
 Minimum space required under the dashboard.  
 Tilt range of 60° and five locking positions.  
 Not applicable to UP18 or UP20 helms



X72



X72

X72 43140K Tilt mechanism for hydraulic front mount steering systems

### Tilt mechanism application for mechanical steering systems

| TILT MECHANISM | Part No. | T81, T83NRFC | T101, T103ZT | TM870, TM870ZT, TM87SS<br>TM87SSZT, TM87J |
|----------------|----------|--------------|--------------|---|
| X52            | 39250U   | X            | X            | X   |

### Tilt mechanism application for hydraulic and electronic steering systems

| TILT MECHANISM | Part No. | UP18<br>UP20F | UP20T | FRONT MOUNT HELMS                                   |  | TILT MOUNT HELMS                                    |  | MASTERDRIVE | INTEGRA |
|----------------|----------|---------------|-------|---|--|---|--|-------------|---------|
|                |          |               |       | STANDARD<br>UP25F,<br>UP28F, UP33F,<br>UP39F, UP45F | SILVERSTEER<br>UP28F-SVS,<br>UP33F-SVS,<br>UP39F-SVS | STANDARD<br>UP25T,<br>UP28T, UP33T,<br>UP39T, UP45T | SILVERSTEER<br>UP28T-SVS,<br>UP33T-SVS,<br>UP39T-SVS |             |         |
| X52            | 39250U   | -             | X     | -   | -  | X   | -  | -           | X       |
| X72            | 43140K   | -             | -     | X   | X  | -   | -  | -           | -       |
| X70-SVS        | 41880T   | -             | -     | -   | -  | -   | X  | -           | -       |
| X66            | 40613M   | -             | -     | -   | -  | -   | -  | X           | -       |

# UP18

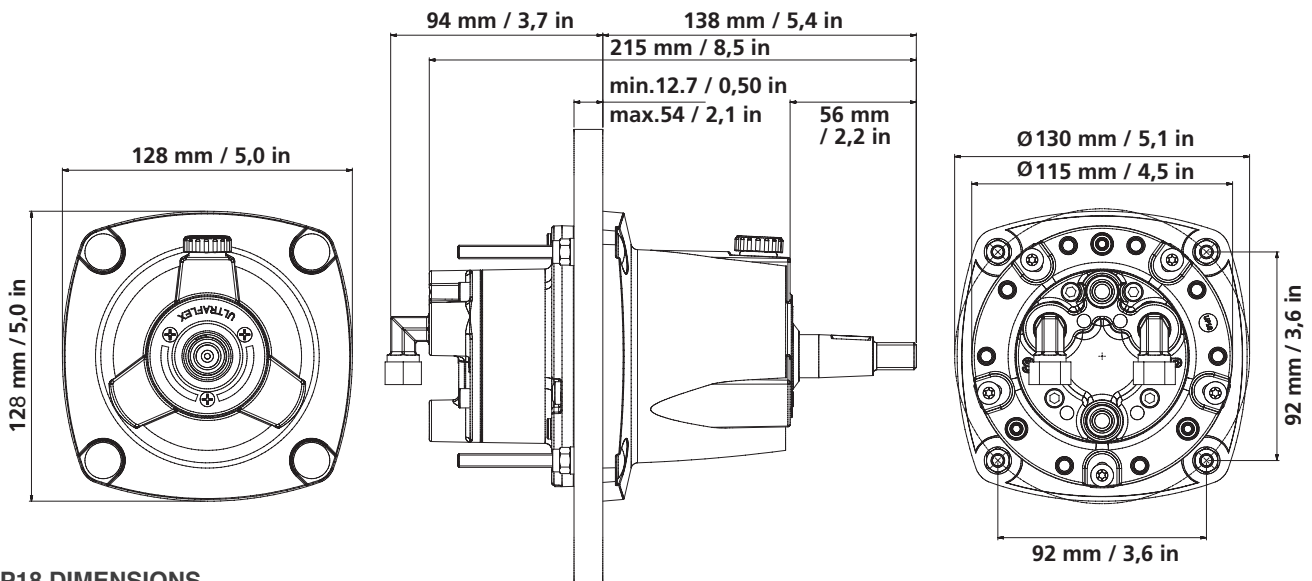
## Intermediate mount position helm



UP18

- Built-in lock valve for positive rudder lock
- Integrated relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Includes 2x 1/4" NPT fittings
- Corrosion proof composite housing
- Easy accessible lock valve and shaft seal for replacement
- For use with UC81-OBF, UC68-OBS and UC69-I cylinders only
- Intermediate mount position helm

| Model                            | Part No. | Description                      |
|----------------------------------|----------|----------------------------------|
| UP18                             | 43182C   | Intermediate mount position helm |
| <b>Mounting</b>                  |          | intermediate                     |
| <b>Displacement / revolution</b> |          | 18 cc- 1.1 cu.in                 |
| <b>No. of pistons</b>            |          | 5                                |
| <b>Relief valve setting</b>      |          | 55 Bar - 800 PSI                 |
| <b>Max. wheel diameter</b>       |          | 508 mm (20")                     |
| <b>Weight</b>                    |          | 3,6 kg (8 lbs")                  |



UP18 DIMENSIONS

# UP20F - Front mount helm UP20T - Tilt mount helm



UP20T + X52



UP20F



UP20F + X74

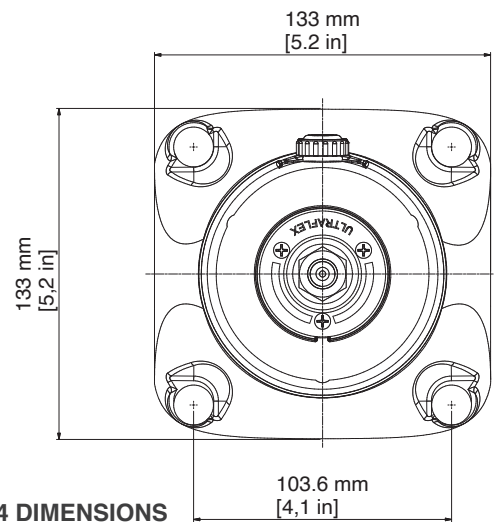
- Built-in lock valve for positive rudder lock
- Integrated relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Corrosion proof composite housing
- Easy accessible lock valve and shaft seal for replacement
- Includes 90° adjustable fittings for 3/8" hose
- **KIT F** - 39664Y (optional): Remote fill adapter
- For use with UC95-OBF, UC68-OBS and UC69-I cylinders only

### For UP20F pump

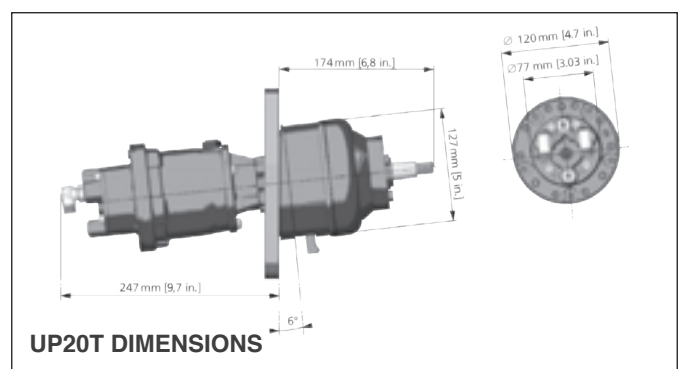
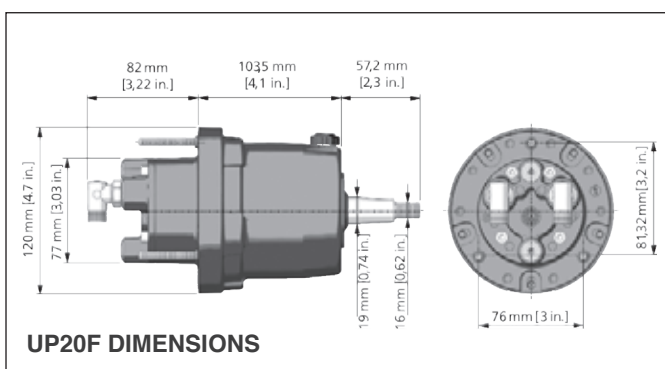
- **X74** - 43048Y square flange permits to install the UP20F pump in an intermediate dashboard position

### For UP20T pump

- Tilt mechanism: **X52** - 39250U tilt range of 48° and five locking positions



| MODEL | P. No. | MOUNTING      | DISPLACEMENT/ REVOLUTION | No. OF PISTONS | RELIEF VALVE SETTING | MAXIMUM WHEEL DIA. | WEIGHT           |
|-------|--------|---------------|--------------------------|----------------|----------------------|--------------------|------------------|
| UP20F | 43180Y | Front mount   | 20 cc - 1.2 cu. in       | 5              | 70 Bar - 1000 PSI    | 508 mm - 20"       | 3,6 kg - 8 lbs   |
| UP20T | 43181A | With X52 tilt | 20 cc - 1.2 cu. in       | 5              | 70 Bar - 1000 PSI    | 406 mm - 16"       | 3,9 kg - 8.5 lbs |



# UP25F - UP28F - UP33F - UP39F - UP45F

## Front mount helms

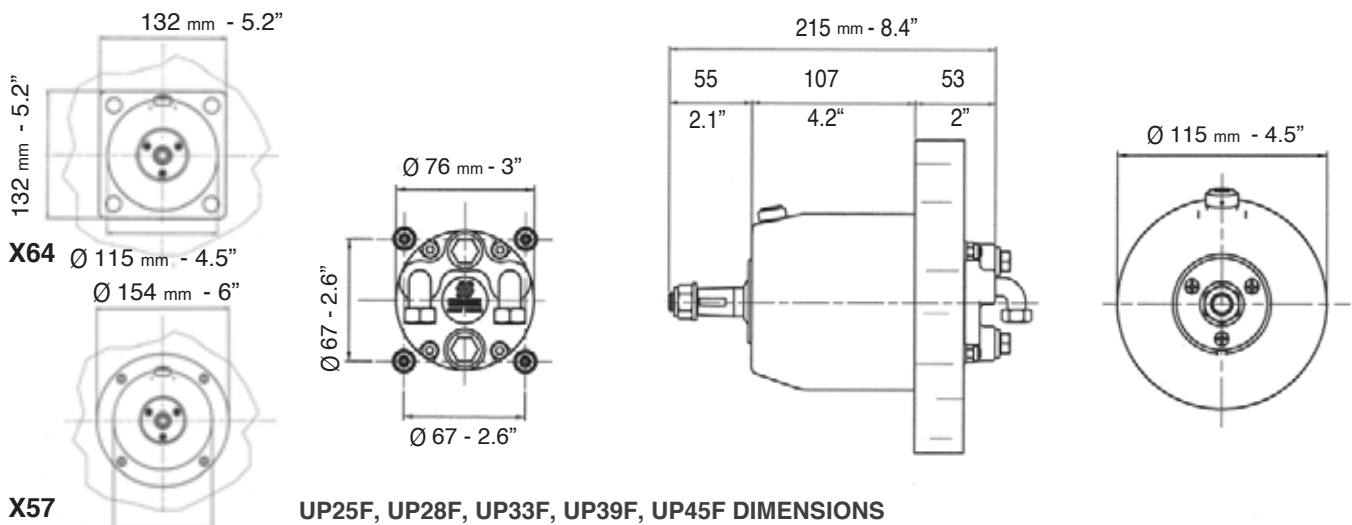


Front mount helm with X64

Front mount helm with X57

- Available in five different displacement sizes
- Built-in lock valve for positive rudder lock
- Integrated relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Easy accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- Includes 90° **adjustable** fittings for 3/8" hose
- Ball bearing piston race
- **X64** - 40198C square flange or **X57** - 39464P round flange to install the helms in a intermediate dashboard position.
- Tilt mechanism: **X72** 43140K tilt range of 60° and five locking positions

| MODEL | P. No. | MOUNTING    | DISPLACEMENT/<br>REVOLUTION | No. OF<br>PISTONS | RELIEF VALVE<br>SETTING | MAXIMUM<br>WHEEL DIA. | WEIGHT        |
|-------|--------|-------------|-----------------------------|-------------------|-------------------------|-----------------------|---------------|
| UP25F | 42462D | Front mount | 25 cc - 1.5 cu.in           | 5                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |
| UP28F | 42459R | Front mount | 28 cc - 1.7 cu.in           | 5                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |
| UP33F | 42456J | Front mount | 33 cc - 2.0 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |
| UP39F | 42453C | Front mount | 39 cc - 2.4 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |
| UP45F | 42465K | Front mount | 45 cc - 2.7 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |



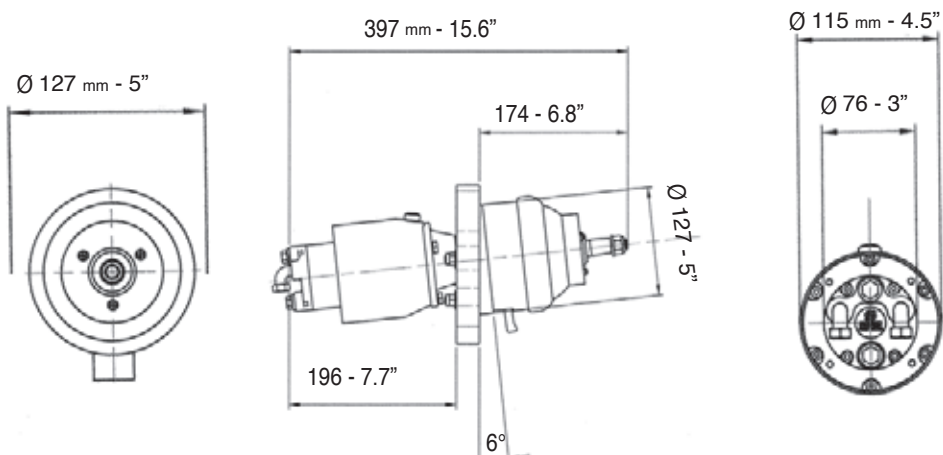
# UP25T - UP28T - UP33T - UP39T - UP45T Tilt mount helms



X52

- Available in five different displacement sizes
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- Integrated relief valve for over-pressure protection
- Stainless steel shaft
- Easy accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- Includes 90° adjustable fittings for 3/8" hose
- Tilt mechanism: **X52**- 39250U – tilt range of 48° and five locking positions
- **KIT F** - 39664Y (optional): remote fill adapter

| MODEL | P. No. | MOUNTING      | DISPLACEMENT/<br>REVOLUTION | No. OF<br>PISTONS | RELIEF VALVE<br>SETTING | MAXIMUM<br>WHEEL DIA. | WEIGHT        |
|-------|--------|---------------|-----------------------------|-------------------|-------------------------|-----------------------|---------------|
| UP25T | 42464H | With X52 tilt | 25 cc - 1.5 cu.in           | 5                 | 70 Bar - 1000 PSI       | 406 mm - 16"          | 5 kg - 11 lbs |
| UP28T | 42461B | With X52 tilt | 28 cc - 1.7 cu.in           | 5                 | 70 Bar - 1000 PSI       | 406 mm - 16"          | 5 kg - 11 lbs |
| UP33T | 42458N | With X52 tilt | 33 cc - 2.0 cu.in           | 7                 | 70 Bar - 1000 PSI       | 406 mm - 16"          | 5 kg - 11 lbs |
| UP39T | 42455G | With X52 tilt | 39 cc - 2.4 cu.in           | 7                 | 70 Bar - 1000 PSI       | 406 mm - 16"          | 5 kg - 11 lbs |
| UP45T | 42467P | With X52 tilt | 45 cc - 2.7 cu.in           | 7                 | 70 Bar - 1000 PSI       | 406 mm - 16"          | 5 kg - 11 lbs |



UP25T, UP28T, UP33T, UP39T, UP45T DIMENSIONS

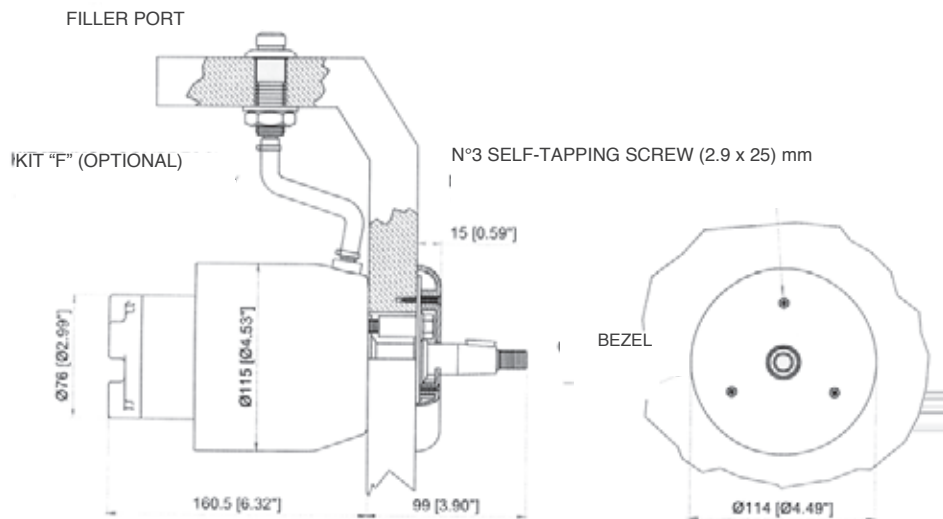
# UP28R - UP33R - UP39R - UP45R

## Rear mount helms



- Available in four different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- Integrated relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron cylinder rotor for greater durability and longer life
- White bezel included
- Complete with 90° adjustable fittings for 3/8" tube, except UP45-IR pump (straight fittings for 12 mm hose)
- **X68** - 40894Z (optional) chrome plated bezel
- **KIT F** - 39664Y (optional): remote fill adapter

| MODEL | P. No. | MOUNTING   | DISPLACEMENT/ REVOLUTION | No. OF PISTONS | RELIEF VALVE SETTING | MAXIMUM WHEEL DIA. | WEIGHT        |
|-------|--------|------------|--------------------------|----------------|----------------------|--------------------|---------------|
| UP28R | 42460Z | Rear mount | 28 cc - 1.7 cu.in        | 5              | 70 Bar - 1000 PSI    | 710 mm - 28"       | 5 kg - 11 lbs |
| UP33R | 42457L | Rear mount | 33 cc - 2.0 cu.in        | 7              | 70 Bar - 1000 PSI    | 710 mm - 28"       | 5 kg - 11 lbs |
| UP39R | 42454E | Rear mount | 39 cc - 2.4 cu.in        | 7              | 70 Bar - 1000 PSI    | 710 mm - 28"       | 5 kg - 11 lbs |
| UP45R | 42466M | Rear mount | 45 cc - 2.7 cu.in        | 7              | 70 Bar - 1000 PSI    | 710 mm - 28"       | 5 kg - 11 lbs |



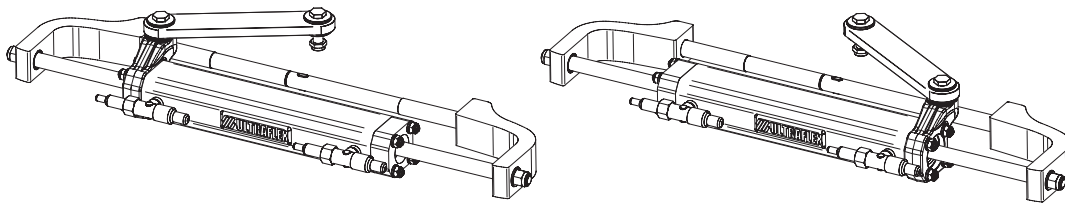
UP28R, UP33R, UP39R, UP45R DIMENSIONS

# UC81-OBF Front mount cylinder

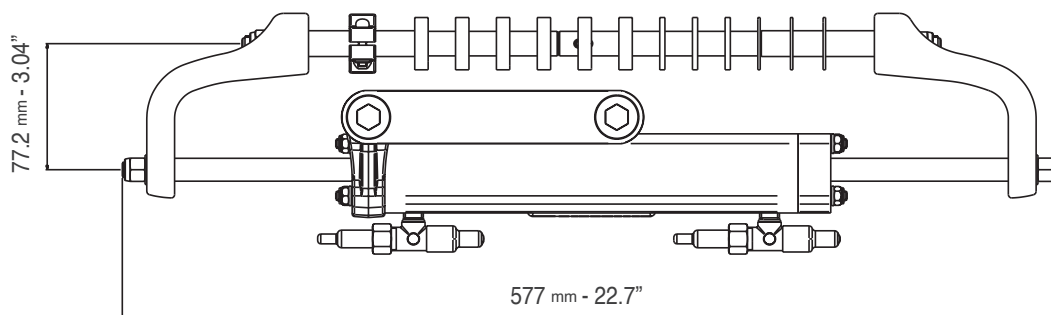


UC81-OBF - Balanced: the number of turns lock-to-lock is equal port to starboard and vice-versa.  
Front mount cylinder for outboard engines up to 115 hp  
Replaceable cylinder end caps

UC81-OBF can be installed port or starboard, according to the applications on the outboard engine



| SPECIFICATIONS         | UC81-OBF - 42654N           |
|------------------------|-----------------------------|
| Volume                 | 81 cc - 4.9 cu. in          |
| Output force           | 222 kg - 489 lbs            |
| Inside diameter        | 27,4 mm - 1.08"             |
| Stroke                 | 186 mm - 7.3"               |
| 3/8" (9,5 mm) Fittings | For high pressure flex hose |
| Bleed fittings         | DN5 Quick connect           |



UC81-OBF DIMENSIONS



# UC81-OBF Applications

Single engine up to 115 hp and where the boat speed does not exceed 45 mph (40 knots)

Not intended for use in racing applications

### WARNING

These recommendations should be used as a general reference only. For any further information please contact our Technical Service.

### NOTE:

Suzuki® engines built from 1998 to 2008 installing UC81-OBF cylinder require optional **KIT SU** part No. 41954W.

| ENGINE               | POWER   | YEAR   |
|----------------------|---|--|
| Mercury®<br>Mariner® | 50 – 75 – 90 2S<br>115 EFI 2S<br>75 – 90 – 115 Optimax 2S<br>40 – 50 – 60 EFI 4S<br>75 – 80 – 90 EFI 4S<br>100 – 115 EFI 4S   | 1990-2008<br>1990-2007<br>2004-2018<br>2004-2018<br>2000-to date<br>2007-to date   |
| Evinrude®            | E40-E50-E55-E60 2S<br>E75-E90 2S<br>E115 2S V4  | 2004-2020<br>2004-2020<br>1995-2020  |
| Yamaha®              | 60-70 2S<br>75C-90 2S<br>115C 2S<br>F40G-F70 4S<br>F30-F40-F60-F75-F80 EFI 4S<br>F90-F100-F115 EFI 4S<br>F115<br>F80-F100 4S<br>F40D-F50F-F60C EFI 4S   | 1984-2008<br>1998-2008<br>1990-2008<br>2010-to date<br>1999-2007<br>1999-2007<br>2004-to date<br>1999-2007<br>2000-to date |
| Honda®               | BF40-50-60-75-90 4S<br>BF115D<br>BF115A<br>BF90 V-TEC 4S  | 1995-to date<br>1998-2009<br>2009-to date<br>2008-to date  |
| Suzuki®              | DF40-50-60-70-80-90 4S<br>DF100-115 4S<br>DF100-115 4S  | 1998-to date<br>1998-2008<br>2008-to date  |
| Tohatsu®<br>Nissan®  | 75-115-120-140 2S<br>40-50-60-70-90-115 TLDI 4S<br>BFT 60-75-80-90-100 4S<br>BFT 115-150 4S<br>40-50-60-70-90 2S<br>MFS 50-60-75-90-100-115 4S  | 2004-to date<br>2004-to date<br>2015-to date<br>2015-to date<br>2004-to date<br>2018-to date                               |
| Selva®               | 40XS-50 Madeira 2S<br>40XS-50 Bull shark 2S<br>40XS-60 Grey shark 2S<br>40XS-70 Mako Shark 2S<br>40XS-60 St.Tropez 2S<br>80 Portofino/Tigershark 2S<br>25 Kingfish 4S<br>40 Aruana 4S<br>40XS-40XSR-50-60 Dorado EFI 4S<br>40XSR EFI Murena 4S<br>80XS-100-100XSR EFI Marlin 4S<br>115-115XSR EFI Tarpon 4S<br>115 EFI Narwhal 4S | 1995-to date<br><br><br><br><br><br><br><br><br><br>2000-to date   |
| Johnson®             | BJ90-115 4S<br>BJ60-70 4S<br>J90-115 V4 2S<br>J150-175 V6 2S  | 2001-2007<br>2001-2007<br>1995-2007<br>1995-2007   |
| PureCraft®           | 50 HP   | 2020-to date   |
| Torque-<br>edo®      | Deep Blue 25, 50  | 2022-to date   |
| Neander<br>Shark®    | DTORQUE 111   | 2020-to date   |



UC95-OBF/1



UC95-OBF/2



UC95-OBF/3

- UC95-OBF/1 – OBF/2 – OBF/3: Balanced: the number of wheel turns lock-to-lock is equal port to starboard or vice-versa
- Adjustable boss style fittings for easy installation
- High resistance stainless steel connection bolt (ULTRABOLT)
- Replaceable cylinder end caps

**Innovative design (PATENTED):**

- Split and pinned cylinder mounting rod for easy installation and bushings to prevent friction with engine tilt tube

**Applications:**

The UC95-OBF front mount cylinder is recommended for use with outboard engines 175 hp total and where the boat speed does not exceed 55 mph (48 knots)

- Not intended for use in racing applications

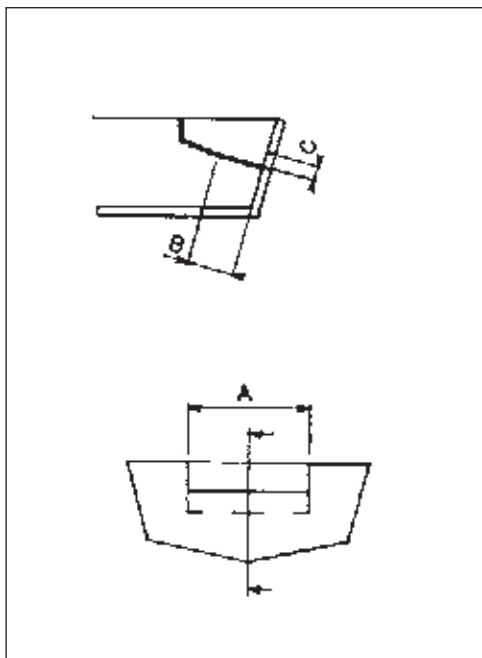
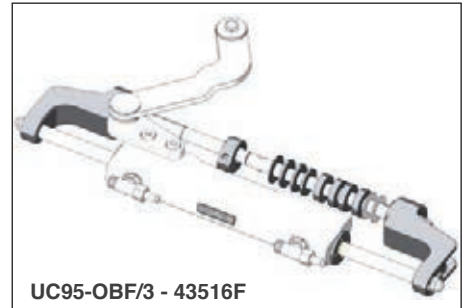
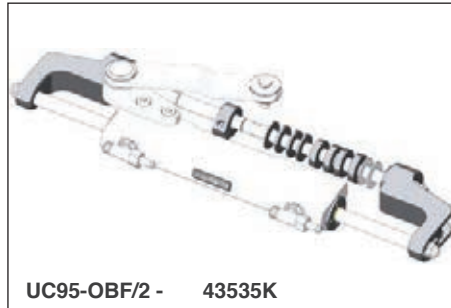
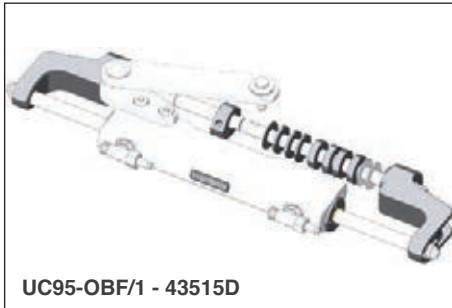
**NOTE:** non suitable with starboard link arms LA1, LA2, LA3 for UC128-OBF cylinder.

| Model      | Part No. | Description  |
|------------|----------|--|
| UC95-OBF/1 | 43515D   | Front mount cylinder for outboard engines up to 175 hp total |
| UC95-OBF/2 | 43535K   | Front mount cylinder for outboard engines up to 175 hp total |
| UC95-OBF/3 | 43516F   | Front mount cylinder for outboard engines up to 175 hp total |

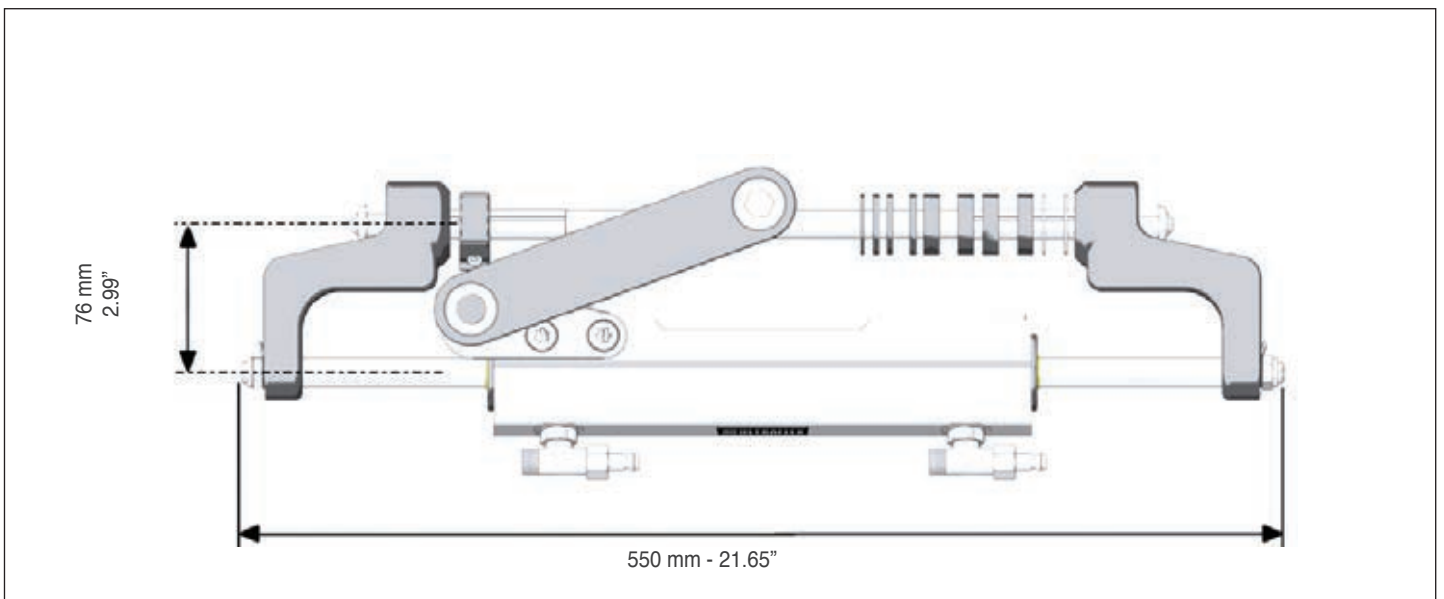
|                                      |                      |
|--------------------------------------|----------------------|
| Volume                               | 95 cc - 5.8 cu.in.   |
| Output force                         | 278 kg (613 lbs)     |
| Internal diameter                    | 30 mm (1.18")        |
| Stroke                               | 186 mm (7.3")        |
| Fittings for high pressure flex hose | 3/8"                 |
| Bleed fittings                       | DN5 quick disconnect |

# UC95-OBF

## Front mount cylinder



| Splashwell dimension requirements |                 |
|-----------------------------------|-----------------|
| Engine No.                        | 1               |
| A                                 | 540 mm (21.25") |
| B                                 | 152 mm (5.98")  |
| C                                 | 152 mm (5.98")  |



UC95-OBF DIMENSIONS

# UC95-OBF Cylinder applications

| ENGINE               | MODEL                                | YEAR         | CYLINDER    | P. No. |
|----------------------|--------------------------------------|--------------|-------------|--------|
| Mercury®<br>Mariner® | 100-115-150 EFI 2S                   | 1991-2007    | UC95-OBF/1  | 43515D |
|                      | 50-75-90 2S                          | 1990-2008    | UC95-OBF/1  | 43515D |
|                      | 75-90-115 Optimax 2S                 | 2004-2018    | UC95-OBF/3  | 43516F |
|                      | 125-135-150 -175 Optimax 2S          | 1999-2018    | UC95-OBF/1  | 43515D |
|                      | 40-50-60 EFI 4S                      | 2004-to date | UC95-OBF/1  | 43515D |
|                      | 75-80-90 EFI 4S / PRO XS / SEAPRO    | 2000-to date | UC95-OBF/1  | 43515D |
|                      | 100-115-150 EFI 4S / PRO XS / SEAPRO | 2007-to date | UC95-OBF/1  | 43515D |
|                      | 175-V6 4S / SEAPRO                   | 2018-to date | UC95-OBF/1  | 43515D |
| Evinrude®            | E40-E50-E55-E60 2S                   | 2004-2020    | UC95-OBF/1* | 43515D |
|                      | E75-E90 2 Stroke                     | 2004-2020    | UC95-OBF/1* | 43515D |
|                      | E115-E130 -E135 2 Stroke V4          | 1995-2020    | UC95-OBF/1* | 43515D |
|                      | E150 -175 2 Stroke V6                | 1995-2020    | UC95-OBF/1* | 43515D |
| Yamaha®              | 60-70 2S                             | 1984-2008    | UC95-OBF/1  | 43515D |
|                      | 75C-90 2S                            | 1998-2008    | UC95-OBF/1* | 43515D |
|                      | 115C-130B -150F 2S                   | 1990-2008    | UC95-OBF/1* | 43515D |
|                      | 150-175 HPDI VMAX 2S                 | 2000-2007    | UC95-OBF/1* | 43515D |
|                      | F60-F75-F80 EFI 4S                   | 1999-2007    | UC95-OBF/1  | 43515D |
|                      | F90-F100-F115 F150 EFI 4S            | 1999-2007    | UC95-OBF/1  | 43515D |
| F115-F150-F175 L4 4S | 2004-to date                         | UC95-OBF/1   | 43515D      |        |
| Honda®               | BF75-80-90-100 4S                    | 1995-to date | UC95-OBF/1  | 43515D |
|                      | BF115D - BF130A                      | 1998-2009    | UC95-OBF/3  | 43516F |
|                      | BF115A 4S                            | 2009-to date | UC95-OBF/1  | 43515D |
|                      | BF135-150 4S                         | 2005-to date | UC95-OBF/1  | 43515D |
|                      | BF175-4S                             | 2001-to date | UC95-OBF/1  | 43515D |
| Suzuki®              | DF70-80-90 4S                        | 1998-to date | UC95-OBF/1* | 43515D |
|                      | DF100-115-140 4S                     | 2008-to date | UC95-OBF/1  | 43515D |
|                      | DF150-175 4S                         | 2006-to date | UC95-OBF/1  | 43515D |
| Tohatsu®<br>Nissan®  | 115-120-140 2S                       | 2004-to date | UC95-OBF/1* | 43515D |
|                      | 70-90-115 TLDI 4S                    | 2004-to date | UC95-OBF/1  | 43515D |
|                      | BFT60-75-80-90-100 4S                | 2015-to date | UC95-OBF/1  | 43515D |
|                      | BFT115-150 4S                        | 2015-to date | UC95-OBF/1  | 43515D |
|                      | MFS 50-60-75-90-100-115 4S           | 2018-to date | UC95-OBF/1  | 43515D |
| Selva®               | 80 Portofino/Tigershark 2S           | 1995-2008    | UC95-OBF/1  | 43515D |
|                      | 150 WHITE SHARK 2S                   | 2001-2007    | UC95-OBF/1* | 43515D |
|                      | 100EFI Marlin - 115 EFI Narwhal      | 2001-2007    | UC95-OBF/1* | 43515D |
|                      | 100-150EFI Killer Whale 4S           | 2000-to date | UC95-OBF/1  | 43515D |
| Johnson®             | BJ90-115-140 4S                      | 2001-2007    | UC95-OBF/1  | 43515D |
|                      | BJ70 4S                              | 2001-2007    | UC95-OBF/1* | 43515D |
|                      | J90-115 V4 2S                        | 1995-2007    | UC95-OBF/1* | 43515D |
|                      | J150 -175 V6 2S                      | 1995-2007    | UC95-OBF/1* | 43515D |
| Neander<br>Shark®    | DTORQUE 111                          | 2020-to date | UC95-OBF/1  | 43515D |

**WARNING**  
The UC95-OBF front mount cylinder is recommended for use with outboard engines 175 hp total and less and where the boat speed does not exceed 55 mph (48 knots)

Not intended for use in racing applications

**WARNING**  
These recommendations should be used as a general reference only. For any further information please contact our Technical Service.

**NOTE:**  
Suzuki® engines built from 1998 to 2008 installing UC95-OBF cylinder require optional **KIT SU** part No. 41954W.

\*NOTE: The UC95-OBF/2 (43535K) cylinder allows for a wide tilting angle.

## UC128-OBF Front mount cylinder



UC128-OBF

- UC128-OBF – Balanced: the number of wheel turns lock-to-lock is equal port to starboard or vice-versa
- Adjustable boss style fittings for easy installation
- High resistance stainless steel connection bolt (ULTRABOLT)
- Replaceable cylinder end caps

- UC128-OBF cylinder is built with heavy duty stainless steel cylinder rod, seals and link assemblies, is simple to install and fits almost every 2 and 4 stroke outboard engine on the market.
- UC128-OBF cylinders are recommended for use with UP25, UP28, UP33 and UP39 series helms and preassembled hoses (Kit OB and Kit OB/R5).
- In the applications with dual UC128-OBF cylinder it is necessary to order a standard UC128-OBF cylinder (link arm attached to the starboard side of the cylinder) and a port UC128P-OBF cylinder (link arm attached to the port side of the cylinder). See tie bars section to select the required model for dual engine/dual cylinder applications.

**Applications:** UC128-OBF front mount cylinder is not recommended for use in installations where the boat speed exceeds 55 mph (48 knots) / (65 mph (56 knots) in dual engine, dual cylinder and counter rotating engines application). Not intended for use in racing applications.

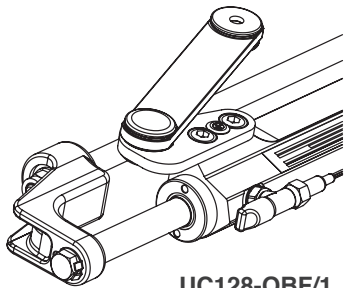
| Model        | Part No. | Description                             |
|--------------|----------|---|
| UC128-OBF/1  | 43231N   | Front mount cylinder, starboard version |
| UC128-OBF/2  | 43232R   | Front mount cylinder, starboard version |
| UC128-OBF/3  | 43233T   | Front mount cylinder, starboard version |
| UC128P-OBF/1 | 43234V   | Front mount cylinder, port version      |
| UC128P-OBF/2 | 43235X   | Front mount cylinder, port version      |

|                                      |                     |
|--------------------------------------|---------------------|
| Volume                               | 120 cc - 7.3 cu.in. |
| Output force                         | 450 kg (992 lbs)    |
| Internal diameter                    | 35 mm (1.37")       |
| Stroke                               | 185 mm (7.28")      |
| Fittings for high pressure flex hose | 3/8"                |
| Bleed fittings                       | DN5 quick connect   |

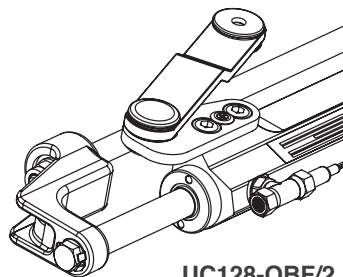
# UC128-OBF Front mount cylinder



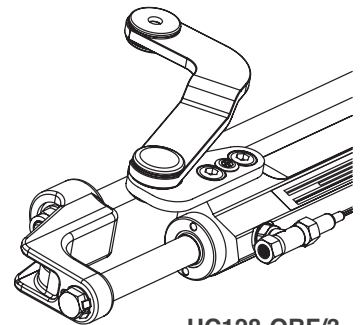
UC128P-OBF



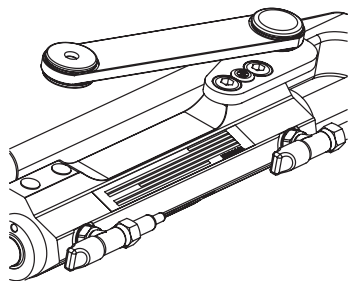
UC128-OBF/1



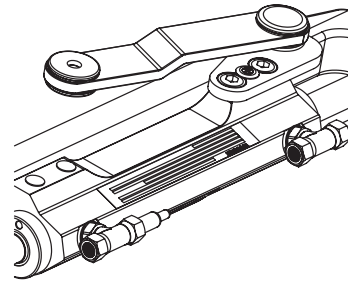
UC128-OBF/2



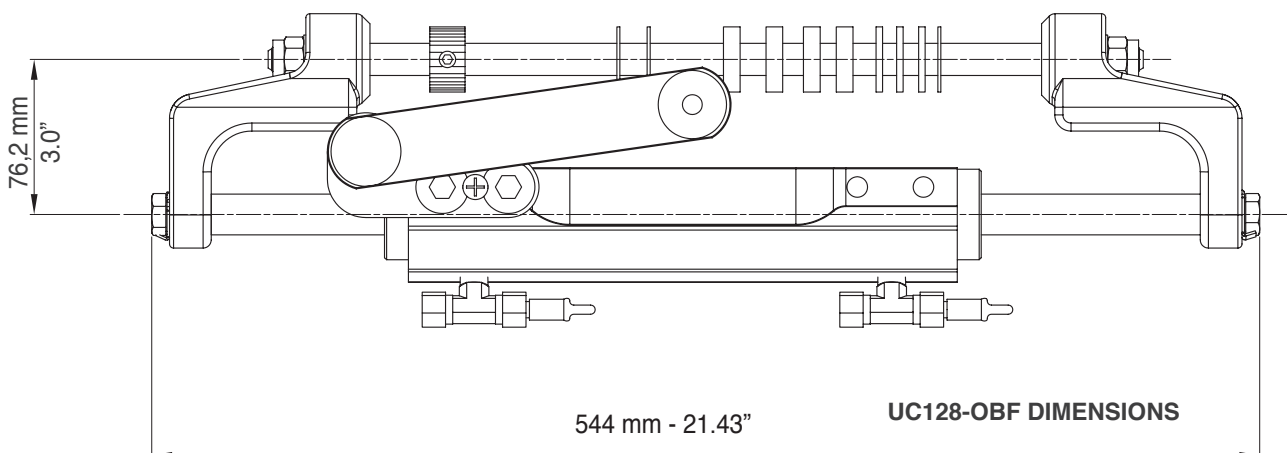
UC128-OBF/3



UC128P-OBF/1

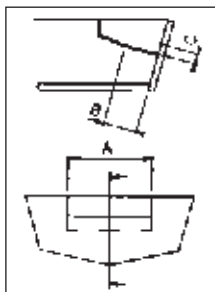


UC128P-OBF/2



# UC128-OBF

## Front mount cylinder



### Splashwell dimension requirements

| Engine No. | 1               | 2                |
|------------|-----------------|------------------|
| A          | 540 mm (21.25") | 1110 mm (43.70") |
| B          | 152 mm (5.98")  | 152 mm (5.98")   |
| C          | 152 mm (5.98")  | 152 mm (5.98")   |

For twin engine applications minimum engine center distance is 650 mm (26")

### UC128-OBF link arms

LA1, LA2, LA3 link arm kits for UC128-OBF standard cylinder and LA1P, LA2P link arm kits for UC128P-OBF port cylinder can also be supplied separately for the first application only, in case the UC128-OBF cylinder needs to be adapted to the already installed outboard engine (see application guide).

**WARNING:** LA1, LA2, LA3 and LA1P, LA2P link arm kits are recommended for use on the first installation **only** and **not** as a retrofit. Installation has to be made by qualified technicians only.

The tightening load to be applied to the screws (**included**) of the link arm kit is recommended on the Installation Manual and the mounting instructions supplied with the products.

### "STARBOARD" link arms



**LA1 40045 A**  
for UC128-OBF/1



**LA2 40046 C**  
for UC128-OBF/2



**LA3 40073 F**  
for UC128-OBF/3

### "PORT" link arms



**LA1P 40104 P**  
for UC128P-OBF/1



**LA2P 40105 S**  
for UC128P-OBF/2

# UC128-OBF Cylinder applications

| ENGINE                         | MODEL   | YEAR         | CYLINDER     | P. NO. |
|--------------------------------|---|--------------|--------------|--------|
| Mercury®<br>Mariner®           | 115-125-150 EFI 2S                              | 1990-2007    | UC128-OBF/1  | 43231N |
|                                | 225-250 EFI 2S                                  | 2000-2007    | UC128-OBF/1  | 43231N |
|                                | 75-90-115 OPTIMAX                               | 2004-2018    | UC128-OBF/3  | 43233T |
|                                | 135-150-175 OPTIMAX                             | 1999-2018    | UC128-OBF/1  | 43231N |
|                                | 200-225-250 OPTIMAX                             | 1999-2018    | UC128-OBF/1  | 43231N |
|                                | RACING 300 OPTIMAX                              | 1999-2011    | UC128-OBF/1  | 43231N |
|                                | 100-115 EFI 4S                                  | 2007-to date | UC128-OBF/1  | 43231N |
|                                | 250 SALTWATER EFI 4S                            | 2007-2011    | UC128-OBF/1  | 43231N |
|                                | 135-150-175-200 VERADO L4                       | 2004-2012    | UC128-OBF/1  | 43231N |
|                                | FOURSTROKE / PRO XS 175-200 V6                  | 2018-to date | UC128-OBF/1  | 43231N |
| FOURSTROKE / PRO XS 225-300 V8 | 2018-to date                                    | UC128-OBF/1  | 43231N       |        |
| Evinrude®                      | E75-E90 2S                                      | 2004-to date | UC128-OBF/2  | 43232R |
|                                | E115-E130-E135 2S V4                            | 1995-2020    | UC128-OBF/2  | 43232R |
|                                | E150-E175-E200-E225-E250-E300 2S V6             | 1995-2020    | UC128-OBF/2  | 43232R |
| Yamaha®                        | 115C-130B 2S                                    | 1990-2008    | UC128-OBF/2  | 43232R |
|                                | 75C-90 2S                                       | 1998-2008    | UC128-OBF/2  | 43232R |
|                                | F70 4S  | 2010-to date | UC128P-OBF/1 | 43234V |
|                                | 150F-200F-250G 2S                               | 1990-2008    | UC128-OBF/2  | 43232R |
|                                | 150 HPDI VMAX 2S                                | 1996-2007    | UC128-OBF/2  | 43232R |
|                                | 175-200-225-250-300 HPDI VMAX 2S                | 2000-2008    | UC128-OBF/2  | 43232R |
|                                | F115-F150 EFI 4S                                | 2000-2008    | UC128-OBF/2  | 43232R |
|                                | F200-F225-F250 4S                               | 1999-2007    | UC128-OBF/2  | 43232R |
|                                | F115-F130-F150D- F150F-F175A-F200F-<br>F200G L4 | 2002-to date | UC128-OBF/1  | 43231N |
|                                | F200-F225-F250-F300 V6 4S                       | 2004-to date | UC128-OBF/2  | 43232R |
| Honda®                         | BF75-BF90 4S                                    | 1995-to date | UC128-OBF/1  | 43231N |
|                                | BF115-BF130 4S                                  | 1998-to date | UC128-OBF/3  | 43233T |
|                                | BF135-BF150 4S                                  | 2005-to date | UC128-OBF/1  | 43231N |
|                                | BF150 V-TEC 4S                                  | 2008-to date | UC128-OBF/1  | 43231N |
|                                | BF175-BF200-BF225-BF250 4S                      | 2001-to date | UC128-OBF/1  | 43231N |
| Suzuki®                        | DF70-80-90 4S                                   | 1998-to date | UC128-OBF/2  | 43232R |
|                                | DF100-115-140 4S                                | 2008-to date | UC128-OBF/1  | 43231N |
|                                | DF150-175-DF200 L4 4S                           | 2006-to date | UC128-OBF/1  | 43231N |
|                                | DF200-DF225-DF250-DF300-V6 4S                   | 2004-to date | UC128-OBF/2  | 43232R |
| Tohatsu®                       | 115-120-140 2S                                  | 2004-to date | UC128-OBF/2  | 43232R |
|                                | 70-90-115 TLDI 4S                               | 2004-to date | UC128-OBF/1  | 43231N |
|                                | MFS 50-60-75-90-100-115 4S                      | 2018-to date | UC128-OBF/1  | 43231N |
|                                | BFT 115-150-200-225-250 4S                      | 2014-to date | UC128-OBF/1  | 43231N |
|                                | BFT60-75-80-90-100 4S                           | 2015-to date | UC128-OBF/1  | 43231N |
| Selva®                         | 80 PORTOFINO/TIGERSHARK 2S                      | 1995-2008    | UC128-OBF/1  | 43231N |
|                                | 150 WHITE SHARK 2S                              | 2001-2007    | UC128-OBF/2  | 43232R |
|                                | 100EFI MARLIN-115 EFI NARWHAL                   | 2000-to date | UC128-OBF/2  | 43232R |
|                                | 225 BEAKED WHALE 4S                             | 2019-to date | UC128-OBF/2  | 43232R |
|                                | 100-150EFI KILLER WHALE 4S-<br>200 SEI WHALE 4S | 2000-to date | UC128-OBF/1  | 43231N |
| Johnson®                       | BJ90-115-140 4S                                 | 2001-2007    | UC128-OBF/1  | 43231N |
|                                | J90-115 V4 2S                                   | 1995-2007    | UC128-OBF/2  | 43232R |
|                                | J150-175 V6 2S                                  | 1995-2007    | UC128-OBF/2  | 43232R |
|                                | J200-225 V6 4S                                  | 2004-2007    | UC128-OBF/2  | 43232R |
| OXE®                           | 125-150-175-200HP DIESEL                        | 2018-to date | UC128-OBF/1  | 43231N |
|                                | 300HP DIESEL                                    | 2020-to date | UC128-OBF/1  | 43231N |
| COX®                           | 300HP   | 2020-to date | UC128-OBF/2  | 43232R |
| Neander<br>Shark®              | DTORQUE 111                                     | 2018-to date | UC128-OBF/1  | 43231N |




**NOTE:**  
Suzuki® engines built from 1998 to 2008 installing UC128-OBF/1 cylinder require optional **KIT SU - 41954W**.  
For higher horsepower applications, high performance SilverSteer™ cylinder is recommended.

**WARNING**  
These recommendations should be used as a general reference only. Final selection should be made with the assistance of a qualified installation technician.  
For any further information please contact our Technical Service.



# UC128-OBF

## Order guide

| SYSTEM  | APPLICATION  | WHEEL TURNS       | COMPONENTS     | MODEL             | Q.TY |
|---|--|-------------------|----------------|-------------------|------|
| <b>Single engine<br/>Single cylinder</b><br>                     | Up to 300 hp max                                   | 4,8<br>(UP25)     | Cylinder       | UC128-OBF         | 1    |
|   |  |                   | Helm pump      | UP25 or UP28      | 1    |
|   |  |                   | Hose Kit       | KIT OB            | 1    |
|   |  | 4,3<br>(UP28)     | Oil            | OL 150            | 2    |
|   |  |                   | Steering wheel | (Wheel selection) | 1    |
| <b>For a second station add:</b><br>1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OL 150, 1 steering wheel                       |  |                   |                |                   |      |
| <b>Dual engine<br/>Single cylinder</b><br>                       | Up to 300 hp max<br>(non-counter rotating engine)  | 4,8<br>(UP25)     | Cylinder       | UC128-OBF         | 1    |
|   |  |                   | Helm pump      | UP25 or UP28      | 1    |
|   | Up to 500 hp max<br>(counter rotating engine)      |                   | Hose Kit       | KIT OB            | 1    |
|   |  | 4,3<br>(UP28)     | Oil            | OL 150            | 2    |
|   |  |                   | Tie bar        | A96               | 1    |
|   | Steering wheel                                     | (Wheel selection) | 1              |                   |      |
| <b>For a second station add:</b><br>1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OL 150, 1 steering wheel                       |  |                   |                |                   |      |
| <b>Dual engine<br/>Dual cylinder</b><br>                       | Up to 500 hp max<br>(non-counter rotating engines) | 6,1<br>(UP39)     | Cylinder       | UC128-OBF         | 1    |
|   |  |                   | Cylinder Port  | UC128P-OBF        | 1    |
|   |  |                   | Helm pump      | UP39 or UP45      | 1    |
|   | Up to 600 hp max<br>(counter rotating engines)     |                   | Hose Kit       | KIT OB            | 1    |
|   |  | 5,3<br>(UP45)     | Oil            | OL 150            | 3    |
|   |  |                   | Tie bar        | A95               | 1    |
|   |  |                   | Steering wheel | (Wheel selection) | 1    |
|   | Connection Kit                                     | KIT OB-2C         | 1              |                   |      |
| <b>For a second station add:</b><br>1 UP39 or UP45 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 2 T fittings 39502 V, 1 OL 150, 1 steering wheel |  |                   |                |                   |      |

### WARNING

The UC128-OBF front mount cylinder is not recommended for use in installations where the boat speed exceeds **55 mph (48 knots)** 65 mph (56 knots) in dual engine, dual cylinder and counter rotating engines application. Not intended for use in racing applications.

### Dual engine dual cylinder application diagram



#### NOTE:

Three outboard engine applications are available with UC130-SVS cylinder.

**For triple outboard engine, dual cylinder applications, please refer to tie-bar section.**

For any further and detailed information, please contact our Technical Service.

#### NOTE:

For high performance applications SilverSteer™ systems are recommended.

# UC68-OBS Side Mount Cylinder



- UC68-OBS – Unbalanced: the number of wheel turns lock-to-lock is not equal port to starboard and vice-versa
- This side mount cylinder features a turning nut for a fast and easy installation to the engine tube (PATENTED)
- Clearance required at the engine tube side: 13.3" (340 mm)

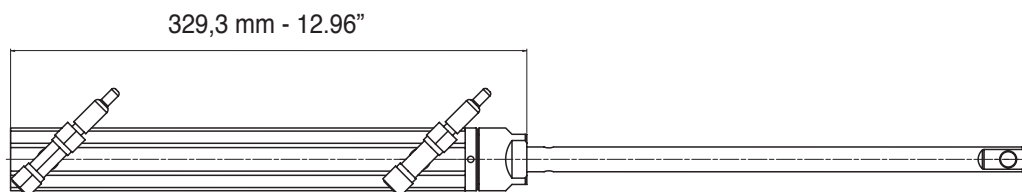
#### APPLICATIONS:

Recommended for use where max boat speed do not exceed 46 mph (40 knots)

Also available in Steering kit: GOTECH-OBS, HYCO-OBS and HYCO-OBS/M

|   |                          |
|---|--------------------------|
| <b>Volume</b>                               | 68/100 cc - 7.3 cu.in.   |
| <b>Output force</b>                         | 185/270 kg (408/595 lbs) |
| <b>Internal diameter</b>                    | 25 mm (0.98")            |
| <b>Stroke</b>                               | 203 mm (8")              |
| <b>Fittings for high pressure flex hose</b> | 3/8"                     |

| Model           | Part No. | Description   |
|-----------------|----------|---|
| <b>UC68-OBS</b> | 39784J   | Side mount cylinder for outboard engines up to 150 hp |

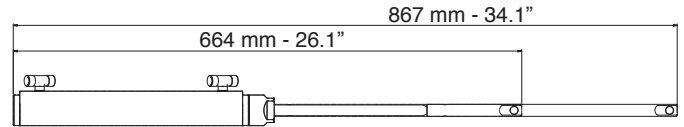


**UC68-OBS**

#### Order guide

| SYSTEM                                       | APPLICATION      | WHEEL TURNS | COMPONENTS     | MODEL             | Q.TY |
|--|------------------|-------------|----------------|-------------------|------|
| <b>Single engine<br/>Single cylinder</b><br> | Up to 150 hp max | 3,4/5       | Cylinder       | UC68-OBS          | 1    |
|  |                  |             | Helm pump      | UP20              | 1    |
|  |                  |             | Hose Kit       | KIT OB            | 1    |
|  |                  |             | Oil            | OL 150            | 2    |
|  |                  |             | Steering wheel | (Wheel selection) | 1    |

# UC132-OBS side mount cylinder



UC132-OBS

UC132-OBS Unbalanced: the wheel number of turns lock-to-lock is not equal port to starboard and vice-versa

- This side mount cylinder features a turning nut for a fast and easy installation to the engine tube (PATENTED)
- Clearance required at the engine tube side: 375 mm (14.76")

APPLICATIONS: not recommended for use in installations where the boat speed exceeds 55 mph (48 knots) or 60 mph (52 knots) for dual cylinder / dual engines installations  
Not intended for use in racing applications

WARNING: UC132-OBS cylinder is not intended for use with 105 Bar (1500 PSI) SilverSteer serie helms.

|   |                            |
|---|----------------------------|
| <b>Volume</b>                               | 132/163 cc - 8/9.95 cu.in. |
| <b>Output force</b>                         | 464/574 kg (1023/1265 lbs) |
| <b>Internal Diameter</b>                    | 25 mm (0.98")              |
| <b>Corsa</b>                                | 203 mm (8")                |
| <b>Fittings for high pressure flex hose</b> | 3/8"                       |

| Model     | Part No. | Description         |
|-----------|----------|---------------------|
| UC132-OBS | 39430W   | Side mount Cylinder |

## ORDER GUIDE

| SYSTEM  | APPLICATION  | WHEEL TURNS       | COMPONENTS     | MODEL             | Q.TY |
|---|--|-------------------|----------------|-------------------|------|
| <b>Single engine<br/>Single cylinder</b><br>  | Up to 250 hp max                                   | 5,3/6,5<br>(UP25) | Cylinder       | UC132-OBS         | 1    |
|   |  |                   | Helm pump      | UP25 or UP28      | 1    |
|   |  |                   | Hose Kit       | KIT OB            | 1    |
|   |  |                   | Oil            | OL 150            | 2    |
|   |  |                   | Steering wheel | (Wheel selection) | 1    |
| <b>For a second station add:</b><br>1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OL 150, 1 steering wheel                       |  |                   |                |                   |      |
| <b>Dual engine<br/>Single cylinder</b><br>  | Up to 250 hp max<br>(non-counter rotating engine)  | 5,3/6,5<br>(UP25) | Cylinder       | UC132-OBS         | 1    |
|   |  |                   | Helm pump      | UP25 or UP28      | 1    |
|   | Up to 300 hp max<br>(counter rotating engine)      | 4,7/5,8<br>(UP28) | Hose Kit       | KIT OB            | 1    |
|   |  |                   | Oil            | OL 150            | 2    |
|   |  |                   | Tie bar        | A88 or A92        | 1    |
|   | Steering wheel                                     | (Wheel selection) | 1              |                   |      |
| <b>For a second station add:</b><br>1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OL 150, 1 steering wheel                       |  |                   |                |                   |      |
| <b>Dual engine<br/>Dual cylinder</b><br>  | Up to 300 hp max<br>(non-counter rotating engines) | 6,7/8,3<br>(UP39) | Cylinder       | UC132-OBS         | 2    |
|   |  |                   | Helm pump      | UP39 or UP45      | 1    |
|   |  |                   | Hose Kit       | KIT OB            | 1    |
|   | Up to 300 hp max<br>(counter rotating engines)     | 5,8/7,3<br>(UP45) | Oil            | OL 150            | 3    |
|   |  |                   | Tie bar        | A88 or A92        | 1    |
|   |  |                   | Steering wheel | (Wheel selection) | 1    |
|   | Connection Kit                                     | KIT OB-2C         | 1              |                   |      |
| <b>For a second station add:</b><br>1 UP39 or UP45 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 2 T fittings 39502 V, 1 OL 150, 1 steering wheel |  |                   |                |                   |      |
| <b>WARNING: THIS APPLICATION REQUIRES THAT THE THREADS ON THE TILT TUBE EXTEND AT LEAST 15 mm (0.6") FROM BOTH SIDES.</b>                         |  |                   |                |                   |      |

# Hydraulic hose kit for GOTECH™ steering systems

## KIT OB-GT/M - Hose kit with preassembled fittings at one end for single station application

It consists of a pair of high pressure flexible hose dia. 1/4" with fittings, featuring turning nuts, preassembled at one end only and supplied with 2 non assembled fittings.

Recommended for use with GOTECH™ steering systems. Available on 6 m (19.7') standard length that can be cut to fit the desired application.

| KIT OB-GT/M    | LENGTH           | PART No. |
|----------------|------------------|----------|
| KIT OB-GT/M-60 | 6,00 m – 19.7 ft | 42669C   |



KIT OB-GT/M

## KIT OB-GT - Hose kit with preassembled fittings at both ends

It consists of a pair of high pressure flexible hose dia. 1/4" with fittings, featuring turning nuts, preassembled at both ends. Recommended for use with GOTECH™ steering systems. Available in different hose lengths.

| KIT OB-GT    | LENGTH           | PART No. |
|--------------|------------------|----------|
| KIT OB-GT 30 | 3,00 m – 9.8 ft  | 43111C   |
| KIT OB-GT 35 | 3,50 m – 11.5 ft | 43112E   |
| KIT OB-GT 40 | 4,00 m – 13.2 ft | 43113G   |
| KIT OB-GT 45 | 4,50 m – 14.8 ft | 43114J   |
| KIT OB-GT 50 | 5,00 m – 16.4 ft | 43106K   |
| KIT OB-GT 55 | 5,50 m – 18.0 ft | 43115L   |
| KIT OB-GT 60 | 6,00 m – 19.7 ft | 43116N   |
| KIT OB-GT 65 | 6,50 m – 21.3 ft | 43117R   |
| KIT OB-GT 70 | 7,00 m – 22.9 ft | 43118T   |



KIT OB-GT

## KIT OB-GT/R5 - Hydraulic hose kit

Two high pressure flexible hoses with pre-cripped brass fittings and R5 bulkhead fittings. Recommended for use with GOTECH™ steering systems. Available in different hose lengths.

| KIT OB-GT/R5    | LENGTH           | PART No. |
|-----------------|------------------|----------|
| KIT OB-GT/R5 30 | 3,00 m – 9.8 ft  | 43123K   |
| KIT OB-GT/R5 35 | 3,50 m – 11.5 ft | 43147A   |
| KIT OB-GT/R5 40 | 4,00 m – 13.2 ft | 43148C   |
| KIT OB-GT/R5 45 | 4,50 m – 14.8 ft | 43149E   |
| KIT OB-GT/R5 50 | 5,00 m – 16.4 ft | 43150N   |
| KIT OB-GT/R5 55 | 5,50 m – 18.0 ft | 43151R   |
| KIT OB-GT/R5 60 | 6,00 m – 19.7 ft | 43152T   |
| KIT OB-GT/R5 65 | 6,50 m – 21.3 ft | 43153V   |
| KIT OB-GT/R5 70 | 7,00 m – 22.9 ft | 43154X   |



KIT OB-GT/R5

## KIT for autopilot application with GOTECH™

**K18** - 43414X

### Components:

2x T fittings

8x reusable fittings for TU 1/4

3x 1/4 NPT 9/16-24 UNEF straight fittings

1x 1/8 NPT 9/16-24 UNEF straight fitting

TU1/4 hose x10 m (32 ft)

TU95 hose x5 m (16 ft)



K18

## High pressure flexible hoses

### KIT OB - Hydraulic hose kit



Two high pressure flexible hoses with pre-crimped brass fittings and bend restrictors on one end. Recommended for use with all Ultraflex standard helms with 70 Bar (1000 psi) relief valves. With SilverSteer™ and MasterDrive™ systems, use KIT OB-SVS. Available lengths: from 3,00 m (9.8 ft) to 9,00 m (29.5 ft) with 0,5 m (1.6 ft) increments.

| KIT OB    | LENGTH           | P. No. |
|-----------|------------------|--------|
| KIT OB-30 | 3,00 m - 9.8 ft  | 40852G |
| KIT OB-35 | 3,50 m - 11.5 ft | 40853J |
| KIT OB-40 | 4,00 m - 13.2 ft | 40752C |
| KIT OB-45 | 4,50 m - 14.8 ft | 40753E |
| KIT OB-50 | 5,00 m - 16.4 ft | 40754G |
| KIT OB-55 | 5,50 m - 18.0 ft | 40755J |
| KIT OB-60 | 6,00 m - 19.7 ft | 40749P |
| KIT OB-65 | 6,50 m - 21.3 ft | 40648H |
| KIT OB-70 | 7,00 m - 22.9 ft | 40796Z |
| KIT OB-75 | 7,50 m - 24.6 ft | 40854L |
| KIT OB-80 | 8,00 m - 26.3 ft | 40855N |
| KIT OB-85 | 8,50 m - 27.8 ft | 40856R |
| KIT OB-90 | 9,00 m - 29.5 ft | 40857T |



KIT OB

### KIT OB/R5 - Hydraulic hose kit

Two high pressure flexible hoses with pre-crimped brass fittings, R5 bulkhead fittings and bend restrictors on both ends. Recommended for use with all Ultraflex standard helms with 70 Bar (1000 psi) relief valves. With SilverSteer™ and MasterDrive™ systems, use KIT OB-SVS. Available lengths: from 3,00 m (9.8 ft) to 9,00 m (29.5 ft) with 0,5 m (1.6 ft) increments.

| KIT OB/R5    | LENGTH           | P. No.  |
|--------------|------------------|---------|
| KIT OB/R5-30 | 3,00 m - 9.8 ft  | 40835G  |
| KIT OB/R5-35 | 3,50 m - 11.5 ft | 40836J  |
| KIT OB/R5-40 | 4,00 m - 13.2 ft | 40837L  |
| KIT OB/R5-45 | 4,50 m - 14.8 ft | 40838N  |
| KIT OB/R5-50 | 5,00 m - 16.4 ft | 40839R  |
| KIT OB/R5-55 | 5,50 m - 18.0 ft | 40840Z  |
| KIT OB/R5-60 | 6,00 m - 19.7 ft | 40841B  |
| KIT OB/R5-65 | 6,50 m - 21.3 ft | 40842D  |
| KIT OB/R5-70 | 7,00 m - 22.9 ft | 40843F  |
| KIT OB/R5-75 | 7,50 m - 24.6 ft | 40844H  |
| KIT OB/R5-80 | 8,00 m - 26.3 ft | 40845 K |
| KIT OB/R5-85 | 8,50 m - 27.8 ft | 40846M  |
| KIT OB/R5-90 | 9,00 m - 29.5 ft | 40847P  |



KIT OB/R5

## High pressure flexible hoses

### KIT OB/M - Hose kit with preassembled fittings at one end - single station application



It consists of a pair of high pressure flexible hose with fittings featuring turning nuts preassembled at one end only. It is supplied with 2 non assembled fittings and 2 reinforcing sleeves. Not recommended for use with SilverSteer™ and MasterDrive™ helms (1500 psi). Available on three lengths that can be cut to fit the desired application.

| KIT OB/M     | LENGTH            | P. No. |
|--------------|-------------------|--------|
| KIT OB/M-60  | 6,00 m - 19.7 ft  | 41708E |
| KIT OB/M-90  | 9,00 m - 29.5 ft  | 41709G |
| KIT OB/M-150 | 15,00 m - 49.2 ft | 42565P |

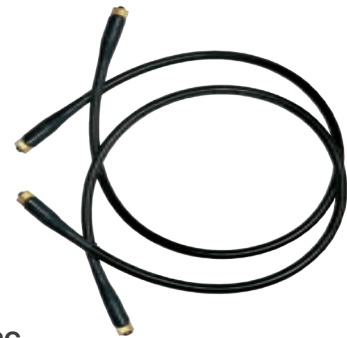


KIT OB/M

### KIT OB-2C - Dual Cylinder/Dual engine connection kit

Two high pressure flexible hoses with pre-crimped fittings and bend restrictors. Not recommended for use with SilverSteer™ Series cylinders. Three lengths available: 70 cm, 90 cm, 120 cm

| KIT OB-2C    | LENGTH           | P. No. |
|--------------|------------------|--------|
| KIT OB-2C-07 | 0,7 m - 2.30 ft  | 41149U |
| KIT OB-2C-09 | 0,9 m - 2.95 ft  | 40680D |
| KIT OB-2C-12 | 1,20 m - 3.95 ft | 40686S |



KIT OB-2C

### KIT OB-2S-5/16 - Kit for a second steering station or autopilot for hydraulic steering systems with 5/16" hose (TU 5/16)

**KIT OB-2S-5/16 - 43401M**

**Components:**

- 2x T fittings
- 8x reusable fittings for TU5/16
- 4x 1/4 NPT 9/16-24 UNEF straight fittings
- 2x 1/8 NPT 9/16-24 UNEF straight fitting
- TU95 hose x10 m (32 ft)
- TU5/16 hose x10 m (32 ft)
- 1x non-vented cap



KIT OB-2S-5/16

# UP28F-SVS - UP33F-SVS - UP39F-SVS

## High Performance front mount helms



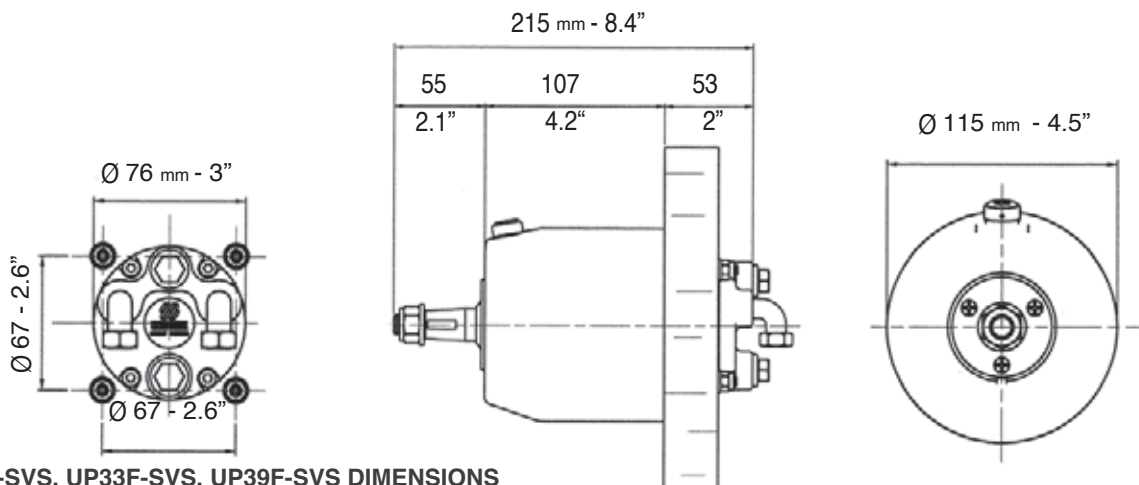
SilverSteer™ SVS helms have been specifically designed for high torque outboard applications such as bass boats, and boats with shallow dead rise and high horsepower engines. Featuring a 1500 psi ( 105 Bar ) pressure valve, SilverSteer™ helms will deliver very precise steering at all torque loads. The SVS helms have to be coupled with the UC130-SVS cylinders and the Kit OB-SVS hoses, which are also specifically designed for high torque applications. SVS Helm pumps feature stainless steel shafts and 90° adjustable nickel-plated brass fittings.

- Available in three different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- **Integrated relief valve for over-pressure protection 105 bar (1500 psi)**
- 3/4" tapered stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- Complete with 90° adjustable fittings for 3/8" hose
- Tilt mechanism:

X72 – Tilt range of 60° and five locking positions.

**WARNING:** SilverSteer™ helm pumps are always to be installed in conjunction with the UC130-SVS cylinder and the Kevlar reinforced hose kit KIT OB-SVS.

| MODEL     | P. No. | MOUNTING    | DISPLACEMENT/ REVOLUTION | No. OF PISTONS | RELIEF VALVE SETTING | MAXIMUM WHEEL DIA. | WEIGHT        |
|-----------|--------|-------------|--------------------------|----------------|----------------------|--------------------|---------------|
| UP28F-SVS | 42662M | Front mount | 28 cc - 1.7 cu.in        | 5              | 105 bar - 1500 PSI   | 710 mm - 28"       | 5 kg - 11 lbs |
| UP33F-SVS | 42661K | Front mount | 33 cc - 2.0 cu.in        | 7              | 105 bar - 1500 PSI   | 710 mm - 28"       | 5 kg - 11 lbs |
| UP39F-SVS | 42660H | Front mount | 39 cc - 2.4 cu.in        | 7              | 105 bar - 1500 PSI   | 710 mm - 28"       | 5 kg - 11 lbs |



UP28F-SVS, UP33F-SVS, UP39F-SVS DIMENSIONS

# UP28T-SVS - UP33T-SVS - UP39T-SVS

## High Performance tilt mount helms



SilverSteer™ SVS helms have been specifically designed for high torque outboard applications such as bass boats, and boats with shallow dead rise and high horsepower engines.

Featuring a 1500 psi (105 Bar) pressure valve, SilverSteer™ helms will deliver very precise steering at all torque loads.

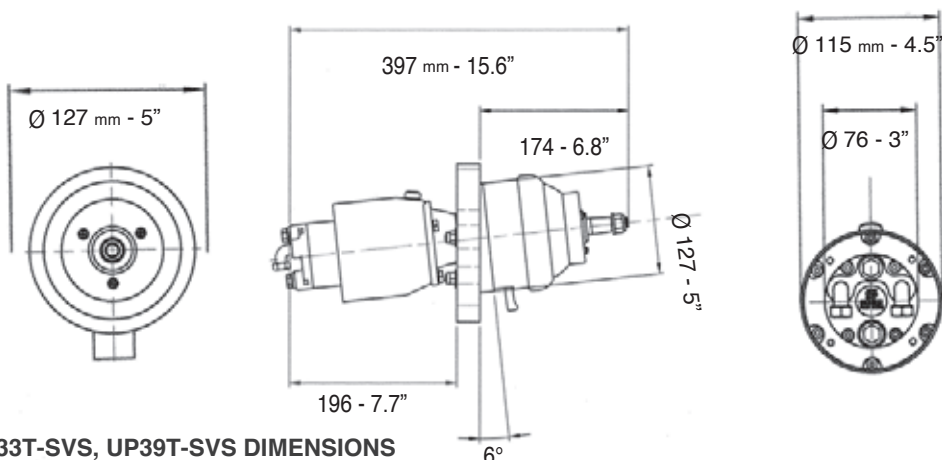
The SVS helms have to be coupled with the UC130-SVS cylinders and the Kit OB-SVS hoses, which are also specifically designed for high torque applications.

SVS Helm pumps feature stainless steel shafts and 90° adjustable nickel-plated brass fittings.

- Available in three different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock (patented)
- Integral relief valve for over-pressure protection 105 bar (1500 psi)
- Stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- Complete with 90° adjustable fittings for 3/8" hose
- Tilt mechanism for SilverSteer™ systems: X70-SVS – Tilt range of 48° and five locking positions
- **KIT F** (optional): remote fill adapter

**WARNING:** The SilverSteer™ helm pumps are always to be installed in conjunction with the UC130-SVS cylinder and the Kevlar reinforced hose kit KIT OB-SVS.

| MODEL     | P. No. | MOUNTING     | DISPLACEMENT/<br>REVOLUTION | No. OF<br>PISTONS | RELIEF VALVE<br>SETTING | MAXIMUM<br>WHEEL DIA. | WEIGHT        |
|-----------|--------|--------------|-----------------------------|-------------------|-------------------------|-----------------------|---------------|
| UP28T-SVS | 42663P | With X70-SVS | 28 cc - 1.7 cu.in           | 5                 | 105 Bar - 1500 PSI      | 406 mm - 16"          | 5 kg - 11 lbs |
| UP33T-SVS | 42664S | With X70-SVS | 33 cc - 2.0 cu.in           | 7                 | 105 Bar - 1500 PSI      | 406 mm - 16"          | 5 kg - 11 lbs |
| UP39T-SVS | 42665U | With X70-SVS | 39 cc - 2.4 cu.in           | 7                 | 105 Bar - 1500 PSI      | 406 mm - 16"          | 5 kg - 11 lbs |



UP28T-SVS, UP33T-SVS, UP39T-SVS DIMENSIONS



# UC130-SVS

## High Performance front mount cylinder



**SILVERSTEER™**

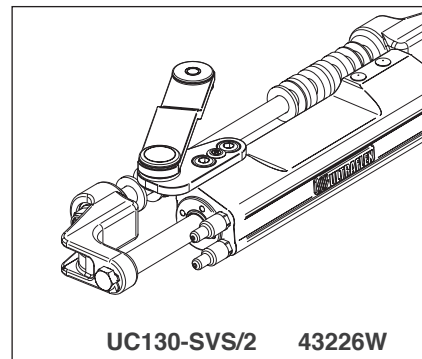
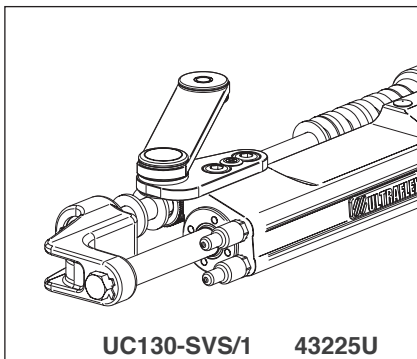


UC130-SVS

UC130-SVS – Balanced: the number of wheel turns lock-to-lock is equal port to starboard or vice-versa

- Side fittings for easy installation
- High resistance stainless steel connection bolt (ULTRABOLT)
- Replaceable cylinder end caps
- SilverSteer™ UC130-SVS cylinder is recommended for high horsepower applications, bass boats and tournament fishing boats.
- This cylinder is built with heavy duty stainless steel cylinder rod, seals and link assemblies, is simple to install and fits almost every 2 and 4 stroke outboard engine in the market. See the application guide to choose the appropriate cylinder (UC130-SVS/1 or UC130-SVS/2) for your application.

**APPLICATION:** UC130-SVS front mount cylinder is not recommended for use in installations where the boat speed exceeds 69 mph (60 knots); (75 mph (65 knots) in dual engine, dual cylinder and counter rotating engines application).  
Not intended for use in racing applications.



| Model        | Part No. | Description                             |
|--------------|----------|---|
| UC130-SVS/1  | 43225U   | Front mount cylinder, starboard version |
| UC130-SVS/2  | 43226W   | Front mount cylinder, starboard version |
| UC130-SVS/3  | 43227Y   | Front mount cylinder, starboard version |
| UC130P-SVS/1 | 43223P   | Front mount cylinder, port version      |
| UC130P-SVS/2 | 43224S   | Front mount cylinder, port version      |

|                                      |                      |
|--------------------------------------|----------------------|
| Volume                               | 130 cc - 7.3 cu. in. |
| Output force                         | 740 kg (1631 lbs)    |
| Internal diameter                    | 36 mm (1.42")        |
| Stroke                               | 185 mm (7.28")       |
| Fittings for high pressure flex hose | 3/8" (9,5 mm)        |
| Bleed fittings                       | DN5 quick connect    |

# UC130-SVS High Performance front mount cylinder

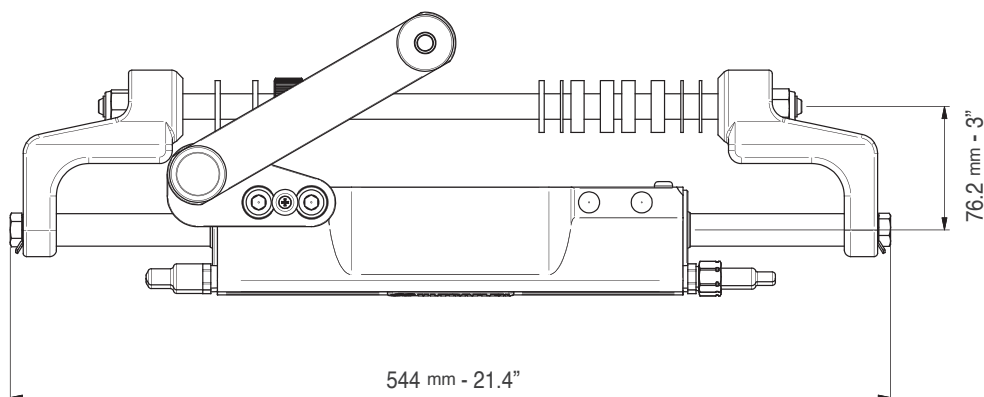
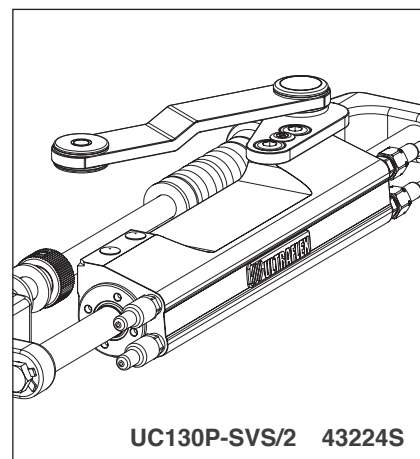
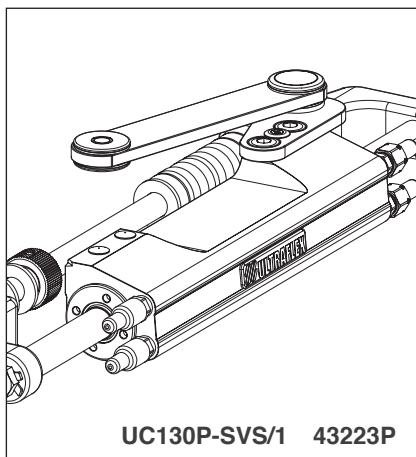
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SILVERSTEER™



UC130P-SVS

In the applications with dual UC130-SVS cylinder it is necessary to order a standard UC130-SVS cylinder (link arm attached to the starboard side of the cylinder) and a port UC130P-SVS cylinder (link arm attached to the port side of the cylinder). A95 tie bar is required for use on dual engine/dual cylinder applications.



UC130-SVS, UC130P-SVS DIMENSIONS

# UC130-SVS cylinder Applications

| ENGINE               | MODEL                                     | YEAR         | CYLINDER    | P. No. |
|----------------------|---|--------------|-------------|--------|
| Mercury®<br>Mariner® | 115-125-150 EFI 2S                        | 1990-2007    | UC130-SVS/1 | 43225U |
|                      | 225-250 EFI 2S                            | 2000-2007    | UC130-SVS/1 | 43225U |
|                      | 135-150-175 OPTIMAX                       | 1999-2018    | UC130-SVS/1 | 43225U |
|                      | 200-225-250 OPTIMAX                       | 1999-2018    | UC130-SVS/1 | 43225U |
|                      | RACING 300 OPTIMAX                        | 1999-2011    | UC130-SVS/1 | 43225U |
|                      | 250 SALTWATER EFI 4S                      | 2007-2011    | UC130-SVS/1 | 43225U |
|                      | 135-150-175-200 VERADO L4                 | 2004-2012    | UC130-SVS/1 | 43225U |
|                      | FOURSTROKE 175-200 V6                     | 2018-to date | UC130-SVS/1 | 43225U |
|                      | FOURSTROKE 225-300 V8                     | 2018-to date | UC130-SVS/1 | 43225U |
| Evinrude®            | E115-E130-E135 2S V4                      | 1995-to date | UC130-SVS/2 | 43226W |
|                      | E150-E175-E200-E225-E250-E300 2S V6       | 1995-to date | UC130-SVS/2 | 43226W |
| Yamaha®              | 115C-130B 2S                              | 1990-2008    | UC130-SVS/2 | 43226W |
|                      | 150F-200F-250G 2S                         | 1990-2008    | UC130-SVS/2 | 43226W |
|                      | 150 HPDI VMAX 2S                          | 1996-2007    | UC130-SVS/2 | 43226W |
|                      | 175-200-225-250-300 HPDI VMAX 2S          | 2000-2008    | UC130-SVS/2 | 43226W |
|                      | F115-F150 EFI 4S                          | 2000-2008    | UC130-SVS/1 | 43225U |
|                      | F200-F225-F250 4S                         | 1999-2007    | UC130-SVS/2 | 43226W |
|                      | F115-F150-F175-F200 L4                    | 2002-to date | UC130-SVS/1 | 43225U |
|                      | F200-F225-F250-F300 V6 4S                 | 2004-to date | UC130-SVS/2 | 43226W |
| F350 4S V8           | 2006-to date                              | UC130-SVS/1  | 43225U      |        |
| Honda®               | BF135-BF150 4S                            | 2005-to date | UC130-SVS/1 | 43225U |
|                      | BF150 V-TEC 4S                            | 2008-to date | UC130-SVS/1 | 43225U |
|                      | BF175-BF200-BF225- BF250 4S               | 2001-to date | UC130-SVS/1 | 43225U |
| Suzuki®              | DF100-115-140 4S                          | 2008-to date | UC130-SVS/1 | 43225U |
|                      | DF150-175-DF200 L4 4S                     | 2006-to date | UC130-SVS/1 | 43225U |
|                      | DF200-DF225-DF250-DF300-DF350 V6 4S       | 2004-to date | UC130-SVS/2 | 43226W |
| Tohatsu®             | 115-120-140 2S                            | 2004-to date | UC130-SVS/2 | 43226W |
|                      | 70-90-115 TLDI 4S                         | 2004-to date | UC130-SVS/1 | 43225U |
|                      | MFS 50-60-75-90-100-115 4S                | 2018-to date | UC130-SVS/1 | 43225U |
|                      | BFT 115-150-200-225-250 4S                | 2014-to date | UC130-SVS/1 | 43225U |
|                      | BFT60-75-90-100 4S                        | 2015-to date | UC130-SVS/1 | 43225U |
| Selva®               | 80 PORTOFINO/TIGERSHARK 2S                | 1995-2008    | UC130-SVS/1 | 43225U |
|                      | 150 WHITE SHARK 2S                        | 2001-2007    | UC130-SVS/2 | 43226W |
|                      | 100EFI MARLIN -115 EFI NARWHAL            | 2000-to date | UC130-SVS/1 | 43225U |
|                      | 225 BEAKED WHALE 4S                       | 2019-to date | UC130-SVS/2 | 43226W |
|                      | 150EFI KILLER WHALE 4S - 200 SEI WHALE 4S | 2000-to date | UC130-SVS/1 | 43225U |
| Johnson®             | BJ90-115-140 4S                           | 2001-2007    | UC130-SVS/1 | 43225U |
|                      | J90-115 V4 2S                             | 1995-2007    | UC130-SVS/2 | 43226W |
|                      | J150-175 V6 2S                            | 1995-2007    | UC130-SVS/2 | 43226W |
|                      | J200-225 V6 4S                            | 2004-2007    | UC130-SVS/2 | 43226W |
| OXE®                 | 125-150-175-200HP DIESEL                  | 2018-to date | UC130-SVS/1 | 43225U |
|                      | 300 HP DIESEL                             | 2020-to date | UC130-SVS/1 | 43225U |
| COX®                 | 300 HP                                    | 2020-to date | UC130-SVS/2 | 43226W |
| NEANDER SHARK®       | DTORQUE 111                               | 2018-to date | UC130-SVS/1 | 43225U |


## WARNING

These recommendations should be used as a general reference only. Final selection should be made with the assistance of a qualified installation technician. For any further information please contact our Technical Service.

**NOTE:** Suzuki® engines built from 1998 to 2008 installing UC130-SVS/1 cylinder require the kit **KIT SU** - 41954W ordered separately.


Suzuki® engines DF100-115-140 4S in with a twin engine configuration require UC128-OBF/2 - 43232R, UC128P-OBF/2 - 43235X cylinders and A90 - 40138H tie bar



| SYSTEM  | APPLICATION      | WHEEL TURNS   | COMPONENTS     | MODEL             | Q.TY |
|---|------------------|---------------|----------------|-------------------|------|
| <b>Single Engine<br/>Single Cylinder</b><br> | Up to 350 hp max | 4,6<br>(UP28) | Cylinder       | UC130-SVS         | 1    |
|   |                  |               | Helm pump      | UP28 or UP33-SVS  | 1    |
|   |                  |               | Hose Kit       | KIT OB-SVS        | 1    |
|   |                  | 3,9<br>(UP33) | Oil            | OL 150            | 2    |
|   |                  |               | Steering wheel | (Wheel selection) | 1    |


For a second station add:

1 UP28-SVS or UP33-SVS helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB-SVS, 1 OL 150, 1 steering wheel

|   |   |                   |           |                  |   |
|---|---|-------------------|-----------|------------------|---|
| <b>Dual engine<br/>Single cylinder</b><br> | Up to 350 hp max<br>(non-counter rotating engine) | 4,6<br>(UP28)     | Cylinder  | UC130-SVS        | 1 |
|   |   |                   | Helm pump | UP28 or UP33-SVS | 1 |
|   | Up to 600 hp max<br>(counter rotating engine)     |                   | Hose Kit  | KIT OB-SVS       | 1 |
|   |   | 3,9<br>(UP33)     | Oil       | OL 150           | 2 |
|   |   |                   | Tie bar   | A96              | 1 |
|   | Steering wheel                                    | (Wheel selection) | 1         |                  |   |

For a second station add:

1 UP28-SVS or UP33-SVS helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB-SVS, 1 OL 150, 1 steering wheel

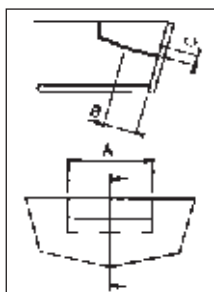
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|---|--|---------------|-------------------|------------|---|
| <b>Dual engine<br/>Dual cylinder</b><br> | Up to 600 hp max<br>(non-counter rotating engines) | 6,6<br>(UP39) | Cylinder          | UC130-SVS  | 1 |
|   |  |               | Cylinder Port     | UC130P-SVS | 1 |
|   | Helm pump  |               | UP39-SVS          | 1          |   |
|   | Hose Kit   |               | KIT OB-SVS        | 1          |   |
|   | Oil  |               | OL 150            | 3          |   |
|   | Tie bar  |               | A95               | 1          |   |
|   | Steering wheel                                     |               | (Wheel selection) | 1          |   |
|   | Connection Kit                                     |               | KIT OB-2C130-SVS  | 1          |   |

For a second station add:

1 UP39-SVS helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB-SVS, 2 T fittings 39502 V, 1 OL 150, 1 steering wheel

### WARNING

The UC130-SVS front mount cylinder is not recommended for use in installations where the boat speed exceeds **69 mph (60 knots)**; (75 mph (65 knots) in dual engine, dual cylinder and counter rotating engines application).  
Not intended for use in racing applications.



### SPLASHWELL DIMENSION REQUIREMENTS

| Engine No. | A                | B              | C              |
|------------|------------------|----------------|----------------|
| 1          | 560 mm - 22.05"  | 152 mm - 5.98" | 152 mm - 5.98" |
| 2          | 1110 mm - 43.70" | 152 mm - 5.98" | 152 mm - 5.98" |

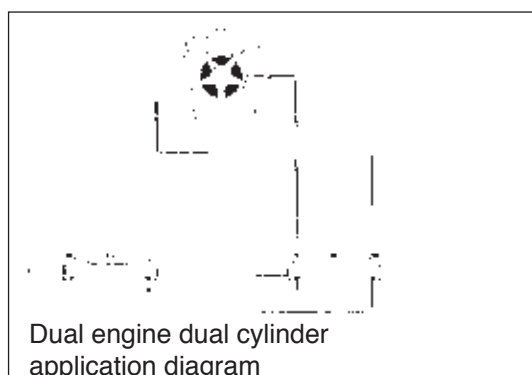
For twin engine applications minimum engine center distance is 650 mm (26")

### WARNING:

The SilverSteer™ helm pumps are always to be installed in conjunction with the UC130-SVS cylinder and the Kevlar reinforced hose kit KIT OB-SVS.

**NOTE:** Three outboard engine applications are available with UC130-SVS cylinder.

**For triple outboard engine, dual cylinder applications, please refer to tie-bar section.**  
For any further and detailed information, please contact our Technical Service.



## Hose kits for SilverSteer™ systems



### KIT OB-SVS - Hose kit for single station installation for SILVERSTEER™ systems



**KIT OB-SVS**

Two high pressure Kevlar stranded flexible hoses with pre-primed fittings and bend restrictors on both ends. Recommended for use with all Ultraflex SilverSteer™ and MasterDrive™ helms with 1500 psi relief valves. Lengths available: from 3m (9.8') to 9m (29.5') with 0,5m (1.6') increments.

| KIT OB-SVS    | LENGTH           | P. No.  |
|---------------|------------------|---------|
| KIT OB-SVS-30 | 3,00 m - 9.8 ft  | 43587F  |
| KIT OB-SVS-35 | 3,50 m - 11.5 ft | 43588H  |
| KIT OB-SVS-40 | 4,00 m - 13.2 ft | 43589K  |
| KIT OB-SVS-45 | 4,50 m - 14.8 ft | 43590U  |
| KIT OB-SVS-50 | 5,00 m - 16.4 ft | 43591W  |
| KIT OB-SVS-55 | 5,50 m - 18.0 ft | 43592Y  |
| KIT OB-SVS-60 | 6,00 m - 19.7 ft | 43593A  |
| KIT OB-SVS-65 | 6,50 m - 21.3 ft | 43594C  |
| KIT OB-SVS-70 | 7,00 m - 22.9 ft | 43595E  |
| KIT OB-SVS-75 | 7,50 m - 24.6 ft | 43596 G |
| KIT OB-SVS-80 | 8,00 m - 26.3 ft | 43597J  |
| KIT OB-SVS-85 | 8,50 m - 27.8 ft | 43598L  |
| KIT OB-SVS-90 | 9,00 m - 29.5 ft | 43599N  |

### KIT OB/R5-SVS - Hose kit for single station installation for SILVERSTEER™ systems



**KIT OB/R5-SVS**

Two high pressure Kevlar stranded flexible hoses with pre-primed fittings, R5 bulkhead fittings and bend restrictors on both ends. Recommended for use with all Ultraflex SilverSteer™ and MasterDrive™ helms with 1500 psi relief valves. Lengths available: from 3m (9.8') to 9m (29.5') with 0,5m (1.6') increments.

| KIT OB/R5-SVS    | LENGTH           | P. No. |
|------------------|------------------|--------|
| KIT OB/R5-SVS-30 | 3,00 m - 9.8 ft  | 43600U |
| KIT OB/R5-SVS-35 | 3,50 m - 11.5 ft | 43601W |
| KIT OB/R5-SVS-40 | 4,00 m - 13.2 ft | 43602Y |
| KIT OB/R5-SVS-45 | 4,50 m - 14.8 ft | 43603A |
| KIT OB/R5-SVS-50 | 5,00 m - 16.4 ft | 43604C |
| KIT OB/R5-SVS-55 | 5,50 m - 18.0 ft | 43605E |
| KIT OB/R5-SVS-60 | 6,00 m - 19.7 ft | 43606G |
| KIT OB/R5-SVS-65 | 6,50 m - 21.3 ft | 43607J |
| KIT OB/R5-SVS-70 | 7,00 m - 22.9 ft | 43608L |
| KIT OB/R5-SVS-75 | 7,50 m - 24.6 ft | 43609N |
| KIT OB/R5-SVS-80 | 8,00 m - 26.3 ft | 43610X |
| KIT OB/R5-SVS-85 | 8,50 m - 27.8 ft | 43611Z |
| KIT OB/R5-SVS-90 | 9,00 m - 29.5 ft | 43612B |

**WARNING:** The SilverSteer™ helm pumps are always to be installed in conjunction with the UC130-SVS cylinder and the Kevlar reinforced hose kit KIT OB-SVS.



## KIT OB-2C-SVS - Dual cylinder / dual engine engine connection kit for UC130-SVS



**KIT OB-2C130-SVS**

Two high pressure Kevlar stranded flexible hoses with pre-attached fittings. **Recommended for use with UC130-SVS only.**

**NOTE:** For UC128-SVS applications (previous SilverSteer cylinder model), please contact our Technical Service.

| KIT OB-2C130-SVS    | ENGINE CENTERS | HOSE LENGTH    | PART No. |
|---------------------|----------------|----------------|----------|
| KIT OB-2C130-SVS-38 | 660 mm (26")   | 381 mm (15")   | 43615H   |
| KIT OB-2C130-SVS-41 | 686 mm (27")   | 407 mm (16")   | 43616K   |
| KIT OB-2C130-SVS-43 | 711 mm (28")   | 432 mm (17")   | 43617M   |
| KIT OB-2C130-SVS-45 | 724 mm (28.5") | 445 mm (17.5") | 43618P   |
| KIT OB-2C130-SVS-46 | 737 mm (29")   | 457 mm (18")   | 43619S   |
| KIT OB-2C130-SVS-48 | 762 mm (30")   | 483 mm (19")   | 43620A   |
| KIT OB-2C130-SVS-50 | 777 mm (30.5") | 496 mm (19.5") | 43621C   |
| KIT OB-2C130-SVS-51 | 788 mm (31")   | 508 mm (20")   | 43622E   |
| KIT OB-2C130-SVS-53 | 813 mm (32")   | 534 mm (21")   | 43623G   |

## A88 - A92

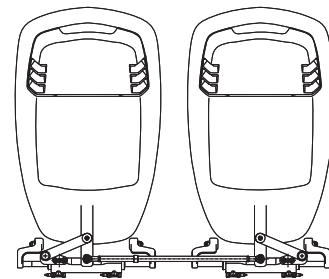
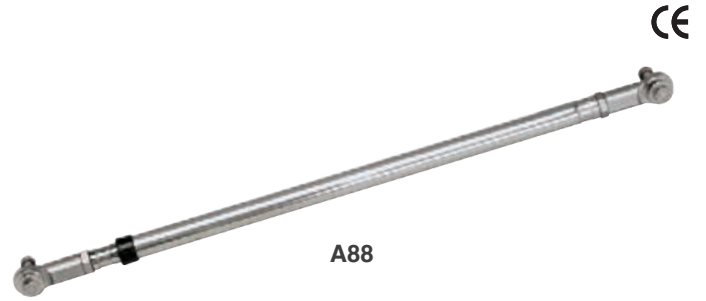
### Tie bars for twin outboard engine

#### A88

Tie bars suitable for all outboard applications with single or dual cylinder **up to 300 hp of maximum power**.  
Electropolished stainless steel ball joint.

- All stainless steel components
- Applicable to twin outboard engines using mechanical steering also
- Adjustable from 650 mm (25.6") to 950 mm (37.4") engine centers

**WARNING:** On those applications where the clearance between engine tiller arms and cowling is not sufficient for the use of the A88, the **A92** tie bar is recommended

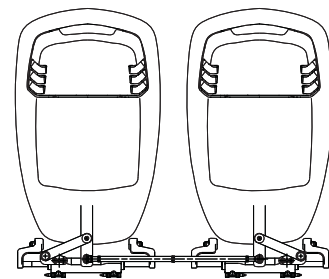


A88 application example

|     |        |   |
|-----|--------|---|
| A88 | 40128E | Tie bar - adjustable from 650 mm (25.6") to 950 mm (37.4") engine centers |
|-----|--------|---|

#### A92

- Easily adjustable before or after installation
- All stainless steel components
- Applicable to twin outboard engines using mechanical steering also
- **A92/700:** Adjustable from 550 mm (21.6") to 700 mm (27.5") engine centers
- **A92/950:** Adjustable from 700 mm (27.5") to 950 mm (37.4") engine centers



A92 application example

|         |        |   |
|---------|--------|---|
| A92/700 | 40892V | Tie bar - adjustable from 550 mm (21.6") to 700 mm (27.5") engine centers |
|---------|--------|---|

|         |        |   |
|---------|--------|---|
| A92/950 | 40893X | Tie bar - adjustable from 700 mm (27.5") to 950 mm (37.4") engine centers |
|---------|--------|---|

**WARNING:** As the tiller arm position varies from engine to engine and the distance between two engines is not predictable, unexpected interferences may occur while tilting. A duly check of the tie bar installation is then strongly recommended. Should you need additional information, please do not hesitate to refer to our Technical Service.

## A96 Tie bars for twin outboard engine/single UC128-OBF or UC130-SVS cylinder

- Suitable for applications with single UC128-OBF or UC130-SVS front mount cylinder
- Allows to tilt the engines independently
- Stainless steel components
- Electropolished stainless steel ball joints
- Also available in semi-assembled bars and brackets

- 2 available different lengths:  
From 26" to 29" engine center  
From 29" to 34.5" engine center



|                     |        |  |
|---------------------|--------|--|
| <b>A96 M/Y-29</b>   | 43496C | From 26" to 29" engine center - Mercury® and Yamaha® engines   |
| <b>A96 M/Y-34.5</b> | 43497E | From 29" to 34.5" engine center - Mercury® and Yamaha® engines |
| <b>A96 S/H-29</b>   | 43897X | From 26" to 29" engine center - Suzuki® and Honda® engines     |
| <b>A96 S/H-34.5</b> | 43898Z | From 29" to 34.5" engine center - Suzuki® and Honda® engines   |

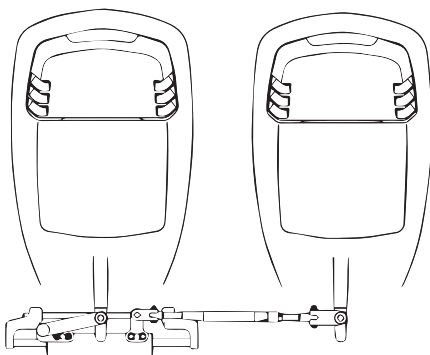
**WARNING:** As the tiller arm position varies from engine to engine and the distance between two engines is not predictable, unexpected interferences may occur while tilting. A duly check of the tie bar installation is then strongly recommended. Should you need additional information, please do not hesitate to refer to our Technical Service.



### A96 TIE BAR APPLICATIONS

**WARNING**

These recommendations should be used as a general reference only. For any further information please contact our Technical Service.



**A96 application example**

| ENGINE   | Power                    |
|----------|--------------------------|
| Mercury® | 135-150-175 Optimax 2T   |
|          | 200-225 Optimax 2T       |
|          | 250 PRO XS               |
|          | 135-150-175 Verado 4T    |
|          | 200 Verado 4T            |
| Yamaha®  | F115-150-200-225-250 4T  |
| Suzuki®  | DF70-80-90 4T            |
|          | DF100-115-140-150-175 4T |
|          | DF200-250-300 DOHC 4T    |
| Honda®   | 115-135-150 OHC BF       |
|          | 200 SOHC BF              |
|          | 225 A6                   |

**NOTE:** Suzuki® engines DF100-115-140 4S require A90 - 40138H tie bar



# A95 - Tie bars for twin outboard engine/dual UC128-OBF or UC130-SVS cylinder



A95 M/Y

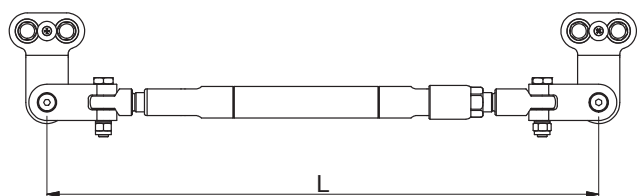


A95 S/H

- Suitable for applications with dual UC128-OBF or UC130-SVS front mount cylinder with the exception of the dual UC128-OBF cylinder with Suzuki DF100-115-140 4S engines. For these applications **A90** - 40138H tie bar is used.
- Allows to tilt the engines independently
- All stainless steel components
- Electropolished stainless steel ball joints
- Also available in semi-assembled bars and brackets

- 2 available different lengths:  
From 26" to 32" engine center  
From 32" to 37.5" engine center

|                     |        |  |
|---------------------|--------|--|
| <b>A95 M/Y-32</b>   | 43409E | From 26" to 32" engine center - Mercury® and Yamaha® engines   |
| <b>A95 M/Y-37.5</b> | 43410N | From 32" to 37.5" engine center - Mercury® and Yamaha® engines |
| <b>A95 S/H-32</b>   | 43901J | From 26" to 32" engine center - Suzuki® and Honda® engines     |
| <b>A95 S/H-37.5</b> | 43902L | From 32" to 37.5" engine center - Suzuki® and Honda® engines   |



ENGINE CENTER DISTANCE:  
 660 mm (26") L= 455 mm (18")  
 813 mm (32") L= 608 mm (24")  
 952 mm (37.5") L= 747 mm (29.5")

## A95 - Tie bars for twin outboard engine/dual UC128-OBF or UC130-SVS cylinder



UC128 + A95



UC130 + A95

**WARNING:** In the applications with dual UC128-OBF or UC130-SVS cylinder it is necessary to order a standard UC128-OBF or UC130-SVS cylinder (link arm attached to the starboard side of the cylinder) and a UC128P-OBF or UC130P-SVS port cylinder (link arm attached to the port side of the cylinder).

UC128 starboard cylinders:

**UC128-OBF/1** - 43231N

**UC128-OBF/2** - 43232R

**UC128-OBF/3** - 43233T

UC128P port cylinders:

**UC128P-OBF/1** - 43234V

**UC128P-OBF/2** - 43235X

UC130 starboard cylinders:

**UC130-SVS/1** - 43225U

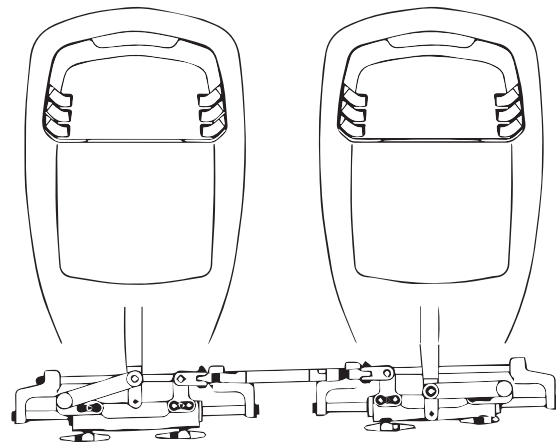
**UC130-SVS/2** - 43226W

**UC130-SVS/3** - 43227Y

UC130P port cylinders:

**UC130P-SVS/1** - 43223P

**UC130P-SVS/2** - 43224S



A95 - application example

**WARNING:** As the tiller arm position varies from engine to engine and the distance between two engines is not predictable, unexpected interferences may occur while tilting.

Checking the cowling clearances with the tie bar at various engine tilt positions and turning angles is required.

Should you need additional information, please do not hesitate to refer to our Technical Service.

## A90 - Tie bar

for twin outboard engine Suzuki® DF100-115-140 4S twin UC128-OBF cylinder



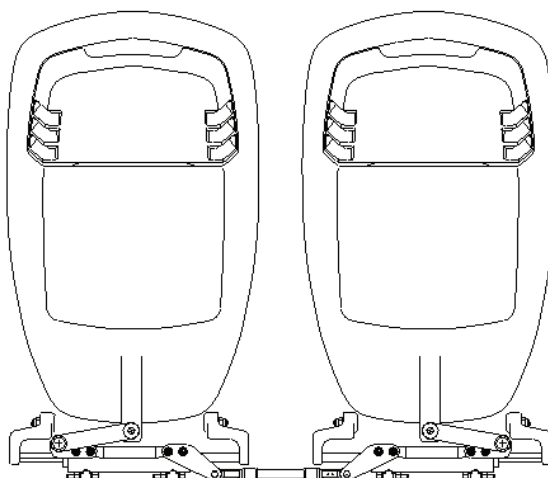
A90

### A90 - 40138H

- Suitable for applications with dual UC128-OBF front mount cylinder
- All stainless steel components
- Electropolished stainless steel ball joints
- Allows to tilt the engines independently
- Applicable to engine centers variable from 660 mm (26") to 950 mm (37.4").



UC128 + A90



A90 - application example

# A97 - Tie bars for triple outboard engine/dual UC128OBF or UC130-SVS cylinder



**A97 M/Y-30**



**A97 S/H-30**



**UC130 + A97**

Suitable for applications with triple outboard engine and dual cylinder UC128-OBF or UC130-SVS  
 • Also available in semi-assembled bars and brackets

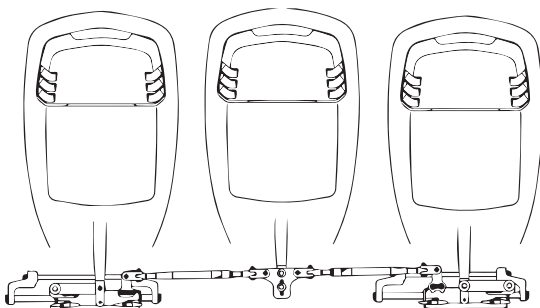
- 2 available different lengths:  
 From 26" to 30" engine center  
 From 30" to 35.5" engine center

|                     |        |  |
|---------------------|--------|--|
| <b>A97 M/Y-30</b>   | 43513Z | From 26" to 30" engine center<br>Mercury® and Yamaha® engines<br>Mercury® bracket included   |
| <b>A97 M/Y-35.5</b> | 43514B | From 30" to 35.5" engine center<br>Mercury® and Yamaha® engines<br>Mercury® bracket included |
| <b>A97 S/H-30</b>   | 43905T | From 26" to 30" engine center<br>Suzuki® and Honda® engines                                  |
| <b>A97 S/H-35.5</b> | 43906V | From 30" to 35.5" engine center<br>Suzuki® and Honda® engines                                |



**MERCURY® BRACKET KIT - 43911M**

Heavy duty triple engine/twin cylinder tie bar kit for use with UC128-OBF or UC130-SVS and UC128P-OBF or UC130P-SVS "Port" version outboard cylinders. These AISI 304 electropolished stainless steel tie bars are easy to install and allow for independent engines trimming with minimal effect on alignment.



**A97 - application example**

| ENGINE   | POWER  |
|----------|--|
| Mercury® | 175/200/225 V6 Fourstroke<br>250/275/300 V8 Fourstroke<br>OPTIMAX V6 |
| Yamaha®  | 200/225/250/300 V6<br>150/175/200 L4                                 |
| Suzuki®  | 200/225/250/300/350 V6/V8<br>150/175/200 L4                          |
| Honda®   | 200/225/250 V6   |

## A98 - Tie bars for quad outboard engine/dual UC128OBF or UC130-SVS cylinder



A98 M/Y



A98 S/H

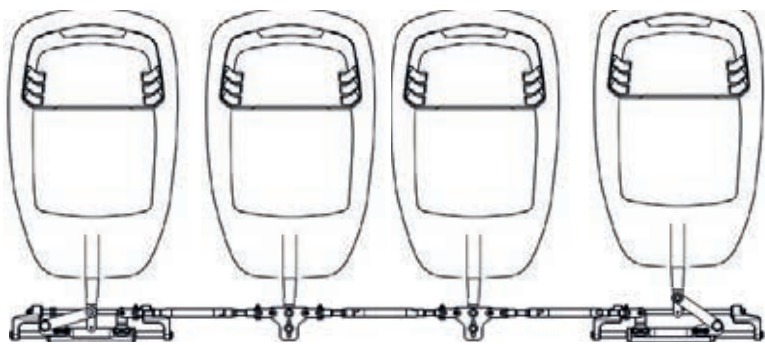


UC128 + A98

Suitable for applications with quad outboard engine and dual cylinder UC128-OBF or UC130-SVS  
 • Also available in semi-assembled bars and brackets  
 From 26" to 32" center engines distance

|                |        |  |
|----------------|--------|--|
| <b>A98 M/Y</b> | 43542G | From 26" to 32" engine center - Mercury® and Yamaha® engines |
| <b>A98 S/H</b> | 43909B | From 26" to 32" engine center - Suzuki® and Honda® engines   |

Heavy duty quad engine/twin cylinder tie bar kit for use with UC128-OBF or UC130-SVS and UC128P-OBF or UC130P-SVS "Port" version outboard cylinders. These AISI 304 electropolished stainless steel tie bars are easy to install and allow for independent engines trimming with minimal effect on alignment.



A98 - application example

| ENGINE   | POWER  |
|----------|--|
| Mercury® | 175/200/225 V6 Fourstroke<br>250/275/300 V8 Fourstroke<br>OPTIMAX V6 |
| Yamaha®  | 200/225/250/300 V6<br>150/175/200 L4                                 |
| Suzuki®  | 200/225/250/300/350 V6/V8<br>150/175/200 L4                          |
| Honda®   | 200/225/250 V6   |



MERCURY® BRACKET KIT - 43911M

### AS-GEN3 - 43918C - Tie bar for Suzuki GEN3 engines



Suitable for applications with Suzuki GEN3 engines with integrated cylinder and Silversteer, Masterdrive and Integra systems

## Tie bars - Connecting bar assemblies without brackets

### CONNECTING BAR ASSEMBLY - 43913C

Connecting bar assembly compatible with:

A96 M/Y-29

A95 M/Y-32

A96 S/H-29

A95 S/H-32



Bars include engine side bracket connectors.

### CONNECTING BAR ASSEMBLY - 43919E

Connecting bar assembly compatible with:

A96 M/Y-34.5

A95 M/Y-37.5

A97 M/Y-35.5

A96 S/H-34.5

A95 S/H-37.5

A97 S/H-35.5



Bars include engine side bracket connectors.

### CONNECTING BAR ASSEMBLY - 43921R

Connecting bar assembly compatible with:

A97 M/Y-30

A98 M/Y (external tie bar)

A97 S/H-30

A98 S/H (external tie bar)



Bars include engine side bracket connectors.

### CONNECTING BAR ASSEMBLY - 43920N

Connecting bar assembly compatible with:

A98 M/Y (central tie bar)

A98 S/H (central tie bar)



Bars include engine side bracket connectors.

## Brackets for tie bars

### CYLINDER SIDE BRACKET FOR TIE BARS - MERCURY® AND YAMAHA® ENGINES - 43912P

Cylinder side bracket compatible with:

A96 M/Y-29

A95 M/Y-32

A97 M/Y-30

A98 M/Y

A96 M/Y-34.5

A95 M/Y-37.5

A97 M/Y-35.5



### CYLINDER SIDE BRACKET FOR TIE BARS - SUZUKI® AND HONDA® ENGINES - 43988A

Cylinder side bracket compatible with:

A96 S/H-29

A95 S/H-32

A97 S/H-30

A98 S/H

A96 S/H-34.5

A95 S/H-37.5

A97 S/H-35.5



### ENGINE SIDE BRACKET FOR A96 M/Y TIE BARS - MERCURY® AND YAMAHA® ENGINES - 43916Y

Engine side bracket compatible with:

A96 M/Y-29

A96 M/Y-34.5



It is necessary to remove the engine side connector from the connecting bar assembly and add the bracket 43916Y.

### ENGINE SIDE BRACKET FOR TIE BARS - MERCURY® AND YAMAHA® (with the exception of A96 M/Y), SUZUKI® AND HONDA® ENGINES - 43917A

Engine side bracket compatible with:

A96 S/H-29

A97 M/Y-30

A98 M/Y

A96 S/H-34.5

A97 M/Y-35.5

A98 S/H

A97 S/H-30

A97 S/H-35.5



### MERCURY® BRACKET KIT - 43911M

Mercury® bracket kit compatible with:

A97 M/Y-30

A98 M/Y

A97 M/Y-35.5



# Tie Bars components selection chart

| Tie bar model | suitable for engines | Tie bar part no. | External connecting bar assembly part no. | Qt | Central connecting bar assembly part no. | Qt | Cylinder side bracket part no. | Qt | Engine or central side bracket part no. | Qt | Mercury® bracket kit | Qt |
|---------------|----------------------|------------------|---|----|--|----|--------------------------------|----|---|----|----------------------|----|
| A96 M/Y-29    | Mercury® / Yamaha®   | 43496C           | 43913C                                    | 1  | -  | -  | 43912P                         | 1  | 43916Y                                  | 1  | -                    | -  |
| A96 M/Y-34.5  | Mercury® / Yamaha®   | 43497E           | 43919E                                    | 1  | -  | -  | 43912P                         | 1  | 43916Y                                  | 1  | -                    | -  |
| A95 M/Y-32    | Mercury® / Yamaha®   | 43409E           | 43913C                                    | 1  | -  | -  | 43912P                         | 2  | -                                       | -  | -                    | -  |
| A95 M/Y-37.5  | Mercury® / Yamaha®   | 43410N           | 43919E                                    | 1  | -  | -  | 43912P                         | 2  | -                                       | -  | -                    | -  |
| A97 M/Y-30    | Mercury® / Yamaha®   | 43513Z           | 43921R                                    | 2  | -  | -  | 43912P                         | 2  | 43917A                                  | 1  | 43911M               | 1  |
| A97 M/Y-35.5  | Mercury® / Yamaha®   | 43514B           | 43919E                                    | 2  | -  | -  | 43912P                         | 2  | 43917A                                  | 1  | 43911M               | 1  |
| A98 M/Y       | Mercury® / Yamaha®   | 43542G           | 43921R                                    | 2  | 43920N                                   | 1  | 43912P                         | 2  | 43917A                                  | 2  | 43911M               | 2  |
| A96 S/H-29    | Suzuki® / Honda®     | 43897X           | 43913C                                    | 1  | -  | -  | 43988A                         | 1  | 43917A                                  | 1  | -                    | -  |
| A96 S/H-34.5  | Suzuki® / Honda®     | 43898Z           | 43919E                                    | 1  | -  | -  | 43988A                         | 1  | 43917A                                  | 1  | -                    | -  |
| A95 S/H-32    | Suzuki® / Honda®     | 43901J           | 43913C                                    | 1  | -  | -  | 43988A                         | 2  | -                                       | -  | -                    | -  |
| A95 S/H-37.5  | Suzuki® / Honda®     | 43902L           | 43919E                                    | 1  | -  | -  | 43988A                         | 2  | -                                       | -  | -                    | -  |
| A97 S/H-30    | Suzuki® / Honda®     | 43905T           | 43921R                                    | 2  | -  | -  | 43988A                         | 2  | 43917A                                  | 1  | -                    | -  |
| A97 S/H-35.5  | Suzuki® / Honda®     | 43906V           | 43919E                                    | 2  | -  | -  | 43988A                         | 2  | 43917A                                  | 1  | -                    | -  |
| A98 S/H       | Suzuki® / Honda®     | 43909B           | 43921R                                    | 2  | 43920N                                   | 1  | 43988A                         | 2  | 43917A                                  | 2  | -                    | -  |

## Liquid Tie Bars

**LTB1** - 42085Z

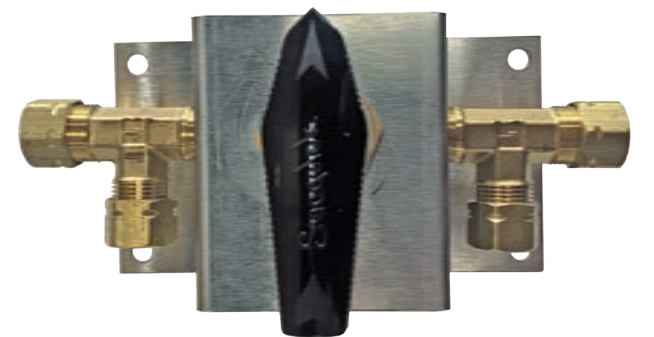
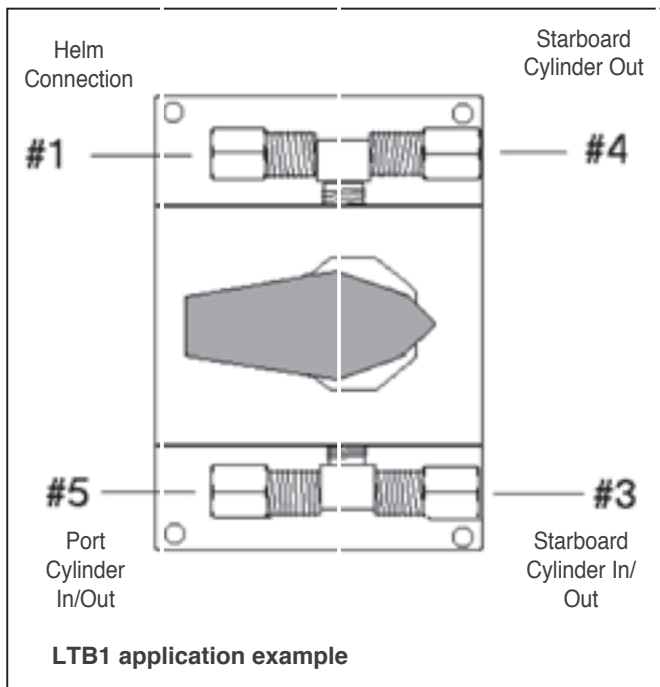
**LTB1N** - 43525G

Liquid Tie Bars for twin engine / twin cylinder applications where a mechanical tie bar is not feasible. Engine centers must be at least 38" wide as engine can periodically misalign. They connect using standard Kit OB or Kit OB/R5.SVS hoses.

The Liquid Tie Bars should not be used on any applications with engine centers less than 36"



LTB1



LTB1N



# Masterdrive™ Power Assisted Outboard Steering System



MasterDrive™ power assisted outboard steering system delivers effortless steering for the most demanding applications, regardless of speed or torque conditions.

## MasterDrive™ System features

- Eliminates torque at the steering wheel
- Three different selectable levels of power give the driver the desired feeling on the wheel (PATENTED).
- Automatically reverts to manual mode in case of power loss.
- High efficiency, low Amp draw, low noise
- The system always running permits immediate control in any sea conditions
- Equipped with safety switch ON/OFF (SMART BUTTON)
- Suitable for dual station installations and for use with autopilot
- Voltage: 12VDC
- CE marked in conformity with ABYC P21, ISO 10592 safety standards, Ignition protected (SAE J-1171 and UNI EN 28846)

| SYSTEM APPLICATIONS                                | MasterDrive™  |
|--|---|
| Max relief valve for the hydraulic steering system | 105 bar   |
| Control unit operation pressure                    | 35 bar  |
| Speed allowed                                      | 60 knots - 65 knots for two engines, dual cylinder, counter rotating propeller applications |



## Components

- 1 single packaged **KIT MD** for single station containing:
  - 1 **UH** Front or tilt mount Main Helm
  - 1 **UPMD** Power Unit, 15' (4,5 m) wiring harness included
  - 1 **UCMD** User Interface
  - 4 **OL 150** bottles of hydraulic oil
- 1 **KIT MD2** for dual station
- 1 **UC130-SVS SilverSteer™** Steering Cylinder (1 UC130-SVS starboard+1 UC130/P-SVS port on dual cylinder applications)
- 2 **KIT OB-SVS: SilverSteer™** high pressure hose kit, helm-power unit connection, complete with preassembled fittings.
- 1 **KIT OB-2C130-SVS: SilverSteer™** high pressure hose kit complete with preassembled fittings for cylinder connection (dual cylinder applications only).
- 1 Tilt mechanism **X66** – 40613 M suitable for Tilt Mount Helm. Tilt range of 48° and five locking positions.
- 1 Dual cylinder application Tie Bar: see selection
- 1 Steering wheel: see selection
- 1 Instruction Manual

# Masterdrive™ Power Assisted Outboard Steering System

## UH - Main Helms

- Available in two different displacement sizes: 32 cc (1.95 cu.in) and 40 cc (2.44 cu.in)
- Front Mount and Tilt Mount versions
- Dual station installation version also available (please refer to MD2 Kit)
- Built-in relief valve
- 3/4" tapered shaft
- Corrosion resistant painted body
- Waterproof

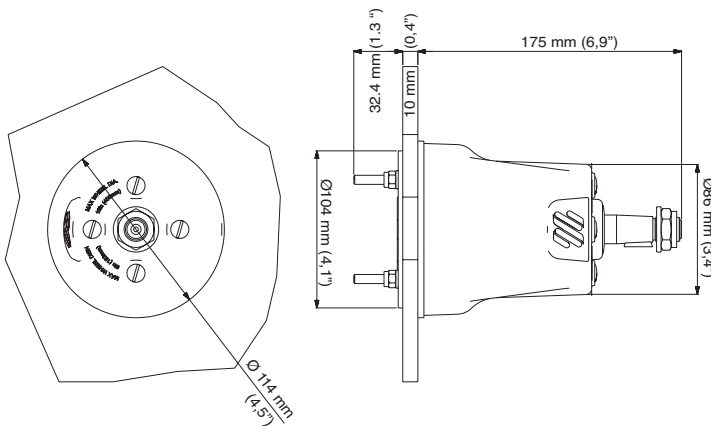


UH

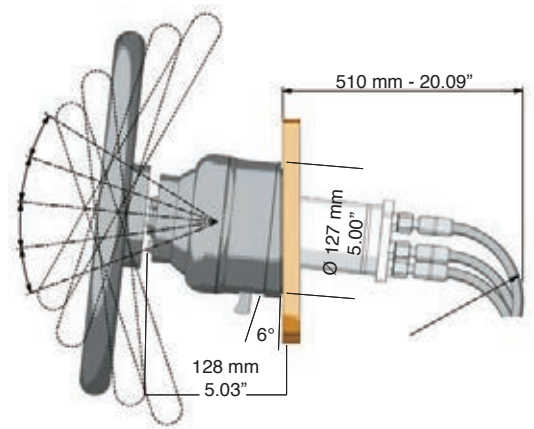
| MODEL  | P. No. | MOUNTING      | DISPLACEMENT/ REVOLUTION | APPLICATION     | No. OF STATIONS | MAXIMUM WHEEL DIA. |
|--------|--------|---------------|--------------------------|-----------------|-----------------|--------------------|
| UH32-F | 42091U | front mount   | 32cc - 1.95 cu.in        | single cylinder | 1               | 406 mm - 16"       |
| UH32-T | 42092W | with X66 tilt | 32cc - 1.95 cu.in        | single cylinder | 1               | 406 mm - 16"       |
| UH40-F | 42093Y | front mount   | 40cc - 2.44 cu.in        | dual cylinder   | 1               | 406 mm - 16"       |
| UH40-T | 42095C | with X66 tilt | 40cc - 2.44 cu.in        | dual cylinder   | 1               | 406 mm - 16"       |

UH32: wheel turns lock-to-lock in single cylinder applications: **3,75**

UH40: wheel turns lock-to-lock in dual cylinder applications: **6**



UH32-F and UH40-F dimensions



UH32-T and UH40-T dimensions

## X66 - Tilt mechanism- 40613M

Tilt mechanism for MasterDrive™ tilt mount helms.  
Tilt range of 48° and five locking positions



X66

MDF-90

## MDF90 90° - two fitting kit for Masterdrive helms (optional)- 42821F

## K81 / K81MM - Intermediate helm position installation kit (optional)

CE UK  
CA

- **K81** - 42435 A  
Kit to permit the MasterDrive™ helm installation at an intermediate dashboard position
- **K81MM** - 42498 B  
Suitable Version for Mercury® Verado™ power-assisted helm.



K81

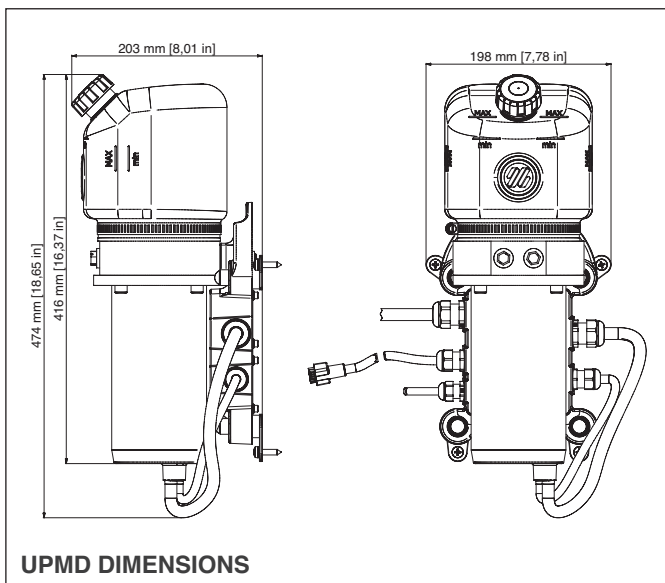


K81MM

## UPMD - Power Unit - 42096E

- 12VDC Motor
- 90° swiveling fittings for easy installation
- Semitransparent 0,5 litre (0.11gal) tank gives immediate oil level vision
- Vented filler plug
- Suitable for applications with autopilot
- Bulkhead or floor mount
- Black galvanized motor case, salt water resistant
- 4,5 m (15') Wiring Harness included
- IP67 waterproof
- Ignition protected (SAE J-1171 and UNI EN 28846)

CE UK  
CA



UPMD

**Note: UPMD-NP 44039C Power Unit** for applications without UCMD user interface - available upon request

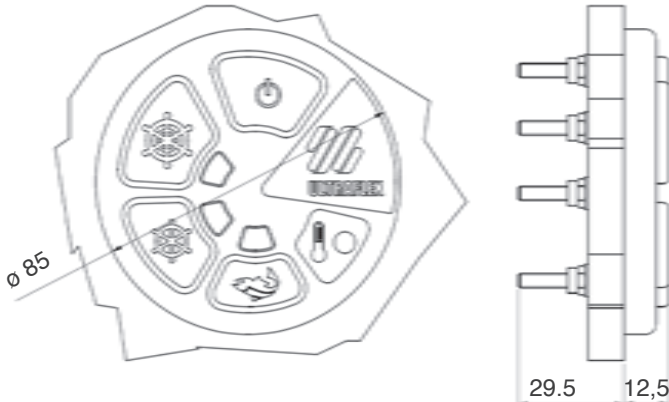
# Masterdrive™ Power Assisted Outboard Steering System

## UCMD - User interface - 42097G

- Safety switch ON/OFF (SMART BUTTON)
- Three different power levels with light indicator (PATENTED)
- Motor temperature visual indicator
- Twin engine key selection included
- Lighted panel for stand-by position
- Plug-in wiring harness
- Suitable for a second station installation
- 7m (23 ft) panel extension cable also available – 42636L



UCMD



UCMD DIMENSIONS

## MD - packaged kit for single station



MasterDrive™ packaged kit contains:

- 1x **UH** Main Helm Pump
- 1x **UPMD** Power Unit, 15' (4,5 m) wiring harness included
- 1x **UCMD** User Interface
- 4 liters **OL 150** hydraulic oil
- Installation Manual

Depending on the helm type, 4 versions are available:

- MD32-F** 42098 J  
32 cc Front Mount Helm included
- MD32-T** 42100S  
32 cc Tilt Mount Helm included
- MD40-F** 42102W  
40 cc Front Mount Helm included
- MD40-T** 42104A  
40 cc Tilt Mount Helm included

The SilverSteer™ UC130-SVS cylinder, the hydraulic hose kits, the **X66** - 40613M tilt mechanism, the tie bar and the wheel are to be ordered separately

7 m (23 ft) Panel extension cable also available - 42636L



MD KIT

## MasterDrive™ Hose kits



| KIT OB-SVS    | LENGTH           | PART No. |
|---------------|------------------|----------|
| KIT OB-SVS-10 | 1,00 m - 3.3 ft  | 43583X   |
| KIT OB-SVS-15 | 1,50 m - 4.9 ft  | 43585B   |
| KIT OB-SVS-20 | 2,00 m - 6.6 ft  | 43584Z   |
| KIT OB-SVS-25 | 2,50 m - 8.2 ft  | 43586D   |
| KIT OB-SVS-30 | 3,00 m - 9.8 ft  | 43587F   |
| KIT OB-SVS-35 | 3,50 m - 11.5 ft | 43588H   |
| KIT OB-SVS-40 | 4,00 m - 13.1 ft | 43589K   |
| KIT OB-SVS-45 | 4,50 m - 14.8 ft | 43590U   |
| KIT OB-SVS-50 | 5,00 m - 16,4 ft | 43591W   |
| KIT OB-SVS-55 | 5,50 m - 18.0 ft | 43592Y   |
| KIT OB-SVS-60 | 6,00 m - 19.7 ft | 43593A   |
| KIT OB-SVS-65 | 6,50 m - 21.3 ft | 43594C   |
| KIT OB-SVS-70 | 7,00 m - 22.9 ft | 43595E   |
| KIT OB-SVS-75 | 7,50 m - 24.6 ft | 43596G   |
| KIT OB-SVS-80 | 8,00 m - 26.3 ft | 43597J   |
| KIT OB-SVS-85 | 8,50 m - 27.8 ft | 43598L   |
| KIT OB-SVS-90 | 9,00 m - 29.5 ft | 43599N   |



KIT OB-SVS

## Kit OB-2C130-SVS - Dual cylinder / dual engine connection kit for UC130-SVS

Two high pressure Kevlar stranded flexible hoses with pre-cripped fittings.  
**Recommended for use with UC130-SVS only.**

**NOTE:** For UC128-SVS applications (previous SilverSteer cylinder model), please contact our Technical Service

| KIT OB-2C130-SVS    | ENGINE CENTERS | HOSE LENGTH    | PART No. |
|---------------------|----------------|----------------|----------|
| KIT OB-2C130-SVS-38 | 660 mm (26")   | 381 mm (15")   | 43615H   |
| KIT OB-2C130-SVS-41 | 686 mm (27")   | 407 mm (16")   | 43616K   |
| KIT OB-2C130-SVS-43 | 711 mm (28")   | 432 mm (17")   | 43617M   |
| KIT OB-2C130-SVS-45 | 724 mm (28.5") | 445 mm (17.5") | 43618P   |
| KIT OB-2C130-SVS-46 | 737 mm (29")   | 457 mm (18")   | 43619S   |
| KIT OB-2C130-SVS-48 | 762 mm (30")   | 483 mm (19")   | 43620A   |
| KIT OB-2C130-SVS-50 | 777 mm (30.5") | 496 mm (19.5") | 43621C   |
| KIT OB-2C130-SVS-51 | 788 mm (31")   | 508 mm (20")   | 43622E   |
| KIT OB-2C130-SVS-53 | 813 mm (32")   | 534 mm (21")   | 43623G   |



KIT OB-2C130-SVS

## KIT OB-2S-SVS - Kit for a second steering station or autopilot for Silversteer™ and MasterDrive™ steering systems

**KIT OB-2S-SVS - 43415Z**

**Components:**

- 2x T fittings
- 4x 1/4 NPT 9/16-24 UNEF straight fittings
- TU95 hose x10 m (32 ft)
- 1x KIT OB-SVS-50 part No. 41290 V
- 1x non-vented cap



KIT OB-2S-SVS

# Masterdrive™ Power Assisted Outboard Steering System

## MD2 - packaged kit for dual station

Master Drive™ MD2 packaged kit for dual station contains:

- 1x **UHD** Secondary helm pump
- 1x **UCMD** User interface
- 1x **74162W** - 23 ft (7 m) electric cable for the second station communications
- **OL 150** 1 liter of hydraulic oil
- 1x **70957S** - 3/8" straight fitting
- 2x **70831T** - 3/8" T fittings
- Installation Manual

Depending on the helm type, 4 versions are available:

- MD2 32-F** - 42610S  
32 cc Front Mount Helm included
- MD2 32-T** - 42611U  
32 cc Tilt Mount Helm included
- MD2 40-F** - 42520R  
40 cc Front Mount Helm included
- MD2 40-T** - 42612W  
40 cc Tilt Mount Helm included



| MODEL          | P. No. | MOUNTING      | DISPLACEMENT/<br>REVOLUTION | APPLICATION     | No. OF<br>STATIONS | MAXIMUM<br>WHEEL DIA. |
|----------------|--------|---------------|-----------------------------|-----------------|--------------------|-----------------------|
| <b>UHD32-F</b> | 42615C | front mount   | 32cc - 1.95 cu.in           | Single cylinder | 2                  | 406 mm - 16"          |
| <b>UHD32-T</b> | 42616E | with X66 tilt | 32cc - 1.95 cu.in           | Single cylinder | 2                  | 406 mm - 16"          |
| <b>UHD40-F</b> | 42094A | front mount   | 40cc - 2.44 cu.in           | Dual cylinder   | 2                  | 406 mm - 16"          |
| <b>UHD40-T</b> | 42617G | with X66 tilt | 40cc - 2.44 cu.in           | Dual cylinder   | 2                  | 406 mm - 16"          |

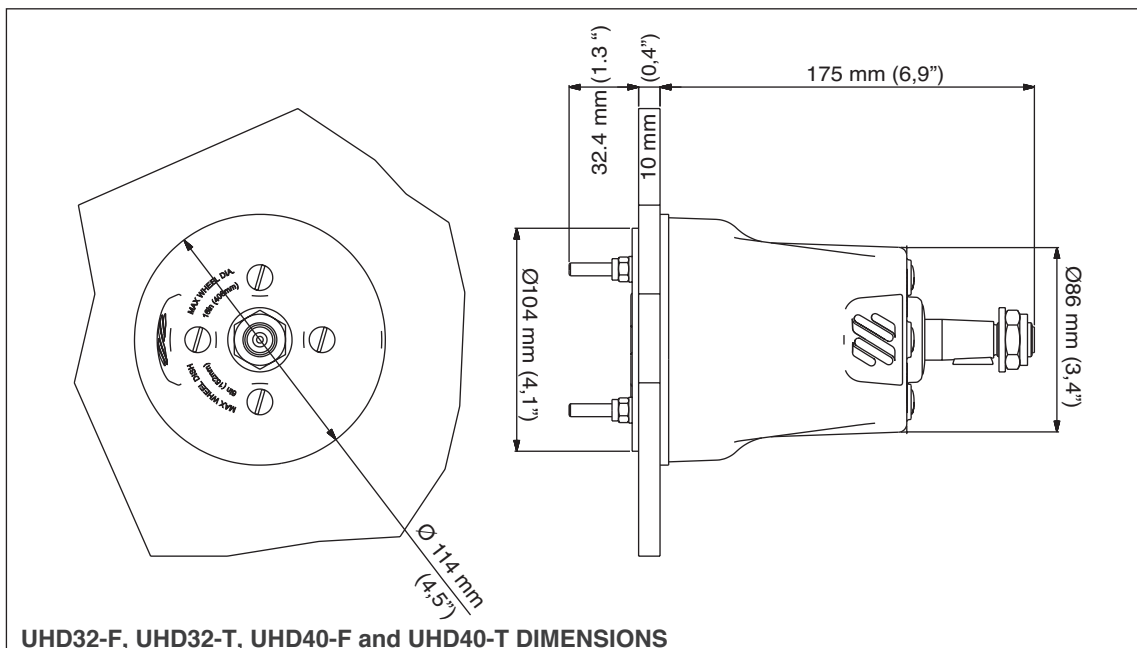
### To order separately:

- 1x Kit OB-SVS with length equal to the distance between the main helm pump and the secondary helm pump
- 2x Kits OB-SVS: select the desired length

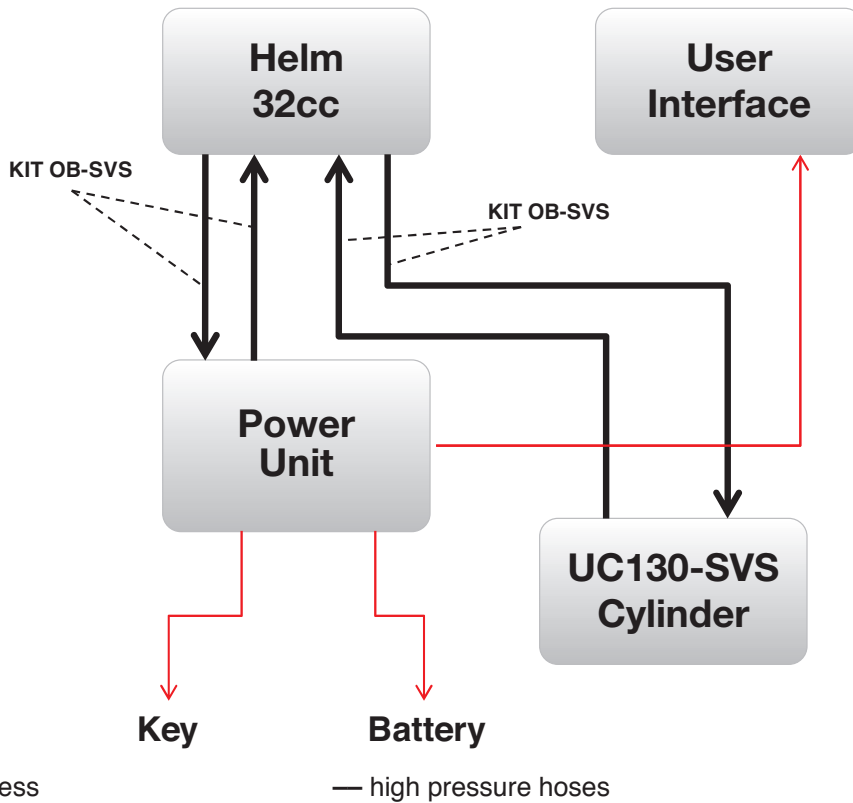
For dual cylinder applications, order:

- 1x KIT OB-2C130-SVS: select the desired length.

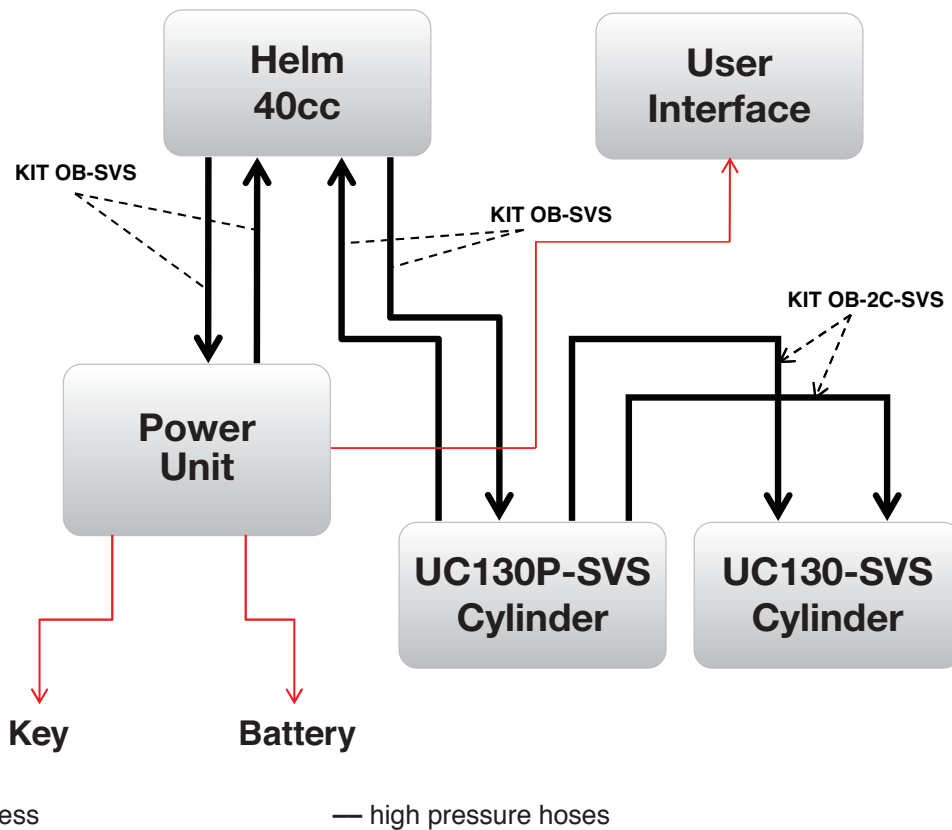
The tilt mechanism **X66** – 40613M and the wheel are to be ordered separately.



Single cylinder single station application



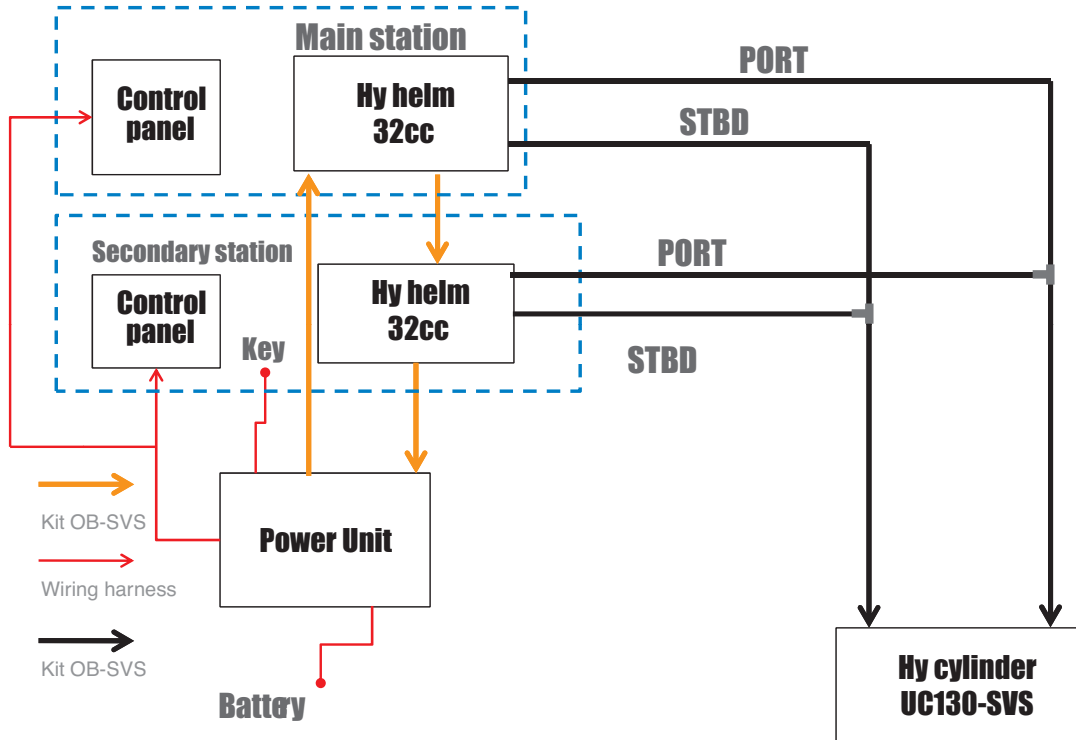
Dual cylinder single station application



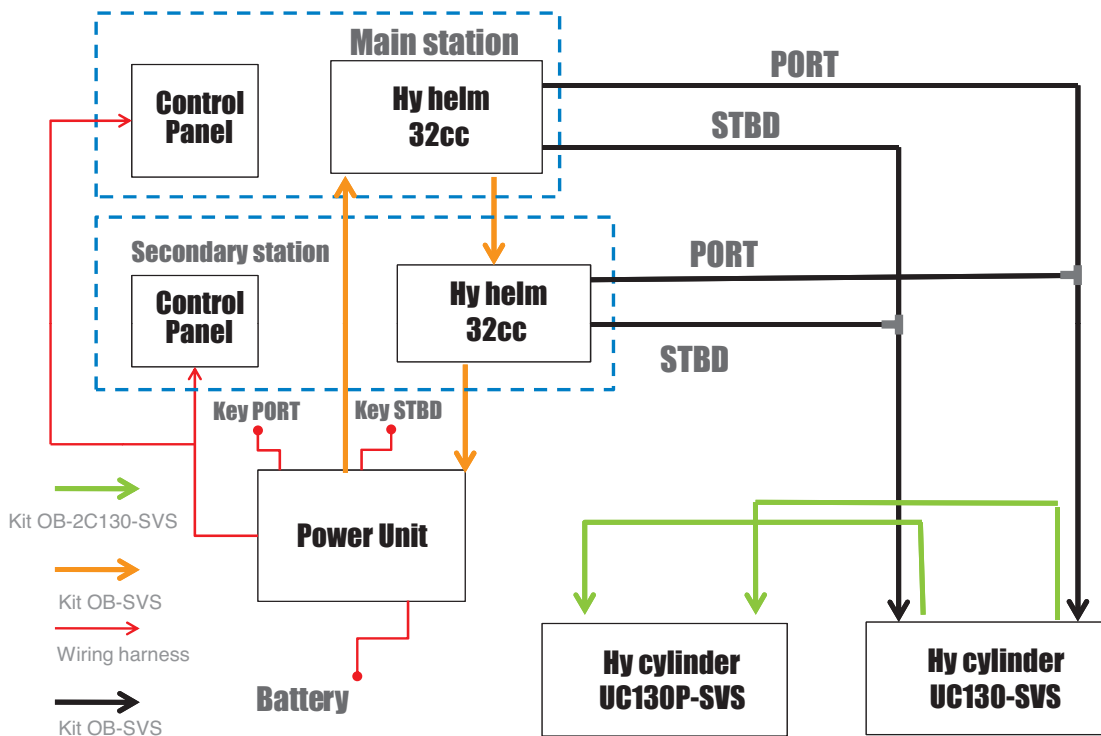


# Masterdrive™ Power Assisted Outboard Steering System

## Single cylinder dual station application



## Dual cylinder dual station application



**Warning:**  
MasterDrive™ system is intended for use with SilverSteer™ UC130-SVS cylinders only

| APPLICATION  | COMPONENTS  | PART NUMBER  | Q.TY                                 |
|--|---|--|--------------------------------------|
| Single engine single cylinder  | KIT MD32-F packaged MasterDrive™ kit includes 32cc front mount helm UC130/1-SVS SilverSteer™ cylinder (or UC130/2-SVS)<br>KIT OB-SVS hydraulic hose kit<br>Steering wheel   | 42098 J<br>43225 U (43226 W)<br>specify length<br>wheel selection  | 1<br>1<br>1<br>1                     |
|  | KIT MD32-T packaged MasterDrive™ kit includes 32cc tilt mount helm UC130/1-SVS SilverSteer™ cylinder (or UC130/2-SVS)<br>KIT OB-SVS hydraulic hose kit<br>X66 tilt mechanism<br>Steering wheel  | 42100 S<br>43225 U (43226 W)<br>specify length<br>40613M<br>wheel selection  | 1<br>1<br>1<br>1<br>1                |
| Dual engine single cylinder  | KIT MD32-F packaged MasterDrive™ kit includes 32cc front mount helm UC130/1-SVS SilverSteer™ cylinder (or UC130/2-SVS)<br>KIT OB-SVS hydraulic hose kit<br>Steering wheel<br>A96 tie bar  | 42098 J<br>43225 U (43226 W)<br>specify length<br>wheel selection<br>tie bar selection   | 1<br>1<br>1<br>1<br>1                |
|  | KIT MD32-T packaged MasterDrive™ kit includes 32cc tilt mount helm UC130/1-SVS SilverSteer™ cylinder (or UC130/2-SVS)<br>KIT OB-SVS hydraulic hose kit<br>X66 tilt mechanism<br>Steering wheel<br>A96 tie bar   | 42100 S<br>43225 U (43226 W)<br>specify length<br>40613M<br>wheel selection<br>tie bar selection   | 1<br>1<br>1<br>1<br>1<br>1           |
| Dual engine dual cylinder  | KIT MD40-F packaged MasterDrive™ kit includes 40cc front mount helm UC130/1-SVS SilverSteer™ cylinder (or UC130/2-SVS)<br>UC130P/1-SVS SilverSteer™ port cylinder (or UC130P/2-SVS)<br>KIT OB-SVS hydraulic hose kit<br>KIT OB-2C130-SVS hydraulic hose cylinder connection kit<br>Steering wheel<br>A95 tie bar                      | 42102 W<br>43225 U (43226 W)<br>43223 P (43224 S)<br>specify length<br>specify length<br>wheel selection<br>tie bar selection            | 1<br>1<br>1<br>1<br>1<br>1<br>1      |
|  | KIT MD40-T packaged MasterDrive™ kit includes 40cc tilt mount helm UC130/1-SVS SilverSteer™ cylinder (or UC130/2-SVS)<br>UC130P/1-SVS SilverSteer™ port cylinder (or UC130P/2-SVS)<br>KIT OB-SVS hydraulic hose kit<br>KIT OB-2C130-SVS hydraulic hose cylinder connection kit<br>X66 tilt mechanism<br>Steering wheel<br>A95 tie bar | 42104 A<br>43225 U (43226 W)<br>43223 P (43224 S)<br>specify length<br>specify length<br>40613 M<br>wheel selection<br>tie bar selection | 1<br>1<br>1<br>1<br>1<br>1<br>1<br>1 |
| <b>For a second station add:</b><br><b>KIT MD2 for dual station</b><br><b>KIT OB-SVS hydraulic hose kit</b><br><b>KIT OB-2C130-SVS (for use with dual cylinder only)</b> |   | <b>specify kit</b><br><b>specify length</b><br><b>specify length</b>   | 1<br>2<br>1                          |

**NOTE:**  
On request, Power Unit wiring harness can be cut to length required 7 m (23 ft) Panel extension cable also available - 42636L

# UC133-IOB / UC132-OBS Sterndrive cylinders

## UC133-IOB - Sterndrive Cylinder



- Balanced cylinder: the number of turns lock to lock is equal port to starboard or vice-versa
- This side mount cylinder features a turning nut for a fast and easy installation to the engine tube (PATENTED)



APPLICATIONS: not recommended for use in installations where the boat speed exceeds 55 mph (48 knots)  
Not intended for use in racing application

## UC132-OBS - Side Mount Cylinder

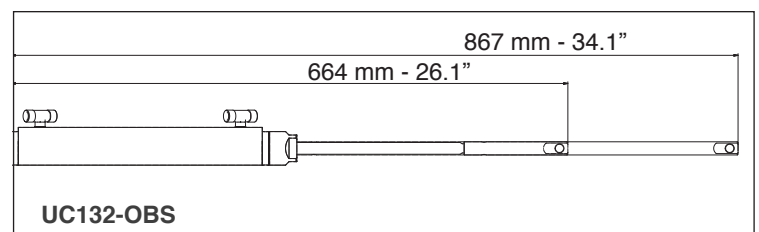
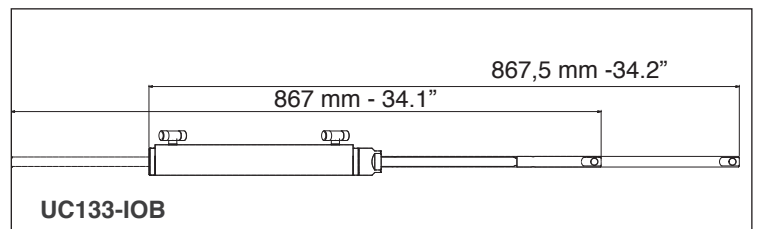
- UC132-OBS Unbalanced: the wheel number of turns lock-to-lock is not equal port to starboard and vice-versa
- This side mount cylinder features a turning nut for a fast and easy installation to the engine tube (PATENTED)
  - Clearance required at the engine tube side: 375 mm (14.76")



APPLICATIONS: not recommended for use in installations where the boat speed exceeds 55 mph (48 knots) (60 mph (52 knots) for dual cylinder / dual engines installations)  
Not intended for use in racing applications

**WARNING:** UC132-OBS cylinder is not intended for use with 105 Bar (1500 PSI) SilverSteer series helms.

| SPECIFICATIONS            | UC133-IOB - 39429 M<br>Balanced | UC132-OBS - 39430 W<br>Unbalanced |
|---------------------------|---------------------------------|-----------------------------------|
| Volume                    | 132 cc - 8 cu. in               | 132 / 163 cc -<br>8 / 9.95 cu. in |
| Torque                    | 66 kgm -<br>- 5738 lbs. in      |                                   |
| Output force              | 464 kg -1023 lbs                | 464 / 574 kg<br>- 1023 / 1265 lbs |
| Inside diameter           | 32 mm - 1.25"                   | 32 mm - 1.25"                     |
| Stroke                    | 203 mm - 8"                     | 203 mm - 8"                       |
| 3/8" (9,5 mm)<br>Fittings | For high pressure<br>flex hose  | For high pressure<br>flex hose    |



## Applications

**WARNING** These recommendations should be used as general reference only and they apply to factory stock sterndrives only. In doubt, contact a qualified installation technician.

| ENGINE     | YEAR    | MODEL       | STERNDRIVE CYLINDERS    |           |                       |           |
|------------|---------|-------------|-------------------------|-----------|-----------------------|-----------|
|            |         |             | non power assist engine | see notes | power assisted engine | see notes |
| MERCUISER® | To date | ALPHA       | UC133-IOB               | 1, 3      | UC132-OBS             | 2         |
|            | To date | BRAVO ONE   | UC133-IOB               | 1, 3      | UC132-OBS             | 2         |
|            | To date | BRAVO TWO   | UC133-IOB               | 1, 3      | UC132-OBS             | 2         |
|            | To date | BRAVO THREE | UC133-IOB               | 1, 3      | UC132-OBS             | 2         |
| VOLVO®     | To date | 275         | UC168-I                 |           | N/D                   |           |
|            | To date | 280         | UC133-IOB               | 1, 3, 4   | UC132-OBS             | 2         |
|            | To date | 290         | UC133-IOB               | 1, 3, 4   | UC132-OBS             | 2         |
|            | To date | DP-E        | UC133-IOB               | 1, 3, 5   | UC133V-IOB            |           |
|            | To date | DP-G        | N/A                     |           | UC133V-IOB            |           |
|            | To date | DP-S        | N/A                     |           | UC132-OBS             | 2         |
| YANMAR®    | To date | ZT350       | N/A                     |           | UC132-OBS             | 2         |

- Balanced cylinder** the number of turns lock to lock is equal port to starboard or vice-versa
- Unbalanced cylinder** the number of turns lock to lock is not equal port to starboard or vice-versa
- Clearance required at the engine tube side: 21.2" (540 mm).**
- ULTRAFLEX hydraulic cylinder** can be installed as an alternative to a mechanical steering system only.
- The Volvo P. No. 872388 adaptor fitting is required for the installation.**

**NOTE:** For applications with sterndrive engines not listed above, please contact our Technical Service.

## Order guide

**NOTE:** 3/8" or 10 mm diameter copper tubing can be used as an alternative tubing for plumbing the systems. For these applications a fitting kit – KIT 95 or KIT 100 – is required.

| Turn lock to lock: Balanced 4.7 - Unbalanced 4.7/5.8<br>Max rudder torque: 66 kgm - 5738 lbs. in |                   |     |   |
|--|-------------------|-----|---|
| Components   | Model             | Qty | For additional station add:<br>1 UP28 helm pump,<br>1 KIT OB-2S fitting kit,<br>1 KIT OB hose Kit,<br>extra OL 150,<br>1 steering wheel |
| Helm pump  | UP28              | 1   |   |
| Cylinder   | see application   | 1   |   |
| Hose kit   | KIT OB            | 1   |   |
| Oil  | OL 150            | 3   |   |
| Steering wheel   | (Wheel selection) | 1   |   |
| Turn lock to lock: Balanced 4 - Unbalanced 4/5<br>Max rudder torque: 66 kgm - 5738 lbs. in       |                   |     |   |
| Components   | Model             | Qty | For additional station add:<br>1 UP33 helm pump,<br>1 KIT OB-2S fitting kit,<br>1 KIT OB hose Kit,<br>extra OL 150,<br>1 steering wheel |
| Helm pump  | UP33              | 1   |   |
| Cylinder   | see application   | 1   |   |
| Hose kit   | KIT OB            | 1   |   |
| Oil  | OL 150            | 3   |   |
| Steering wheel   | (Wheel selection) | 1   |   |

# Bulkhead hose kits

## R5 - R5SS Bulkhead strain relief hose kit

R5 kit distributes strain from bends in hose. It features a water tight gripper fitting and a bulkhead fitting flange for hose protection.

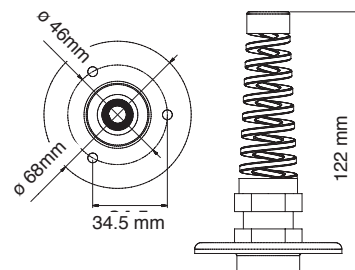
|      |        |   |
|------|--------|---|
| R5   | 39510U | Bulkhead hose kit                             |
| R5SS | 42419C | Bulkhead hose kit with stainless steel flange |



R5



R5SS



R5 DIMENSIONS

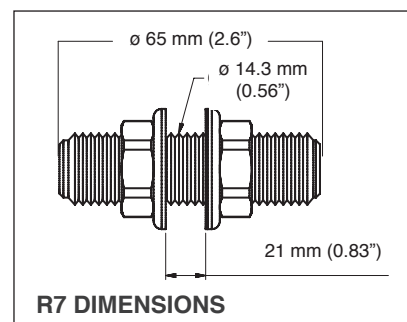
## R7 - 3/4" Bulkhead fitting kit

3/4" bulkhead fitting kit for single cylinder installation. 2 assemblies as illustrated per kit.

|    |        |                           |
|----|--------|---------------------------|
| R7 | 40819J | 3/4" bulkhead fitting kit |
|----|--------|---------------------------|



R7 KIT



R7 DIMENSIONS

## R8 - Dual thru-hull hose kit

Connection flange available in three different colours

|      |        |                                   |
|------|--------|-----------------------------------|
| R8B  | 41299P | Connection flange - black         |
| R8W  | 41300V | Connection flange - white         |
| R8CH | 41301X | Connection flange - chrome plated |



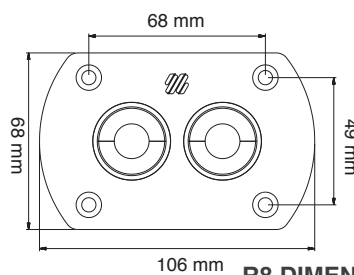
R8B



R8W



R8CH



R8 DIMENSIONS

## R9 Bulkhead kit for dual hose with preassembled fittings

Connection flange available in three different colours

|      |        |                                   |
|------|--------|-----------------------------------|
| R9B  | 43165C | Connection flange - black         |
| R9W  | 43167G | Connection flange - white         |
| R9CH | 43166E | Connection flange - chrome plated |



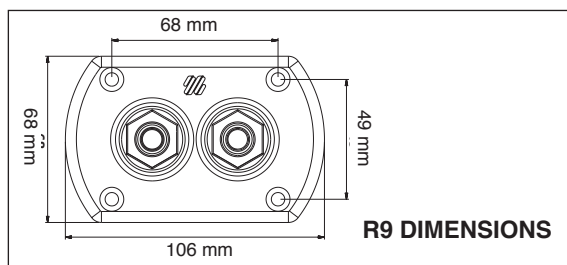
R9B



R9W



R9CH



R9 DIMENSIONS

## K18 - Kit for autopilot applications with GOTECH™

K18 - 43414X

### Components:

- 2x T fittings
- 8x reusable fittings for TU 1/4
- 3x 1/4 NPT 9/16-24 UNEF straight fittings
- 1x 1/8 NPT 9/16-24 UNEF straight fitting
- TU1/4 hose x10 m (32 ft)
- TU95 hose x5 m (16 ft)



K18

## KIT OB-2S-5/16 - Kit for a second steering station or autopilot for Hydraulic steering systems with 5&16" (TU 5/16) hose

KIT OB-2S-5/16 - 43401M

### Components:

- 2x T fittings
- 8x reusable fittings for TU5/16
- 4x 1/4 NPT 9/16-24 UNEF straight fittings
- 2x 1/8 NPT 9/16-24 UNEF straight fitting
- TU95 hose x10 m (32 ft)
- TU5/15 hose x10 m (32 ft)
- 1x non-vented cap



KIT OB-2S-5/16

## KIT OB-2S-SVS - Kit for a second steering station or autopilot for SILVERSTEER™ e MASTERDRIVE™ steering systems

KIT OB-2S-SVS - 43415Z

### Components:

- 2x T fittings
- 4x 1/4 NPT 9/16-24 UNEF straight fittings
- TU95 hose x10 m (32 ft)
- 1x KIT OB-SVS-50 part No. 41290 V
- 1x non-vented cap



KIT OB-2S-SVS

## Tubing - accessories

### Hoses, fittings, bend restrictors for installation and integration with autopilot

|                    |                            |   |
|--------------------|----------------------------|---|
| <b>TU1/4</b>       | 42573N                     | 1/4" tubing for outboard engines applications with Gotech™ only. Available per metre  |
| <b>TU5/16</b>      | 41305F<br>42574R<br>41389R | 5/16" nylon tubing recommended for outboard engines applications and fittings OB-F5/16<br>Available per metre (41305F), 50 m (164 ft) coils (42574R) and 150 m (492 ft) coils (41389R). |
| <b>OB-F1/4</b>     | 42656T                     | Two reusable fittings featuring turning nut for use with 1/4" hydraulic hose for Gotech™ only.  |
| <b>OB-F5/16</b>    | 42670L                     | Two reusable fittings featuring turning nut for use with 5/16" hydraulic hose and connection for 3/8" fitting   |
| <b>KIT 2M-5/16</b> | 41822C                     | Kit with 2 bend restrictors 5/16"   |
| <b>TU95</b>        | 70701D                     | 3/8" nylon tubing. It is not recommended in the applications where the total tubing run exceeds 50 ft (15 m).<br>Not recommended for use with UC128-OBF and UC130-SVS cylinders         |



OB-F1/4



OB-F5/16



KIT 2M-5/16

### Accessories

#### OL 150 - 42398X:

Hydraulic oil sold in 1 litre (0.26 gallons) bottle

- Hydraulic oil: ISO VG 15
- Solidification point: <- 30 °C
- Contamination according to NAS1638 ≤ 8



OL 150

#### KIT F - 39664Y:

Remote fill adapter for rear mount and tilt mount pumps.



KIT F

**61BCA** - 71004K

3/8" (9,5 mm) nut and sleeve assembly, brass

**61CA** - 71013L

3/8" (9,5 mm) nut and sleeve assembly, nickel plated

**AF45-130** - 43412T

45° adjustable fitting for UC130-SVS cylinder

**AF45** - 41284A

45° adjustable fitting, helm and tube. Suitable for SilverSteer™ system only.

**AF90** - 74144U

90° adjustable fitting, nickel plated brass, for standard pumps (except UP18), UP20 - 42955 D and SilverSteer™ pumps.

**SF38** - 39471L

3/8" (9,5 mm) connector fitting, helm and tube

**SF12** - 41306H

straight fitting, helm and tube Ø 12 mm

**EF38** - 39472N

3/8" (9,5 mm) 90° fitting for UP18 and for helms part number:

|                   |                   |
|-------------------|-------------------|
| 37939U - UP20 F   | 40153D - UP20 T   |
| 39618R - UP25 F   | 41273V - UP25NV F |
| 39443F - UP28 F   | 39422X - UP33 F   |
| 41275Z - UP33NV F | 39415A - UP39 F   |
| 41276B - UP45 F   | 40803T - UP25 T   |
| 39445K - UP28 T   | 39446M - UP33 T   |
| 39447P - UP39 T   | 41227D - UP45 T   |
| 39970F - UP28 R   | 39969X - UP33 R   |
| 39444H - UP39 R   | 41278F - UP45 R   |

**TF916** - 76828M

9/16" (14.3 mm) x 24 union T for tube

**VF38** - 39503X

3/8" (9,5 mm) bleed T for cylinder, brass

**VFN38** - 39925A

3/8" (9,5 mm) bleed T for cylinder, nickel plated

**VFNO38** - 40868Y

3/8" (9,5 mm) adjustable bleed T for cylinder, nickel plated, for all cylinders except UC81-OBF and UC94-OBF with serial number prior to 30 1156 000001

**VFN916** - 43835Y

9/16" (14.3 mm) x 24 for dual station, nickel plated

**QCFN** - 41307K

Quick connect bleed T for cylinder, nickel plated, for all cylinders except UC94-OBF with serial number prior to 30 1156 000001

**QCFN94** - 41308M

Quick connect bleed T for cylinder, nickel plated with DN5 quick connect, for UC94-OBF cylinders with serial number prior to 30 1156 000001

**SF916** - 43155Z

9/16" (14.3 mm) nickel plated brass straight fitting

**EXT-F916** - 43156B

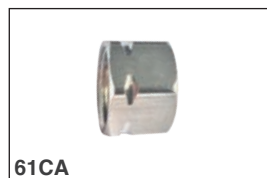
9/16" (14.3 mm) nickel plated brass male adapter to 9/16" (14.3 mm) female

**SF916-14** - 43301H

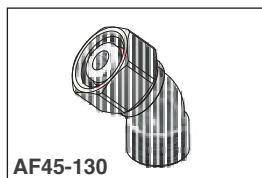
9/16" (14.3 mm) straight fitting to 1/4 NPT



61BCA



61CA



AF45-130



AF45



AF90



SF38



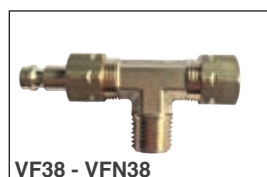
SF12



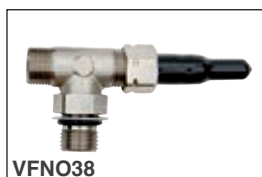
EF38



TF916



VF38 - VFN38



VFNO38



VFN916



QCFN



QCFN94



SF916



EXT-F916



SF916-14



# BubbleBuster™

## Portable device for automatic filling and purging of hydraulic systems

Reduce time and simplify purging hydraulic steering systems with the self contained and portable BubbleBuster™ purging unit.

Attach the hoses using the quick connect fittings to the helm and cylinder and with the push of a button the BubbleBuster™ begins cycling oil throughout the entire systems free of air.

The system features a ZeroEmulsion pump, 1 gal capacity reservoir and is compatible with competing helms and cylinders.

Zero Emulsion Effect



BubbleBuster™

| MODEL | P. No. | DESCRIPTION  |
|-------|--------|--|
| BB    | 41666R | BubbleBuster™ - complete set                                 |
| KBE1  | 41682N | Extension kit  |
| KBD2  | 41703U | Double cylinder purging kit                                  |
| KH94  | 41899R | Connection kit for UC94-OBF cylinder with old fittings       |
| KH128 | 41900W | Connection kit for cylinders with old fittings (except UC95) |

## Components included

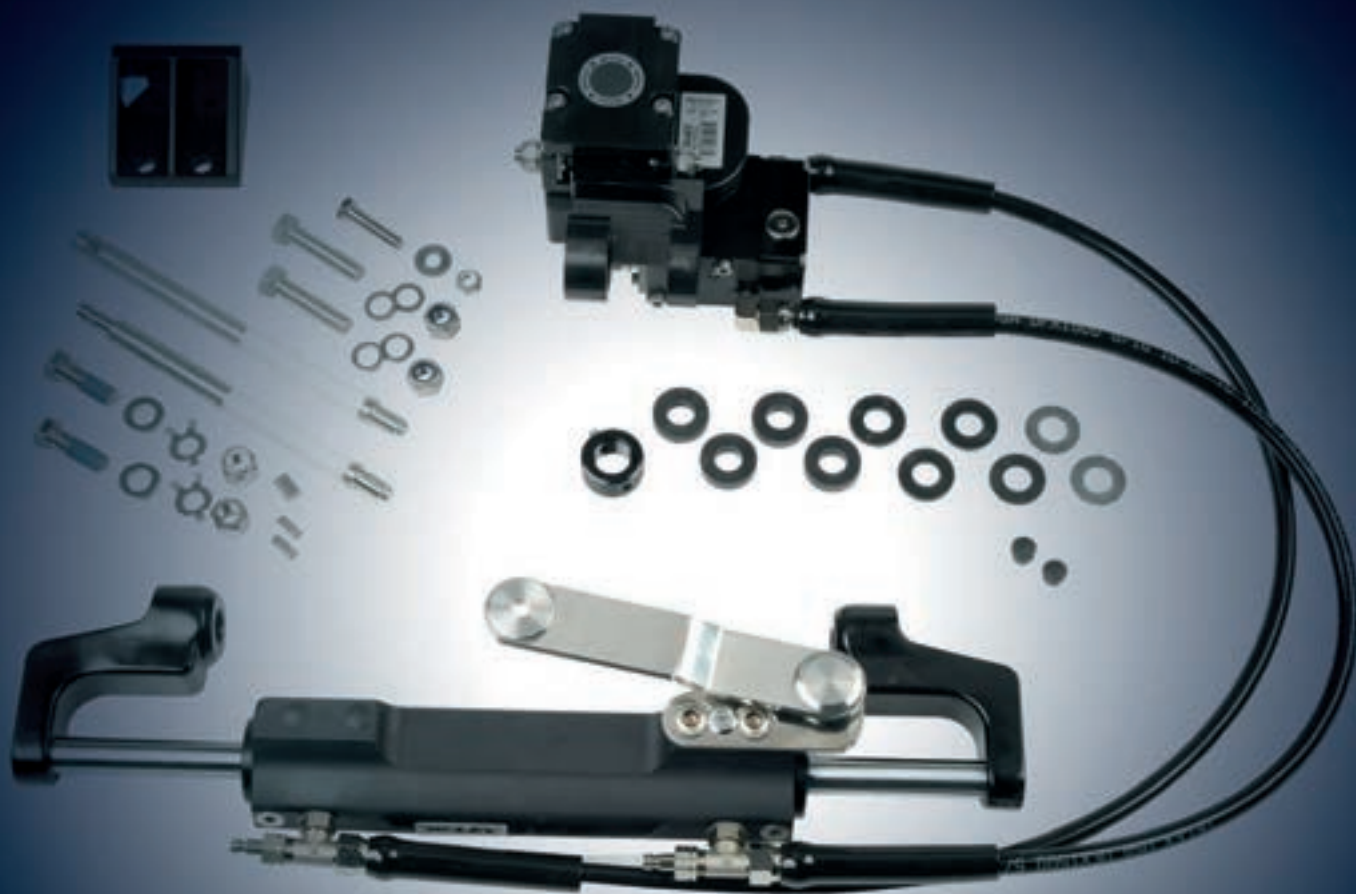
- No. 1 motor pump with safety valve , switch and 5 litres (1 gal) tank included, it allows the purging of 2 hydraulic steering systems before refilling.
- 12V electric motor with thermal protection. Current absorption 8 A
- No. 1 4m (13') electric harness with alligator clips for fast connection with the battery.
- No. 1 double spiralled hose to connect to helm pump. Extended length: 6m (19,6')
- No. 1 double spiralled hose to connect to cylinder. Extended length: 6m (19,6')
- No. 1 utility tray

## Spare parts

- **42593V** - Helm purging fitting
- **42595Z** - Fittings replacement kit

## Optional components

- **KBE1** No. 1 double spiralled hose to connect to cylinder 15 m (49') extension )
- **KBD2** No. 1 kit for double cylinder systems filling and purge
- **KH94** Connection kit for UC94-OBF cylinders with old bleeders (not fast connect)
- **KH128** Connection kit for cylinders (except UC95) with old bleeders (not fast connect)



## ZTF - Zero Torque Feedback - Tiller steering systems

Today's four stroke outboard engines are generating high torque loads which can make tiller steered boats difficult to steer. The Ultraflex® ZTF Tiller systems eliminate propeller torque at the tiller handle when the driver is not actively changing direction.

Using a patented hydraulic valve, the propeller torque is locked from reaching the tiller handle unless the driver pushes or pulls on the end of the handle, at which point the valve opens and allows for active steering movements.

Now you can drive your tiller steered boat in comfort, saving your energy for reeling in fish rather than effort to just get to your favorite fishing spot.

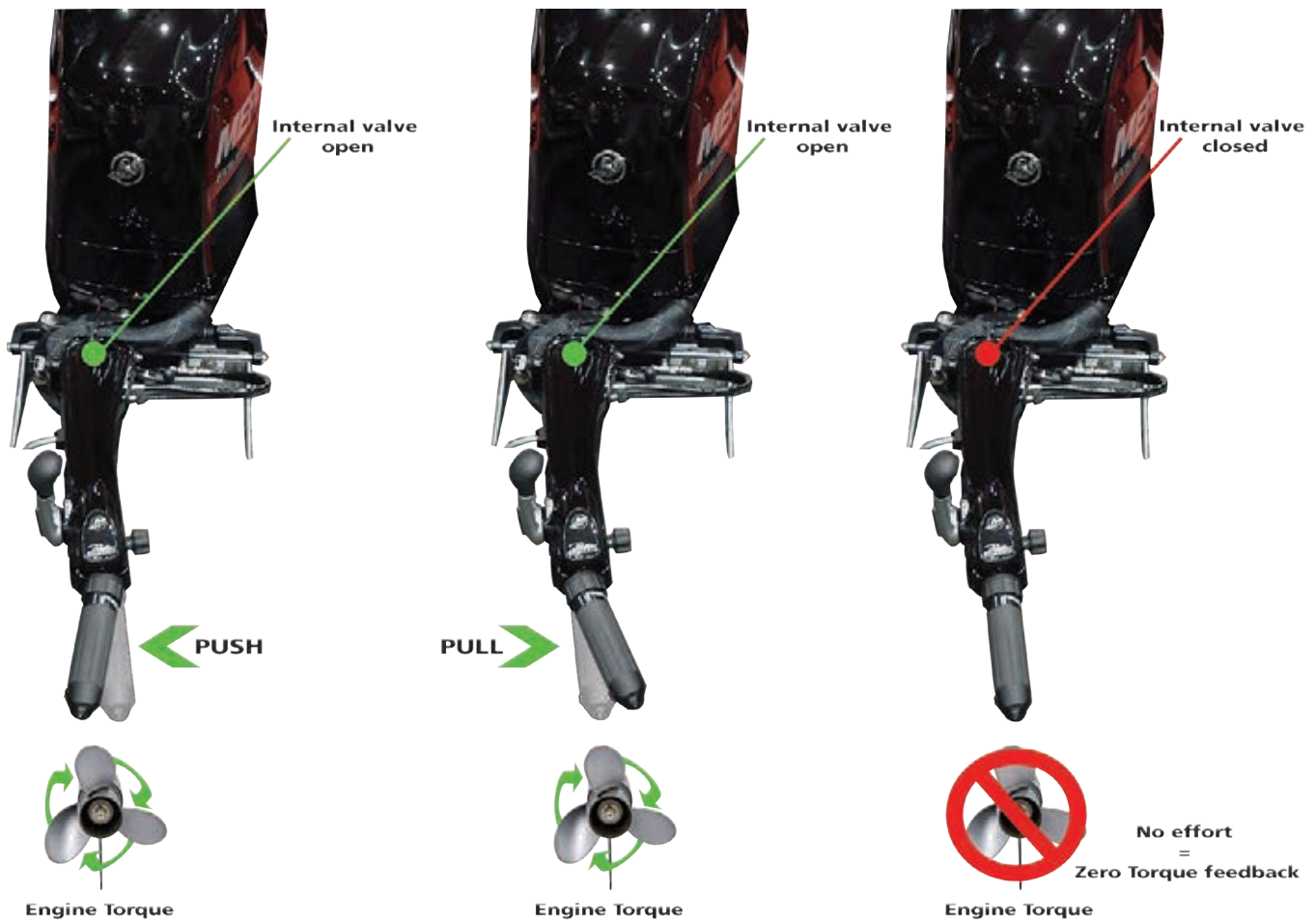
### How the ZTF tiller system works

Push on the end of the tiller handle and the valve opens allowing you to steer.

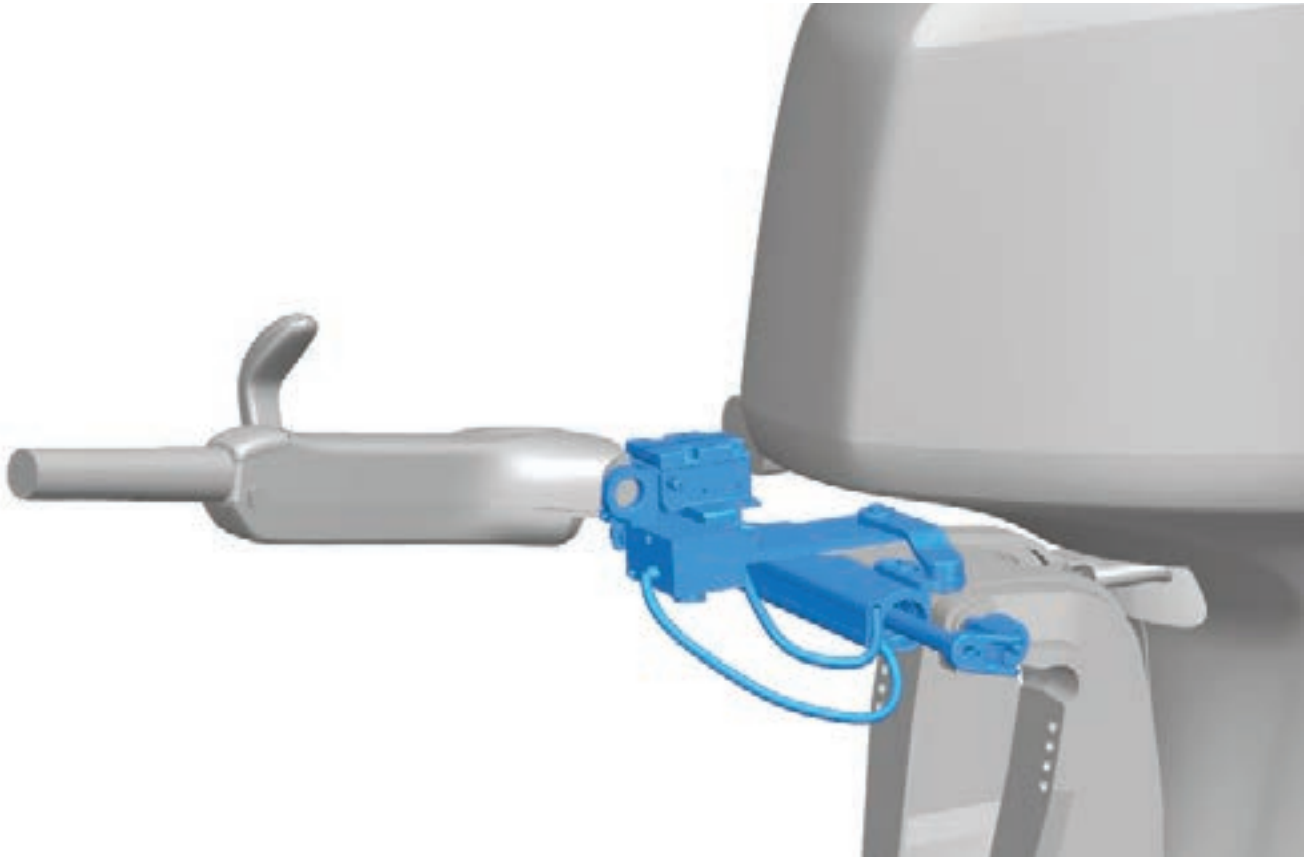
Pull on the end of the tiller handle and the valve opens allowing you to steer.

Rest your hand on the tiller and the valve remains closed, locking out the propeller torque and providing comfortable boat operation.

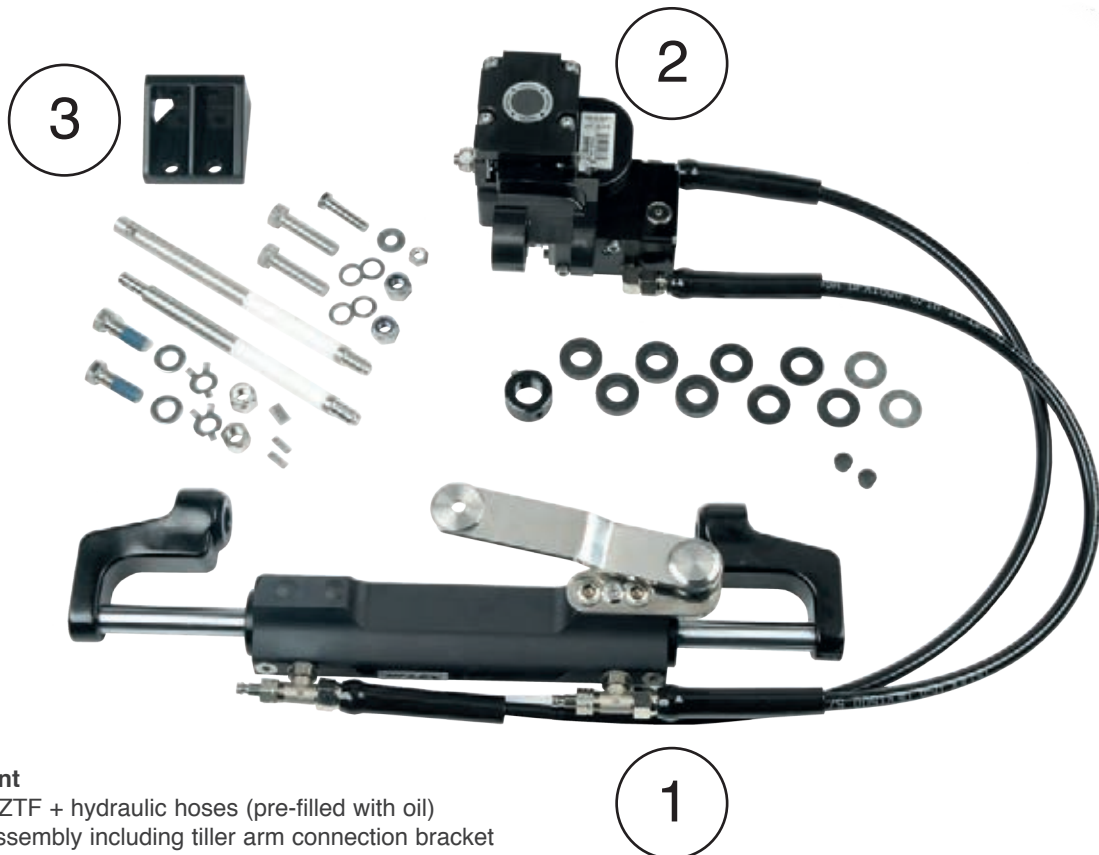
**WARNING!** This system is not intended to be used in place of the boat operator. Operator must maintain contact with the Tiller Handle during operation.



## ZTF - Zero Torque Feedback - Tiller steering systems



ZTF - Zero torque feedback tiller steering systems



### Component

- 1- UC128-ZTF + hydraulic hoses (pre-filled with oil)
  - 2- Valve assembly including tiller arm connection bracket
  - 3- Engine connection bracket
- Other tools:  
No. 2 Ultraflex® push-pull cables for throttle and shift

## ZTF - Zero Torque Feedback - Tiller steering systems

### MERCURY® Zero Torque Feedback tiller steering system

#### Tiller 40-115 Mercury®

- Rated up to 115 hp
- Easy steering
- Reduced operator fatigue

**Note:** Mercury® Tiller Arm not included



**ZTF Tiller M2** 43880D For use with 75 hp to 115 hp EFI 4 stroke, from 2014 to date

### YAMAHA® Zero Torque Feedback tiller steering system

- Rated up to 200 hp Four Stroke
- Easy steering
- Reduced operator fatigue

**Note:** Yamaha® Tiller Arm not included



**ZTF Tiller Y1** 43877R For use with Yamaha® 90 hp - 115 hp - 130 hp - 2015 to date

**ZTF Tiller Y2** 43878T For use with Yamaha® 150 hp - 175 hp - 200 hp

### SUZUKI® Zero Torque Feedback tiller steering system

- Rated up to 200 hp Four Stroke
- Easy steering
- Reduced operator fatigue

**Note:** Suzuki® Tiller Arm not included

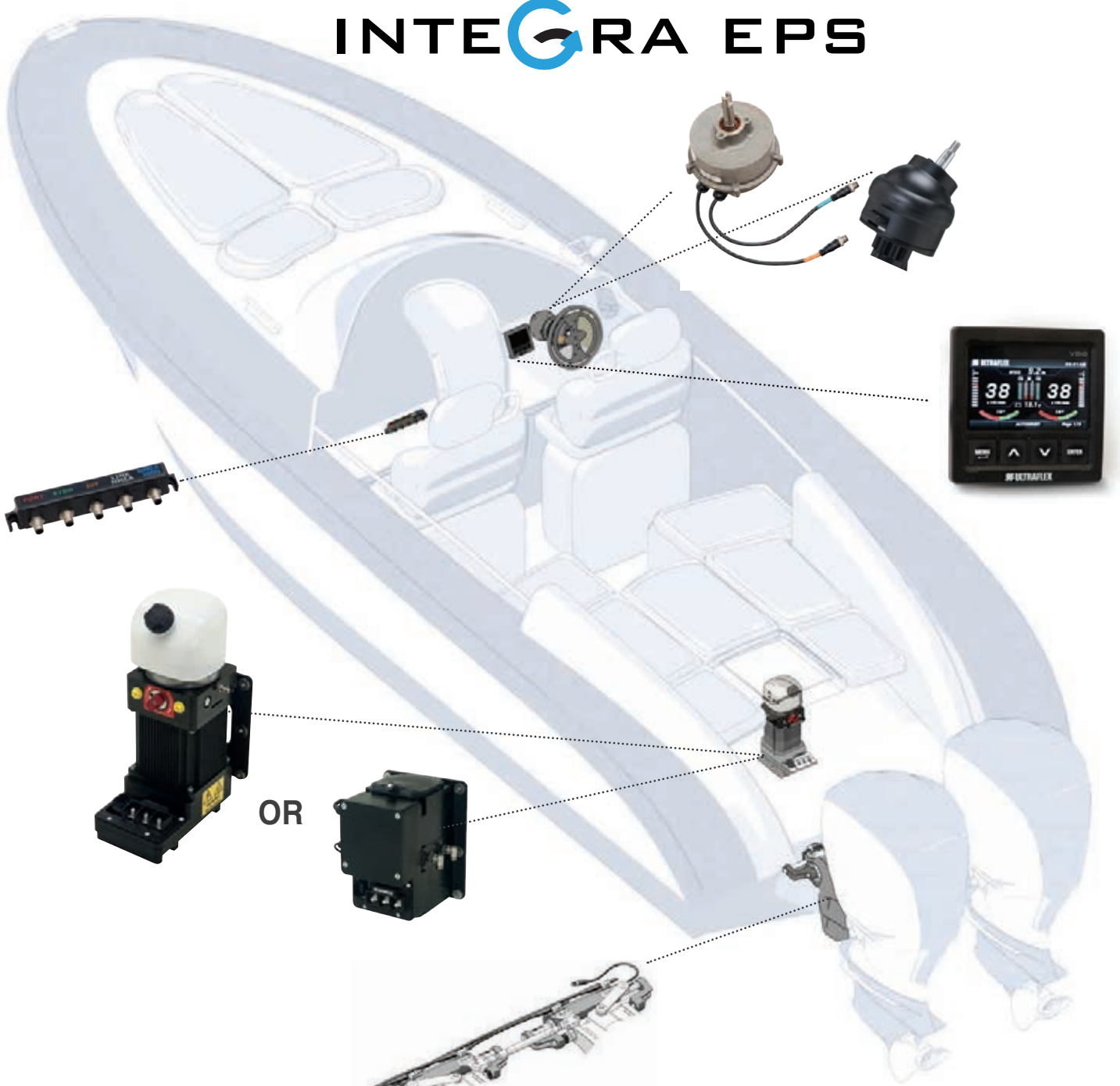


**ZTF Tiller S2** 43879V For use with Suzuki® DF150A - DF175A - DF200A



**Integra™ EPS**  
 Outboard electronic power steering systems

# INTEGRA EPS

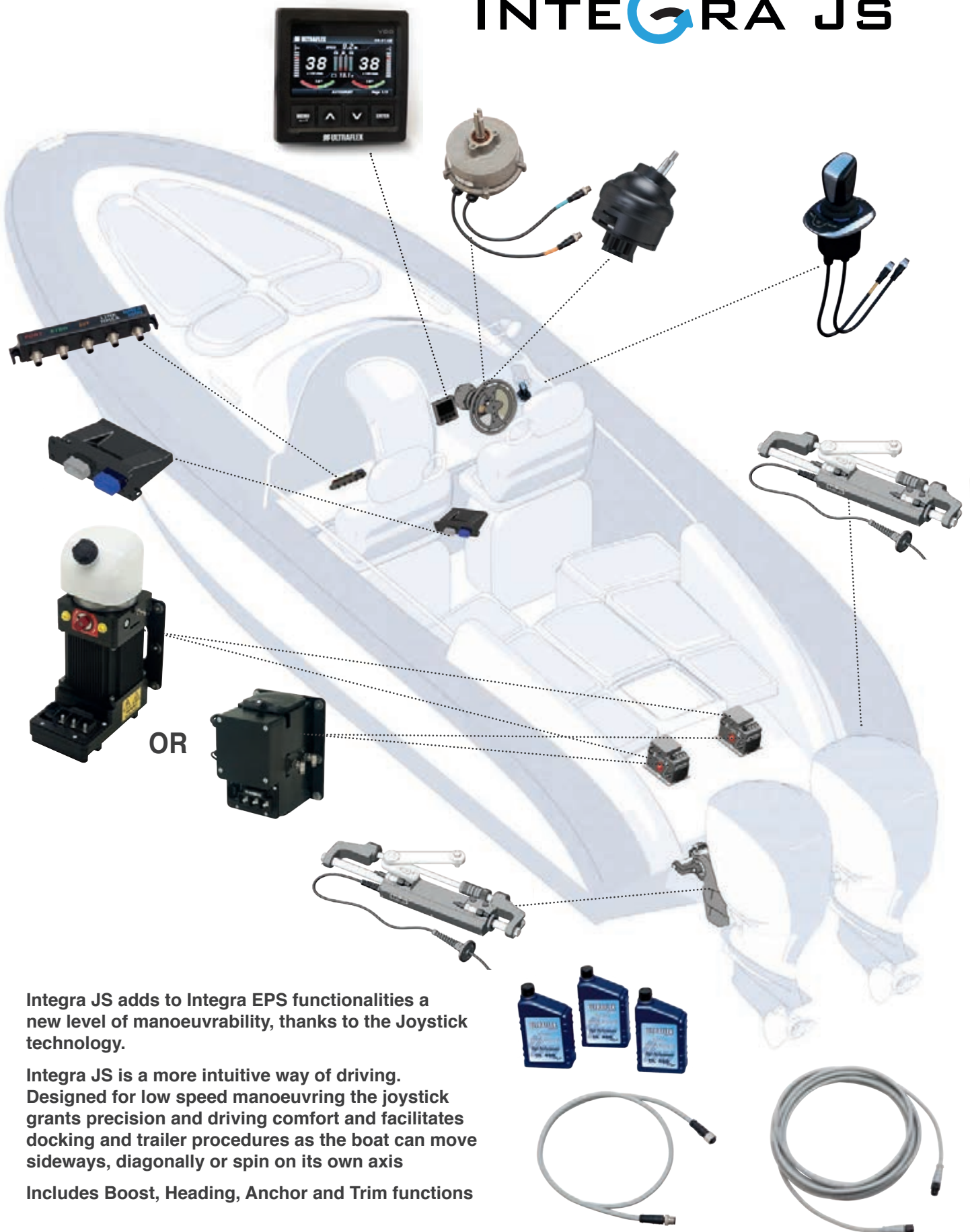


OR



- Great efficiency and quickest response
- Extremely silent
- Redundant waterproof Can bus connection system - Garmin® and Raymarine® Autopilot direct interface
- Very low amperage draw at idle
- Customizable driving mode: Autocruise and Autosport
- Veratron® color display
- Easy installation (simplified configuration)

# INTEGRA JS



- Integra JS adds to Integra EPS functionalities a new level of manoeuvrability, thanks to the Joystick technology.
- Integra JS is a more intuitive way of driving. Designed for low speed manoeuvring the joystick grants precision and driving comfort and facilitates docking and trailer procedures as the boat can move sideways, diagonally or spin on its own axis
- Includes Boost, Heading, Anchor and Trim functions



# Integra™

## Outboard electronic power steering systems

| Model                             | UIP                                      | UIPC               |
|-----------------------------------|--|--------------------|
| Operating voltage                 | 10,8 V - 14,4 V                          |                    |
| Average current draw              | 5 A                                      | 2 A                |
| Temperature range                 | -25°C / +77°C                            |                    |
| Nominal voltage                   | 12 VDC                                   |                    |
| Max flow                          | 4,8 l/min @ 60 bar (cw & ccw)            | 4,0 l/min @ 50 bar |
| Relief valve                      | 120 bar - 1740 PSI                       | 105 bar - 1500 PSI |
| Pump unit motor                   | 12 VDC Brushless                         |                    |
| Outboard engine installations     | Single, dual, triple or quad             |                    |
| N. of engines per motor pump unit | up to 4                                  | up to 2            |
| Autopilot direct interface        | Garmin® Raymarine® Furuno® Simrad®       |                    |
| Customizable Driving mode         | Autocruise and Autosport                 |                    |
| Customizable wheel effort         | Yes                                      |                    |
| Exceeds Safety Standards          | ISO 25197, ISO 10592, ABYC P21, P24, P27 |                    |
| Ignition Protected SAE J1171      | Yes                                      |                    |

### System components

| System components  | Integra EPS™ | Integra JS™ |
|--|--------------|-------------|
| <b>UIH</b> - Tilt mount electronic helm  | ✓            | ✓           |
| <b>UJS</b> - Integra JS joystick   | -            | ✓           |
| <b>UGW</b> - Integra JS Gateway  | -            | ✓           |
| <b>X52</b> - Adjustable steering wheel tilt mechanism  | ✓            | ✓           |
| <b>UID</b> - Veratron®-VDO® color display  | ✓            | ✓           |
| <b>BCM</b> - Body Control Module – CAN Bus network module  | ✓            | ✓           |
| <b>UIP</b> - High Power electro-hydraulic power unit   | ✓            | ✓           |
| <b>UIPC</b> - Compact electro-hydraulic power unit   | ✓            | ✓           |
| <b>UC120E</b> - Heavy duty starboard cylinder with integrated sensor                                 | ✓            | ✓           |
| <b>UC120EP</b> - Heavy duty port cylinder with integrated sensor                                     | ✓            | ✓           |
| <b>UC120</b> - Heavy duty starboard hydraulic cylinder for multiple engine applications with tie bar | ✓            | ✓           |
| <b>UC120P</b> - Heavy duty port hydraulic cylinder for multiple engine applications with tie bar     | ✓            | ✓           |
| <b>Tie bar</b> - Please refer to Integra tie bar section   | ✓            | ✓           |
| <b>KIT OB-SVS</b> - High pressure Hydraulic hoses with pre crimped fittings                          | ✓            | ✓           |
| <b>CAN Bus wires</b> - Can Bus power wires   | ✓            | ✓           |
| <b>KBD3</b> - Purging kit with twin spiralled hoses and connectors (optional)                        | ✓            | ✓           |
| <b>OL460</b> - 3 one litre hydraulic oil bottles   | ✓            | ✓           |

### Integra EPS and Integra JS key benefits

- **Redundant electronic steering system**, a reliable way to reduce steering effort, tuning your driving and enhancing steering experience.
- **Powerful output, great efficiency and quickest response** in any situation, thanks to the brushless motor of the pump unit and to the electronic management
- **Extremely silent**
- **Low amperage system**
- **Veratron® colour display**
- **Customizable driving mode**: the user can choose between Autocruise and Autosport driving mode
- **Autopilot direct interface**: **Garmin®** Reactor™ 40 Steer-by-wire, **Raymarine®** EV-2 SBW, **Furuno®** Navipilot 300, **Simrad®** AP44 e Ap48 con NAC-D
- **Easy installation**, thanks to the simplified configuration and the CAN bus connection system.
- **Customizable wheel effort**.
- Wheel effort is programmed to change with engine RPM.
- **Tilt range of 48° and 5 locking positions**, thanks to the **X52** tilt mechanisms
- **Easy boat handling**, thanks to the adjustable speed sensitive turns lock to lock
- **The pump unit** is available in **2 versions** to choose from, based on the selected application: **UIP** (High Power electro-hydraulic power unit) and **UIPC** (Compact electro-hydraulic power unit) and **can be positioned anywhere** on the boat
- It's possible to have a no tie-bar configuration, using two motor pump units
- **Automatic Power Selector** to ensure optimal voltage
- Designed for single, dual, triple or quad outboard engines
- Available for multiple steering stations applications
- It can handle up to 4 engines with a single power unit
- Heavy duty steering cylinder with embedded CAN bus position sensor

### Integra JS additional functionalities

- **Integra JS** adds to Integra EPS functionalities a new level of manoeuvrability, thanks to the **Joystick technology**
- **Integra JS** is a more **intuitive way of driving**. Designed for **low speed manoeuvring**, the Joystick grants precision and driving comfort and **facilitates docking and trailer procedures** as the boat can move sideways, diagonally or spin on its own axis
- **Integra JS Joystick** includes several functions: **Boost** function used to momentarily increase engine rpm if you need instant thrust, **Heading** function, that gives the ability to maintain the set course, **Anchor** function, to maintain boat position via GPS connection and the **Trim** function. **Anchor** function needs the presence of **Veratron® Nav Sensor** - part No. **20201Z**



# Integra™

## Outboard electronic power steering systems

### UIH1 - Electronic helm

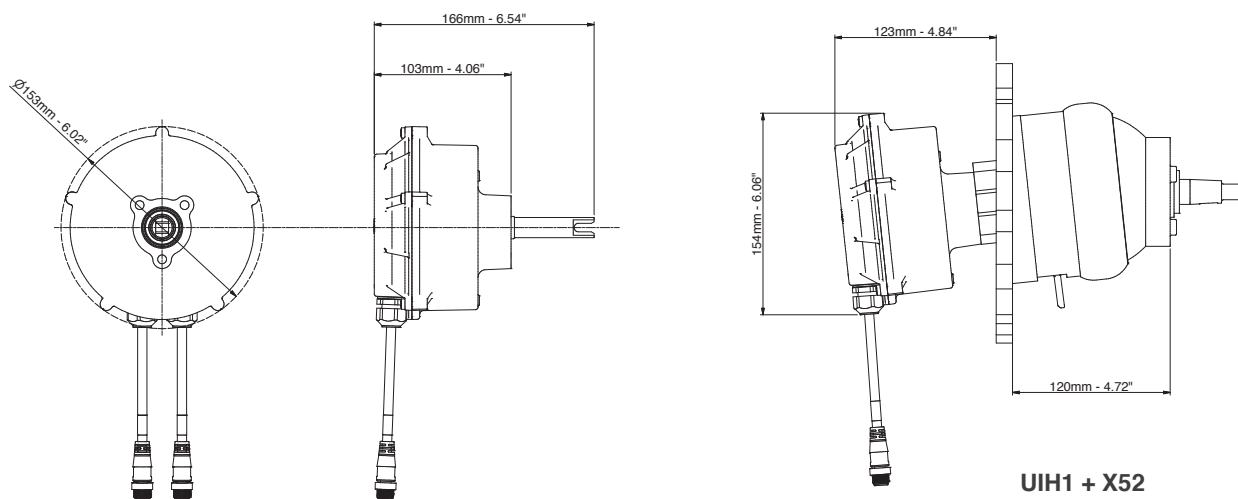
- Electronic steering helm tilt mount (X52 - 39250U)
- Easy to install, no oil or hydraulic hoses

**UIH1** - 43536M - first station electronic helm.

**UIH2** - 43537P - second station electronic helm

**UIH3** - 43538S - third station electronic helm

- Resistant to harsh marine conditions
- Steering wheel turns can be set by the user.
- Variable steering wheel resistance according to boat speed
- Instant responsiveness
- Redundant architecture with 2 CAN bus channels



UIH1 + X52

### UJS - Integra JS joystick

- Power: turning on the station
- BOOST switch on the handle: momentarily increases engine rpm if you need instant thrust, it is active as long as the switch is pressed
- Signal lights: indicate if the joystick is in Neutral
- Heading: ability to maintain the set course
- UP and Down trim switches: to connect to the boat's trims
- **Anchor** function: to maintain boat position via GPS connection. Anchor function needs the presence of **Veratron® Nav Sensor** - part No. **20201Z**
- CAN Bus communication by means of 2 DeviceNet® connectors

|     |        |                     |
|-----|--------|---------------------|
| UJS | 43922T | Integra JS joystick |
|-----|--------|---------------------|



UJS

## UGW-S - Suzuki® Gateway

Device to control throttle and inverter in Suzuki outboard engines equipped with Suzuki Precision Control 1 (SPC1). It allows management of the trims directly from the joystick.

|        |        |                 |
|--------|--------|-----------------|
| UGW-S  | 43934A | Suzuki® Gateway |
| UGW-S1 | 43991N |                 |
| UGW-S2 | 43990L |                 |



UGW-S

## UID - Veratron® color display

- Veratron® **color Display** - user adjustable brightness
- **Customizable driving mode:** the user can choose between **Autocruise** and **Autosport** driving mode
- **Customizable wheel effort.**
- **Automatic wheel effort setting** with engine RPM
- Multiple steering station applications

|             |        |                               |
|-------------|--------|-------------------------------|
| UID - black | 43539U | UID Veratron® display - black |
| UID - white | 43825V | UID Veratron® display - white |



UID

### Display visual information:

Boat speed

Engine RPM

Engine temperature

Rudder angle display

Trim angle display

Fuel level

Battery voltage



## BCM (Body Control Module) - Can Bus Network Module

- Waterproof CAN bus connection system
- Direct interface with Garmin® and Raymarine® autopilot
- Very compact dimensions

|     |        |                        |
|-----|--------|------------------------|
| BCM | 43540C | Can Bus network module |
|-----|--------|------------------------|



BCM

# Integra™

## Outboard electronic power steering systems

### UIP and UIPC - Power units

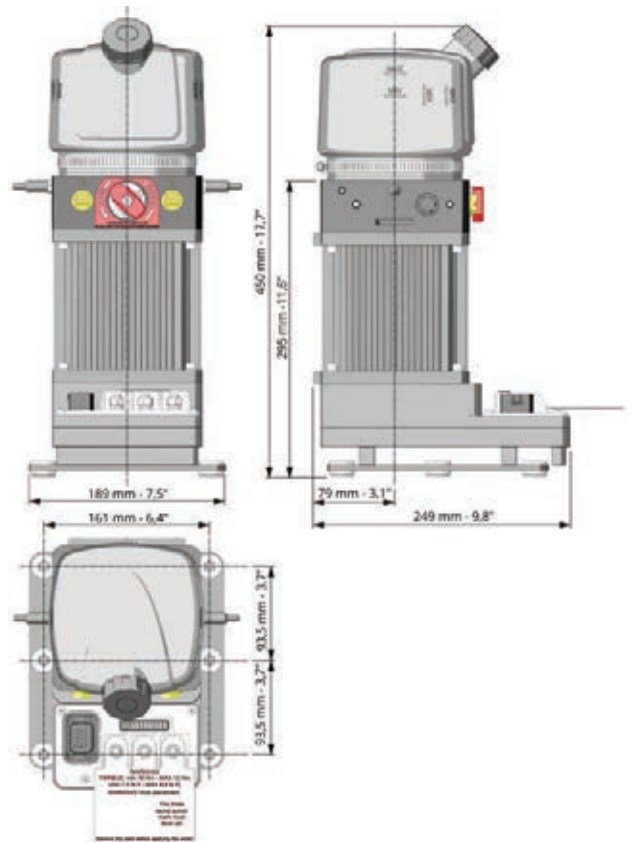
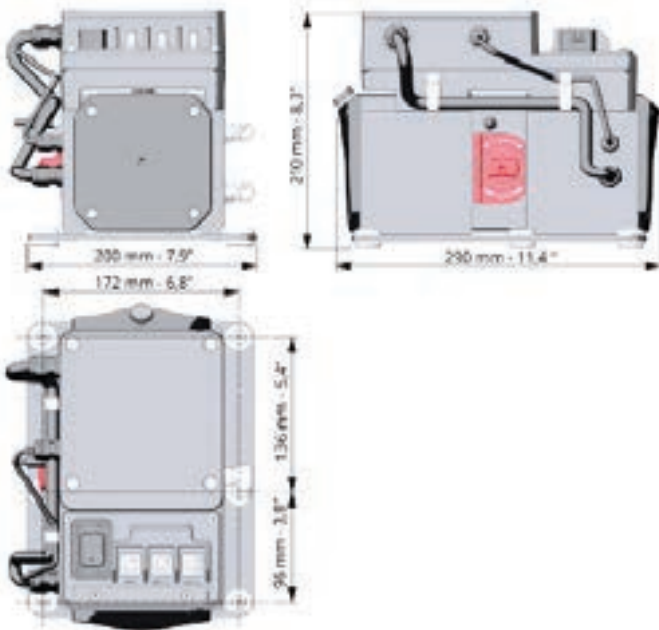
- 12 VDC brushless motor
- High power: very short lead times for maximum reactivity
- Embedded automatic power selector to manage the power supply from 2 batteries
- Can be installed anywhere on the boat
- 90° swiveling fittings for easy hose connection
- Tank: 1 litre (0.26 gal) UIP power unit; 0,3 litres (0.08 gal) UIPC power unit
- Vented cap
- Marine anodized aluminum body
- Include the main connector with 1m communication cables
- Ignition Protected SAE J1171



UIPC



UIP



|      |        |                       |
|------|--------|-----------------------|
| UIP  | 43541E | High Power Power unit |
| UIPC | 43859N | Compact power unit    |

UC120E and UC120EP Cylinders

CE

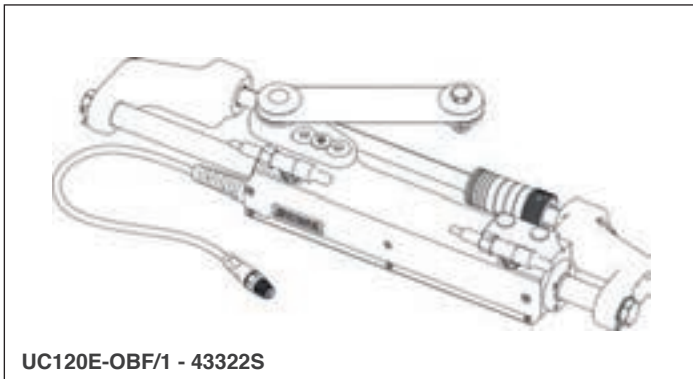
new



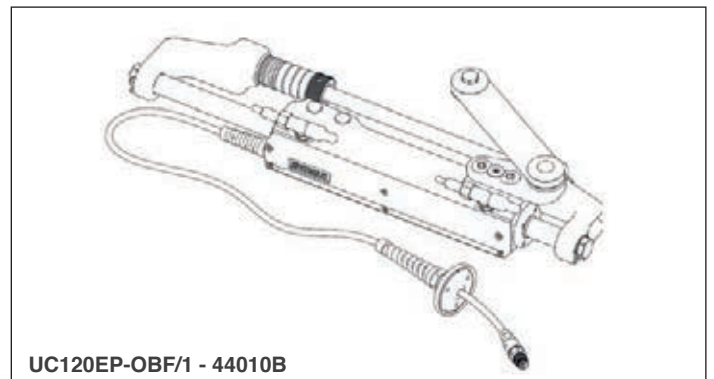
UC120E



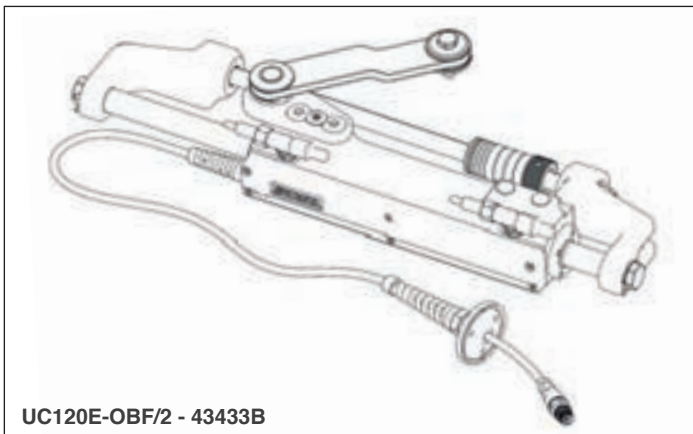
UC120EP



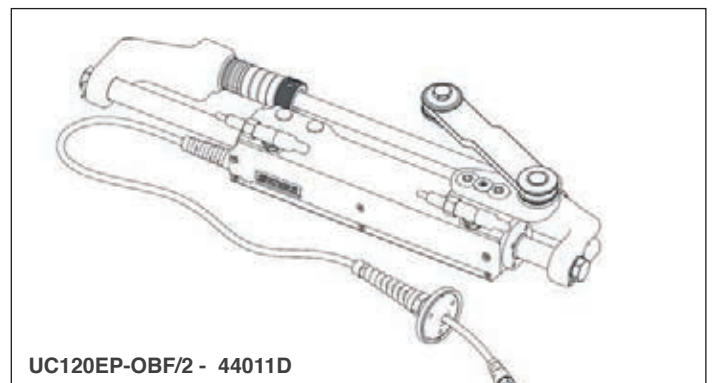
UC120E-OBF/1 - 43322S



UC120EP-OBF/1 - 44010B



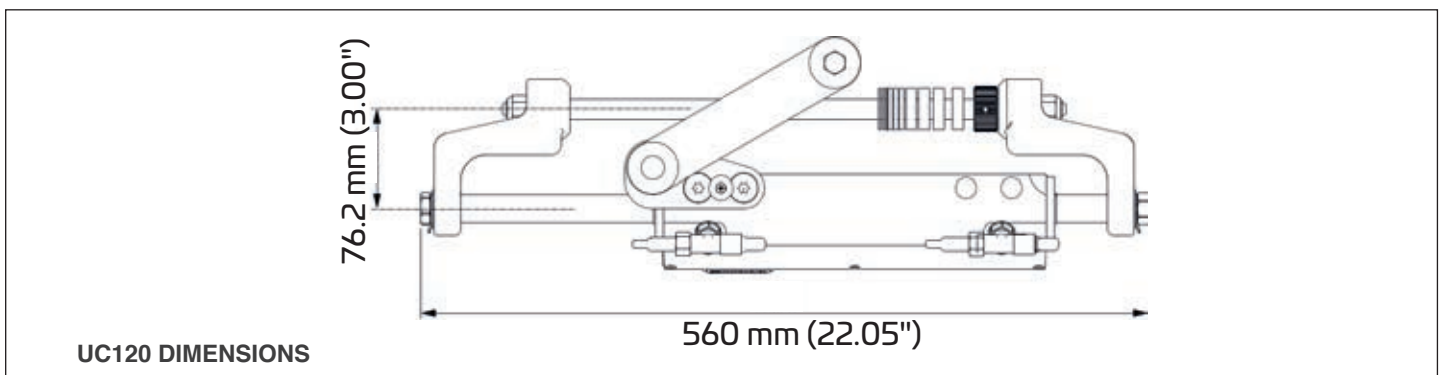
UC120E-OBF/2 - 43433B



UC120EP-OBF/2 - 44011D

- **UC120E:** heavy-duty starboard cylinder with integrated sensor
- **UC120EP:** heavy-duty port cylinder with integrated sensor

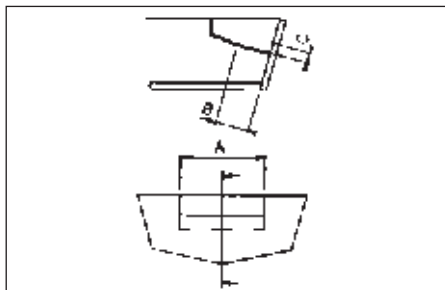
|                   |                     |
|-------------------|---------------------|
| Volume            | 120 cc - 7.5 cu. in |
| Output force      | 800 kg - 1764 lbs   |
| Internal diameter | 36.5 mm - 1.44"     |
| Stroke            | 184 mm - 7.24"      |
| Oil               | OL460               |



UC120 DIMENSIONS

# Integra™

## Outboard electronic power steering systems



### SPLASHWELL DIMENSION REQUIREMENTS

| Engine No. | A                | B              | C              |
|------------|------------------|----------------|----------------|
| 1          | 560 mm - 22.05"  | 152 mm - 5.98" | 152 mm - 5.98" |
| 2          | 1110 mm - 43.70" | 152 mm - 5.98" | 152 mm - 5.98" |

### UC120E and UC120EP Cylinder application

| ENGINE               | MODEL                                     | YEAR         | CYLINDER STARBOARD | P. No.        | CYLINDER PORT | P. No. |
|----------------------|---|--------------|--------------------|---------------|---------------|--------|
| Mercury®<br>Mariner® | 115-125-150 EFI 2S                        | 1990-2007    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | 225-250 EFI 2S                            | 2000-2007    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | 135-150-175 OPTIMAX                       | 1999-2018    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | 200-225-250 OPTIMAX                       | 1999-2018    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | RACING 300 OPTIMAX                        | 1999-2011    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | 250 SALTWATER EFI 4S                      | 2007-2011    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | 135-150-175-200 VERADO L4                 | 2004-2012    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | FOURSTROKE 175-200 V6                     | 2018-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | FOURSTROKE 225-300 V8                     | 2018-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
| Evinrude®            | E115-E130-E135 2S V4                      | 1995-to date | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
|                      | E150-E175-E200-E225-E250-E300 2S V6       | 1995-to date | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
| Yamaha®              | 150F-200F-250G 2S                         | 1990-2008    | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
|                      | 150 HPDI VMAX 2S                          | 1996-2007    | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
|                      | 175-200-225-250-300 HPDI VMAX 2S          | 2000-2008    | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
|                      | F115-F150 EFI 4S                          | 2000-2008    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | F200-F225-F250 4S                         | 1999-2007    | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
|                      | F115-F150-F175-F200 L4                    | 2002-2007    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | F200-F225-F250-F300 V6 4S                 | 2004-to date | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
| F350 4S V8           | 2006-to date                              | UC120E-OBF/1 | 43322S             | UC120EP-OBF/1 | 44010B        |        |
| Honda®               | BF135-BF150 4S                            | 2005-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | BF150 V-TEC 4S                            | 2008-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | BF175-BF200-BF225- BF250 4S               | 2001-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
| Suzuki®              | DF100-115-140 4S                          | 2008-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | DF150-175-DF200 L4 4S                     | 2006-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | DF200-DF225-DF250-DF300-DF350 V6 4S       | 2004-to date | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
| Tohatsu®             | 115-120-140 2S                            | 2004-to date | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
|                      | 70-90-115 TLDI 4S                         | 2004-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | BFT 115-150-200-225-250 4S                | 2014-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | BFT60-75-90                               | 2015-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
| Selva®               | 80 PORTOFINO/TIGERSHARK 2S                | 1995-2008    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | 150 WHITE SHARK 2S                        | 2001-2007    | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
|                      | 100EFI MARLIN -115 EFI NARWHAL            | 2000-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | 225 BEAKED WHALE 4S                       | 2019-to date | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
|                      | 150EFI KILLER WHALE 4S - 200 SEI WHALE 4S | 2000-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
| Johnson®             | BJ90-115-140 4S                           | 2001-2007    | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | J90-115 V4 2S                             | 1995-2007    | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
|                      | J150-175 V6 2S                            | 1995-2007    | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
|                      | J200-225 V6 4S                            | 2004-2007    | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |
| OXE®                 | 125-150-175-200HP DIESEL                  | 2018-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
|                      | 300 HP DIESEL                             | 2020-to date | UC120E-OBF/1       | 43322S        | UC120EP-OBF/1 | 44010B |
| COX®                 | 300 HP                                    | 2020-to date | UC120E-OBF/2       | 43433B        | UC120EP-OBF/2 | 44011D |

## UC120 an UC120P Hydraulic cylinders

CE

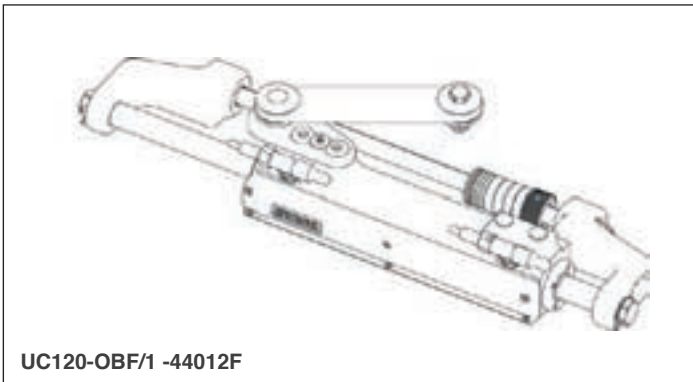
new



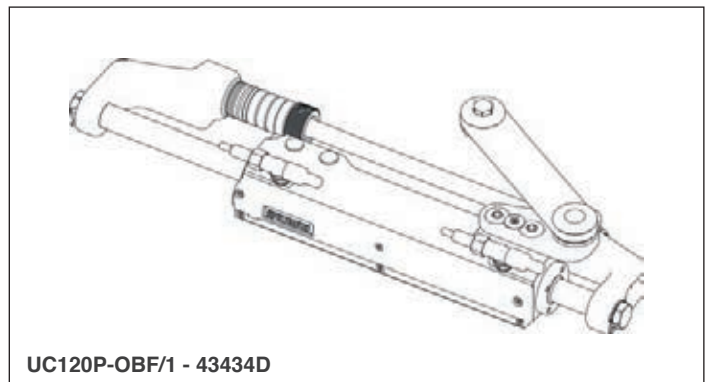
UC120



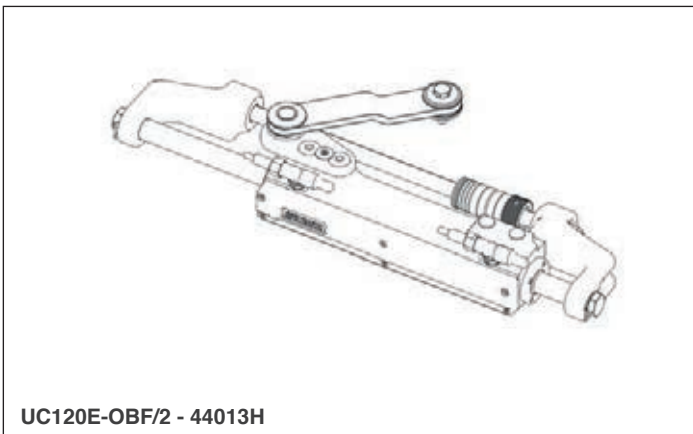
UC120P



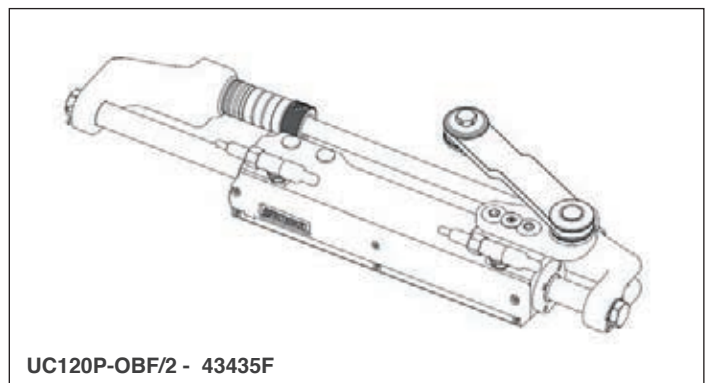
UC120-OBF/1 - 44012F



UC120P-OBF/1 - 43434D



UC120E-OBF/2 - 44013H

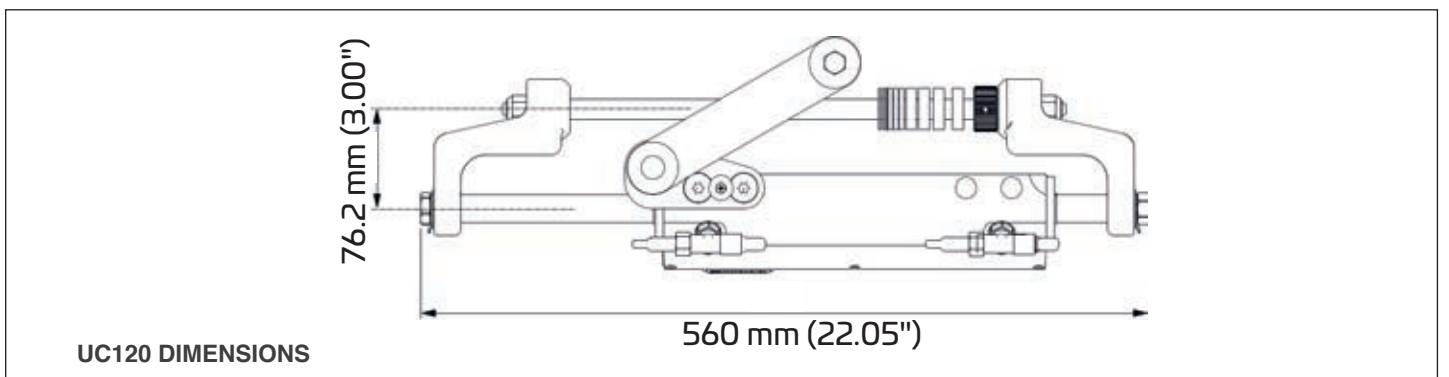


UC120P-OBF/2 - 43435F

• **UC120:** heavy-duty starboard cylinder for two, three or four outboard engine applications with tie bar

• **UC120P:** heavy-duty port cylinder for two, three or four outboard engine applications with tie bar

|                   |                     |
|-------------------|---------------------|
| Volume            | 120 cc - 7.5 cu. in |
| Output force      | 800 kg - 1764 lbs   |
| Internal diameter | 36.5 mm - 1.44"     |
| Stroke            | 184 mm - 7.24"      |
| Oil               | OL460               |

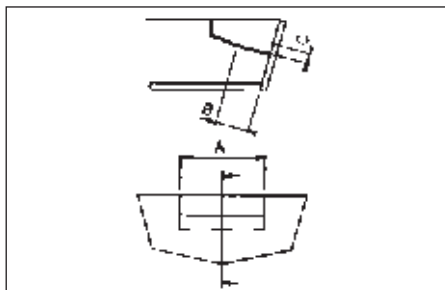


UC120 DIMENSIONS



# Integra™

## Outboard electronic power steering systems



### SPLASHWELL DIMENSION REQUIREMENTS

| Engine No. | A                | B              | C              |
|------------|------------------|----------------|----------------|
| 1          | 560 mm - 22.05"  | 152 mm - 5.98" | 152 mm - 5.98" |
| 2          | 1110 mm - 43.70" | 152 mm - 5.98" | 152 mm - 5.98" |

### UC120 Cylinder applications

| ENGINE                              | MODEL                                     | YEAR                 | CYLINDER     | P. No.       |              |              |
|-------------------------------------|---|----------------------|--------------|--------------|--------------|--------------|
| Mercury®<br>Mariner®                | 115-125-150 EFI 2S                        | 1990-2007            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | 225-250 EFI 2S                            | 2000-2007            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | 135-150-175 OPTIMAX                       | 1999-2018            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | 200-225-250 OPTIMAX                       | 1999-2018            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | RACING 300 OPTIMAX                        | 1999-2011            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | 250 SALTWATER EFI 4S                      | 2007-2011            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | 135-150-175-200 VERADO L4                 | 2004-2012            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | FOURSTROKE 175-200 V6                     | 2018-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | FOURSTROKE 225-300 V8                     | 2018-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | Evinrude®                                 | E115-E130-E135 2S V4 | 1995-to date | UC120-OBF/2  | 44013H       | UC120P-OBF/2 |
| E150-E175-E200-E225-E250-E300 2S V6 |   | 1995-to date         | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
| Yamaha®                             | 150F-200F-250G 2S                         | 1990-2008            | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
|                                     | 150 HPDI VMAX 2S                          | 1996-2007            | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
|                                     | 175-200-225-250-300 HPDI VMAX 2S          | 2000-2008            | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
|                                     | F115-F150 EFI 4S                          | 2000-2008            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | F200-F225-F250 4S                         | 1999-2007            | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
|                                     | F115-F150-F175-F200 L4                    | 2002-2007            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | F200-F225-F250-F300 V6 4S                 | 2004-to date         | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
| F350 4S V8                          | 2006-to date                              | UC120-OBF/1          | 44012F       | UC120P-OBF/1 | 43434D       |              |
| Honda®                              | BF135-BF150 4S                            | 2005-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | BF150 V-TEC 4S                            | 2008-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | BF175-BF200-BF225- BF250 4S               | 2001-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
| Suzuki®                             | DF100-115-140 4S                          | 2008-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | DF150-175-DF200 L4 4S                     | 2006-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | DF200-DF225-DF250-DF300-DF350 V6 4S       | 2004-to date         | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
| Tohatsu®                            | 115-120-140 2S                            | 2004-to date         | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
|                                     | 70-90-115 TLDI 4S                         | 2004-to date         | UC120-OBF/1  | 43322S       | UC120P-OBF/1 | 43434D       |
|                                     | BFT 115-150-200-225-250 4S                | 2014-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | BFT60-75-90                               | 2015-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
| Selva®                              | 80 PORTOFINO/TIGERSHARK 2S                | 1995-2008            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | 150 WHITE SHARK 2S                        | 2001-2007            | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
|                                     | 100EFI MARLIN -115 EFI NARWHAL            | 2000-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | 225 BEAKED WHALE 4S                       | 2019-to date         | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
|                                     | 150EFI KILLER WHALE 4S - 200 SEI WHALE 4S | 2000-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
| Johnson®                            | BJ90-115-140 4S                           | 2001-2007            | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | J90-115 V4 2S                             | 1995-2007            | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
|                                     | J150-175 V6 2S                            | 1995-2007            | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
|                                     | J200-225 V6 4S                            | 2004-2007            | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |
| OXE®                                | 125-150-175-200HP DIESEL                  | 2018-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
|                                     | 300 HP DIESEL                             | 2020-to date         | UC120-OBF/1  | 44012F       | UC120P-OBF/1 | 43434D       |
| COX®                                | 300 HP                                    | 2020-to date         | UC120-OBF/2  | 44013H       | UC120P-OBF/2 | 43435F       |

Tie bars suitable with INTEGRA electronic power steering systems only

## A96-120 - Tie bar for twin outboard engine/single UC120E or UC120EP cylinder

Two different lengths available:  
From 26" to 29"X engine center  
From 29" to 34.5" engine center



|                         |        |  |
|-------------------------|--------|--|
| <b>A96 M/Y-120-29</b>   | 43471K | From 26" to 29" engine center - For Mercury® and Yamaha® engines   |
| <b>A96 M/Y-120-34.5</b> | 43472M | From 29" to 34.5" engine center - For Mercury® and Yamaha® engines |
| <b>A96 S/H-120-29</b>   | 43899B | From 26" to 29" engine center - For Suzuki® and Honda® engines     |
| <b>A96 S/H-120-34.5</b> | 43900G | From 29" to 34.5" engine center - For Suzuki® and Honda® engines   |

## A95-120 - Tie bar for twin outboard engine/dual UC120E and UC120P or UC120EP and UC120 cylinder

Two different lengths available:  
From 26" to 32" engine center  
From 32" to 37.5" engine center



|                         |        |  |
|-------------------------|--------|--|
| <b>A95 M/Y-120-32</b>   | 43437K | From 26" to 32" engine center - For Mercury® and Yamaha® engines   |
| <b>A95 M/Y-120-37.5</b> | 43468X | From 32" to 37.5" engine center - For Mercury® and Yamaha® engines |
| <b>A95 S/H-120-32</b>   | 43903N | From 26" to 32" engine center - For Suzuki® and Honda® engines     |
| <b>A95 S/H-120-37.5</b> | 43904R | From 32" to 37.5" engine center - For Suzuki® and Honda® engines   |

# Integra™ Tie bars

Tie bars suitable with INTEGRA electronic power steering systems only

## A97-120 - Tie bar for triple outboard engines/dual UC120E and UC120P cylinder

Two different lengths available:  
From 26" to 30" engine center  
From 30" to 35.5" engine center



**A97 S/H-120**



**A97 M/Y-120**

|                         |        |  |
|-------------------------|--------|--|
| <b>A97 M/Y-120-30</b>   | 43474S | From 26" to 30" engine center - For Mercury® and Yamaha® engines   |
| <b>A97 M/Y-120-35.5</b> | 43475U | From 30" to 35.5" engine center - For Mercury® and Yamaha® engines |
| <b>A97 S/H-120-30</b>   | 43907X | From 26" to 30" engine center - For Suzuki® and Honda® engines     |
| <b>A97 S/H-120-35.5</b> | 43908Z | From 30" to 35.5" engine center - For Suzuki® and Honda® engines   |

## A98-120 - Tie bar for quad outboard engines/dual UC120E and UC120P cylinder

From 26" to 32" engine center



**A98 S/H-120**



**A98 M/Y-120**

|                    |        |  |
|--------------------|--------|--|
| <b>A98 M/Y-120</b> | 43543J | From 26" to 32" engine center - For Mercury® and Yamaha® engines |
| <b>A98 S/H-120</b> | 43910K | From 26" to 32" engine center - For Suzuki® and Honda® engines   |

## AS-GEN3 - 43918C - Tie bar for Suzuki GEN3 engines



Suitable for applications with Suzuki GEN3 engines with integrated cylinder and Silversteer, Masterdrive and Integra systems

## LTB6 - 44042R - Remote bypass valve

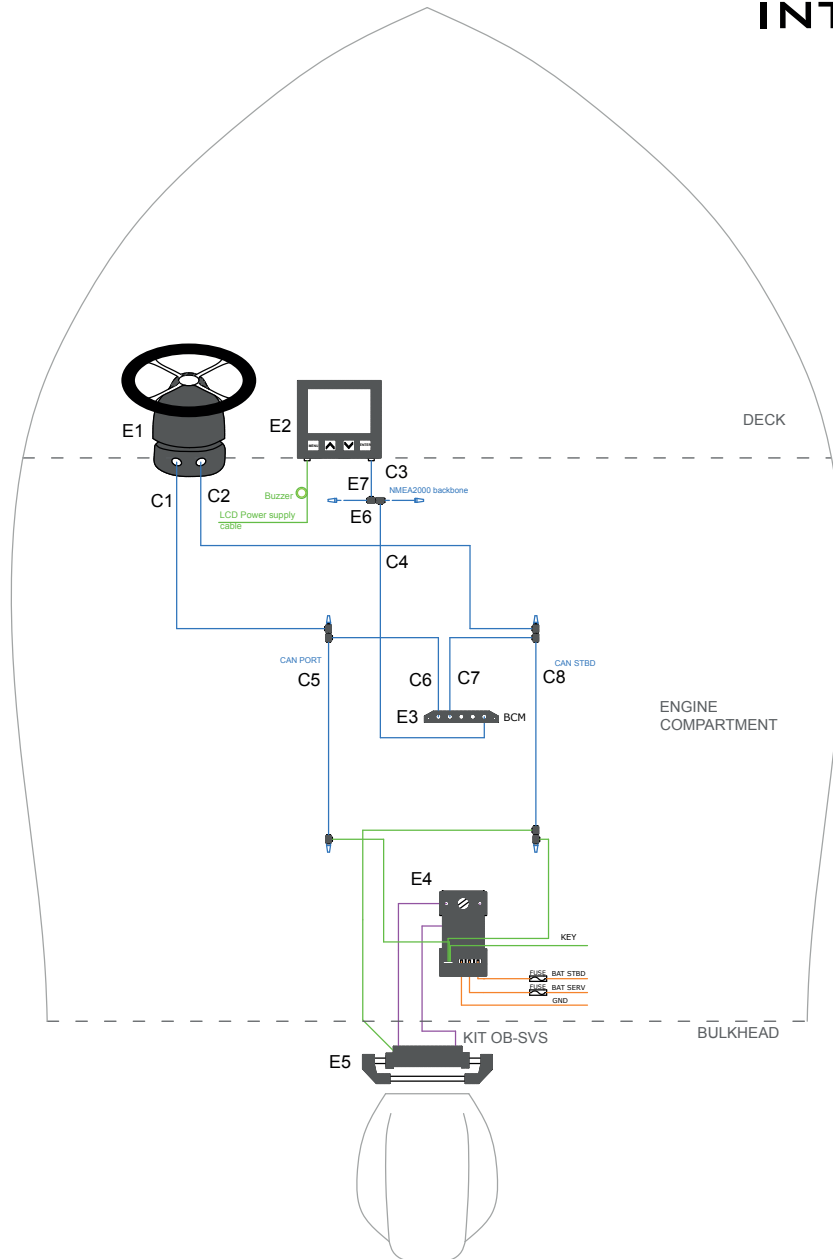
Remote bypass valve for UIP and UIPC power units



**LTB6**

Single engine, single cylinder

## INTEGRA EPS



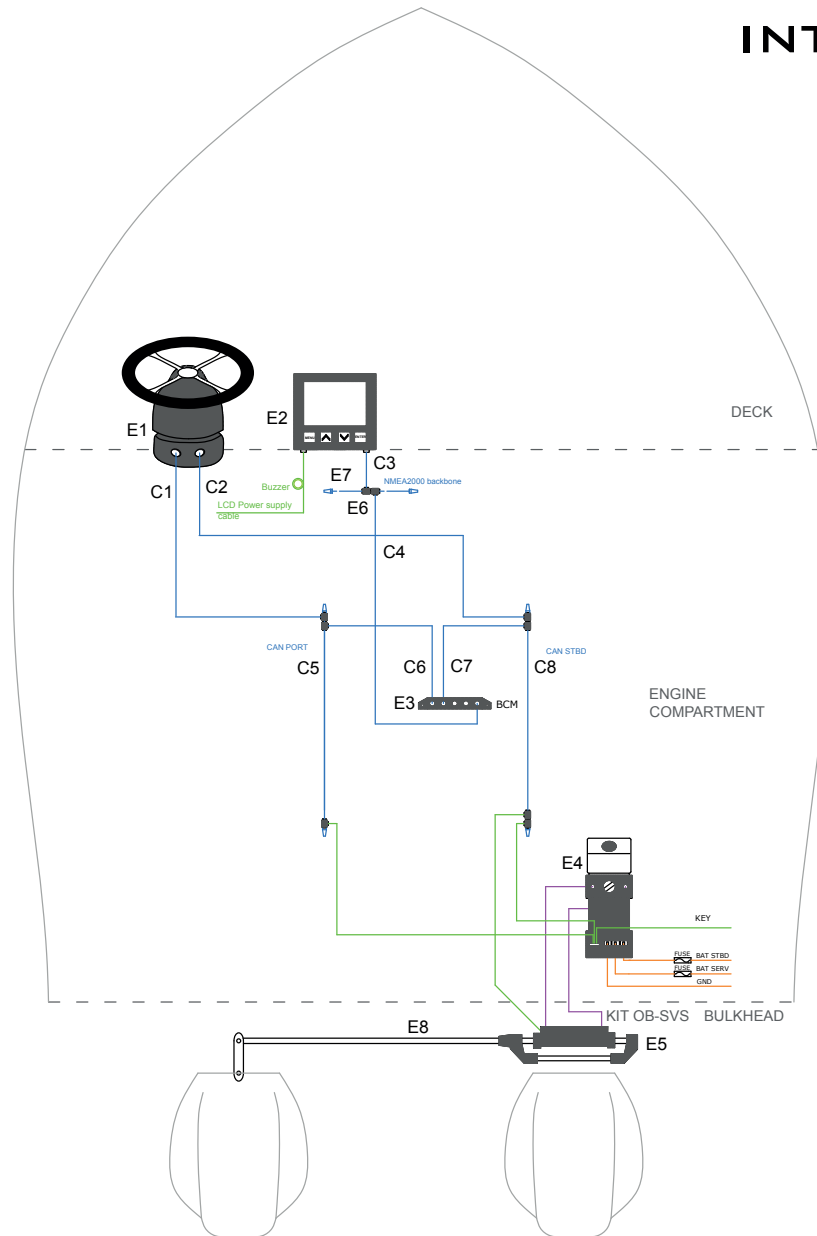
### Main components

| Name       | Description                                       | Quantity |
|------------|---|----------|
| E1         | UIH1 Electronic helm - 43536M                     | 1        |
| E1         | X52 Tilt mechanism - 39250U                       | 1        |
| E2         | Veratron display - 43539U                         | 1        |
| E3         | BCM - Body control module - 43540C                | 1        |
| E4         | UIPC compact power unit - 43859N                  | 1        |
| E5         | UC120E (or UC120EP) Cylinder with sensor included | 1        |
| E6         | CAN bus - Tee connection - 43578E                 | 9        |
| E7         | CAN bus - Terminator pair - 43576A                | 3        |
| C1-C8      | CAN-bus cables - length on request                | 8        |
| KIT OB-SVS | Hydraulic hoses kit - length on request           | 1        |

# Integra™ EPS Applications

Dual engine, single cylinder

INTEGRA EPS

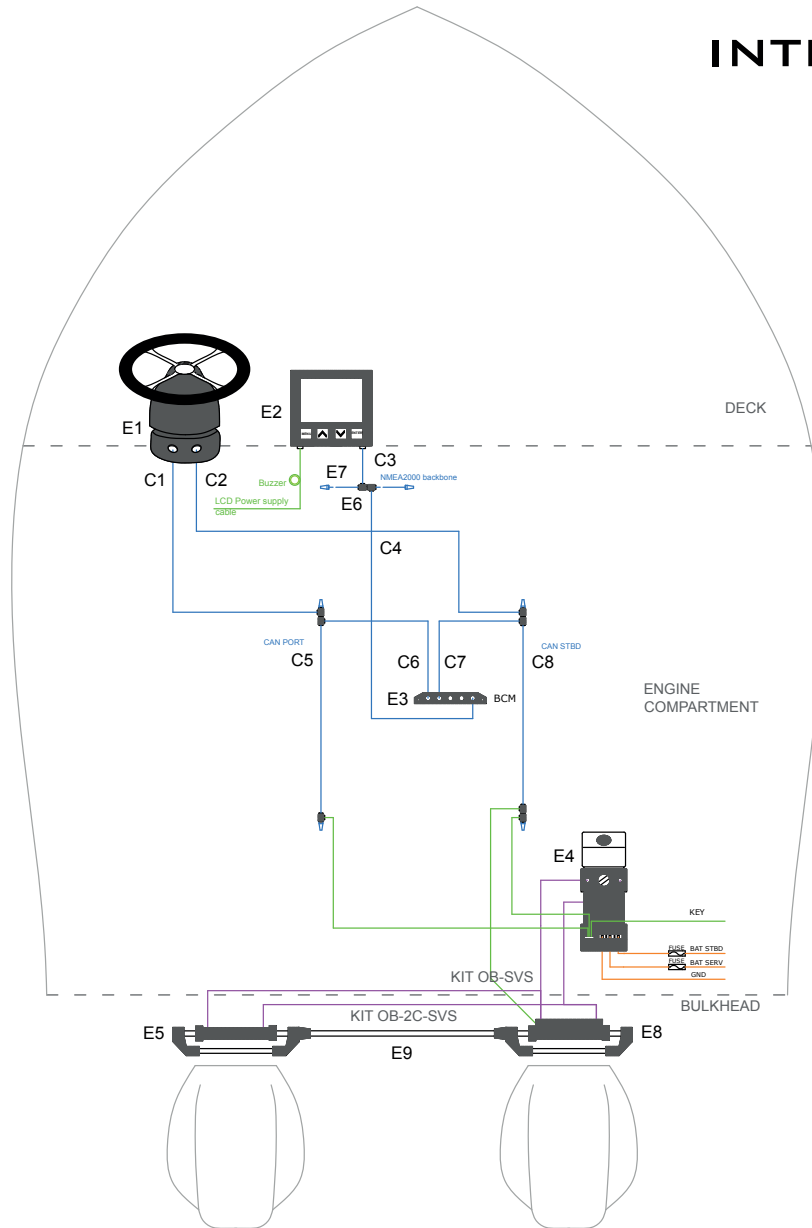


## Main components

| Name       | Description   | Quantity |
|------------|---|----------|
| E1         | UIH1 Electronic helm - 43536M                               | 1        |
| E1         | X52 Tilt mechanism - 39250U                                 | 1        |
| E2         | Veratron display - 43539U                                   | 1        |
| E3         | BCM - Body control module - 43540C                          | 1        |
| E4         | UIP Power Unit - 43541E or UIPC compact power unit - 43859N | 1 or 1   |
| E5         | UC120E (or UC120EP) Cylinder with integrated sensor         | 1        |
| E6         | CAN bus - Tee connection - 43578E                           | 9        |
| E7         | CAN bus - Terminator pair - 43576A                          | 3        |
| E8         | A96-120 tie bar   | 1        |
| C1-C8      | CAN-bus cables - length on request                          | 8        |
| KIT OB-SVS | Hydraulic hoses kit - length on request                     | 1        |

## Dual engine, dual cylinder

**INTEGRA EPS**



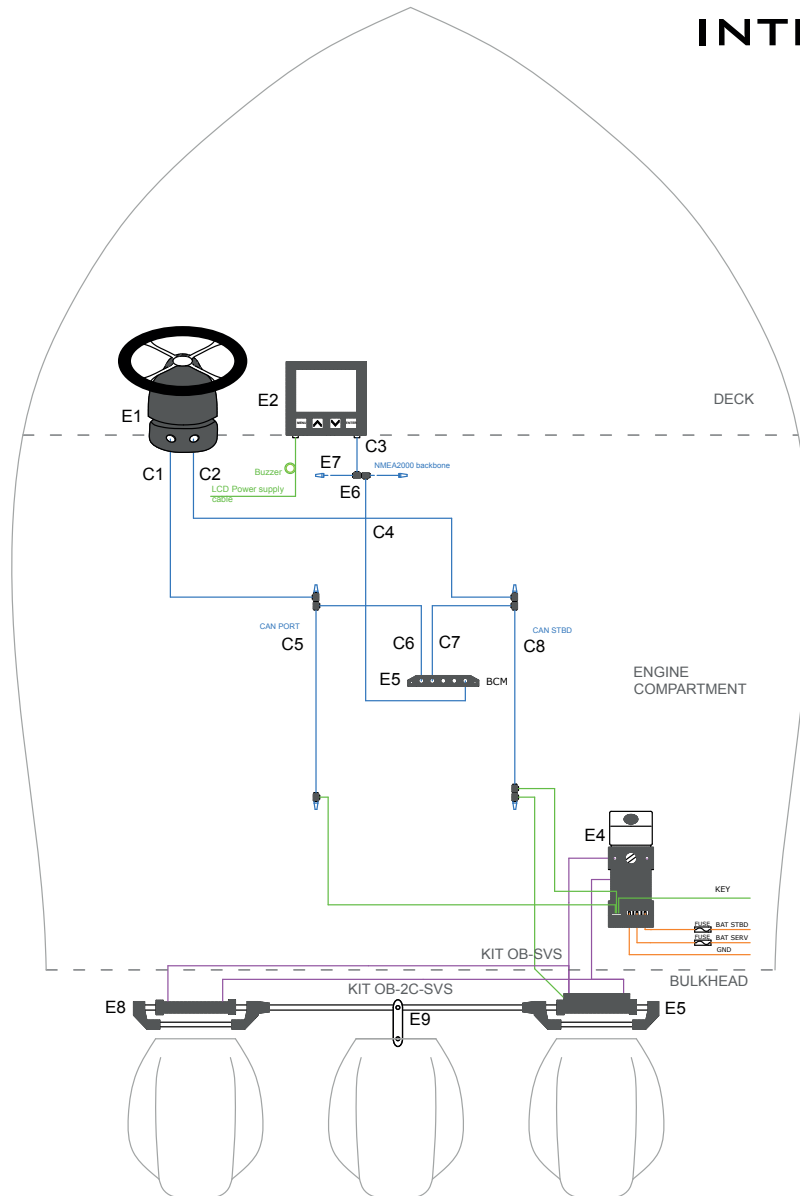
### Main components

| Name          | Description   | Quantity |
|---------------|---|----------|
| E1            | UIH1 Electronic helm - 43536M                                   | 1        |
| E1            | X52 Tilt mechanism - 39250U                                     | 1        |
| E2            | Veratron display - 43539U                                       | 1        |
| E3            | BCM - Body control module - 43540C                              | 1        |
| E4            | UIP Power Unit - 43541E   | 1        |
| E5            | UC120P (or UC120) Hydraulic cylinder                            | 1        |
| E6            | CAN bus - Tee connection - 43578E                               | 9        |
| E7            | CAN bus - Terminator pair - 43576A                              | 3        |
| E8            | UC120E (or UC120EP) cylinder with integrated sensor             | 1        |
| E9            | A95-120 tie bar- Port cylinder to starboard cylinder connection | 1        |
| C1-C8         | CAN-bus cables - length on request                              | 8        |
| KIT OB-SVS    | Hydraulic hoses kit - length on request                         | 1        |
| KIT OB-2C-SVS | Hydraulic hoses kit - length on request                         | 1        |

# Integra™ EPS Applications

Triple engine, dual cylinder

INTEGRA EPS

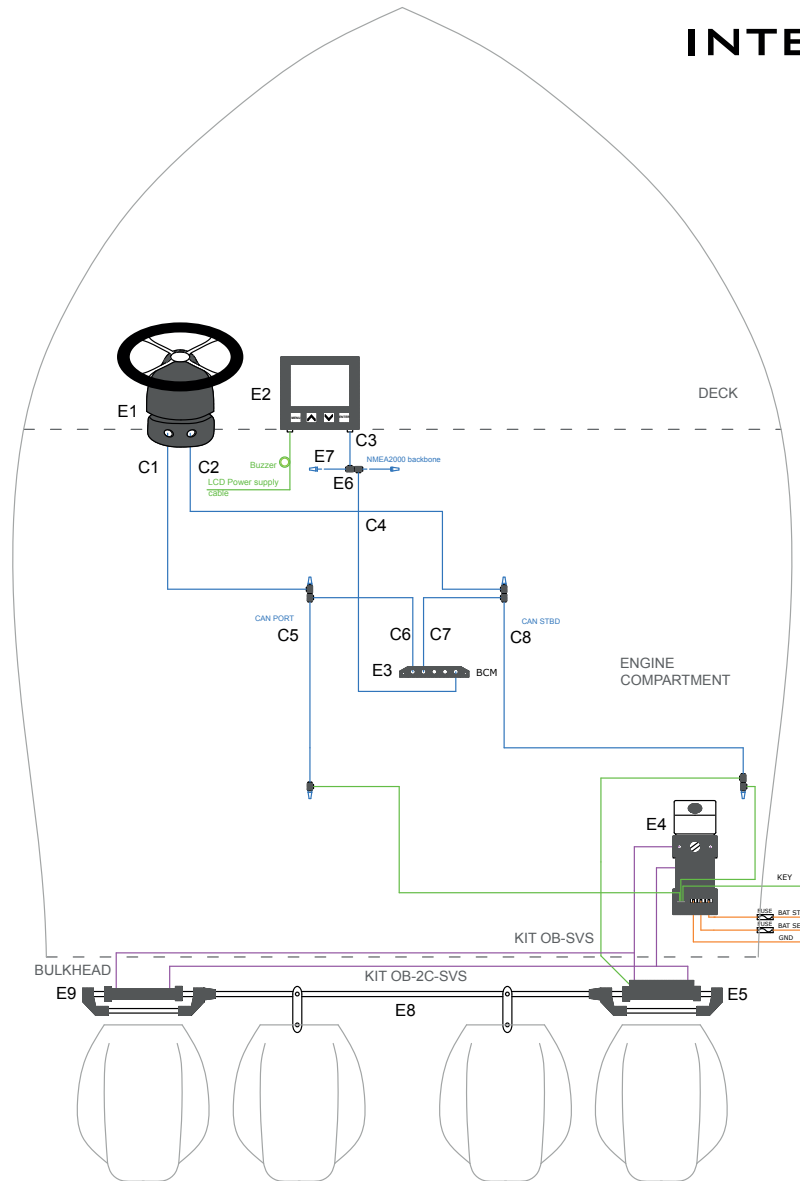


## Main components

| Name          | Description   | Quantity |
|---------------|---|----------|
| E1            | UIH1 Electronic helm - 43536M                       | 1        |
| E1            | X52 Tilt mechanism - 39250U                         | 1        |
| E2            | Veratron display - 43539U                           | 1        |
| E3            | BCM - Body control module - 43540C                  | 1        |
| E4            | UIP Power Unit - 43541E                             | 1        |
| E5            | UC120E (or UC120EP) Cylinder with integrated sensor | 1        |
| E6            | CAN bus - Tee connection - 43578E                   | 9        |
| E7            | CAN bus - Terminator pair - 43576A                  | 3        |
| E8            | UC120P (or UC120) Hydraulic cylinder                | 1        |
| E9            | A97-120 tie bar                                     | 1        |
| C1-C8         | CAN-bus cables - length on request                  | 8        |
| KIT OB-SVS    | Hydraulic hoses kit - length on request             | 1        |
| KIT OB-2C-SVS | Hydraulic hoses kit - length on request             | 1        |

## Quad engine, dual cylinder

**INTEGRA EPS**



### Main components

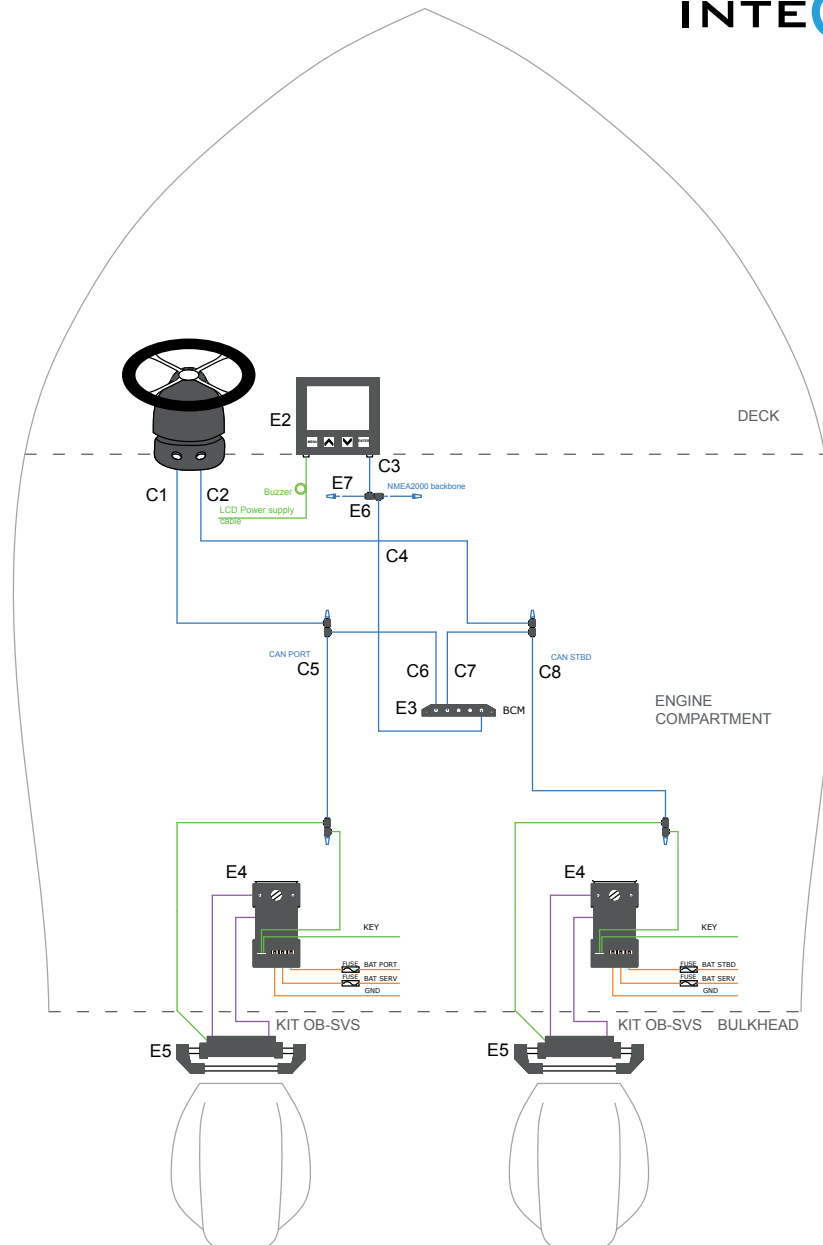
| Name          | Description   | Quantity |
|---------------|---|----------|
| E1            | UIH1 Electronic helm - 43536M                       | 1        |
| E1            | X52 Tilt mechanism - 39250U                         | 1        |
| E2            | Veratron display - 43539U                           | 1        |
| E3            | BCM - Body control module - 43540C                  | 1        |
| E4            | UIP Power Unit - 43541E                             | 1        |
| E5            | UC120E (or UC120EP) Cylinder with integrated sensor | 1        |
| E6            | CAN bus - Tee connection - 43578E                   | 9        |
| E7            | CAN bus - Terminator pair - 43576A                  | 3        |
| E8            | UC120P (or UC120) Hydraulic cylinder                | 1        |
| E9            | A98-120 tie bar                                     | 1        |
| C1-C8         | CAN-bus cables - length on request                  | 8        |
| KIT OB-SVS    | Hydraulic hoses kit - length on request             | 1        |
| KIT OB-2C-SVS | Hydraulic hoses kit - length on request             | 1        |



# Integra™ CEPS Applications

Dual engine, dual cylinder, dual power unit

INTEGRA CEPS

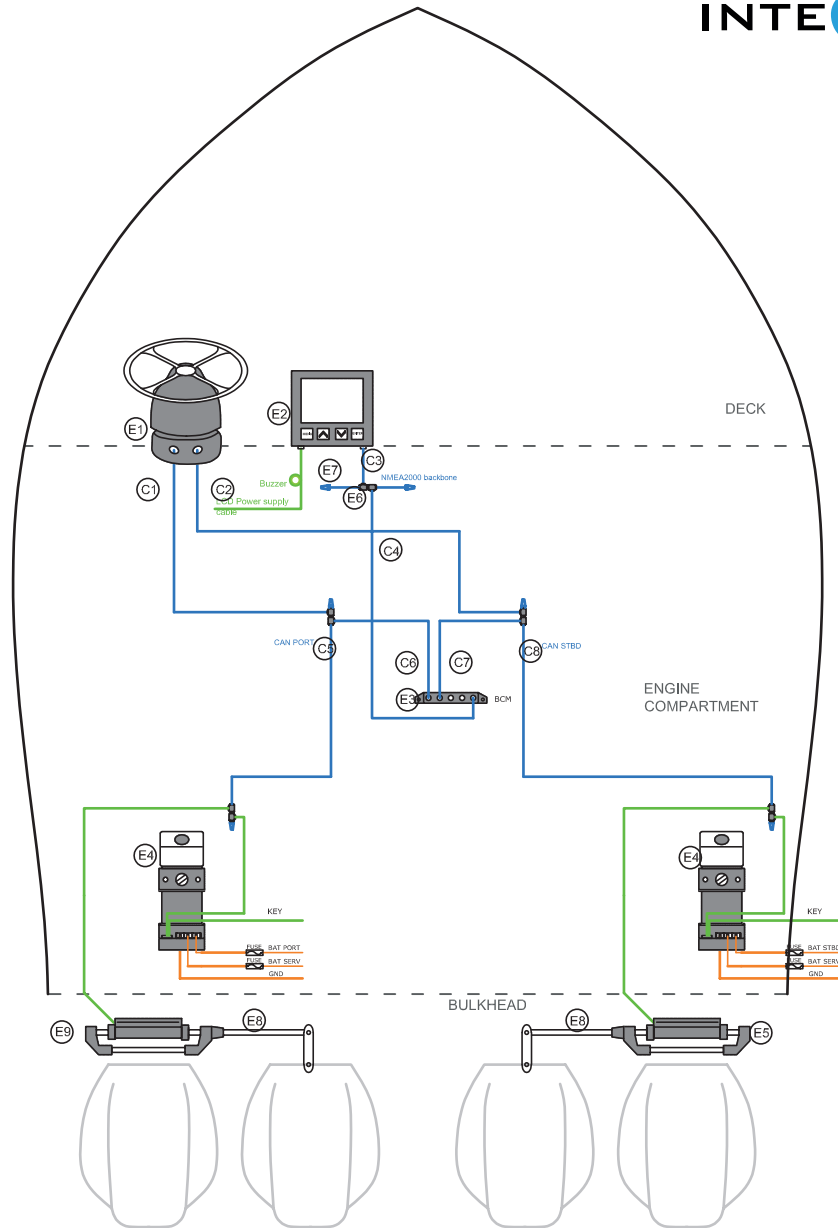


## Main components

| Name       | Description   | Quantity |
|------------|---|----------|
| E1         | UIH1 Electronic helm - 43536M                       | 1        |
| E1         | X52 Tilt mechanism - 39250U                         | 1        |
| E2         | Veratron display - 43539U                           | 1        |
| E3         | BCM - Body control module - 43540C                  | 1        |
| E4         | UIPC compact power unit - 43859N                    | 2        |
| E5         | UC120E (or UC120EP) Cylinder with integrated sensor | 2        |
| E6         | CAN bus - Tee connection - 43578E                   | 10       |
| E7         | CAN bus - Terminator pair - 43576A                  | 3        |
| C1-C8      | CAN-bus cables - length on request                  | 8        |
| KIT OB-SVS | Hydraulic hoses kit - length on request             | 2        |

## Quad engine, dual cylinder, dual power unit

INTEGRA CEPS



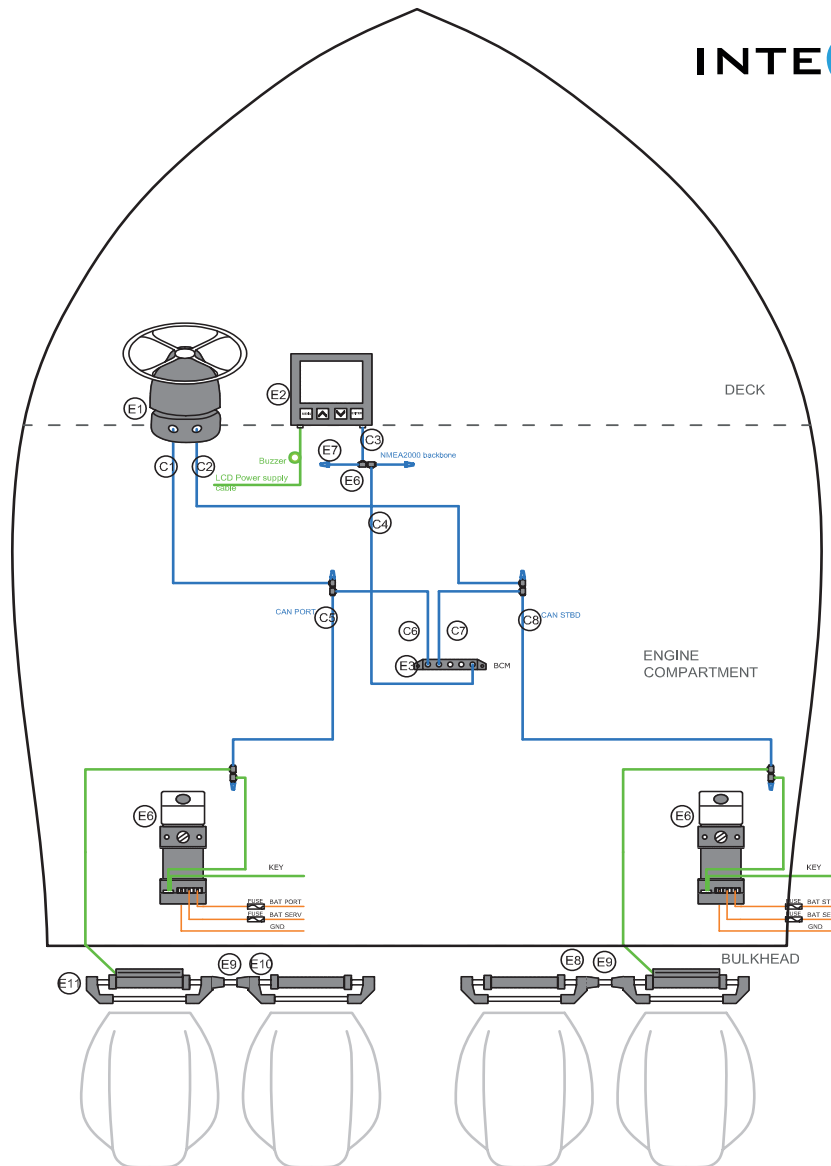
### Main components

| Name       | Description   | Quantity |
|------------|---|----------|
| E1         | UIH1 Electronic helm - 43536M                               | 1        |
| E1         | X52 Tilt mechanism - 39250U                                 | 1        |
| E2         | Veratron display - 43539U                                   | 1        |
| E3         | BCM - Body control module - 43540C                          | 1        |
| E4         | UIP Power Unit - 43541E or UIPC compact power unit - 43859N | 2        |
| E5         | UC120E (or UC120EP) Cylinder with integrated sensor         | 2        |
| E6         | CAN bus - Tee connection - 43578E                           | 10       |
| E7         | CAN bus - Terminator pair - 43576A                          | 3        |
| E8         | A96-120 tie bar   | 2        |
| C1-C8      | CAN-bus cables - length on request                          | 8        |
| KIT OB-SVS | Hydraulic hoses kit - length on request                     | 2        |

# Integra™ CEPS Applications

Quad engine, quad cylinder, dual power unit

INTEGRA CEPS

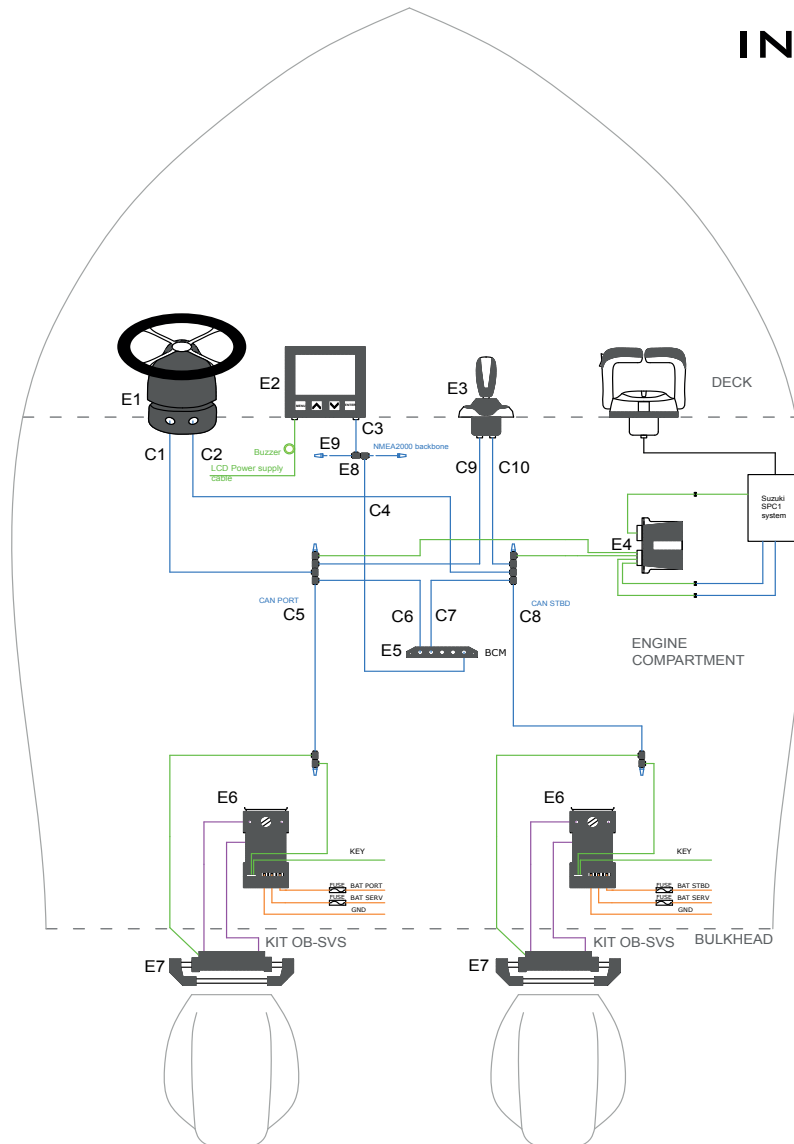


## Main components

| Name          | Description  | Quantity |
|---------------|--|----------|
| E1            | UIH1 Electronic helm - 43536M                                    | 1        |
| E1            | X52 Tilt mechanism - 39250U                                      | 1        |
| E2            | Veratron display - 43539U  | 1        |
| E3            | BCM - Body control module - 43540C                               | 1        |
| E4            | UIP Power Unit - 43541E  | 2        |
| E5            | UC120E Starboard cylinder with sensor included                   | 1        |
| E6            | CAN bus - Tee connection - 43578E                                | 14       |
| E7            | CAN bus - Terminator pair - 43576A                               | 3        |
| E8            | UC120 Starboard hydraulic cylinder                               | 1        |
| E9            | A95-120 tie bar - Port cylinder to starboard cylinder connection | 2        |
| E10           | UC120P Port hydraulic cylinder                                   | 1        |
| E11           | UC120EP Port cylinder with integrated sensor                     | 1        |
| C1-C8         | CAN-bus cables - length on request                               | 8        |
| KIT OB-SVS    | Hydraulic hoses kit - length on request                          | 2        |
| KIT OB-2C-SVS | Hydraulic hoses kit - length on request                          | 2        |

Dual engine, dual cylinder, dual power unit

## INTEGRA JS



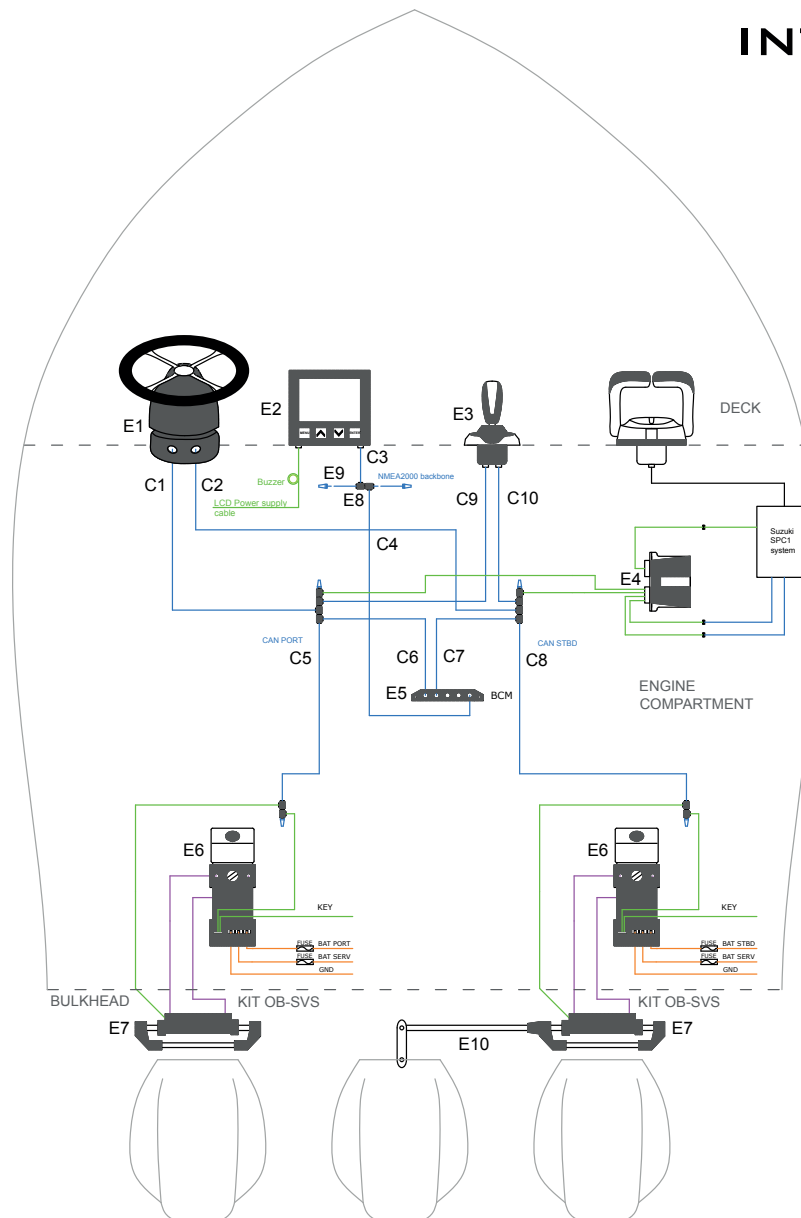
### Main components

| Name       | Description   | Quantity |
|------------|---|----------|
| E1         | UIH1 Electronic helm - 43536M                       | 1        |
| E1         | X52 Tilt mechanism - 39250U                         | 1        |
| E2         | Veratron display - 43539U                           | 1        |
| E3         | UJS joystick - 43922T                               | 1        |
| E4         | Gateway   | 1        |
| E5         | BCM - Body control module - 43540C                  | 1        |
| E6         | UIPC compact power unit - 43859N                    | 2        |
| E7         | UC120E (or UC120EP) Cylinder with integrated sensor | 2        |
| E8         | CAN bus - Tee connection - 43578E                   | 14       |
| E9         | CAN bus - Terminator pair - 43576A                  | 3        |
| C1-C10     | CAN-bus cables - length on request                  | 10       |
| KIT OB-SVS | Hydraulic hoses kit - length on request             | 2        |

# Integra™ JS Applications

Triple engine, dual cylinder, dual power unit

INTEGRA JS

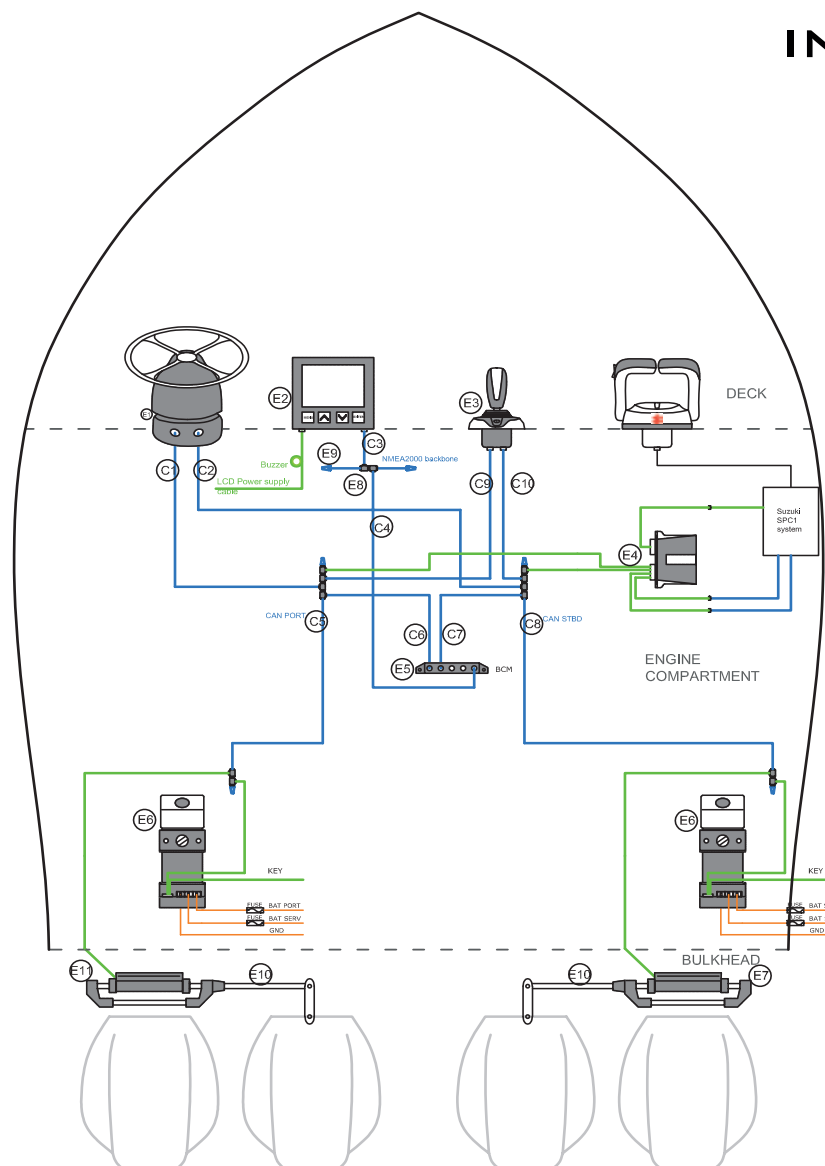


## Main components

| Name       | Description   | Quantity |
|------------|---|----------|
| E1         | UIH1 Electronic helm - 43536M                             | 1        |
| E1         | X52 Tilt mechanism - 39250U                               | 1        |
| E2         | Veratron display - 43539U                                 | 1        |
| E3         | UJS joystick - 43922T                                     | 1        |
| E4         | Gateway   | 1        |
| E5         | BCM - Body control module - 43540C                        | 1        |
| E6         | UIP Power Unit 43541E or UIPC compact power unit - 43859N | 2        |
| E7         | UC120E (or UC120EP) Cylinder with integrated sensor       | 2        |
| E8         | CAN bus - Tee connection - 43578E                         | 14       |
| E9         | CAN bus - Terminator pair - 43576A                        | 3        |
| E10        | A96-120 tie bar   | 1        |
| C1-C10     | CAN-bus cables - length on request                        | 10       |
| KIT OB-SVS | Hydraulic hoses kit - length on request                   | 2        |

## Quad engine, dual cylinder, dual power unit

INTEGRA JS



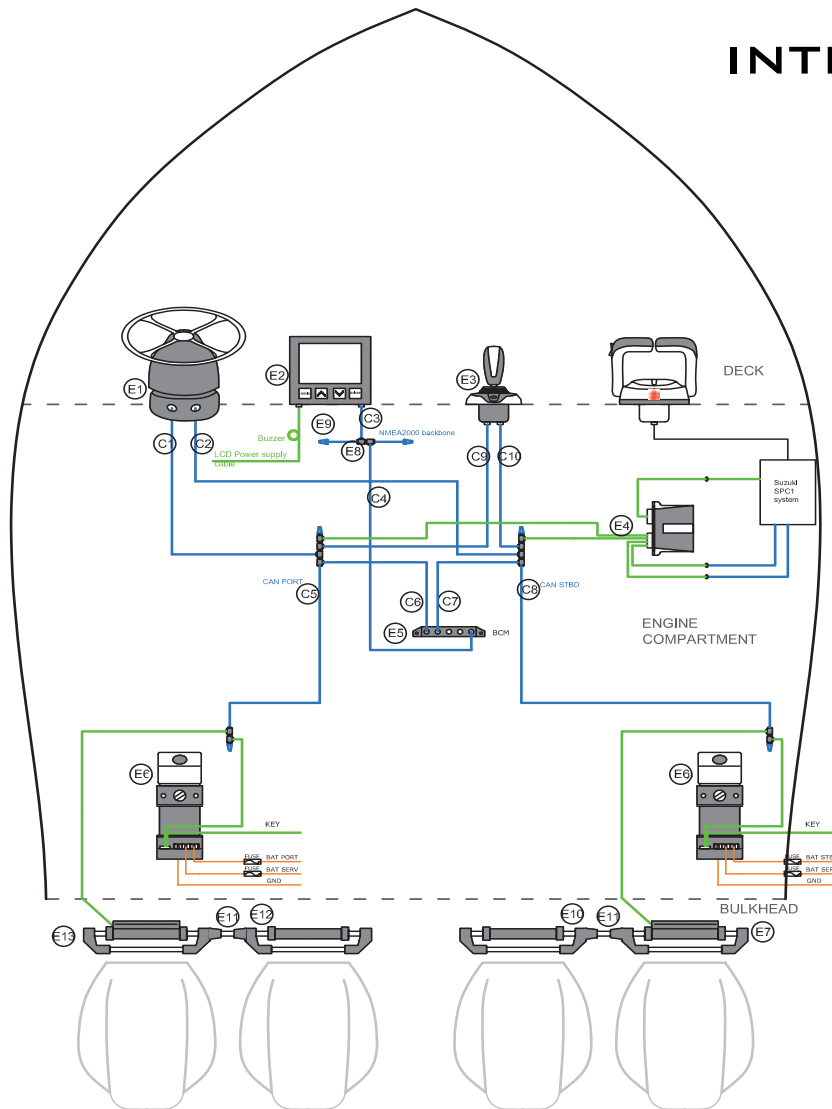
### Main components

| Name       | Description   | Quantity |
|------------|---|----------|
| E1         | UIH1 Electronic helm - 43536M                               | 1        |
| E1         | X52 Tilt mechanism - 39250U                                 | 1        |
| E2         | Veratron display - 43539U                                   | 1        |
| E3         | UJS joystick - 43922T                                       | 1        |
| E4         | Gateway   | 1        |
| E5         | BCM - Body control module - 43540C                          | 1        |
| E6         | UIP Power Unit - 43541E or UIPC compact power unit - 43859N | 2        |
| E7         | UC120E Starboard cylinder with integrated sensor            | 1        |
| E8         | CAN bus - Tee connection - 43578E                           | 14       |
| E9         | CAN bus - Terminator pair - 43576A                          | 3        |
| E10        | A96-120 tie bar   | 2        |
| E11        | UC120EP Port cylinder with integrated sensor                | 1        |
| C1-C10     | CAN-bus cables - length on request                          | 10       |
| KIT OB-SVS | Hydraulic hoses kit - length on request                     | 2        |

# Integra™ JS Applications

Quad engine, quad cylinder, dual power unit

INTEGRA JS



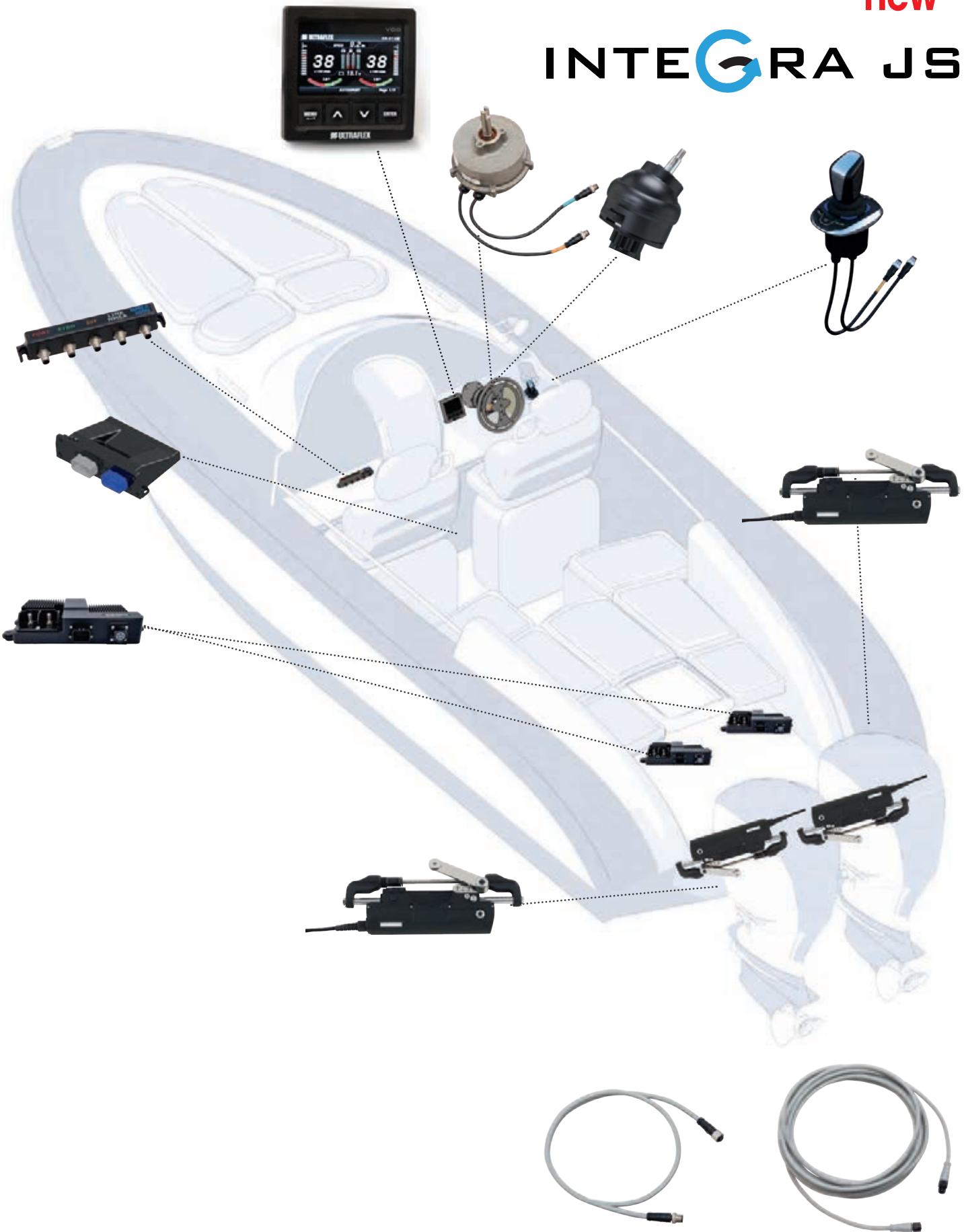
## Main components

| Name                       | Description  | Quantity |
|----------------------------|--|----------|
| E1                         | UIH1 Electronic helm - 43536M                                    | 1        |
| E1                         | X52 Tilt mechanism - 39250U                                      | 1        |
| E2                         | Veratron display - 43539U  | 1        |
| E3                         | UJS joystick - 43922T  | 1        |
| E4                         | Gateway  | 1        |
| E5                         | BCM - Body control module - 43540C                               | 1        |
| E6                         | UIP Power Unit - 43541E  | 2        |
| E7                         | UC120E Starboard cylinder with integrated sensor                 | 1        |
| E8                         | CAN bus - Tee connection - 43578E                                | 14       |
| E9                         | CAN bus - Terminator pair - 43576A                               | 3        |
| E10                        | UC120 Starboard hydraulic cylinder                               | 1        |
| E11                        | A95-120 tie bar - Port cylinder to starboard cylinder connection | 2        |
| E12                        | UC120P Port hydraulic cylinder                                   | 1        |
| E13                        | UC120EP Port cylinder with integrated sensor                     | 1        |
| C1-C10                     | CAN-bus cables - length on request                               | 10       |
| KIT OB-SVS / KIT OB-2C-SVS | Hydraulic hoses kit - length on request                          | 2        |

Integra™ equipped with UPA123  
Outboard electronic power steering systems

new

# INTEGRA JS





# Integra™ equipped with UPA123

## Outboard electronic power steering system

### System components

|                 |  |
|-----------------|--|
| UIH             | Tilt mount electronic helm                       |
| UJS             | Integra JS joystick                              |
| UGW             | Integra JS Gateway                               |
| X52             | Adjustable steering wheel tilt mechanism         |
| UID             | Veratron® / VDO® colour display                  |
| BCM             | Body Control Module -Can Bus network module      |
| UPA123          | Electronic power Starboard actuator              |
| UPA123P         | Electronic power port actuator                   |
| DC/DC Converter | Voltage converter for UP123 actuator             |
| A96UPA          | Tie bar for Integra with UPA123 steering systems |
| CANbus wires    | Can bus power wires                              |

### Technical specifications

- Operating voltage: 12VDC
- Temperature range: -25°C/+77°C
- Outboard engine installations: single, dual, triple, quad
- Autopilot direct interface:
  - **Garmin®** Corepack Reactor 40 SBW
  - **Raymarine®** pack EV-2 SBW
  - **Furuno®** Navpilot 300
  - **Simrad®** Ap44 and Ap48 with NAC-D
- Customizable driving mode: Autocruise and Autosport
- Customizable wheel effort
- Compliance with rules: ISO 25197, ISO 10592, ABYC P21, P24, P27
- Ignition Protected SAE J1171



# Integra™ equipped with UPA123 Outboard electronic power steering systems

## Integra EPS and Integra JS with UPA123 key benefits

- **Redundant electronic steering system**, a reliable way to reduce steering effort, tuning your driving and enhancing steering experience.
- **Plug & play system**
- **Absence of hydraulic hoses onboard . - no purging operations required**
- **Virtually maintenance free**
- **Integra JS with UPA123 is ready for use**, once installed
- **Reduced size wire**: can be easily connected and disconnected to/from the actuator, thanks its the specific connector
- **Integra JS** adds to Integra EPS functionalities a new level of manoeuvrability, thanks to the **Joystick technology**
- **Integra JS** is a more **intuitive way of driving**. Designed for **low speed manoeuvring**, the Joystick grants precision and driving comfort and **facilitates docking and trailer procedures** as the boat can move sideways, diagonally or spin on its own axis
- **Integra JS Joystick** includes several functions: **Boost** function used to momentarily increase engine rpm if you need instant thrust, **Heading** function, that gives the ability to maintain the set course, **Anchor** function, to maintain boat position via GPS connection and the **Trim** function. **Anchor** function needs the presence of **Veratron® Nav Sensor** - part No. **20201Z**
- **Powerful output, great efficiency and quickest response** in any situation, thanks to the brushless motor of the pump unit and to the electronic management
- **Extremely silent**
- **Low amperage system**
- **Veratron® colour display**
- **Customizable driving mode**: the user can choose between Autocruise and Autosport driving mode
- **Autopilot direct interface**: **Garmin®** Reactor™ 40 Steer-by-wire, **Raymarine®** EV-2 SBW, **Furuno®** Navipilot 300, **Simrad®** Ap44 and Ap48 with NAC-D
- **Easy installation**, thanks to the simplified configuration and the CAN bus connection system.
- **Customizable wheel effort**.
- Wheel effort is programmed to change with engine RPM.
- **Tilt range of 48° and 5 locking positions**, thanks to the **X52** tilt mechanisms
- **Easy boat handling**: adjustable speed sensitive turns lock to lock
- Designed for single, dual, triple or quad outboard engines
- Available for multiple steering stations applications

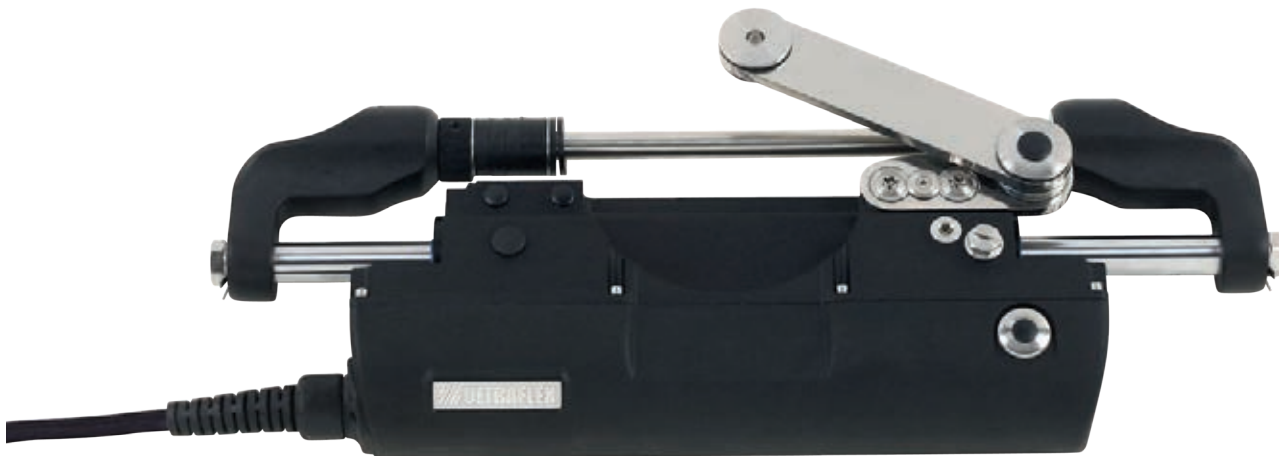


# Integra™ equipped with UPA123 Outboard electronic power steering systems

UPA123 - Electronic power actuator

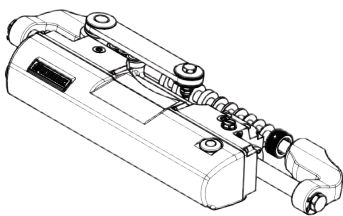
CE UK  
CA

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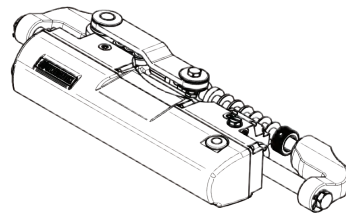


UPA123P

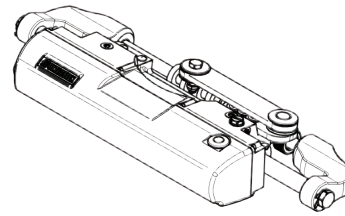
- Plug & play system
- Absence of hydraulic hoses onboard . - no purging operations required
- Virtually maintenance free
- Integra JS with UPA123 is ready for use, once installed
- **Reduced size wire:** it can be easily connected and disconnected to/from the actuator, thanks to its specific connector



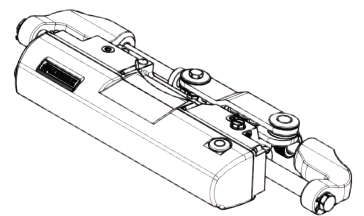
UPA123-OBF/1



UPA123-OBF/2



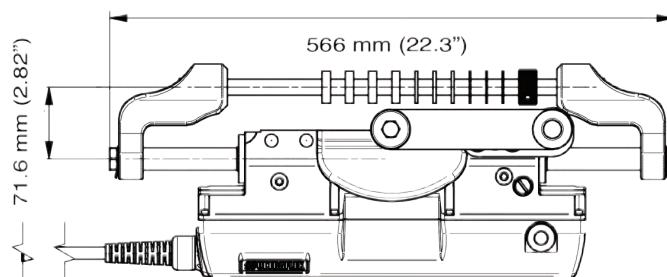
UPA123P-OBF/1



UPA123P-OBF/2

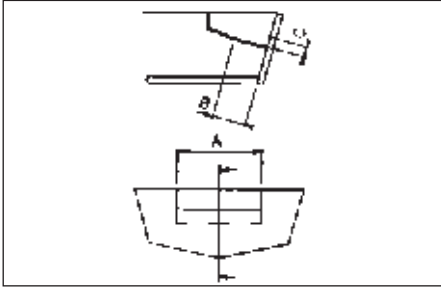
| Modello       | Codice | Descrizione  |
|---------------|--------|--|
| UPA123-OBF/1  | 44007N | Front mount electronic actuator, starboard version |
| UPA123-OBF/2  | 44009T | Front mount electronic actuator, starboard version |
| UPA123P-OBF/1 | 43851V | Front mount electronic actuator, port version      |
| UPA123P-OBF/2 | 44008R | Front mount electronic actuator, port version      |

|                                     |                   |
|-------------------------------------|-------------------|
| Max load                            | 700 kg (1555 lbs) |
| Stroke                              | 184 mm (7.24")    |
| Nominal voltage with DCDC converter | 12VDC             |
| MAX tension                         | 55A               |



UPA123 - DIMENSIONS

# Integra™ equipped with UPA123 Outboard electronic power steering systems



| SPLASHWELL DIMENSION REQUIREMENTS |                  |                |                |
|-----------------------------------|------------------|----------------|----------------|
| Engine No.                        | A                | B              | C              |
| 1                                 | 560 mm - 22.05"  | 152 mm - 5.98" | 152 mm - 5.98" |
| 2                                 | 1110 mm - 43.70" | 152 mm - 5.98" | 152 mm - 5.98" |

## UPA123 electronic actuator applications

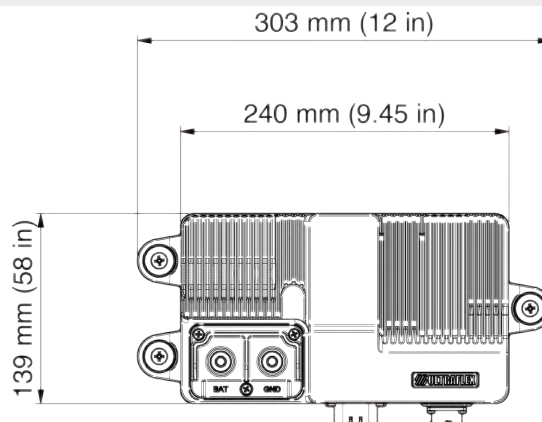
| ENGINE               | MODEL                                     | YEAR                         | ACTUATOR STARBOARD           | P. No.           | ACTUATOR PORT                  | P. No.           |
|----------------------|---|------------------------------|------------------------------|------------------|--------------------------------|------------------|
| Mercury®<br>Mariner® | 115-125-150 EFI 2S                        | 1990-2007                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | 225-250 EFI 2S                            | 2000-2007                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | 135-150-175 OPTIMAX                       | 1999-2018                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | 200-225-250 OPTIMAX                       | 1999-2018                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | RACING 300 OPTIMAX                        | 1999-2011                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | 250 SALTWATER EFI 4S                      | 2007-2011                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | 135-150-175-200 VERADO L4                 | 2004-2012                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | FOURSTROKE 175-200 V6                     | 2018-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | FOURSTROKE 225-300 V8                     | 2018-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
| Evinrude®            | E115-E130-E135 2S V4                      | 1995-to date                 | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |
|                      | E150-E175-E200-E225-E250-E300 2S V6       | 1995-to date                 | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |
| Yamaha®              | 150F-200F-250G 2S                         | 1990-2008                    | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |
|                      | 150 HPDI VMAX 2S                          | 1996-2007                    | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |
|                      | 175-200-225-250-300 HPDI VMAX 2S          | 2000-2008                    | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |
|                      | F115-F150 EFI 4S                          | 2000-2008                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | F200-F225-F250 4S                         | 1999-2007                    | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |
|                      | F115-F150-F175-F200 L4                    | 2002-2007                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | F200-F225-F250-F300 V6 4S<br>F350 4S V8   | 2004-to date<br>2006-to date | UPA123-OBF/2<br>UPA123-OBF/1 | 44009T<br>44007N | UPA123P-OBF/2<br>UPA123P-OBF/1 | 44008R<br>43851V |
| Honda®               | BF135-BF150 4S                            | 2005-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | BF150 V-TEC 4S                            | 2008-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | BF175-BF200-BF225- BF250 4S               | 2001-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
| Suzuki®              | DF100-115-140 4S                          | 2008-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | DF150-175-DF200 L4 4S                     | 2006-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | DF200-DF225-DF250-DF300-DF350 V6 4S       | 2004-to date                 | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 43851V           |
| Tohatsu®             | 115-120-140 2S                            | 2004-to date                 | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |
|                      | 70-90-115 TLDI 4S                         | 2004-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | BFT 115-150-200-225-250 4S                | 2014-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | BFT60-75-90                               | 2015-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
| Selva®               | 80 PORTOFINO/TIGERSHARK 2S                | 1995-2008                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | 150 WHITE SHARK 2S                        | 2001-2007                    | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 43433B           |
|                      | 100EFI MARLIN -115 EFI NARWHAL            | 2000-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | 225 BEAKED WHALE 4S                       | 2019-to date                 | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 43433B           |
|                      | 150EFI KILLER WHALE 4S - 200 SEI WHALE 4S | 2000-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
| Johnson®             | BJ90-115-140 4S                           | 2001-2007                    | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | J90-115 V4 2S                             | 1995-2007                    | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |
|                      | J150-175 V6 2S                            | 1995-2007                    | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |
|                      | J200-225 V6 4S                            | 2004-2007                    | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |
| OXE®                 | 125-150-175-200HP DIESEL                  | 2018-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
|                      | 300 HP DIESEL                             | 2020-to date                 | UPA123-OBF/1                 | 44007N           | UPA123P-OBF/1                  | 43851V           |
| COX®                 | 300 HP                                    | 2020-to date                 | UPA123-OBF/2                 | 44009T           | UPA123P-OBF/2                  | 44008R           |

# Integra™ equipped with UPA123 Outboard electronic power steering systems

## DCDC converter



DCDC converter



DCDC converter dimensions



**new**

DCDC converter - 43993T

DCDC converter is a component of Integra™ with UPA123 electronic power system. Every electronic actuator needs to be connected to a dedicated DCDC converter.

## A96-UPA - Tie bar for twin outboard engine/single UPA123 electronic actuator

Tie bars suitable with Integra™ equipped with UPA123 electronic power steering system only



A96-UPA M/Y



A96-UPA S/H

**new**

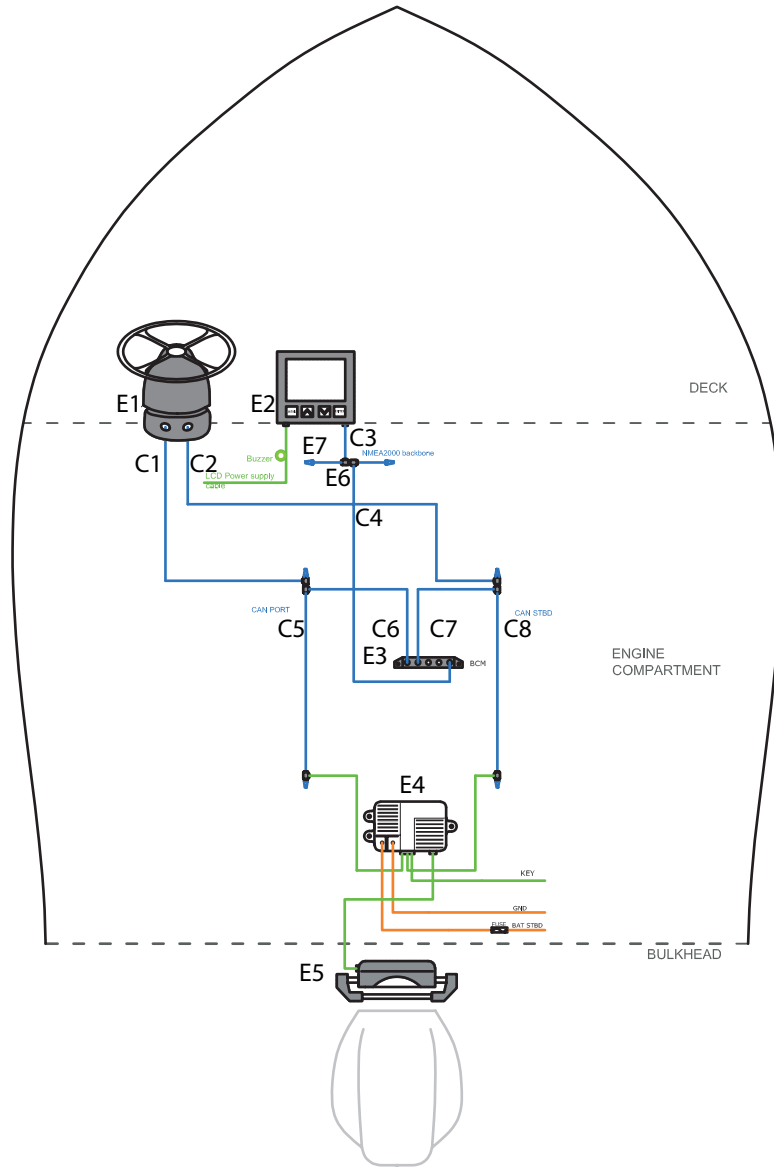
Two different lengths available:  
From 26" to 29" engine center  
From 29" to 34.5" engine center

|                  |        |  |
|------------------|--------|--|
| A96-UPA M/Y-29   | 44036W | From 26" to 29" engine center - For Mercury® and Yamaha® engines   |
| A96-UPA M/Y-34.5 | 44035U | From 29" to 34.5" engine center - For Mercury® and Yamaha® engines |
| A96-UPA S/H-29   | 44038A | From 26" to 29" engine center - For Suzuki® and Honda® engines     |
| A96-UPA S/H-34.5 | 44037Y | From 29" to 34.5" engine center - For Suzuki® and Honda® engines   |

# Integra™ EPS equipped with UPA123 Applications

Single engine, single cylinder

INTEGRA EPS



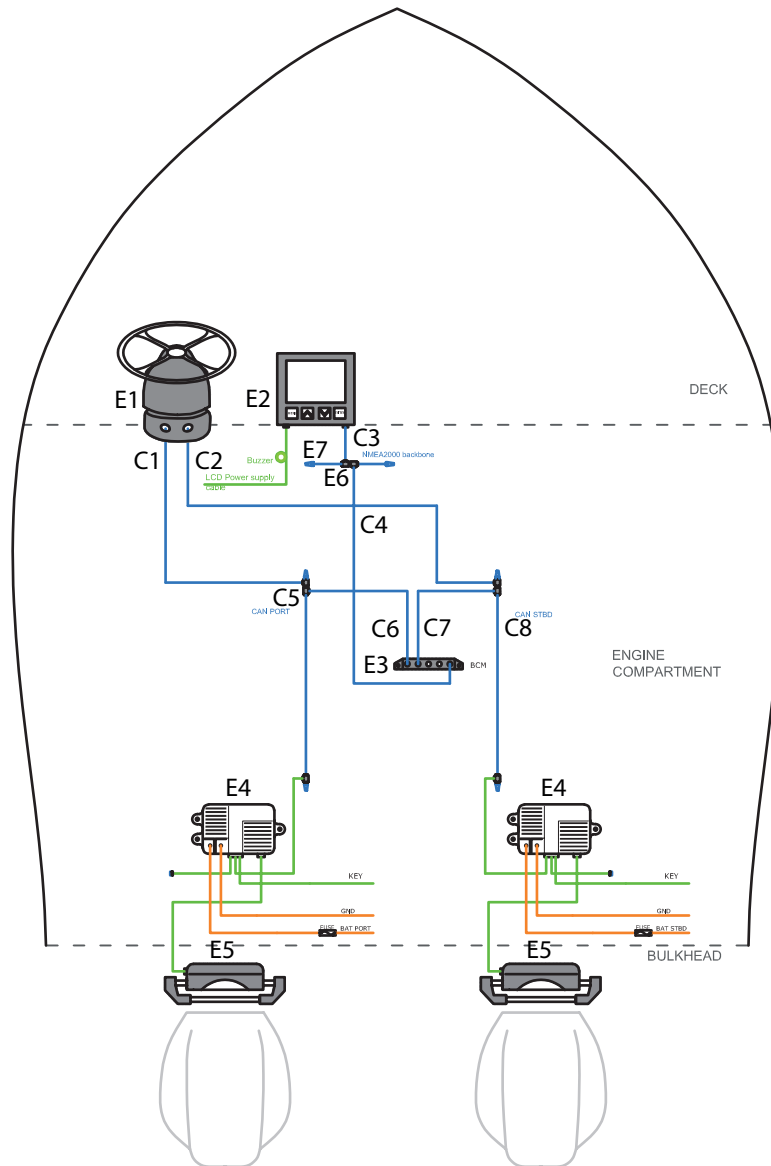
## Main components

| Name  | Description                               | Quantity |
|-------|---|----------|
| E1    | UIH1 Electronic helm - 43536M             | 1        |
| E1    | X52 Tilt mechanism - 39250U               | 1        |
| E2    | Veratron display - 43539U                 | 1        |
| E3    | BCM - Body control module - 43540C        | 1        |
| E4    | UPA Driver - DC/DC Converter - 43993T     | 1        |
| E5    | UPA123 (or UPA123P) - Electronic actuator | 1        |
| E6    | CAN bus - Tee connection - 43578E         | 8        |
| E7    | CAN bus - Terminator pair - 43576A        | 3        |
| C1-C8 | CAN-bus cables - length on request        | 8        |

# Integra™ CEPS equipped with UPA123 Applications

Dual engine, dual cylinder

INTEGRA CEPS



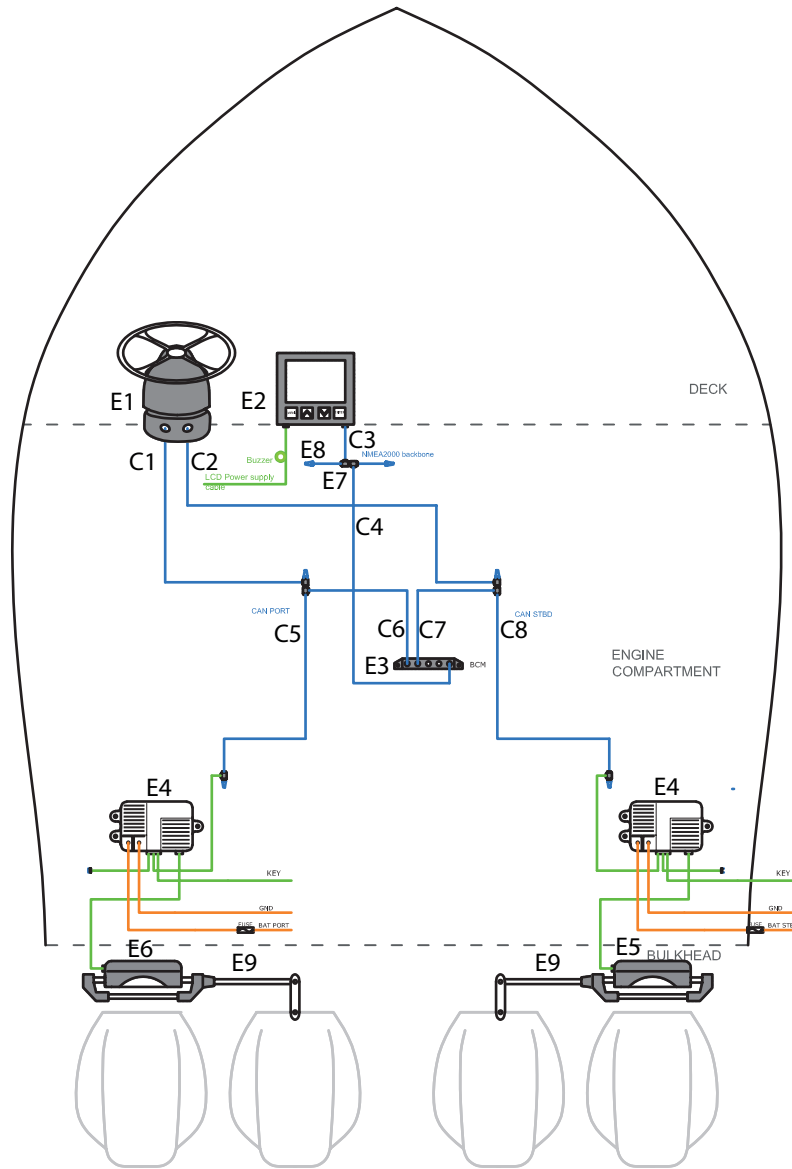
## Main components

| Name  | Description                             | Quantity |
|-------|---|----------|
| E1    | UIH1 Electronic helm - 43536M           | 1        |
| E1    | X52 Tilt mechanism - 39250U             | 1        |
| E2    | Veratron display - 43539U               | 1        |
| E3    | BCM - Body control module - 43540C      | 1        |
| E4    | UPA Driver - DC/DC Converter - 43993T   | 2        |
| E5    | UPA123 (or UPA123P) Electronic actuator | 2        |
| E6    | CAN bus - Tee connection - 43578E       | 8        |
| E7    | CAN bus - Terminator pair - 43576A      | 3        |
| C1-C8 | CAN-bus cables - length on request      | 8        |

# Integra™ CEPS equipped with UPA123 Applications

Quad engine, dual cylinder

INTEGRA CEPS



## Main components

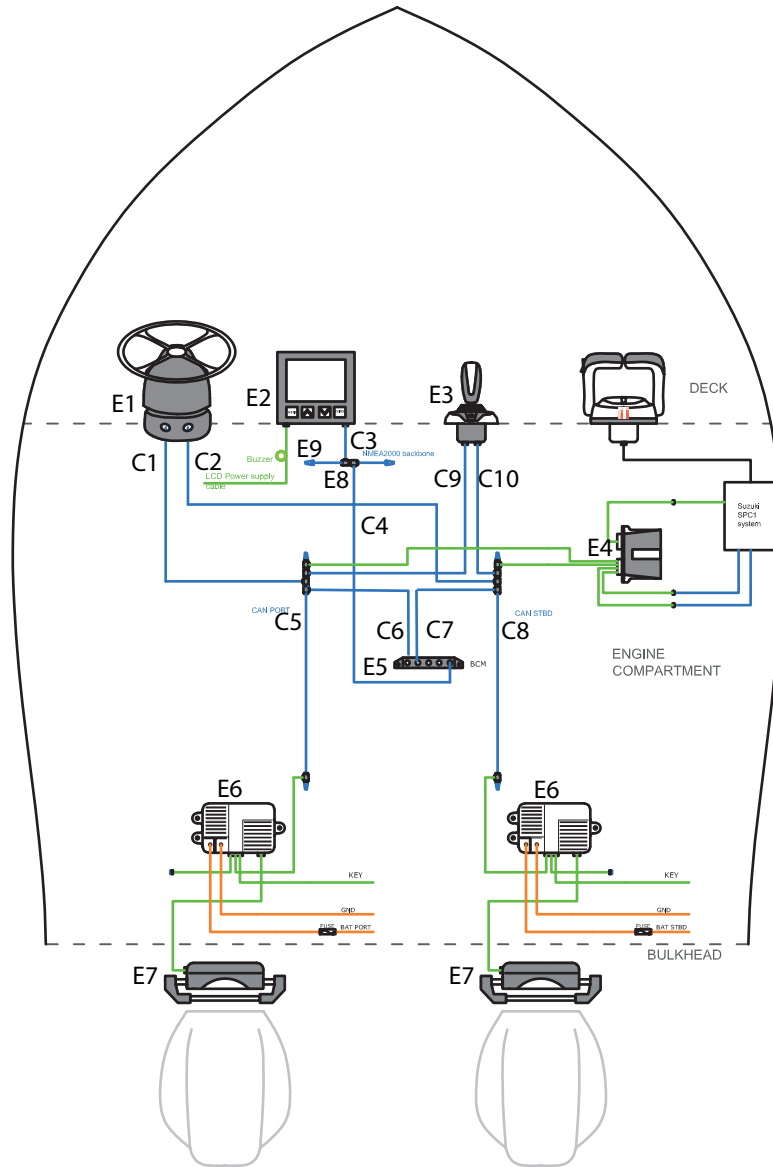
| Name  | Description                            | Quantity |
|-------|--|----------|
| E1    | UIH1 Electronic helm - 43536M          | 1        |
| E1    | X52 Tilt mechanism - 39250U            | 1        |
| E2    | Veratron display - 43539U              | 1        |
| E3    | BCM - Body control module - 43540C     | 1        |
| E4    | UPA Driver - DC/DC Converter - 43993T  | 2        |
| E5    | UPA123 - Electronic starboard actuator | 1        |
| E6    | UPA123P - Electronic port actuator     | 1        |
| E7    | CAN bus - Tee connection - 43578E      | 3        |
| E8    | CAN bus - Terminator pair - 43576A     | 2        |
| E9    | A96-120 tie bar                        | 2        |
| C1-C8 | CAN-bus cables - length on request     | 8        |



# Integra™ JS equipped with UPA123 Applications

Dual engine, dual cylinder

INTEGRA JS



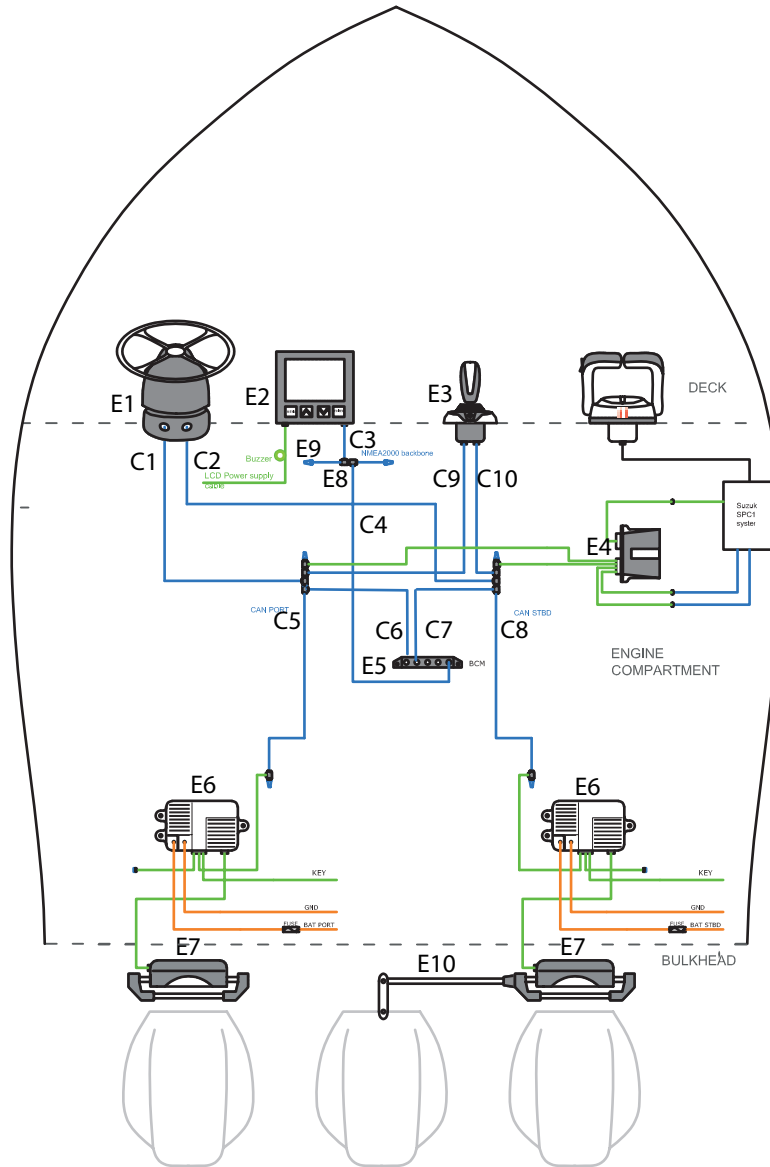
## Main components

| Name   | Description                               | Quantity |
|--------|---|----------|
| E1     | UIH1 Electronic helm - 43536M             | 1        |
| E1     | X52 Tilt mechanism - 39250U               | 1        |
| E2     | Veratron display - 43539U                 | 1        |
| E3     | UJS joystick - 43922T                     | 1        |
| E4     | Gateway                                   | 1        |
| E5     | BCM - Body control module - 43540C        | 1        |
| E6     | UPA Driver - DC/DC Converter - 43993T     | 2        |
| E7     | UPA123 (or UPA123P) - Electronic actuator | 2        |
| E8     | CAN bus - Tee connection - 43578E         | 12       |
| E9     | CAN bus - Terminator pair - 43576A        | 3        |
| C1-C10 | CAN-bus cables - length on request        | 10       |

# Integra™ JS equipped with UPA123 Applications

Triple engine, dual cylinder

INTEGRA JS



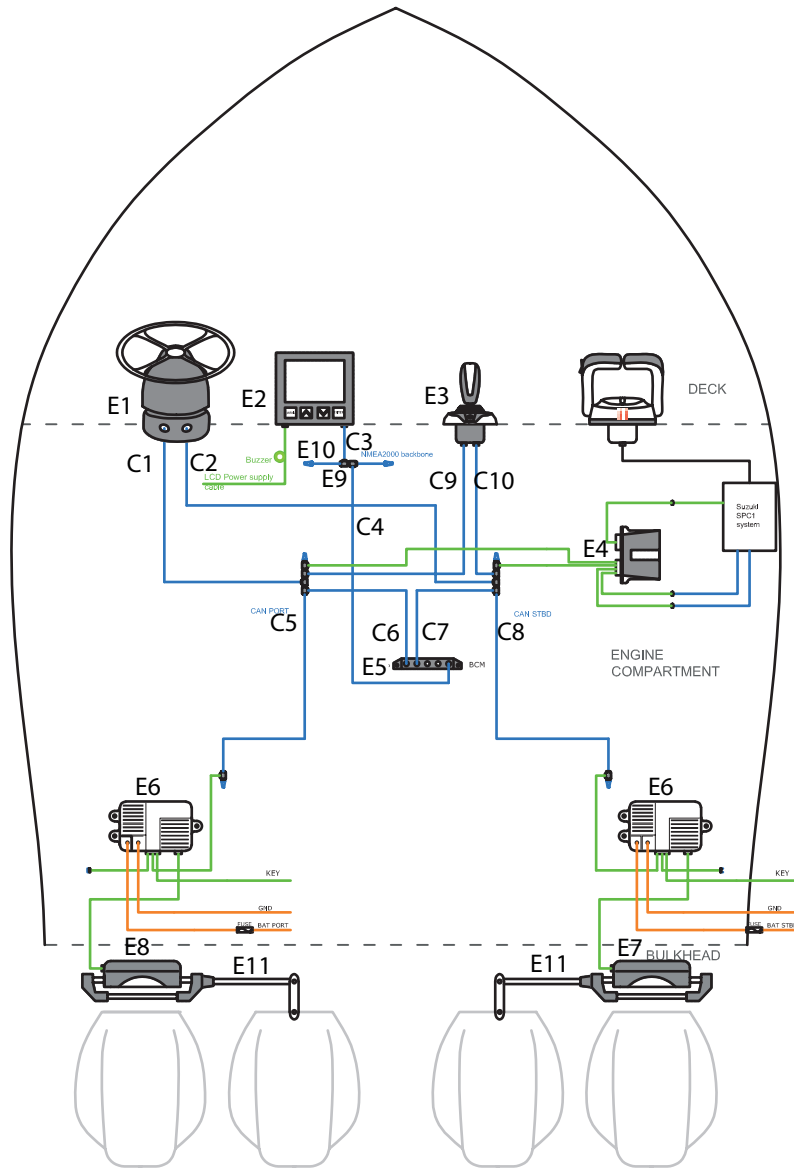
## Main components

| Name   | Description                               | Quantity |
|--------|---|----------|
| E1     | UIH1 Electronic helm - 43536M             | 1        |
| E1     | X52 Tilt mechanism - 39250U               | 1        |
| E2     | Veratron display - 43539U                 | 1        |
| E3     | UJS joystick - 43922T                     | 1        |
| E4     | Gateway                                   | 1        |
| E5     | BCM - Body control module - 43540C        | 1        |
| E6     | UPA Driver - DC/DC Converter - 43993T     | 2        |
| E7     | UPA123 (or UPA123P) - Electronic actuator | 2        |
| E8     | CAN bus - Tee connection - 43578E         | 12       |
| E9     | CAN bus - Terminator pair - 43576A        | 3        |
| E10    | A96-120 tie bar                           | 1        |
| C1-C10 | CAN-bus cables - length on request        | 10       |

# Integra™ JS equipped with UPA123 Applications

Quad engine, dual cylinder

INTEGRA JS



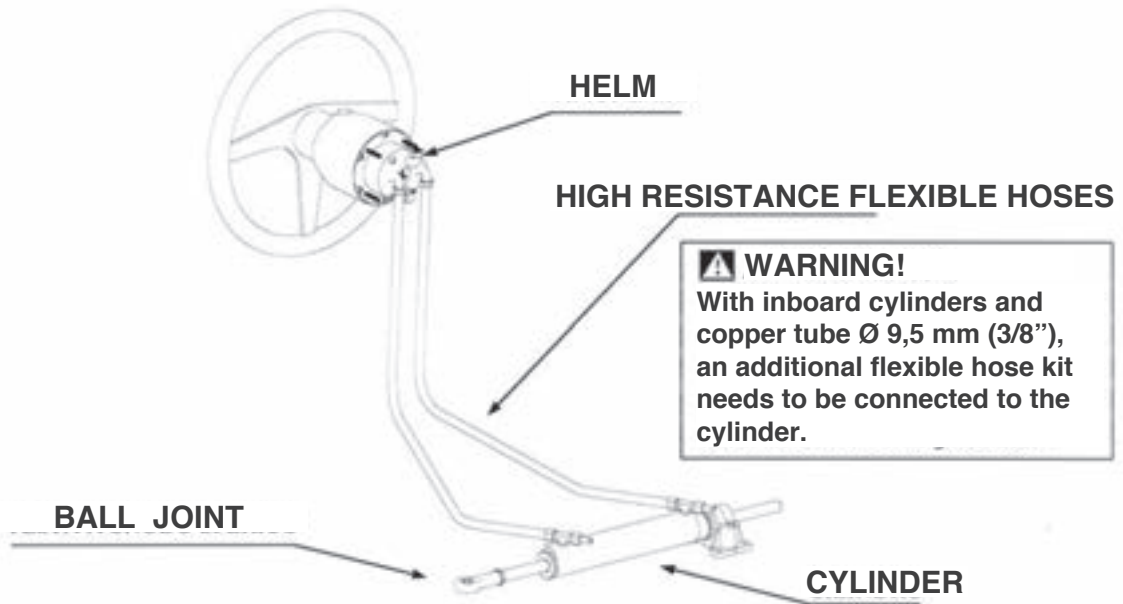
## Main components

| Name | Description                           | Quantity |
|------|---------------------------------------|----------|
| E1   | UIH1 Electronic helm - 43536M         | 1        |
| E1   | X52 Tilt mechanism - 39250U           | 1        |
| E2   | Veratron display - 43539U             | 1        |
| E3   | UJS joystick - 43922T                 | 1        |
| E4   | Gateway                               | 1        |
| E5   | BCM - Body control module - 43540C    | 1        |
| E6   | UPA Driver - DC/DC Converter - 43993T | 2        |
| E7   | UPA123 Electronic starboard actuator  | 1        |
| E8   | UPA123P Electronic port actuator      | 1        |
| E9   | CAN bus - Tee connection - 43578E     | 12       |
| E10  | CAN bus - Terminator pair - 43576A    | 3        |
| E11  | A96-120 tie bar                       | 2        |

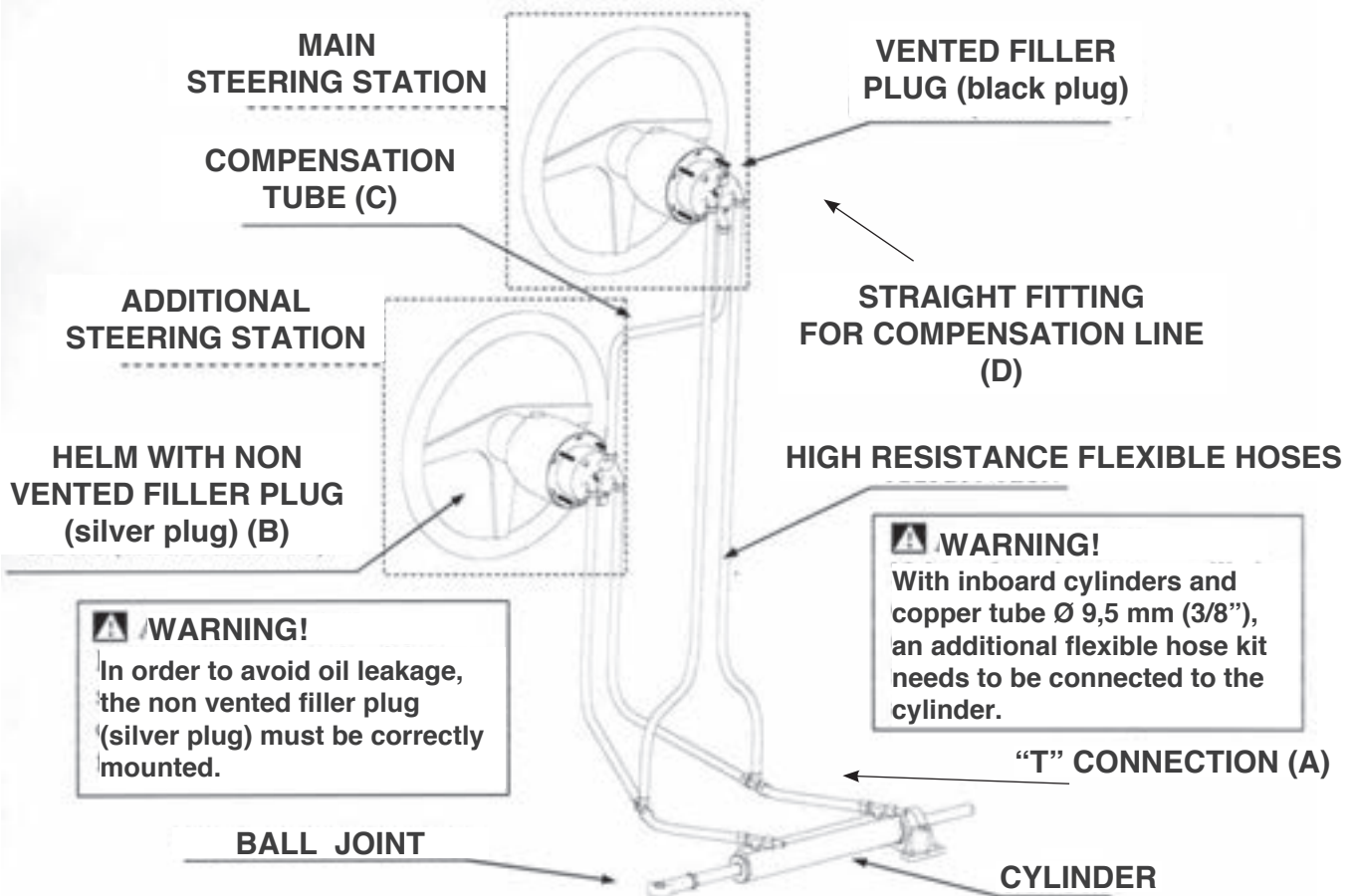


# Inboard steering systems

## Single steering station installation diagram



## Dual steering station installation diagram



|                                 |         |
|---------------------------------|---------|
| A) 3/8" T fitting               | 39502 V |
| B) non vented filler plug       | 40802 R |
| C) TU95 - 3/8" nylon tube (1m)  | 70701 D |
| D) SF38 - 3/8" straight fitting | 39471 L |

Kit OB-2S - 39518 L includes 2xA+B+2xD  
 Kit OB-2S - 43073 X includes 2xA+B+8mxC+2xD

# Inboard steering systems

## Application guide

| BOAT LENGTH | UP to 10 m (33') | UP to 10 m (33') | UP to 10 m (33') | 10 ÷ 12 m (33' ÷ 40') | 10 ÷ 12 m (33' ÷ 40') | 12 ÷ 14 m (40' ÷ 46') | 14 ÷ 16 m (46' ÷ 53') | 16 ÷ 18 m (53' ÷ 59') | 18 ÷ 20 m (59' ÷ 66') |
|-------------|------------------|------------------|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| CYLINDER    |                  |                  |                  |                       |                       |                       |                       |                       |                       |
| HELM PUMP   | UC69-I           | UC116-I          | UC168-I          | UC215-I               | UC293-I               | UC339-I               | UC378-I               | UC442-I               | UC530-I               |
| UP18        | 3,8 N - 3/8"     |                  |                  |                       |                       |                       |                       |                       |                       |
| UP20        | 3,5 N - 3/8"     |                  |                  |                       |                       |                       |                       |                       |                       |
| UP25        |                  | 4,6 N - 3/8"     | 6,72 L - 3/8"    | 8,6 L - 3/8"          |                       |                       |                       |                       |                       |
| UP28        |                  | 4,1 M - 3/8"     | 6 N - 3/8"       | 7,6 L - 3/8"          |                       |                       |                       |                       |                       |
| UP33        |                  | 3,5 H - 3/8"     | 5,1 M - 3/8"     | 6,5 N - 3/8"          | 8,8 L - 3/8"          |                       |                       |                       |                       |
| UP39        |                  |                  | 4,3 H - 3/8"     | 5,5 M - 3/8"          | 7,5 N - 3/8"          | N/A                   |                       |                       |                       |
| UP39-I R    |                  |                  |                  | N/A                   | N/A                   | 8,6 N - R7            | 9,6 L - R7            |                       |                       |
| UP45        |                  |                  |                  |                       | 6,5 M - 3/8"          | N/A                   | N/A                   |                       |                       |
| UP45-I R    |                  |                  |                  |                       |                       | 7,5 M - R7            | 8,4 N - R7            | 9,8 N - R7            | 11,5 L - R7           |
| UP56        |                  |                  |                  |                       |                       | 6,0 P - R7            | 6,7 M - R7            | 7,9 N - R7            | 9,5 N - R7            |
| UP68        |                  |                  |                  |                       |                       |                       | 5,5 P - R7            | 6,5 M - R7            | 7,8 N - R7            |


| STEERING WHEEL TURNS LOCK TO LOCK   | STEERING WHEEL FEELING | HOSE TYPE                                |
|---|------------------------|--|
|  | L=LIGHT                | 3/8"= 5/16 HOSE AND FITTINGS OR KIT-OB/M |
|   | N=NORMAL               |  |
|   | M=MEDIUM               | R7 = TUR7 FLEXIBLE HOSE AND FR7 FITTINGS |
|   | H=HEAVY                |  |



Photo courtesy of Fluid Motion

**WARNING:** These recommendations should be used as a general reference only. Final selection should be made with the assistance of a qualified installation technician. For any further information please contact our Technical Service

# UP20F - UP25F - UP28F - UP33F - UP39F - UP45F

## Front mount helms



UP20F



UP25F/28F/33F/39F/45F

- Available in six different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- Integrated relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Includes 90° **adjustable** fittings for 3/8" tube
- **X74** - 43048Y square flange for UP20
- **X64** - 40198C square flange (for all models except UP20) or **X57** - 39464P round flange (for all models except UP20) permit to install the pumps in an intermediate dashboard position.



UP20F + X74

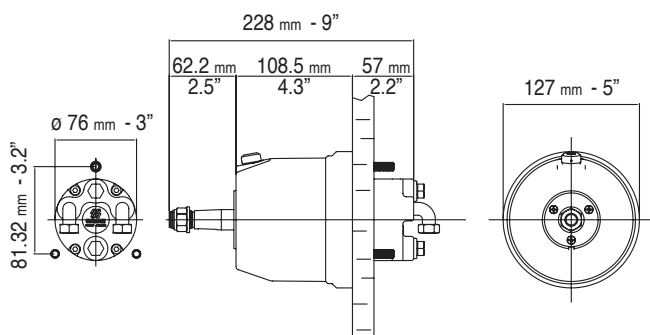


UP25F/28F/33F/39F/45F + X64

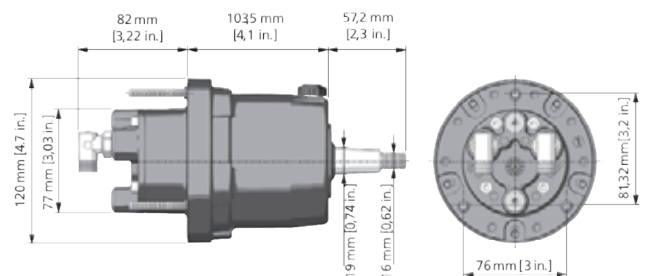


UP25F/28F/33F/39F/45F + X57

| MODEL | P. No.  | MOUNTING    | DISPLACEMENT/<br>REVOLUTION | No. OF<br>PISTONS | RELIEF VALVE<br>SETTING | MAXIMUM<br>WHEEL DIA. | WEIGHT         |
|-------|---------|-------------|-----------------------------|-------------------|-------------------------|-----------------------|----------------|
| UP20F | 43180 Y | Front mount | 20 cc - 1.2 cu.in           | 5                 | 70 Bar - 1000 PSI       | 508 mm - 20"          | 3,6 kg - 8 lbs |
| UP25F | 42462 D | Front mount | 25 cc - 1.5 cu.in           | 5                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs  |
| UP28F | 42459 R | Front mount | 28 cc - 1.7 cu.in           | 5                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs  |
| UP33F | 42456 J | Front mount | 33 cc - 2.0 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs  |
| UP39F | 42453 C | Front mount | 39 cc - 2.4 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs  |
| UP45F | 42465 K | Front mount | 45 cc - 2.7 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs  |



UP25F, UP28F, UP33F, UP39F, UP45F DIMENSIONS



UP20F DIMENSIONS

# UP28R - UP33R - UP39R - UP39-IR - UP45R - UP45-IR

## Rear mount helms



X68

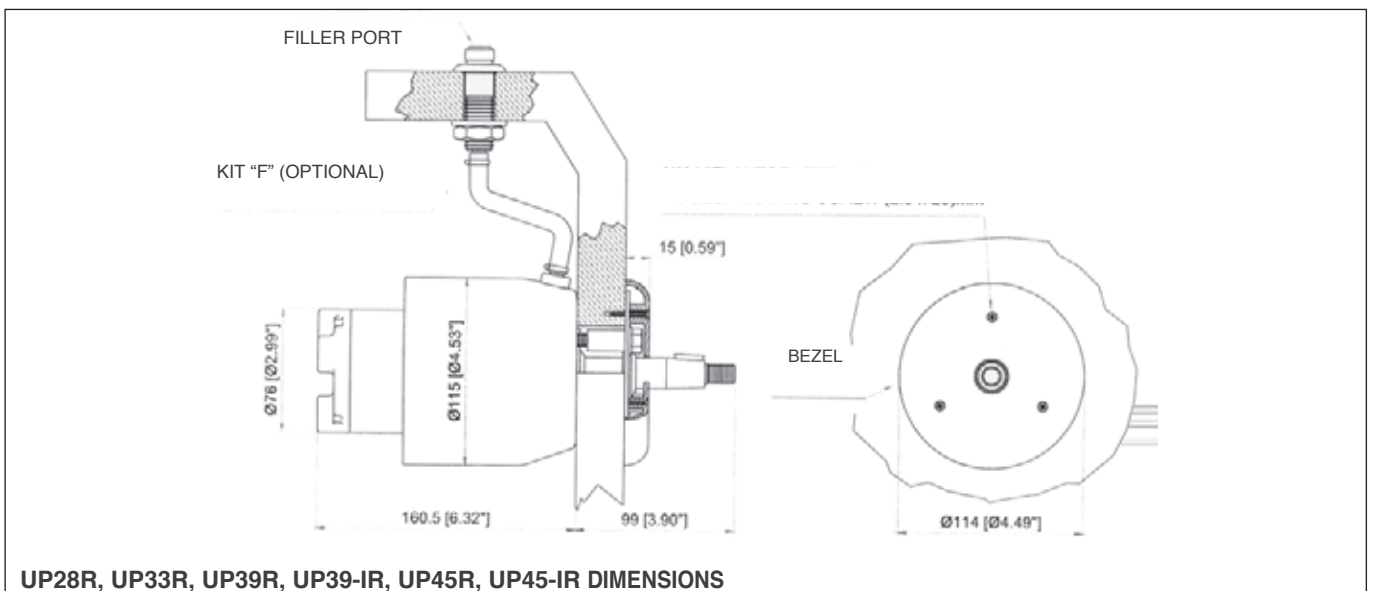


KIT F



- Available in four different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- Integrated relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Easily accessible shaft seal for replacement
- Cast iron cylinder rotor for greater durability and longer life
- White bezel included
- Complete with 90° **adjustable** fittings for 3/8" tube, except UP39-I R and UP45-I R pumps (straight fittings for 12 mm hose)
- **X68** (optional) - 40894Z Chrome plated bezel
- **KIT F** (optional) - 39664Y Remote fill adapter

| MODEL   | P. No. | MOUNTING   | DISPLACEMENT/<br>REVOLUTION | No. OF<br>PISTONS | RELIEF VALVE<br>SETTING | MAXIMUM<br>WHEEL DIA. | WEIGHT        |
|---------|--------|------------|-----------------------------|-------------------|-------------------------|-----------------------|---------------|
| UP28R   | 42460Z | Rear mount | 28 cc - 1.7 cu.in           | 5                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |
| UP33R   | 42457L | Rear mount | 33 cc - 2.0 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |
| UP39R   | 42454E | Rear mount | 39 cc - 2.4 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |
| UP39-IR | 42557R | Rear mount | 39 cc - 2.4 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |
| UP45R   | 42466M | Rear mount | 45 cc - 2.7 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |
| UP45-IR | 41279H | Rear mount | 45 cc - 2.7 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 5 kg - 11 lbs |



UP28R, UP33R, UP39R, UP39-IR, UP45R, UP45-IR DIMENSIONS



## UP56 - UP68

### Rear or intermediate mount helms



KIT F56



KR56



- Rear or intermediate mounting configuration
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- 3/4" tapered shaft
- Easily accessible shaft seal for replacement
- Brass rotor for greater durability and longer life
- 3/8" BSPP fitting for 12 mm tube
- Complete with fittings
- **KR56** (optional) - 42558T permits to install the UP56 and UP68 pumps in a rear mount position. Includes chrome plated cover ring.
- **KIM56** (optional) - 42559V hardware kit: permits to install the UP56 and UP68 pumps in an intermediate mount position

**NOTE:** UP56 or UP68 installation needs either kit KR56 or KIM56

- **KIT F56** (optional) - 40813W Remote fill adapter

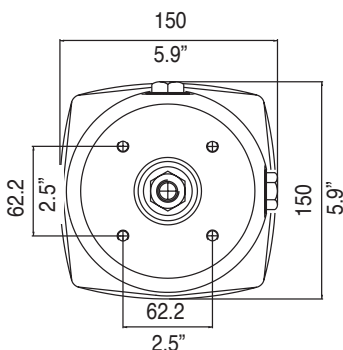
| MODEL | P. No. | MOUNTING                              | DISPLACEMENT/<br>REVOLUTION | No. OF<br>PISTONS | RELIEF VALVE<br>SETTING | MAXIMUM<br>WHEEL DIA. | WEIGHT            |
|-------|--------|---------------------------------------|-----------------------------|-------------------|-------------------------|-----------------------|-------------------|
| UP56  | 40808D | Rear (KR56) -<br>Intermediate (KIM56) | 56 cc - 3.4 cu.in           | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 7,5 kg - 16,5 lbs |
| UP68  | 42561F | Rear (KR56) -<br>Intermediate (KIM56) | 68 cc - 4.15 cu.in          | 7                 | 70 Bar - 1000 PSI       | 710 mm - 28"          | 7,5 kg - 16,5 lbs |

### RV70 - 42560D - Relief valve 70 bar

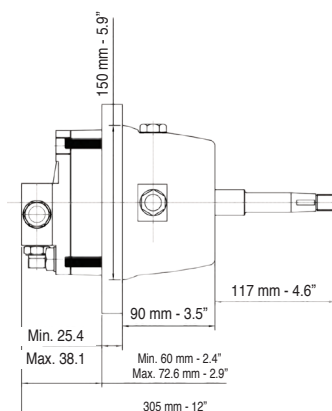
**WARNING:** Applications with UP56 or UP68 pumps require the RV70 relief valve added to the system for over-pressure protection.



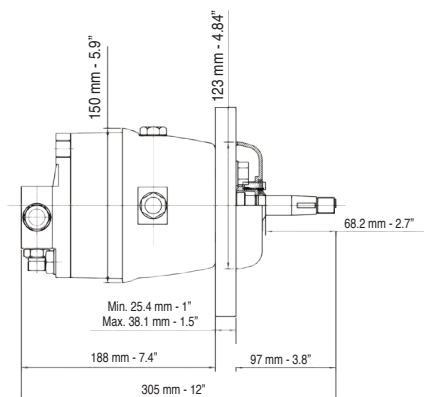
RV70



UP56, UP68



UP56, UP68 INTERMEDIATE MOUNT



UP56, UP68 REAR MOUNT

# UC69-I - UC116-I - UC168-I - UC215-I Inboard cylinders

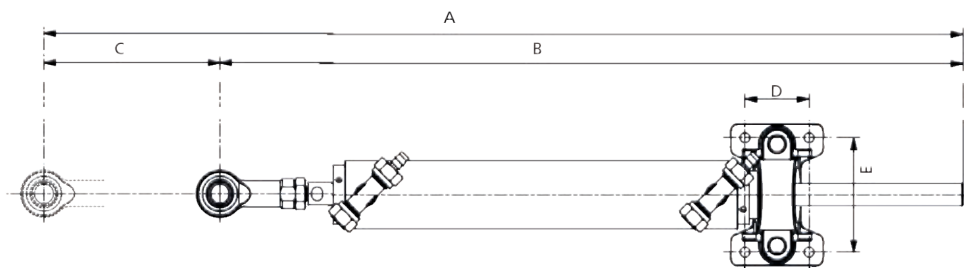


**UC69-I** - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



**UC116-I; UC168-I; UC215-I**  
All balanced cylinders: the number of turns lock-to-lock is equal port to starboard and vice-versa

| SPECIFICATIONS            | UC69-I - 39782E                | UC116-I - 39431Y<br>Alluminium | UC168-I - 39432A<br>Alluminium | UC215-I - 39433C<br>Alluminium |
|---------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Volume                    | 69 cc - 4.2 cu. in             | 116 cc - 7 cu. in              | 168 cc - 10.25 cu.in           | 215 cc - 13.12 cu. in          |
| Torque                    | 32 kgm - 2783 lbs. in          | 58 kgm - 5043 lbs. in          | 87 kgm - 7565 lbs. in          | 111 kgm - 9652 lbs. in         |
| Output force              | 168 kg - 371 lbs               | 464 kg - 1023 lbs              | 673 kg - 1483 lbs              | 673 kg - 1483 lbs              |
| Internal diameter         | 25 mm - 0.98"                  | 32 mm - 1.25"                  | 40 mm - 1.57"                  | 40 mm - 1.57"                  |
| Stroke                    | 150 mm - 5.9"                  | 178 mm - 7"                    | 178 mm - 7"                    | 228 mm - 9"                    |
| 3/8" (9,5 mm)<br>Fittings | For high pressure<br>flex hose | For high pressure<br>flex hose | For high pressure<br>flex hose | For high pressure<br>flex hose |



|                   | UC69-I          | UC116-I         | UC168-I         | UC215-I         |
|-------------------|-----------------|-----------------|-----------------|-----------------|
| <b>A</b>          | 644 mm - 25.33" | 741 mm - 29.17" | 792 mm - 31.18" | 941 mm - 37.05" |
| <b>B</b>          | 494 mm - 19.43" | 563 mm - 22.17" | 614 mm - 24.17" | 713 mm - 28.07" |
| <b>C (stroke)</b> | 150 mm - 5.9"   | 178 mm - 7"     | 178 mm - 7"     | 228 mm - 8.98"  |
| <b>D</b>          | 40 mm - 1.57"   | 40 mm - 1.57"   | 40 mm - 1.57"   | 40 mm - 1.57"   |
| <b>E</b>          | 73 mm - 2.87"   | 73 mm - 2.87"   | 105 mm - 4.13"  | 105 mm - 4.13"  |
| <b>Rod Ø</b>      | 14 mm - 0.55"   | 14 mm - 0.55"   | 20 mm - 0.79"   | 20 mm - 0.79"   |

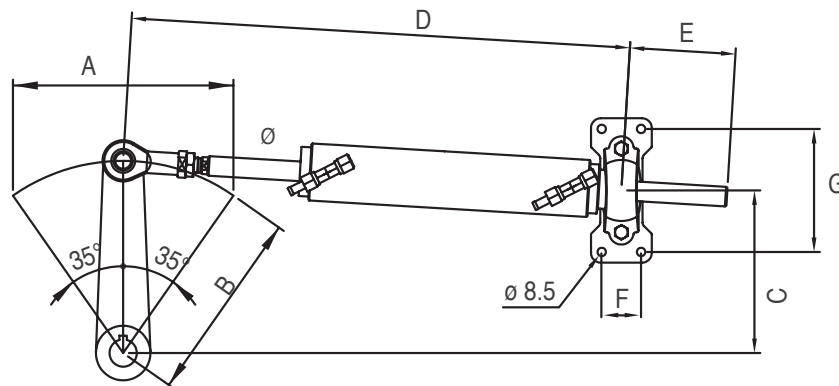
## UC293-I - UC378-I Inboard cylinders



### UC293-I; UC378-I

Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.

| SPECIFICATIONS    | UC293-I - 40246L<br>Brass                    | UC378-I - 40810P<br>Brass  |
|-------------------|--|--|
| Volume            | 293 cc - 17.8 cu. in                         | 376 cc - 22.94 cu. in  |
| Torque            | 146,5 kgm - 12816 lbs. in                    | 187,6 kgm - 16347 lbs. in  |
| Output force      | 1155 kg - 2545 lbs                           | 1155 kg - 2545 lbs   |
| Internal diameter | 50 mm - 1.97"                                | 50 mm - 1.97"  |
| Stroke            | 178 mm - 7"                                  | 228 mm - 9"  |
| Fittings          | 3/8" (9,5 mm)<br>for high pressure flex hose | for (12 mm) copper tube<br>(flexible connection hoses not included)<br>or TUR7 high pressure flex hose |



|       | UC293-I        | UC378-I         |
|-------|----------------|-----------------|
| A     | 178 mm - 7"    | 228 mm - 9"     |
| B     | 163 mm - 6.4"  | 199 mm - 7.8"   |
| C     | 134 mm - 5.2"  | 163 mm - 6.4"   |
| D     | 506 mm - 19.9" | 592 mm - 23.3"  |
| E     | 107 mm - 4.2"  | 132,5 mm - 5.2" |
| F     | 40 mm - 1.6"   | 40 mm - 1.6"    |
| G     | 125 mm - 4.9"  | 125 mm - 4.9"   |
| Rod Ø | 20 mm - 0.8"   | 20 mm - 0.8"    |

# UC339-I - UC442-I - UC50-I Inboard cylinders



### UC339-I; UC442-I

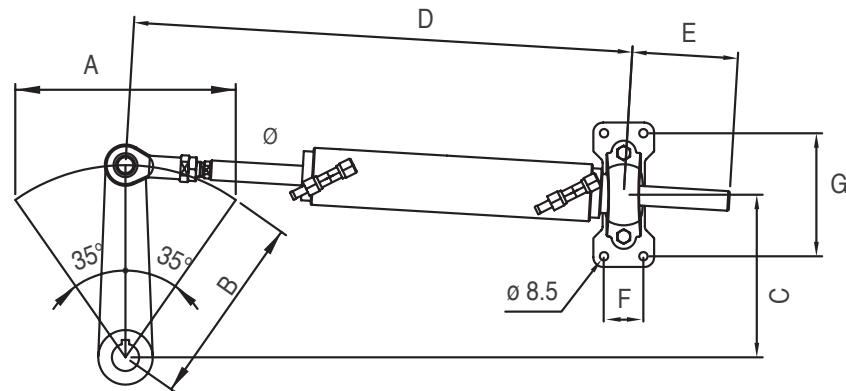
Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



### UC530-I

Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.

| SPECIFICATIONS  | UC339-I<br>42562H  | UC442-I<br>42563K  | UC530-I<br>42564M  |
|-----------------|--|--|--|
| Volume          | 339 cc – 20.7 cu.in                                      | 442 cc – 26.9 cu.in                                      | 530 cc – 32.3 cu.in                                      |
| Torque          | 172 kgm – 14957.7 lbs.in                                 | 223 kgm – 19335.6 lbs.in                                 | 270 kgm – 23443.4 lbs.in                                 |
| Output force    | 1051 kg – 2316.6 lbs                                     | 1051 kg – 2316.6 lbs                                     | 1513 kg – 3335.9 lbs                                     |
| Inside diameter | 50 mm – 1.97"  | 50 mm – 1.97"  | 60 mm – 2.36"  |
| Stroke          | 230 mm – 9"  | 300 mm – 12"   | 250 mm – 10"   |
| Fittings        | For 12 mm copper tube or<br>TUR7 high pressure flex hose | For 12 mm copper tube or<br>TUR7 high pressure flex hose | For 12 mm copper tube or<br>TUR7 high pressure flex hose |



|       | UC339-I        | UC442-I        | UC530-I        |
|-------|----------------|----------------|----------------|
| A     | 230 mm – 9"    | 300 mm – 12"   | 250 mm – 10"   |
| B     | 200 mm – 7.9"  | 260 mm – 10.2" | 218 mm – 8.6"  |
| C     | 164 mm – 6.5"  | 212 mm – 8.3"  | 178 mm – 7.0"  |
| D     | 637 mm – 25.1" | 749 mm – 29.5" | 723 mm – 28.5" |
| E     | 147 mm – 5.8"  | 183 mm – 7.2"  | 168 mm – 6.6"  |
| F     | 70 mm – 2.8"   | 70 mm – 2.8"   | 120 mm – 4.7"  |
| G     | 110 mm – 4.3"  | 110 mm – 4.3"  | 104 mm – 4.1"  |
| Rod Ø | 25 mm – 0.98"  | 25 mm – 0.98"  | 30 mm – 1.18"  |

# Hoses - accessories for inboard steering systems

## KIT OB/M - Hose kit with preassembled fittings at one end for single station installation

Two high pressure flexible hoses with fittings featuring turning nuts preassembled at one end only. It is supplied with two spare fittings and two bend restrictors. Available in three standard lengths that can be cut to fit the required application.

| KIT OB/M     | LENGTH            | P. No.  |
|--------------|-------------------|---------|
| KIT OB/M-60  | 6,00 m - 19.7 ft  | 41708 E |
| KIT OB/M-90  | 9,00 m - 29.5 ft  | 41709 G |
| KIT OB/M-150 | 15,00 m - 49,2 ft | 42565 P |

- TU5/16 - 41305F** 5/16" nylon tubing for OB-F5/16 fittings. Available per metre (41305F), 50 m (164 ft) coils (42574R) and 150 m (492 ft) coils (41389R).
- OB-F5/16 - 42670L** two reusable fittings featuring turning nut for use with 5/16" hydraulic hose and connection for 3/8" end fitting
- TUR7 42568W** high pressure hydraulic hose for FR7 12mm end fittings. Available per metre and 50 m (164 ft) coils (42567U).
- FR7 - 42569Y** 1 reusable fitting for use with 3/8" hydraulic hose and connection with 12 mm helm and cylinder fittings.
- RV70 - 42560D** relief valve required for use in inboard applications with UP56 and UP68 pumps.
- KIT OB-2S - 43183E** fitting kit for a second steering station or for an autopilot installation. It includes all necessary fittings for 3/8" flexible hose and 8 m (ft 26.3) of 3/8" dia. nylon tube for the compensating line.
- KIT 95 - 39516G** 3/8" copper tube fitting kit. It includes one 1,0 m (3.2') nylon tube and all necessary fittings for a single station application.
- KIT 120-I - 42765Y** 12 mm copper tube fitting kit. It includes one 1,0 m (3.2') nylon tube and all necessary fittings for a single station application.
- KIT 95-2S - 43184G** fitting kit for a second steering station or for an autopilot installation. It includes all necessary fittings for 3/8" flexible hose or copper tube.
- KIT 120U-2S - 41625A** fitting kit for a second steering station or for an autopilot installation. It includes all necessary fittings for 12 mm flexible hose or copper tube in UP33-I R or UP45-I R applications.
- KIT 120-2S - 40821V** Fitting kit for a second steering station or for an autopilot installation for UP56 and UP68 pumps
- BP 95 - 42829Y** by-pass for 3/8" flexible hose
- BP 56 - 42566S** by-pass for 12 mm hose. For use with UC339-I, UC442-I and UC530-I cylinders in installation with copper tube. Connection flex hoses included.



KIT OB/M



OB-F5/16



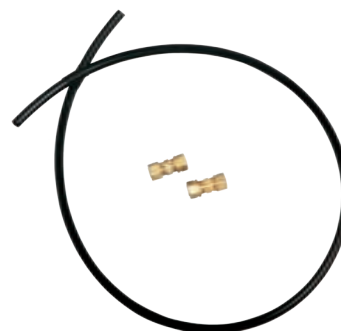
FR7



RV70



KIT OB-2S



KIT 95 - KIT120-I



BP 95



BP 56



KIT 95-2S - KIT 120U-2S

## Hoses - accessories for inboard steering systems

### OL 150 - 42398X:

Hydraulic oil sold in 1 litre (0.26 gallons) bottle

- Hydraulic oil: 150 VG 15

- Solidification point: < -30°C

- Contamination according to NAS1638 ≤ 8

### KIT F - 39664Y:

remote fill adapter for rear mount UP28, UP33,

UP39, UP45 pumps.

### KIT F56 - 40813W:

remote fill adapter for rear mount UP56 and

UP68 pumps.



OL 150



KIT F - KIT F56 (adapter included)

### Order guide

| PUMP model                  | CYLINDER model | Wheel turns Lock-to-lock | Max rudder torque          | Flex hose or copper tube                | Kit for a dual station installation     |
|-----------------------------|----------------|--------------------------|----------------------------|---|---|
| UP20 F                      | UC69           | 3,5                      | 32 kgm<br>2780 lbs.in.     | TU5/16 flex hose or<br>3/8" copper tube | KIT-OB-2S 39539V<br>or Kit 95-2S 39518L |
| UP25 F                      | UC116-I        | 4,6                      | 58 kgm<br>5043 lbs.in.     | TU5/16 flex hose or<br>3/8" copper tube | KIT-OB-2S 39539V<br>or Kit 95-2S 39518L |
| UP28 F<br>or UP28 R         | UC116-I        | 4,1                      | 58 kgm<br>5043 lbs.in.     | TU5/16 flex hose or<br>3/8" copper tube | KIT-OB-2S 39539V<br>or Kit 95-2S 39518L |
| UP28 F<br>or UP28 R         | UC168-I        | 6,0                      | 87 kgm<br>7565 lbs.in.     | TU5/16 flex hose or<br>3/8" copper tube | KIT-OB-2S 39539V<br>or Kit 95-2S 39518L |
| UP33 F<br>or UP33 R         | UC168-I        | 5,1                      | 87 kgm<br>7565 lbs.in.     | TU5/16 flex hose or<br>3/8" copper tube | KIT-OB-2S 39539V<br>or Kit 95-2S 39518L |
| UP33 F<br>or UP33 R         | UC215-I        | 6,5                      | 111 kgm<br>9642 lbs.in.    | TU5/16 flex hose or<br>3/8" copper tube | KIT-OB-2S 39539V<br>or Kit 95-2S 39518L |
| UP39 F<br>or UP39 R         | UC215-I        | 5,5                      | 111 kgm<br>9642 lbs.in.    | TU5/16 flex hose or<br>3/8" copper tube | KIT-OB-2S 39539V<br>or Kit 95-2S 39518L |
| UP39 F<br>or UP39 R         | UC293-I        | 7,5                      | 146,5 kgm<br>12816 lbs.in. | TU5/16 flex hose or<br>3/8" copper tube | KIT-OB-2S 39539V<br>or Kit 95-2S 39518L |
| UP45 F<br>or UP45 R         | UC293-I        | 6,5                      | 146,5 kgm<br>12816 lbs.in. | TU5/16 flex hose or<br>3/8" copper tube | KIT-OB-2S 39539V<br>or Kit 95-2S 39518L |
| UP39-I R                    | UC339-I        | 8,6                      | 172 kgm<br>14958 lbs.in    | 12mm copper tube<br>or TUR7 flex hose   | KIT120U-2S<br>41625A                    |
| UP56*<br>with KR56 or KIM56 | UC339-I        | 6,0                      | 172 kgm<br>14958 lbs.in    | 12mm copper tube<br>or TUR7 flex hose   | KIT120-2S<br>40821V                     |
| UP45-I R                    | UC378-I        | 8,4                      | 187,6 kgm<br>16347 lbs.in. | 12mm copper tube<br>or TUR7 flex hose   | KIT120U-2S<br>41625A                    |
| UP56*<br>with KR56 or KIM56 | UC378-I        | 6,7                      | 187,6 kgm<br>16347 lbs.in. | 12mm copper tube<br>or TUR7 flex hose   | KIT120-2S<br>40821V                     |
| UP56*<br>with KR56 or KIM56 | UC442-I        | 7,9                      | 223 kgm<br>19336 lbs.in    | 12mm copper tube<br>or TUR7 flex hose   | KIT120-2S<br>40821V                     |
| UP68*<br>with KR56 or KIM56 | UC442-I        | 6,5                      | 223 kgm<br>19336 lbs.in    | 12mm copper tube<br>or TUR7 flex hose   | KIT120-2S<br>40821V                     |
| UP68*<br>with KR56 or KIM56 | UC530-I        | 7,8                      | 270 kgm<br>23443 lbs.in    | 12mm copper tube<br>or TUR7 flex hose   | KIT120-2S<br>40821V                     |

\* **WARNING:** Applications with UP56 or UP68 pumps require the RV70 - 42560D relief valve added to the system for over-pressure protection.

# Masterdrive™

## Power assisted inboard steering system



MD – Packaged kit for single station



MD2 – Packaged kit for dual station

### System features

- Eliminates torque at the steering wheel
- Three different selectable levels of power give the boater the desired feeling on the wheel (PATENTED).
- Automatically reverts to manual mode in case of power loss.
- High efficiency, low Amp draw
- The system always running permits immediate control in any sea conditions
- Equipped with safety switch ON/OFF (SMART BUTTON)
- Can be used on dual station installations
- Suitable for use with autopilot
- Low noise
- Voltage: 12VDC
- CE marked in conformity with ABYC P21, ISO 10592 safety standards
- Ignition protected (SAE J-1171 and UNI EN 28846)

### System components

- 1 single packaged **KIT MD** for single station containing:
  - 1 **UH** Front or tilt mount Main Helm
  - 1 **UPMD** Power Unit, 15' (4,5 m) wiring harness included
  - 1 **UCMD** User Interface
  - 4 **OL 150** bottles of hydraulic oil
- 1 inboard cylinder (suggested model: see “order guide” next page)
- 1 **KIT MD2** for dual station
- Flexible hydraulic hoses.
- 1 Tilt mechanism **X66** - 40613M suitable for Tilt Mount Helm. Tilt range of 48° and five locking positions
- 1 Steering wheel: see selection
- 1 Instruction manual

### Note

The MasterDrive™ Helms (both the UH main and the UHD secondary for a dual station), the UPMD Power Unit and the UCMD User Interface are the same products shown on the outboard MasterDrive™ systems. For more details please refer to the outboard MasterDrive™ section.



## Order guide

| SINGLE CYLINDER APPLICATION |                |             |                            |                                    |                        |
|-----------------------------|----------------|-------------|----------------------------|------------------------------------|------------------------|
| Kit MasterDrive™            | Cylinder       | Wheel turns | Max Rudder torque          | Connection flex hoses              | Steering wheel         |
| MD32-F - 42098J             | UC116 - 39431Y | 3,6         | 52 kgm<br>5043 lbs. in     | 2 kit OB-SVS<br>(length selection) | 1<br>steering<br>wheel |
| MD32-F - 42098J             | UC168 - 39432A | 5,2         | 87 kgm<br>7565 lbs. in     |                                    |                        |
| MD32-F - 42098J             | UC215 - 39433C | 6,7         | 111 kgm<br>9642 lbs. in    |                                    |                        |
| MD40-F - 42102W             | UC215 - 39433C | 5,3         | 111 kgm<br>9642 lbs. in    |                                    |                        |
| MD40-F - 42102W             | UC293 - 40246L | 7,3         | 146,5 kgm<br>12816 lbs. in |                                    |                        |

| DUAL CYLINDER APPLICATION |                  |     |                        |  |                        |
|---------------------------|------------------|-----|------------------------|--|------------------------|
| MD32-F - 42098J           | 2 UC116 - 39431Y | 7,2 | 52 kgm<br>5043 lbs. in | 2 kit OB-SVS<br>(length selection)       | 1<br>steering<br>wheel |
| MD40-F - 42102W           | 2 UC168 - 39432A | 8,4 | 87 kgm<br>7565 lbs. in | 1 kit OB-2C130-SVS<br>(length selection) |                        |

**NOTE:** On tilt applications, replace MD32-F or MD40-F MasterDrive™ kit with MD32-T or MD40-T kit + tilt mechanism X66 (optional).

Wheel selection: please refer to the appropriate section.

**For a second station add:**

- 1 Kit MD (select kit required by the needed installation)
- 3 Kit OB-SVS (select length required)

**NOTE:**

On request, Power Unit wiring harness can be cut to length required.

**7 m (23 ft) panel extension cable also available - 42636L**



# Packaged inboard steering systems

## GOTECH-I

GOTECH-I package kit contains:

- UP18** Intermediate helm pump
- UC69-I** Inboard cylinder
- OL 150** Hydraulic oil - 2 litres
- KIT OB-GT/M-60** Hose kit dia. 1/4" 6 m (19.7") length with fittings preassembled at one end only.

The wheel is not included

|                 |        |                 |
|-----------------|--------|-----------------|
| <b>GOTECH-I</b> | 42824M | Wheel turns 3,8 |
|-----------------|--------|-----------------|



GOTECH-I

## HYCO-I

HYCO-I package kit contains:

- UP20 F** Front mount helm pump.
- UC69-I** Inboard cylinder.
- OL 150** Hydraulic oil - 2 litres.
- KIT OB-60** Hose kit with preassembled fittings. Length: 6 m (19.7')

HYCO-I not including flexible hoses or with Kit OB/M-60 or Kit OB/M-90 is available on request. The wheel is not included.

**WARNING:** HYCO-I steering system is suitable for inboard boats up to approx. 10 m (32.8') length and 25 mph max speed.

|               |        |                 |
|---------------|--------|-----------------|
| <b>HYCO-I</b> | 40224A | Wheel turns 3,5 |
|---------------|--------|-----------------|



HYCO-I

## Fittings

- 61BCA** - 71004K  
3/8" (9,5 mm) nut and sleeve assembly, brass
- AF45** - 41284A  
45° adjustable fitting, helm and tube.
- AF90** - 74144U  
90° adjustable fitting, nickel plated brass
- SF38** - 39471L  
3/8" (9,5 mm) connector fitting, helm and tube
- SF12** - 41306H  
straight fitting, helm and tube Ø 12 mm
- VF38** - 39503X  
3/8" (9,5 mm) bleed T for cylinders, brass
- QCFN** - 41307K  
Quick connect bleed T for cylinder, nickel plated
- VFN916** - 76988L  
9/16 (14.3 mm) x 24 for dual station, nickel plated





## V32 - V33

### Composite steering wheels - hub included



V32B - Ø 335 mm (13.2")



V32W - Ø 335 mm (13.2")



V33B - Ø 342 mm (13.4")



V33W - Ø 342 mm (13.4")

| Model                      | V32                                  | V33           |
|----------------------------|--------------------------------------|---------------|
| Depth                      | 92 mm (3.62")                        | 105 mm (4.1") |
| Grip material              | Thermoplastic antishock material     |               |
| Grip color                 | Black, white                         |               |
| Spokes                     | Thermoplastic antishock material     |               |
| Floating cap               | n.a.                                 |               |
| Standard 3/4" hub          | Included                             |               |
| QDH hub                    | n.a.                                 |               |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |               |

| Model | Part No. | Description  |
|-------|----------|--|
| V32B  | 35458X   | Black thermoplastic antishock material grip and spokes |
| V32W  | 35509R   | White thermoplastic antishock material grip and spokes |
| V33B  | 35819L   | Black thermoplastic antishock material grip and spokes |
| V33W  | 35817H   | White thermoplastic antishock material grip and spokes |

## V38 - V45 Composite steering wheels - hub included



V38B - Ø 350 mm (13.8")



V38G - Ø 350 mm (13.8")



V45B - Ø 280 mm (11")



V45W - Ø 280 mm (11")



V45G - Ø 280 mm (11")

| Model                      | V38                                  | V45                |
|----------------------------|--------------------------------------|--------------------|
| Depth                      | 85 mm (3.3")                         | 82 mm (3.2")       |
| Grip material              | Thermoplastic antishock material     |                    |
| Grip color                 | Black, grey                          | Black, white, grey |
| Spokes                     | Thermoplastic antishock material     |                    |
| Floating cap               | n.a.                                 |                    |
| Standard 3/4" hub          | Included                             |                    |
| QDH hub                    | n.a.                                 |                    |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |                    |

| Model | Part No. | Description  |
|-------|----------|--|
| V38B  | 36517Q   | Black thermoplastic antishock material grip and spokes |
| V38G  | 37387G   | Grey thermoplastic antishock material grip and spokes  |
| V45B  | 37920H   | Black thermoplastic antishock material grip and spokes |
| V45W  | 38049P   | White thermoplastic antishock material grip and spokes |
| V45G  | 39291J   | Grey thermoplastic antishock material grip and spokes  |

## V99 - Portofino

### Composite steering wheels - hub included



V99 B/B/CH - Ø 350 mm (13.8")



V99 B/CB/CB - Ø 350 mm (13.8")



V99 B/S/S - Ø 350 mm (13.8")



V99 B/CH/CH - Ø 350 mm (13.8")

| Model                      | Portofino   |
|----------------------------|---|
| Depth                      | 78 mm (3")  |
| Grip material              | Soft touch thermoplastic antishock material         |
| Grip color                 | Black   |
| Spokes                     | Black thermoplastic antishock material with inserts |
| Floating cap               | n.a.  |
| Standard 3/4" hub          | Included  |
| QDH hub                    | n.a.  |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22                |

| Model       | Part No. | Description   |
|-------------|----------|---|
| V99 B/B/CH  | 43015G   | Thermoplastic antishock material grip and spokes with chrome plated inserts and black cover |
| V99 B/CB/CB | 43405W   | Thermoplastic antishock material grip and spokes with carbon inserts and cover              |
| V99 B/S/S   | 43404U   | Thermoplastic antishock material grip and spokes with silver inserts and cover              |
| V99 B/CH/CH | 43016J   | Thermoplastic antishock material grip and spokes with chrome plated inserts and cover       |

**V60 - V61 Antigua**  
**Composite soft touch grip steering wheels - hub included**



**V60B - Ø 350 mm (13.8")**



**V60W - Ø 350 mm (13.8")**



**V60G - Ø 350 mm (13.8")**



**V61BR - Ø 350 mm (13.8")**

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| <b>Model</b>                          | V60 - V61                            |
| <b>Depth</b>                          | 85 mm (3.3")                         |
| <b>Grip material</b>                  | Thermoplastic antishock material     |
| <b>Grip color</b>                     | Black, white, grey, burl wood        |
| <b>Spokes</b>                         | Thermoplastic antishock material     |
| <b>Floating cap</b>                   | n.a.                                 |
| <b>Standard 3/4" hub</b>              | Included                             |
| <b>QDH hub</b>                        | n.a.                                 |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| <b>Model</b> | <b>Part No.</b> | <b>Description</b>   |
|--------------|-----------------|--|
| V60B         | 39189U          | Black thermoplastic antishock material grip and spokes     |
| V60W         | 39190C          | White thermoplastic antishock material grip and spokes     |
| V60G         | 39274J          | Grey thermoplastic antishock material grip and spokes      |
| V61BR        | 39191E          | Burl wood thermoplastic antishock material grip and spokes |

## Corsica

### Soft touch grip steering wheels



Corsica B/S - Ø 350 mm (13.8")



Corsica B/B - Ø 350 mm (13.8")



Corsica W/S - Ø 350 mm (13.8")



Corsica G/S - Ø 350 mm (13.8")

|                            |                                      |
|----------------------------|--------------------------------------|
| Model                      | Corsica                              |
| Depth                      | 88 mm (3.46")                        |
| Grip material              | Soft touch                           |
| Grip color                 | Black, white, grey                   |
| Spokes                     | Silver or black anodized aluminum    |
| Floating cap               | n.a.                                 |
| Standard 3/4" hub          | X63 - 40119D - not included          |
| QDH hub                    | Available upon request               |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| Model       | Part No. | Description                                   |
|-------------|----------|---|
| Corsica B/S | 38333O   | Black soft touch grip, silver aluminum spokes |
| Corsica B/B | 38332N   | Black soft touch grip, black aluminum spokes  |
| Corsica W/S | 38334P   | White soft touch grip, silver aluminum spokes |
| Corsica G/S | 38393H   | Grey soft touch grip, silver aluminum spokes  |

## Vivara - Budelli - Mykonos - Santorini Polyurethane grip steering wheels



Vivara CH/P - Ø 350 mm (13.8")



Budelli CH/P - Ø 350 mm (13.8")



Santorini B/S - Ø 350 mm (13.8")



Mykonos B/S - Ø 320 mm (12.6")

| Model                      | Vivara                                 | Budelli     | Santorini                            | Mykonos       |
|----------------------------|--|-------------|--------------------------------------|---------------|
| Depth                      | 88 mm (3.46")                          | 94 mm (3.7) | 91 mm (3.58)                         | 83 mm (3.27") |
| Grip material              | Leather look PUR with polished inserts |             | Leather look PUR with silver inserts |               |
| Grip color                 | Black                                  |             |                                      |               |
| Spokes                     | Polished aluminum                      |             | Silver anodized aluminum             |               |
| Floating cap               | n.a.                                   |             | n.a.                                 |               |
| Standard 3/4" hub          | X63 - 40119D not included              |             |                                      |               |
| QDH hub                    | Available upon request                 |             |                                      |               |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22   |             |                                      |               |

| Model         | Part No. | Description  |
|---------------|----------|--|
| Vivara CH/P   | 64643G   | Black polyurethane grip with polished inserts, aluminum spokes       |
| Budelli CH/P  | 65294N   | Black polyurethane grip with polished inserts, aluminum spokes       |
| Santorini B/S | 65995W   | Black polyurethane grip with silver painted inserts, aluminum spokes |
| Mykonos B/S   | 68365B   | Black polyurethane grip with chrome plated inserts, aluminum spokes  |



## Nisida - Palmaria

### Polyurethane grip steering wheels



Nisida B/S - Ø 350 mm (13.8")



Nisida B/B - Ø 350 mm (13.8")



Palmaria B/B - Ø 350 mm (13.8")

| Model                      | Nisida                               | Palmaria                |
|----------------------------|--------------------------------------|-------------------------|
| Depth                      | 85 mm (3.35")                        | 40 mm (1.57")           |
| Grip material              | Leather look polyurethane            |                         |
| Grip color                 | Black                                |                         |
| Spokes                     | Silver or black anodized aluminum    | Black anodized aluminum |
| Floating cap               | n.a.                                 |                         |
| Standard 3/4" hub          | X63 - 40119D not included            |                         |
| QDH hub                    | Available upon request               |                         |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |                         |

| Model        | Part No. | Description                                     |
|--------------|----------|---|
| Nisida B/S   | 61813P   | Black polyurethane grip, silver aluminum spokes |
| Nisida B/B   | 61812M   | Black polyurethane grip, black aluminum spokes  |
| Palmaria B/B | 63727H   | Black polyurethane grip, black aluminum spokes  |

## Capraia - Tavolara Polyurethane grip steering wheels



Capraia B/S - Ø 350 mm (13.8")



Capraia B/B - Ø 350 mm (13.8")



Tavolara B/B/CH - Ø 350 mm (13.8")



Tavolara B/S/CH - Ø 350 mm (13.8")

| Model                      | Capraia                              | Tavolara                          |
|----------------------------|--------------------------------------|-----------------------------------|
| Depth                      | 84 mm (3.3")                         | 89 mm (3.5")                      |
| Grip material              | Leather look polyurethane            |                                   |
| Grip color                 | Black                                |                                   |
| Spokes                     | Silver or black anodized aluminum    | Silver or black anodized aluminum |
| Floating cap               | n.a.                                 | n.a.                              |
| Standard 3/4" hub          | <b>X63 - 40119D not included</b>     |                                   |
| QDH hub                    | Available upon request               |                                   |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |                                   |

| Model           | Part No. | Description  |
|-----------------|----------|--|
| Capraia B/S     | 22958X   | Black polyurethane grip, silver aluminum spokes                      |
| Capraia B/B     | 22959Z   | Black polyurethane grip, black aluminum spokes                       |
| Tavolara B/B/CH | 23916K   | Black polyurethane grip, black aluminum spokes, chrome plated cover  |
| Tavolara B/S/CH | 65277N   | Black polyurethane grip, silver aluminum spokes, chrome plated cover |

## Pianosa Polyurethane grip steering wheels



Pianosa B/S - Ø 350 mm (13.8")



Pianosa B/B - Ø 350 mm (13.8")



Pianosa B/SS - Ø 350 mm (13.8")

|                                       |  |
|---------------------------------------|--|
| <b>Model</b>                          | Pianosa  |
| <b>Depth</b>                          | 88 mm (3.46")  |
| <b>Grip material</b>                  | Leather look polyurethane                            |
| <b>Grip color</b>                     | Black  |
| <b>Spokes</b>                         | Stainless steel or silver or black anodized aluminum |
| <b>Floating cap</b>                   | n.a.   |
| <b>Standard 3/4" hub</b>              | X63 - 40119D - not included                          |
| <b>QDH hub</b>                        | Available upon request                               |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22                 |

| Model        | Part No. | Description  |
|--------------|----------|--|
| Pianosa B/S  | 22322Y   | Black polyurethane grip, silver aluminum spokes, polished ring     |
| Pianosa B/B  | 22960H   | Black polyurethane grip, black aluminum spokes, black painted ring |
| Pianosa B/SS | 22961K   | Black polyurethane grip, SS spokes, polished ring                  |

## Domino Polyurethane grip steering wheels



Domino B/B/CH - Ø 350 mm (13.8")



Domino B/S - Ø 350 mm (13.8")



Domino B/B - Ø 350 mm (13.8")

|                            |                                      |
|----------------------------|--------------------------------------|
| Model                      | Domino                               |
| Depth                      | 88 mm (3.46")                        |
| Grip material              | Leather look polyurethane            |
| Grip color                 | Black                                |
| Spokes                     | Silver or black anodized aluminum    |
| Floating cap               | n.a.                                 |
| Standard 3/4" hub          | X63 - 40119D - not included          |
| QDH hub                    | Available upon request               |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| Model         | Part No. | Description   |
|---------------|----------|---|
| Domino B/B/CH | 23897J   | Black polyurethane grip, black aluminum spokes, chrome plated cover |
| Domino B/S    | 23895E   | Black polyurethane grip, silver aluminum spokes and ring            |
| Domino B/B    | 23896G   | Black polyurethane grip, black aluminum spokes and ring             |

## Pantelleria - Giannutri Polyurethane grip steering wheels



Pantelleria B/S - Ø 320 mm (12.6")



Pantelleria B/B - Ø 320 mm (12.6")



Giannutri PU B/SS - Ø 280 mm (11")



Giannutri PU W/SS - Ø 280 mm (11")

| Model                      | Pantelleria                          | Giannutri                 |
|----------------------------|--------------------------------------|---------------------------|
| Depth                      | 90 mm (3.58")                        | 69 mm (2.7")              |
| Grip material              | Leather look polyurethane            | Leather look polyurethane |
| Grip color                 | Black                                | Black, white              |
| Spokes                     | Silver or black anodized aluminum    | Polished stainless steel  |
| Floating cap               | n.a.                                 |                           |
| Standard 3/4" hub          | X63 - 40119D not included            |                           |
| QDH hub                    | Available upon request               |                           |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |                           |

| Model             | Part No. | Description                                       |
|-------------------|----------|---|
| Pantelleria B/S   | 22232X   | Black polyurethane grip, silver aluminum spokes   |
| Pantelleria B/B   | 25102Z   | Black polyurethane grip, black aluminum spokes    |
| Giannutri PU B/SS | 23477P   | Black polyurethane grip, SS spokes, polished ring |
| Giannutri PU W/SS | 23476H   | White polyurethane grip, SS spokes, polished ring |

## Ustica - Levanzo Polyurethane grip steering wheels



Ustica B/S/B - Ø 330 mm (13")



Ustica B/B/B - Ø 330 mm (13")



Levanzo B/S/CH - Ø 330 mm (13")



KNOB UST

| Model                      | Ustica                               | Levanzo                                     |
|----------------------------|--------------------------------------|---|
| Depth                      | 90 mm (3.54")                        | 90 mm (3.54")                               |
| Grip material              | Leather look PUR                     | Leather look PUR with chrome plated inserts |
| Grip color                 | Black                                |   |
| Spokes                     | Silver or black anodized aluminum    | Silver anodized aluminum                    |
| Floating cap               | n.a.                                 | n.a.  |
| Standard 3/4" hub          | X63 - 40119D <b>not included</b>     |   |
| QDH hub                    | Available upon request               |   |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |   |

| Model          | Part No. | Description  |
|----------------|----------|--|
| Ustica B/S/B   | 20926X   | Black polyurethane grip, silver aluminum spokes, black painted cover                   |
| Ustica B/B/B   | 21622F   | Black polyurethane grip, black aluminum spokes, black painted cover                    |
| Levanzo B/S/CH | 20927Z   | Black PUR grip with chrome plated inserts, silver aluminum spokes, chrome plated cover |
| KNOB UST       | 21721H   | Knob for Ustica and Levanzo steering wheels  |

## Montecristo Polyurethane grip steering wheels



Montecristo B/SS/CH - Ø 350 mm (13.8")



Montecristo B/S/S - Ø 350 mm (13.8")



Montecristo B/B/CH - Ø 350 mm (13.8")



Montecristo B/B/P/CH - Ø 350 mm (13.8")

|                            |   |
|----------------------------|---|
| Model                      | Montecristo   |
| Depth                      | SS spokes 94 mm (3.7") aluminum spokes 98 mm (3.86")              |
| Grip material              | Leather look polyurethane   |
| Grip color                 | Black   |
| Spokes                     | Polished 304 stainless steel or silver or black anodized aluminum |
| Center cap                 | Chrome plated, or silver, or black painted                        |
| Floating cap               | Available upon request  |
| Standard 3/4" hub          | X63 - 40119D - not included                                       |
| QDH hub                    | Available upon request  |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22                              |

| Model                | Part No. | Description   |
|----------------------|----------|---|
| Montecristo B/SS/CH  | 20470D   | Black polyurethane grip, SS spokes, black cover                           |
| Montecristo B/S/S    | 20350T   | Black polyurethane grip, silver aluminum spokes, black cover              |
| Montecristo B/B/CH   | 20351V   | Black polyurethane grip, black aluminum spokes, black cover               |
| Montecristo B/B/P/CH | 23590F   | Black polyurethane grip, black aluminum spokes with chrome plated inserts |

# Asinara

## Vynil and polyurethane grip steering wheels



Asinara V B/SS/L - Ø 350 mm (13.8")



Asinara PU B/SS/B - Ø 350 mm (13.8")



Asinara PU B/S/B - Ø 350 mm (13.8")



Asinara PU B/B/B - Ø 350 mm (13.8")

|                                       |   |
|---------------------------------------|---|
| <b>Model</b>                          | <b>Asinara</b>  |
| <b>Depth</b>                          | SS spokes 92 mm (3.62") aluminum spokes 95 mm (3.74")             |
| <b>Grip material</b>                  | Vinyl or leather look polyurethane                                |
| <b>Grip color</b>                     | Black   |
| <b>Spokes</b>                         | Polished 304 stainless steel or silver or black anodized aluminum |
| <b>Center cap</b>                     | Black leather with embossed logo                                  |
| <b>Floating cap</b>                   | Available upon request  |
| <b>Standard 3/4" hub</b>              | <b>X63 - 40119D - not included</b>                                |
| <b>QDH hub</b>                        | Available upon request  |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22                              |

| Model                    | Part No. | Description   |
|--------------------------|----------|---|
| <b>Asinara V B/SS/L</b>  | 24732E   | Black vinyl grip, SS spokes, SS cover                     |
| <b>Asinara PU B/SS/B</b> | 24729S   | Black polyurethane grip, SS spokes, SS cover              |
| <b>Asinara PU B/S/B</b>  | 24730A   | Black polyurethane grip, silver aluminum spokes, SS cover |
| <b>Asinara PU B/B/B</b>  | 24731C   | Black polyurethane grip, black aluminum spokes, SS cover  |



## Razzoli - Capri Mahogany grip steering wheels



Razzoli M/SS/BR - Ø 350 mm (13.8")



Razzoli M/SS/SS - Ø 350 mm (13.8")



Capri - Ø 320 mm (12.6")

| Model                      | Razzoli                              | Capri                    |
|----------------------------|--------------------------------------|--------------------------|
| Depth                      | 85,5 mm (3.37")                      | 87 mm (3.43")            |
| Grip material              | Mahogany wood                        |                          |
| Grip color                 | Mahogany                             |                          |
| Spokes                     | Stainless steel                      | Silver anodized aluminum |
| Cover                      | Burl wood or SS                      | n.a.                     |
| Floating cap               | Available upon request               | n.a.                     |
| Standard 3/4" hub          | X63 - 40119D not included            |                          |
| QDH hub                    | Available upon request               |                          |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |                          |

| Model           | Part No. | Description                                       |
|-----------------|----------|---|
| Razzoli M/SS/BR | 23612N   | Mahogany grip, stainless steel spokes, burl cover |
| Razzoli M/SS/SS | 24703X   | Mahogany grip, stainless steel spokes, SS cover   |
| Capri           | 62465Y   | Mahogany grip, silver aluminum spokes             |

Polyurethane or teak grip equidistant spoke steering wheels - hub included



V21B - Ø 350 mm (13.8")



V21W - Ø 350 mm (13.8")



V21TK - Ø 350 mm (13.8")



KNOB21

|                            |                                      |
|----------------------------|--------------------------------------|
| Model                      | V21                                  |
| Depth                      | 64 mm (2.52")                        |
| Grip material              | Polyurethane, teak                   |
| Grip color                 | Black, white, teak                   |
| Spokes                     | Stainless steel                      |
| Floating cap               | n.a.                                 |
| Standard 3/4" hub          | Included                             |
| QDH hub                    | n.a.                                 |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| Model  | Part No. | Description                        |
|--------|----------|------------------------------------|
| V21B   | 42328Z   | Black polyurethane grip, SS spokes |
| V21W   | 42324R   | White polyurethane grip, SS spokes |
| V21TK  | 42325T   | Teak grip, SS spokes               |
| KNOB21 | 42371A   | Speed knob                         |

## V25

Polyurethane, mahogany or SS grip equidistant spoke steering wheels - hub included



V25B - Ø 350 mm (13.8")



V25W - Ø 350 mm (13.8")



V25G - Ø 350 mm (13.8")



V25SS - Ø 350 mm (13.8")



V25M - Ø 350 mm (13.8")

|                            |   |
|----------------------------|---|
| Model                      | V25                                       |
| Depth                      | 57 mm (2.24")                             |
| Grip material              | Polyurethane, stainless steel, mahogany   |
| Grip color                 | Black, white, grey, stainless steel, teak |
| Spokes                     | Stainless steel                           |
| Floating cap               | n.a.                                      |
| Standard 3/4" hub          | Included                                  |
| QDH hub                    | n.a.                                      |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22      |

| Model | Part No. | Description                        |
|-------|----------|------------------------------------|
| V25B  | 40640R   | Black polyurethane grip, SS spokes |
| V25W  | 40642W   | White polyurethane grip, SS spokes |
| V25G  | 40641T   | Grey polyurethane grip, SS spokes  |
| V25SS | 40643X   | Stainless steel grip and spokes    |
| V25M  | 40644Z   | Mahogany grip, SS spokes           |

Polyurethane or SS grip equidistant spoke steering wheels - hub included



V01B - Ø 350 mm (13.8")



V01W - Ø 350 mm (13.8")



V01G - Ø 350 mm (13.8")



V01SS - Ø 350 mm (13.8")

|                            |                                      |
|----------------------------|--------------------------------------|
| Model                      | V01                                  |
| Depth                      | 67 mm (2.64")                        |
| Grip material              | Polyurethane, stainless steel        |
| Grip color                 | Black, white, grey, stainless steel  |
| Spokes                     | Stainless steel                      |
| Floating cap               | n.a.                                 |
| Standard 3/4" hub          | Included                             |
| QDH hub                    | n.a.                                 |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| Model | Part No. | Description                        |
|-------|----------|------------------------------------|
| V01B  | 41687Z   | Black polyurethane grip, SS spokes |
| V01W  | 41688B   | White polyurethane grip, SS spokes |
| V01G  | 41689D   | Grey polyurethane grip, SS spokes  |
| V01SS | 41692S   | Stainless steel grip and spokes    |

## V10

Polyurethane, teak or SS grip equidistant spoke steering wheels - hub included



V10B - Ø 350 mm (13.8")



V10W - Ø 350 mm (13.8")



V10G - Ø 350 mm (13.8")



V10SS - Ø 350 mm (13.8")



V10TK - Ø 350 mm (13.8")

|                            |   |
|----------------------------|---|
| Model                      | V10   |
| Depth                      | Ø 350 mm: 67 mm (2.64") / Ø 400 mm: 73 mm (2.87") |
| Grip material              | Polyurethane, stainless steel, teak               |
| Grip color                 | Black, white, grey, stainless steel, teak         |
| Spokes                     | Stainless steel                                   |
| Floating cap               | n.a.  |
| Standard 3/4" hub          | Included  |
| QDH hub                    | n.a.  |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22              |

| Model    | Part No. | Description                        |
|----------|----------|------------------------------------|
| V10B     | 41693U   | Black polyurethane grip, SS spokes |
| V10W     | 41694W   | White polyurethane grip, SS spokes |
| V10G     | 41695Y   | Grey polyurethane grip, SS spokes  |
| V10SS    | 41699G   | Stainless steel grip and spokes    |
| V10TK 35 | 41697C   | Teak grip, SS spokes               |

**V20 - Balbi - V29**  
**Polyurethane grip equidistant spoke steering wheels - hub included**



**V20B - Ø 350 mm (13.8")**



**Balbi - Ø 350 mm (13.8")**



**V29B - Ø 350 mm (13.8")**

| Model                      | V20                                  | Balbi        | V29           |
|----------------------------|--------------------------------------|--------------|---------------|
| Depth                      | 67 mm (2.64")                        | 73 mm (2.87) | 107 mm (4.21) |
| Grip material              | Polyurethane                         |              |               |
| Grip color                 | Black                                |              |               |
| Spokes                     | Stainless steel                      |              |               |
| Floating cap               | n.a.                                 |              | n.a.          |
| Standard 3/4" hub          | Included                             |              |               |
| QDH hub                    | n.a.                                 |              | n.a.          |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |              |               |

| Model | Part No. | Description                        |
|-------|----------|------------------------------------|
| V20B  | 42843S   | Black polyurethane grip, SS spokes |
| Balbi | 68833J   | Black polyurethane grip, SS spokes |
| V29B  | 42846Y   | Black polyurethane grip, SS spokes |

## V57 - V31

Polyurethane grip equidistant spoke steering wheels - hub included



V57B - Ø 350 mm (13.8")



V57W - Ø 350 mm (13.8")



V57G - Ø 350 mm (13.8")



V31B - Ø 320 mm (12.6")

| Model                      | V57                                  | V31          |
|----------------------------|--------------------------------------|--------------|
| Depth                      | 76 mm (2.99")                        | 75 mm (2.95) |
| Grip material              | Polyurethane                         |              |
| Grip color                 | Black, white, grey                   | Black        |
| Spokes                     | Stainless steel                      |              |
| Floating cap               | n.a.                                 | n.a.         |
| Standard 3/4" hub          | Included                             |              |
| QDH hub                    | n.a.                                 | n.a.         |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |              |

| Model | Part No. | Description                        |
|-------|----------|------------------------------------|
| V57B  | 38155O   | Black polyurethane grip, SS spokes |
| V57W  | 38157Q   | White polyurethane grip, SS spokes |
| V57G  | 38156P   | Grey polyurethane grip, SS spokes  |
| V31B  | 43006F   | Black polyurethane grip, SS spokes |

Polyurethane grip equidistant spoke steering wheels - hub included



V52B - Ø 320 mm (12.6")



V52W - Ø 320 mm (12.6")



V52G - Ø 320 mm (12.6")



V28B - Ø 280 mm (11")



V28W - Ø 280 mm (11")

| Model                      | V52                                  | V28           |
|----------------------------|--------------------------------------|---------------|
| Depth                      | 70 mm (2.76")                        | 65 mm (2.26") |
| Grip material              | Polyurethane                         |               |
| Grip color                 | Black, white, grey                   | Black, white  |
| Spokes                     | Stainless steel                      |               |
| Floating cap               | n.a.                                 | n.a.          |
| Standard 3/4" hub          | Included                             |               |
| QDH hub                    | n.a.                                 | n.a.          |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |               |

| Model | Part No. | Description                        |
|-------|----------|------------------------------------|
| V52B  | 40631P   | Black polyurethane grip, SS spokes |
| V52W  | 40633U   | White polyurethane grip, SS spokes |
| V52G  | 40632S   | Grey polyurethane grip, SS spokes  |
| V28B  | 42502N   | Black polyurethane grip, SS spokes |
| V28W  | 42503R   | White polyurethane grip, SS spokes |



## V56

Polyurethane grip, equidistant spoke steering wheels - hub included



V56 B/CH - Ø 350 mm (13.8")



V56 W/CH - Ø 350 mm (13.8")

V56 G/CH - Ø 350 mm (13.8")

|                            |                                      |
|----------------------------|--------------------------------------|
| Model                      | V56                                  |
| Depth                      | 95 mm (3.74")                        |
| Grip material              | Polyurethane                         |
| Grip color                 | Black, white, grey, soft blue        |
| Spokes                     | Polyurethane with inserts            |
| Floating cap               | n.a.                                 |
| Standard 3/4" hub          | Included                             |
| QDH hub                    | n.a.                                 |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| Model    | Part No. | Description   |
|----------|----------|---|
| V56 B/CH | 21351A   | Black polyurethane grip and spokes with chrome plated inserts |
| V56 W/CH | 21406Z   | White polyurethane grip and spokes with chrome plated inserts |
| V56 G/CH | 21407B   | Grey polyurethane grip and spokes with chrome plated inserts  |



V56 B/R - Ø 350 mm (13.8")



V56 W/W - Ø 350 mm (13.8")



V56 SB/CH - Ø 350 mm (13.8")



KNOB V56

| Model     | Part No. | Description   |
|-----------|----------|---|
| V56 B/R   | 21524F   | Black polyurethane grip and spokes with red painted inserts       |
| V56 W/W   | 21596H   | White polyurethane grip and spokes with white painted inserts     |
| V56 SB/CH | 21408D   | Soft blue polyurethane grip and spokes with chrome plated inserts |
| KNOB V56  | 23600F   | Knob for V56 steering wheel                                       |

## V70

Polyurethane grip, equidistant spoke steering wheels - hub included



V70B - Ø 350 mm (13.8")



V70W - Ø 350 mm (13.8")



V70G - Ø 350 mm (13.8")

|                            |                                      |
|----------------------------|--------------------------------------|
| Model                      | V70                                  |
| Depth                      | 93 mm (3.66")                        |
| Grip material              | Polyurethane                         |
| Grip color                 | Black, white, grey                   |
| Spokes                     | Stainless steel                      |
| Floating cap               | n.a.                                 |
| Standard 3/4" hub          | Included                             |
| QDH hub                    | n.a.                                 |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| Model | Part No. | Description                        |
|-------|----------|------------------------------------|
| V70B  | 39442D   | Black polyurethane grip, SS spokes |
| V70W  | 39929J   | White polyurethane grip, SS spokes |
| V70G  | 39441B   | Grey polyurethane grip, SS spokes  |

Polyurethane grip, equidistant spoke steering wheels - hub included



V24B - Ø 350 mm (13.8")



V24W - Ø 350 mm (13.8")



V24G - Ø 350 mm (13.8")



V24 COMMANDO - Ø 350 mm (13.8")

|                            |                                      |
|----------------------------|--------------------------------------|
| Model                      | V24                                  |
| Depth                      | 74 mm (2.91")                        |
| Grip material              | Polyurethane                         |
| Grip color                 | Black, white, grey                   |
| Spokes                     | Stainless steel                      |
| Floating cap               | n.a.                                 |
| Standard 3/4" hub          | Included                             |
| QDH hub                    | n.a.                                 |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| Model        | Part No. | Description                                      |
|--------------|----------|--|
| V24B         | 42345Z   | Black polyurethane grip, SS spokes               |
| V24W         | 42347D   | White polyurethane grip, SS spokes               |
| V24G         | 42346B   | Grey polyurethane grip, SS spokes                |
| V24 COMMANDO | 42370Y   | Black polyurethane grip, black painted SS spokes |

## V58 - V53 - V35 - V23 - V65

Polyurethane or stainless steel grip equidistant spoke steering wheels - hub included



V58G - Ø 400 mm (15.7")



V53B - Ø 450 mm (17.7")



V35 - Ø 345 mm (13.6")



V23 - Ø 400 mm (15.7")



V65 - Ø 370 mm (14.6")

| Model                      | V58                                  | V53              | V35               | V23               | V65              |
|----------------------------|--------------------------------------|------------------|-------------------|-------------------|------------------|
| Depth                      | 78 mm<br>(3.07")                     | 88 mm<br>(3.46") | 100 mm<br>(3.94") | 110 mm<br>(4.33") | 73 mm<br>(2.87") |
| Grip material              | Polyurethane                         |                  | Stainless steel   |                   |                  |
| Grip color                 | Grey                                 | Black            | Stainless steel   |                   |                  |
| Spokes                     | Stainless steel                      |                  |                   |                   |                  |
| Floating cap               | n.a.                                 |                  |                   |                   |                  |
| Standard 3/4" hub          | Included                             |                  |                   |                   |                  |
| QDH hub                    | n.a.                                 |                  |                   |                   |                  |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |                  |                   |                   |                  |

| Model | Part No. | Description                        |
|-------|----------|------------------------------------|
| V58G  | 38650F   | Grey polyurethane grip, SS spokes  |
| V53B  | 40634W   | Black polyurethane grip, SS spokes |
| V35   | 31602H   | Stainless steel grip and spokes    |
| V23   | 32397D   | Stainless steel grip and spokes    |
| V65   | 36436J   | Stainless steel grip and spokes    |

V66 - V63 - V62 - V82  
Wood grip equidistant spoke steering wheels - hub included



V66 - Ø 350 mm (13.8")



V63 - Ø 450 mm (17.7")



V62 - Ø 350 mm (13.8")



V82 - Ø 350 mm (13.8")

| Model                      | V66                                  | V63               | V62               | V82              |
|----------------------------|--------------------------------------|-------------------|-------------------|------------------|
| Depth                      | 80 mm<br>(3.15")                     | 108 mm<br>(4.25") | 104 mm<br>(4.09") | 70 mm<br>(2.76") |
| Grip material              | Mahogany                             | Mahogany          | Mahogany          | Natural oak      |
| Grip color                 | Mahogany                             | Mahogany          | Mahogany          | Natural oak      |
| Spokes                     | Stainless steel                      |                   |                   |                  |
| Floating cap               | n.a.                                 |                   |                   |                  |
| Standard 3/4" hub          | Included                             |                   |                   |                  |
| QDH hub                    | n.a.                                 |                   |                   |                  |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |                   |                   |                  |

| Model | Part No. | Description                 |
|-------|----------|-----------------------------|
| V66   | 39424B   | Mahogany grip, SS spokes    |
| V63   | 39264F   | Mahogany grip, SS spokes    |
| V62   | 39263D   | Mahogany grip, SS spokes    |
| V82   | 41685V   | Natural oak grip, SS spokes |

## V67 - V74 - V77 - V85

Wood grip equidistant spoke steering wheels - hub included



V67 - Ø 400 mm (15.7")



V74/40- Ø 400 mm (15.7")



V77/40 - Ø 400 mm (15.7")



V85 - Ø 500 mm (19.7")



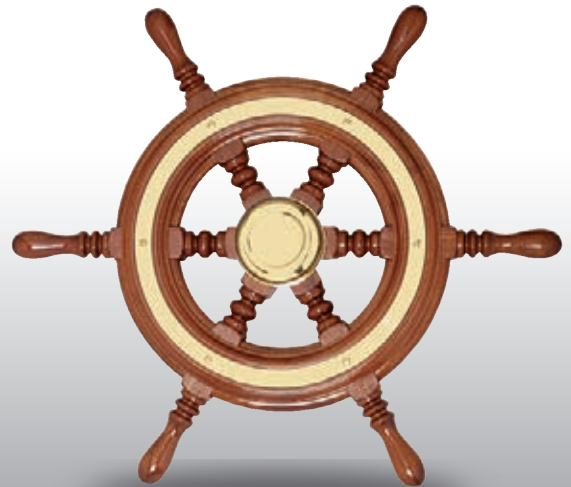
KNOB67

| Model                      | V67                                  | V74           | V77           | V85           |
|----------------------------|--------------------------------------|---------------|---------------|---------------|
| Depth                      | 100 mm (3.94")                       | 63 mm (2.48") | 63 mm (2.48") | 69 mm (2.72") |
| Grip material              | Mahogany                             | Mahogany      | Natural teak  | Teak          |
| Grip color                 | Mahogany                             | Mahogany      | Natural teak  | Teak          |
| Spokes                     | Stainless steel                      |               |               |               |
| Floating cap               | n.a.                                 |               |               |               |
| Standard 3/4" hub          | Included                             |               |               |               |
| QDH hub                    | n.a.                                 |               |               |               |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |               |               |               |

| Model  | Part No. | Description                  |
|--------|----------|------------------------------|
| V67    | 39425D   | Mahogany grip, SS spokes     |
| V74/40 | 41115A   | Mahogany grip, SS spokes     |
| V77/40 | 41152G   | Natural teak grip, SS spokes |
| V85    | 42416W   | Teak grip, SS spokes         |
| KNOB67 | 40677R   | Knob for V67 steering wheel  |



V93- Ø 460 mm (18.1")



V90/42 - Ø 420 mm (16.5")



V89 - Ø 500 mm (19.7")



KNOB93

| Model                      | V93                                  | V90/42   | V89      |
|----------------------------|--------------------------------------|----------|----------|
| Grip material              | Wood                                 | Wood     | SS, wood |
| Grip color                 | Wood                                 | Wood     | SS       |
| Spokes                     | Wood                                 | Wood     | SS       |
| Floating cap               |                                      | n.a.     |          |
| Standard 3/4" hub          |                                      | Included |          |
| QDH hub                    |                                      | n.a.     |          |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |          |          |

| Model  | Part No. | Description   |
|--------|----------|---|
| V93    | 40695B   | Wood grip and spokes                                  |
| V90/42 | 43043S   | Wood grip and spokes                                  |
| V89    | 40721R   | Stainless steel and wood grip, stainless steel spokes |
| KNOB93 | 40647F   | Knob for V93 steering wheel                           |

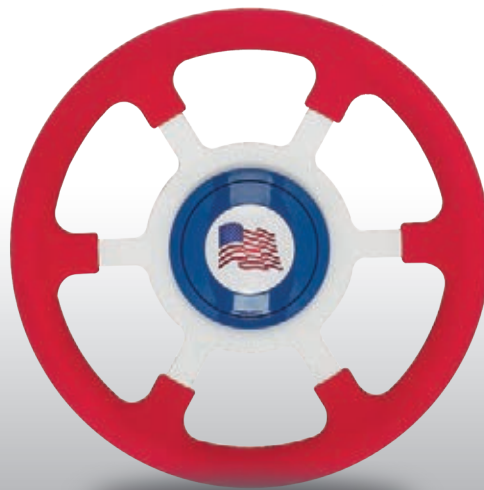


## V15

### Polyurethane grip equidistant spoke steering wheels - hub included



V15 B/SS/F - Ø 350 mm (13.8")



V15 R/W/F - Ø 350 mm (13.8")

|                            |   |
|----------------------------|---|
| Model                      | V15                                       |
| Depth                      | 94 mm (3.7")                              |
| Grip material              | Polyurethane                              |
| Grip color                 | Black, red                                |
| Spokes                     | Stainless steel or white painted aluminum |
| Floating cap               | available on request                      |
| Standard 3/4" hub          | Included                                  |
| QDH hub                    | n.a.                                      |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22      |

| Model      | Part No. | Description  |
|------------|----------|--|
| V15 B/SS/F | 22325E   | Black polyurethane grip, SS spokes                   |
| V15 R/W/F  | 22323A   | Red polyurethane grip, white painted aluminum spokes |



VERO VOLANTE ITALIANO



VERO VOLANTE ITALIANO

## Boccanegra Vero Volante Italiano



VERO VOLANTE ITALIANO



CHRISTIANGRANDE  
DesignWorks

**Boccanegra L B/L**

3-spoke steering wheel.  
Spokes are made of 316L polished stainless steel.  
Hand-stitching leather grip.  
Leather wrapped, chrome plated or painted cover.  
Leather wrapped or painted center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 89 mm (3.5")



**Boccanegra L B/L**



**Boccanegra L W/L**



**Boccanegra L SB/P**



**Boccanegra L B/CH**

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| <b>Diameter</b>                       | 350 mm (13.8")                       |
| <b>Grip material</b>                  | Leather                              |
| <b>Grip color</b>                     | Black, white, sky-blue               |
| <b>Spokes</b>                         | Polished 316L stainless steel        |
| <b>Center cap</b>                     | Leather or painted                   |
| <b>Floating cap</b>                   | n.a.                                 |
| <b>Standard 3/4" hub</b>              | Included                             |
| <b>QDH hub</b>                        | n.a.                                 |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| <b>Model</b>             | <b>Part No.</b> | <b>Description</b>  |
|--------------------------|-----------------|---|
| <b>Boccanegra L B/L</b>  | 67460P          | Black leather grip, stainless steel spokes, black leather cover       |
| <b>Boccanegra L W/L</b>  | 67295B          | White leather grip, stainless steel spokes, white leather cover       |
| <b>Boccanegra L SB/P</b> | 67296D          | Sky-blue leather grip, stainless steel spokes, sky-blue painted cover |
| <b>Boccanegra L B/CH</b> | 20944Z          | Black leather grip, stainless steel spokes, chrome plated cover       |

## Oderico Vero Volante Italiano



VERO VOLANTE ITALIANO



Oderico L B/SS/CH

### 3-Spoke steering wheel

Oderico spokes are made of 316L stainless steel and have a **double treatment**: polished on the left side of the spoke and black sandblasted on the right side.

Grip is available in black hand-stitching leather or vinyl

Hub included - standard 3/4" taper.

Ø = 350 mm (13.8")

Depth = 72 mm (2.83")



Oderico L B/SS/CH



Oderico V B/SS/CH



|                                       |  |
|---------------------------------------|--|
| <b>Diameter</b>                       | 350 mm (13.8")                         |
| <b>Grip material</b>                  | Leather or vinyl                       |
| <b>Grip color</b>                     | Black                                  |
| <b>Spokes</b>                         | Polished and black sandblasted 316L SS |
| <b>Center cap</b>                     | Chrome plated                          |
| <b>Floating cap</b>                   | Available upon request                 |
| <b>Standard 3/4" hub</b>              | Included                               |
| <b>QDH hub</b>                        | n.a.                                   |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22   |

| Model                    | Part No. | Description   |
|--------------------------|----------|---|
| <b>Oderico L B/SS/CH</b> | 69570H   | Black leather grip, stainless steel spokes, black painted cover |
| <b>Oderico V B/SS/CH</b> | 69563L   | Black vinyl grip, stainless steel spokes, black painted cover   |

## Soranzo Vero Volante Italiano



VERO VOLANTE ITALIANO



Soranzo L B/L/L

CHRISTIANGRANDE  
DesignWorks

3-spoke steering wheel.  
Polished 316L stainless steel spokes.  
Grip is available in hand-stitching leather or vinyl.  
Leather wrapped or painted cover, leather or vinyl center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 97 mm (3.8")



Soranzo L B/L/L



Soranzo L L/L/L



Soranzo L BL/L/L



Soranzo V B/L/L

|                            |                                      |
|----------------------------|--------------------------------------|
| Diameter                   | 350 mm (13.8")                       |
| Grip material              | Leather or vinyl                     |
| Grip color                 | Black, tan leather, blue             |
| Spokes                     | Polished 316L stainless steel        |
| Center cap                 | Leather or vinyl                     |
| Floating cap               | Available upon request               |
| Standard 3/4" hub          | Included                             |
| QDH hub                    | n.a.                                 |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| Model            | Part No. | Description  |
|------------------|----------|--|
| Soranzo L B/L/L  | 24725H   | Black leather grip, grey stitches, SS spokes, black leather cover      |
| Soranzo L L/L/L  | 24727M   | Tan leather grip, cream stitches, SS spokes, tan leather painted cover |
| Soranzo L BL/L/L | 24726K   | Blue leather grip, light blue stitches, SS spokes, blue leather cover  |
| Soranzo V B/L/L  | 24728P   | Black vinyl grip, grey stitches, SS spokes, black painted cover        |



## Fregoso Vero Volante Italiano



VERO VOLANTE ITALIANO



  
CHRISTIANGRANDE  
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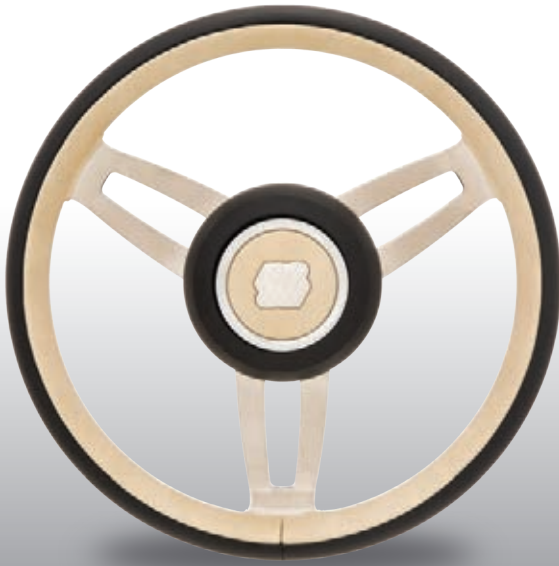
Fregoso LL AW/A/A

3-spoke steering wheel.  
Polished 304 stainless steel spokes.  
Grip is available in leather or vinyl in two colours.  
Leather wrapped or painted cover, vinyl or painted center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

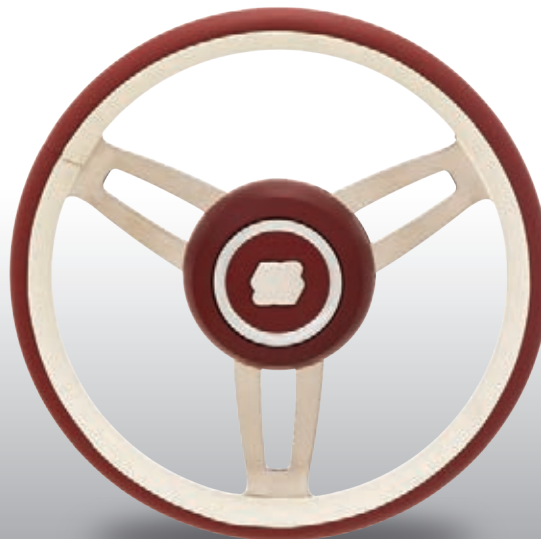
Depth = 81 mm (3.2")



**Fregoso LV BC/B/C**



**Fregoso VV LC/L/C**



**Fregoso LL AW/A/A**

|                                       |  |
|---------------------------------------|--|
| <b>Diameter</b>                       | 350 mm (13.8")   |
| <b>Grip material</b>                  | Leather, vinyl   |
| <b>Grip color</b>                     | Black and sand, tan leather and sand, amaranth and white |
| <b>Spokes</b>                         | Polished 304 stainless steel                             |
| <b>Center cap</b>                     | Sand color vinyl or amaranth painted                     |
| <b>Floating cap</b>                   | n.a.   |
| <b>Standard 3/4" hub</b>              | Included   |
| <b>QDH hub</b>                        | Available upon request*                                  |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22                     |

| <b>Model</b>             | <b>Part No.</b> | <b>Description</b>  |
|--------------------------|-----------------|---|
| <b>Fregoso LV BC/B/C</b> | 24739V          | Black leather external grip, sand color vinyl internal grip, SS spokes, black painted cover                 |
| <b>Fregoso VV LC/L/C</b> | 24740D          | Tan leather color vinyl external grip, sand color vinyl internal grip, SS spokes, tan leather painted cover |
| <b>Fregoso LL AW/A/A</b> | 24741F          | Amaranth color leather external grip, white leather internal grip, SS spokes, amaranth painted cover        |

\* To be specified when ordering the wheel

## Guarco Vero Volante Italiano



VERO VOLANTE ITALIANO



Guarco L B/SS/CH

3-spoke steering wheel.  
Polished 316L stainless steel spokes.  
Hand-stitching leather grip, chrome plated or matt black painted cover.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 96 mm (3.8")



**Guarco L B/SS/CH**



**Guarco L B/SS/B**



**Guarco L B/SS/B**

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| <b>Diameter</b>                       | 350 mm (13.8")                       |
| <b>Grip material</b>                  | Leather                              |
| <b>Grip color</b>                     | Black                                |
| <b>Spokes</b>                         | Polished 316L stainless steel        |
| <b>Center cap</b>                     | Black polished with pad printed logo |
| <b>Floating cap</b>                   | Available upon request.              |
| <b>Standard 3/4" hub</b>              | Included                             |
| <b>QDH hub</b>                        | n.a.                                 |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| <b>Model</b>            | <b>Part No.</b> | <b>Description</b>  |
|-------------------------|-----------------|---|
| <b>Guarco L B/SS/CH</b> | 24737R          | Black leather grip, grey stitches, SS spokes, chrome plated cover       |
| <b>Guarco L B/SS/B</b>  | 24736N          | Black leather grip, black stitches, SS spokes, matt black painted cover |

## Spinola

Vero Volante Italiano



VERO VOLANTE ITALIANO



Spinola L B/P  
Spinola V B/P

3-spoke steering wheel.  
316L stainless steel polished or brushed spokes.

Hand-stitching leather or vinyl grip.  
Stainless steel cover, leather or vinyl center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 82 mm (3.22")



**Spinola L B/P**



**Spinola V B/P**



**Spinola L B/BRU**



**Spinola V B/BRU**

|                                       |  |
|---------------------------------------|--|
| <b>Diameter</b>                       | 350 mm (13.8")                           |
| <b>Grip material</b>                  | Leather or vinyl                         |
| <b>Grip color</b>                     | Black                                    |
| <b>Spokes</b>                         | Polished or brushed 316L stainless steel |
| <b>Center cap</b>                     | Leather or vinyl                         |
| <b>Floating cap</b>                   | Available upon request                   |
| <b>Standard 3/4" hub</b>              | Included                                 |
| <b>QDH hub</b>                        | n.a.                                     |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22     |

| <b>Model</b>           | <b>Part No.</b> | <b>Description</b>                               |
|------------------------|-----------------|--|
| <b>Spinola L B/P</b>   | 23902Y          | Black leather grip, polished SS spokes, SS cover |
| <b>Spinola V B/P</b>   | 23901W          | Black vinyl grip, polished SS spokes, SS cover   |
| <b>Spinola L B/BRU</b> | 23900U          | Black leather grip, brushed SS spokes, SS cover  |
| <b>Spinola V B/BRU</b> | 23899N          | Black vinyl grip, brushed SS spokes, SS cover    |

## Tron Vero Volante Italiano



VERO VOLANTE ITALIANO



Tron L B/SS/PU  
Tron V B/SS/PU  
Tron PU B/SS/PU

3-spoke steering wheel.  
Polished 316L stainless steel spokes.  
Hand-stitching leather or vinyl or leather look polyurethane grip.  
Black polyurethane cover, chrome plated center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 95 mm (3.74")



Tron L B/SS/PU



Tron V B/SS/PU



Tron PU B/SS/PU

|                                       |   |
|---------------------------------------|---|
| <b>Diameter</b>                       | 350 mm (13.8")                                |
| <b>Grip material</b>                  | Leather or vinyl or leather look polyurethane |
| <b>Grip color</b>                     | Black   |
| <b>Spokes</b>                         | Polished 316L stainless steel                 |
| <b>Center cap</b>                     | Chrome plated                                 |
| <b>Floating cap</b>                   | Available upon request                        |
| <b>Standard 3/4" hub</b>              | Included                                      |
| <b>QDH hub</b>                        | n.a.  |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22          |

| Model           | Part No. | Description  |
|-----------------|----------|--|
| Tron L B/SS/PU  | 22125V   | Black leather grip, SS spokes, black polyurethane cover      |
| Tron V B/SS/PU  | 22321W   | Black vinyl grip, SS spokes, black polyurethane cover        |
| Tron PU B/SS/PU | 22124U   | Black polyurethane grip, SS spokes, black polyurethane cover |



## Dolphin Vero Volante Italiano



VERO VOLANTE ITALIANO



Dolphin L B/B/Pw

3-spoke steering wheel.

316L stainless steel spokes with inserts.

Hand-stitching leather or vinyl grip.

Available spokes:

- polished stainless steel spokes with black inserts
- black painted stainless steel spokes with black inserts
- black painted stainless steel spokes with pewter look inserts

Black painted cover, black center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 82 mm (3.22")



**Dolfin L B/B/B**



**Dolfin L B/B/Pw**



**Dolfin L B/SS/B**



**Dolfin V B/SS/B**

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| <b>Diameter</b>                       | 350 mm (13.8")                       |
| <b>Grip material</b>                  | Leather or vinyl                     |
| <b>Grip color</b>                     | Black                                |
| <b>Spokes</b>                         | 316L SS polished or black            |
| <b>Center cap</b>                     | Black                                |
| <b>Floating cap</b>                   | Available upon request               |
| <b>Standard 3/4" hub</b>              | Included                             |
| <b>QDH hub</b>                        | n.a.                                 |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

|                        |        |   |
|------------------------|--------|---|
| <b>Dolfin L B/B/B</b>  | 23023T | Black leather grip, SS black spokes with black inserts, black painted cover               |
| <b>Dolfin L B/B/Pw</b> | 23591H | Black leather grip, SS black spokes with pewter look painted inserts, black painted cover |
| <b>Dolfin L B/SS/B</b> | 69562J | Black leather grip, SS polished spokes with black inserts, black painted cover            |
| <b>Dolfin V B/SS/B</b> | 69561G | Black vinyl grip, SS polished spokes with black inserts, black painted cover              |

## Vivaldi Vero Volante Italiano



VERO VOLANTE ITALIANO



  
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Vivaldi L B/L/L

3-spoke steering wheel.  
Polished 304 stainless steel inserts.  
Hand-stitching leather or vinyl or leather look polyurethane grip.  
Leather or Painted cover, leather or stainless steel center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 95 mm (3.74")



Vivaldi L B/L/L



Vivaldi V B/L/L



Vivaldi PU B/B/L



Vivaldi V W/W/SS

|                                       |   |
|---------------------------------------|---|
| <b>Diameter</b>                       | 350 mm (13.8")                                  |
| <b>Grip material</b>                  | Leather, or vinyl, or leather look polyurethane |
| <b>Grip color</b>                     | Black or white                                  |
| <b>Spokes</b>                         | Polished 304 stainless steel                    |
| <b>Center cap</b>                     | Leather or stainless steel                      |
| <b>Floating cap</b>                   | Available upon request                          |
| <b>Standard 3/4" hub</b>              | Included  |
| <b>QDH hub</b>                        | n.a.  |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22            |

| <b>Model</b>     | <b>Part No.</b> | <b>Description</b>                                      |
|------------------|-----------------|---|
| Vivaldi L B/L/L  | 24721Z          | Black leather grip, SS spokes, black leather cover      |
| Vivaldi V B/L/L  | 24723D          | Black vinyl grip, SS spokes, black painted cover        |
| Vivaldi PU B/B/L | 24724F          | Black polyurethane grip, SS spokes, black painted cover |
| Vivaldi V W/W/SS | 24722B          | White vinyl grip, SS spokes, white painted cover        |



VERO VOLANTE ITALIANO



**Morosini L B/CH/L**

CHRISTIANGRANDE  
DesignWorks

3-spoke steering wheel.  
Polished 304 stainless steel spokes.  
Available grip:  
• Hand-stitching leather  
• Hand-stitching vinyl  
• Mahogany  
• Leather look polyurethane.  
Chrome plated or painted cover, leather or painted or burl wood center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 78 mm (3.07")



**Morosini L B/CH/L**



**Morosini V B/CH/L**



**Morosini PU B/CH/V**



**Morosini L C/P/P**

|                                       |   |
|---------------------------------------|---|
| <b>Diameter</b>                       | 350 mm (13.8")  |
| <b>Grip material</b>                  | Leather or vinyl or mahogany or leather look polyurethane |
| <b>Grip color</b>                     | Black, grey, white, cream, mahogany                       |
| <b>Spokes</b>                         | Polished 304 stainless steel                              |
| <b>Center cap</b>                     | Leather or painted or burl wood                           |
| <b>Floating cap</b>                   | n.a.  |
| <b>Standard 3/4" hub</b>              | Included  |
| <b>QDH hub</b>                        | Available upon request*                                   |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22                      |

| <b>Model</b>              | <b>Part No.</b> | <b>Description</b>                                      |
|---------------------------|-----------------|---|
| <b>Morosini L B/CH/L</b>  | 67297F          | Black leather grip, SS spokes, chrome plated cover      |
| <b>Morosini V B/CH/L</b>  | 68000H          | Black vinyl grip, SS spokes, chrome plated cover        |
| <b>Morosini PU B/CH/V</b> | 67461S          | Black polyurethane grip, SS spokes, chrome plated cover |
| <b>Morosini L C/P/P</b>   | 67299K          | Cream leather grip, SS spokes, cream painted cover      |

\* To be specified when ordering the wheel



VERO VOLANTE ITALIANO



CHRISTIANGRANDE  
DesignWorks

**Morosini M/CH/BR**

3-spoke steering wheel.

Polished 304 stainless steel spokes.

Available grip:

- Hand-stitching leather
- Hand-stitching vinyl
- Mahogany
- Leather look polyurethane.

Chrome plated or painted cover, leather or painted or burl wood center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 78 mm (3.07")



**Morosini M/CH/BR**



**Morosini L W/P/P - Morosini V W/P/P**



**Morosini L G/CH/L**



**Morosini V G/CH/L**

|                                       |   |
|---------------------------------------|---|
| <b>Diameter</b>                       | 350 mm (13.8")  |
| <b>Grip material</b>                  | Leather or vinyl or mahogany or leather look polyurethane |
| <b>Grip color</b>                     | Black, grey, white, cream, mahogany                       |
| <b>Spokes</b>                         | Polished 304 stainless steel                              |
| <b>Center cap</b>                     | Leather or painted or burl wood                           |
| <b>Floating cap</b>                   | n.a.  |
| <b>Standard 3/4" hub</b>              | Included  |
| <b>QDH hub</b>                        | Available upon request*                                   |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22                      |

\* To be specified when ordering the wheel

| <b>Model</b>             | <b>Part No.</b> | <b>Description</b>                                 |
|--------------------------|-----------------|--|
| <b>Morosini M/CH/BR</b>  | 68378L          | Mahogany grip, SS spokes, chrome plated cover      |
| <b>Morosini L W/P/P</b>  | 67298H          | White leather grip, SS spokes, white painted cover |
| <b>Morosini V W/P/P</b>  | 68831E          | White vinyl grip, SS spokes, white painted cover   |
| <b>Morosini L G/CH/L</b> | 67300R          | Grey leather grip, SS spokes, chrome plated cover  |
| <b>Morosini V G/CH/L</b> | 68830C          | Grey vinyl grip, SS spokes, chrome plated cover    |



**Gritti**  
Vero Volante Italiano



VERO VOLANTE ITALIANO



**Gritti Carbon LC B/SS/B**

3-spoke steering wheel.  
Polished 304 stainless steel spokes.  
Hand-stitching leather grip with inserts in alutec or carbon.  
chrome plated cover, leather center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 86 mm (3.4")



**Gritti Alutec LA B/SS/B**



**Gritti Alutec LA B/SS/B**



**Gritti Carbon LC B/SS/B**



**Gritti Carbon LC B/SS/R**

|                                       |  |
|---------------------------------------|--|
| <b>Diameter</b>                       | 350 mm (13.8")                           |
| <b>Grip material</b>                  | Leather and alutec or leather and carbon |
| <b>Grip color</b>                     | Black                                    |
| <b>Spokes</b>                         | Polished 304 stainless steel             |
| <b>Center cap</b>                     | Leather                                  |
| <b>Floating cap</b>                   | Available upon request.                  |
| <b>Standard 3/4" hub</b>              | Included                                 |
| <b>QDH hub</b>                        | n.a.                                     |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22     |

| <b>Model</b>            | <b>Part No.</b> | <b>Description</b>   |
|-------------------------|-----------------|--|
| <b>Gritti LA B/SS/B</b> | 24720X          | Black perforated leather and alutec grip, SS spokes, chrome plated cover             |
| <b>Gritti LC B/SS/B</b> | 24719N          | Black leather and glossy carbon grip, SS spokes, chrome plated cover                 |
| <b>Gritti LC B/SS/R</b> | 24921H          | Black leather with red stitches and matt carbon grip, SS spokes, chrome plated cover |

## Foscari Vero Volante Italiano



VERO VOLANTE ITALIANO



CHRISTIANGRANDE  
DesignWorks

Foscari V B/R

3-spoke steering wheel.  
Polished 304 stainless steel spokes.  
Hand-stitching vinyl or leather look polyurethane grip.  
Stainless steel cover, stainless steel center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 78 mm (3.07")



**Foscari V B/R**



**Foscari PU B**



**Foscari PU W**



**Foscari PU C**

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| <b>Diameter</b>                       | 350 mm (13.8")                       |
| <b>Grip material</b>                  | Vinyl or leather look polyurethane   |
| <b>Grip color</b>                     | Black, white, cream                  |
| <b>Spokes</b>                         | Polished 304 stainless steel         |
| <b>Center cap</b>                     | Stainless steel                      |
| <b>Floating cap</b>                   | n.a.                                 |
| <b>Standard 3/4" hub</b>              | Included                             |
| <b>QDH hub</b>                        | Available upon request               |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| <b>Model</b>         | <b>Part No.</b> | <b>Description</b>                                  |
|----------------------|-----------------|---|
| <b>Foscari V B/R</b> | 21552L          | Black vinyl grip, red stitches, SS spokes, SS cover |
| <b>Foscari PU B</b>  | 67303X          | Black polyurethane grip, SS spokes, SS cover        |
| <b>Foscari PU W</b>  | 67302V          | White polyurethane grip, SS spokes, SS cover        |
| <b>Foscari PU C</b>  | 67304Z          | Cream polyurethane grip, SS spokes, SS cover        |

## Adorno Vero Volante Italiano



VERO VOLANTE ITALIANO



Adorno L B/CH

3-spoke steering wheel.  
Polished 304 stainless steel spokes.  
Hand-stitching leather or leather look polyurethane grip.  
Stainless steel cover, polished stainless steel center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 81 mm (3.19")



**Adorno L B/CH**



**Adorno PU B/CH**



|                                       |                                      |
|---------------------------------------|--------------------------------------|
| <b>Diameter</b>                       | 350 mm (13.8")                       |
| <b>Grip material</b>                  | Leather or leather look polyurethane |
| <b>Grip color</b>                     | Black                                |
| <b>Spokes</b>                         | Polished 304 stainless steel         |
| <b>Center cap</b>                     | Polished stainless steel             |
| <b>Floating cap</b>                   | Available upon request               |
| <b>Standard 3/4" hub</b>              | Included                             |
| <b>QDH hub</b>                        | Available upon request               |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| <b>Model</b>          | <b>Part No.</b> | <b>Description</b>                           |
|-----------------------|-----------------|--|
| <b>Adorno L B/CH</b>  | 69169G          | Black leather grip, SS spokes, SS cover      |
| <b>Adorno PU B/CH</b> | 69167C          | Black polyurethane grip, SS spokes, SS cover |

## Imperiale Vero Volante Italiano



VERO VOLANTE ITALIANO



Imperiale V B/SS/P

3-spoke steering wheel.

Available spokes:

- Brushed 316L stainless steel with polished edges
- Brushed silver anodized aluminum with polished edges

Hand-stitching vinyl or leather look polyurethane grip.

Black painted cover, chrome plated center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 66,5 mm (2.62")



**Imperiale V B/SS/P**



**Imperiale PU B/S/P**



|                                       |  |
|---------------------------------------|--|
| <b>Diameter</b>                       | 350 mm (13.8")                             |
| <b>Grip material</b>                  | Vinyl or leather look polyurethane         |
| <b>Grip color</b>                     | Black                                      |
| <b>Spokes</b>                         | Brushed 316L SS or brushed silver aluminum |
| <b>Center cap</b>                     | Chrome plated                              |
| <b>Floating cap</b>                   | n.a.                                       |
| <b>Standard 3/4" hub</b>              | Included                                   |
| <b>QDH hub</b>                        | n.a.                                       |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22       |

| <b>Model</b>              | <b>Part No.</b> | <b>Description</b>  |
|---------------------------|-----------------|---|
| <b>Imperiale V B/SS/P</b> | 21299B          | Black vinyl grip, brushed SS spokes with polished edges, black painted cover              |
| <b>Imperiale PU B/S/P</b> | 21300G          | Black polyurethane grip, brushed aluminum spokes with polished edges, black painted cover |



## Manin Vero Volante Italiano



VERO VOLANTE ITALIANO



Manin PU B/S

3-spoke steering wheel.  
Polished 304 stainless steel or silver or black anodized aluminum spokes.  
Leather look polyurethane grip.  
Chrome plated cover and center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 81 mm (3.19")



**Manin PU B/SS**



**Manin PU B/S**



**Manin PU B/B**

|                                       |   |
|---------------------------------------|---|
| <b>Diameter</b>                       | 350 mm (13.8")                              |
| <b>Grip material</b>                  | Leather look polyurethane                   |
| <b>Grip color</b>                     | Black                                       |
| <b>Spokes</b>                         | Polished 304 SS or silver or black aluminum |
| <b>Center cap</b>                     | Chrome plated                               |
| <b>Floating cap</b>                   | Available upon request                      |
| <b>Standard 3/4" hub</b>              | Included                                    |
| <b>QDH hub</b>                        | Available upon request                      |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22        |

| <b>Model</b>         | <b>Part No.</b> | <b>Description</b>   |
|----------------------|-----------------|--|
| <b>Manin PU B/SS</b> | 68204A          | Black polyurethane grip, SS spokes, chrome plated cover              |
| <b>Manin PU B/S</b>  | 68205C          | Black polyurethane grip, silver aluminum spokes, chrome plated cover |
| <b>Manin PU B/B</b>  | 68206E          | Black polyurethane grip, black aluminum spokes, chrome plated cover  |

## Grimani Vero Volante Italiano



VERO VOLANTE ITALIANO



Grimani PU B/S/VE

3-spoke steering wheel.  
Polished 304 stainless steel or silver or black anodized aluminum spokes.  
Leather look polyurethane grip with silver or chrome plated inserts.  
Black painted and chrome plated or silver and chrome plated cover and  
black painted center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth:  
SS Spokes = 89,5 mm (3.52")  
Aluminum Spokes = 91,5 mm (3.6")



**Grimani PU B/SS/CH**



**Grimani PU B/S/VE**



**Grimani PU B/B/CH**

|                                       |   |
|---------------------------------------|---|
| <b>Diameter</b>                       | 350 mm (13.8")                              |
| <b>Grip material</b>                  | Leather look polyurethane with inserts      |
| <b>Grip color</b>                     | Black with silver or chrome plated inserts  |
| <b>Spokes</b>                         | Polished 304 SS or silver or black aluminum |
| <b>Center cap</b>                     | Black painted                               |
| <b>Floating cap</b>                   | Available upon request                      |
| <b>Standard 3/4" hub</b>              | Included                                    |
| <b>QDH hub</b>                        | Available upon request                      |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22        |

| <b>Model</b>              | <b>Part No.</b> | <b>Description</b>   |
|---------------------------|-----------------|--|
| <b>Grimani PU B/SS/CH</b> | 69198P          | Black polyurethane grip with chrome plated inserts, SS spokes, black painted and chrome plated cover             |
| <b>Grimani PU B/S/VE</b>  | 69297S          | Black polyurethane grip with silver inserts, silver aluminum spokes, black painted and silver painted cover      |
| <b>Grimani PU B/B/CH</b>  | 69298U          | Black polyurethane grip with chrome plated inserts, black aluminum spokes, black painted and chrome plated cover |

**Grimani**  
Vero Volante Italiano



VERO VOLANTE ITALIANO



Grimani PU B/S/R

3-spoke steering wheel.  
Silver anodized aluminum spokes.  
Leather look polyurethane grip with color painted inserts.  
Black and color painted cover and black painted center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 91,5 mm (3.6")



**Grimani PU B/S/BL**



**Grimani PU B/S/R**



**Grimani PU B/S/KG**



**Grimani PU B/S/Y**

|                                       |  |
|---------------------------------------|--|
| <b>Diameter</b>                       | 350 mm (13.8")                         |
| <b>Grip material</b>                  | Leather look polyurethane with inserts |
| <b>Grip color</b>                     | Black with color painted inserts       |
| <b>Spokes</b>                         | Silver anodized aluminum               |
| <b>Center cap</b>                     | Black painted                          |
| <b>Floating cap</b>                   | Available upon request                 |
| <b>Standard 3/4" hub</b>              | Included                               |
| <b>QDH hub</b>                        | Available upon request                 |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22   |

| <b>Model</b>             | <b>Part No.</b> | <b>Description</b>  |
|--------------------------|-----------------|---|
| <b>Grimani PU B/S/BL</b> | 69480G          | Black polyurethane grip with blue inserts, silver aluminum spokes, black and blue painted cover     |
| <b>Grimani PU B/S/R</b>  | 69481J          | Black polyurethane grip with red inserts, silver aluminum spokes, black and red painted cover       |
| <b>Grimani PU B/S/KG</b> | 20836W          | Black polyurethane grip with green inserts, silver aluminum spokes, black and green painted cover   |
| <b>Grimani PU B/S/Y</b>  | 69482L          | Black polyurethane grip with yellow inserts, silver aluminum spokes, black and yellow painted cover |

## Loredan Vero Volante Italiano



VERO VOLANTE ITALIANO



Loredan PU B/SS/CH

3-spoke steering wheel.  
Polished 304 stainless steel or silver or black anodized aluminum spokes.  
Leather look polyurethane grip with chrome plated inserts.  
Black painted and chrome plated cover and black painted center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 92,5 mm (3.64")



**Loredan PU B/SS/CH**



**Loredan PU B/S/CH**



**Loredan PU B/B/CH**

|                                       |   |
|---------------------------------------|---|
| <b>Diameter</b>                       | 350 mm (13.8")                              |
| <b>Grip material</b>                  | Leather look polyurethane with inserts      |
| <b>Grip color</b>                     | Black with chrome plated inserts            |
| <b>Spokes</b>                         | Polished 304 SS or silver or black aluminum |
| <b>Center cap</b>                     | Black painted                               |
| <b>Floating cap</b>                   | Available upon request                      |
| <b>Standard 3/4" hub</b>              | Included                                    |
| <b>QDH hub</b>                        | Available upon request                      |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22        |

| <b>Model</b>              | <b>Part No.</b> | <b>Description</b>  |
|---------------------------|-----------------|---|
| <b>Loredan PU B/SS/CH</b> | 69557S          | Black polyurethane grip with chrome plated inserts, SS spokes, black painted and chrome plated cover              |
| <b>Loredan PU B/S/CH</b>  | 69558U          | Black polyurethane grip with chrome plated inserts, silver aluminum spokes, black painted and chrome plated cover |
| <b>Loredan PU B/B/CH</b>  | 69559W          | Black polyurethane grip with chrome plated inserts, black aluminum spokes, black painted and chrome plated cover  |



## Doria

### Vero Volante Italiano



VERO VOLANTE ITALIANO



Doria PU B/S/R

3-spoke steering wheel.

Chrome plated or silver painted spokes, leather look polyurethane grip with chrome plated or color painted inserts and painted center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 52 mm (2.05")



**Doria PU B/S/R**



**Doria PU B/S/B**



**Doria PU B/CH/CH**

|                                       |   |
|---------------------------------------|---|
| <b>Diameter</b>                       | 350 mm (13.8")                                    |
| <b>Grip material</b>                  | Leather look polyurethane with inserts            |
| <b>Grip color</b>                     | Black with color painted or chrome plated inserts |
| <b>Spokes</b>                         | Silver or chrome plated                           |
| <b>Center cap</b>                     | Painted   |
| <b>Floating cap</b>                   | n.a.  |
| <b>Standard 3/4" hub</b>              | Included  |
| <b>QDH hub</b>                        | n.a.  |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22              |

| <b>Model</b>            | <b>Part No.</b> | <b>Description</b>  |
|-------------------------|-----------------|---|
| <b>Doria PU B/S/R</b>   | 67309K          | Black polyurethane grip with painted red inserts, silver painted spokes   |
| <b>Doria PU B/S/B</b>   | 67465A          | Black polyurethane grip with painted black inserts, silver painted spokes |
| <b>Doria PU B/CH/CH</b> | 69706G          | Black polyurethane grip with chrome plated inserts, chrome plated spokes  |

## Falier Vero Volante Italiano



VERO VOLANTE ITALIANO



Falier V B/BRU/L

5-spoke steering wheel.  
Brushed 316L stainless steel spokes.  
Vinyl or leather look polyurethane grip  
Brushed stainless steel cover, leather center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 84 mm (3.3")



Falier V B/BRU/L



Falier PU B/BRU/B



Falier PU G/BRU/G

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| <b>Diameter</b>                       | 350 mm (13.8")                       |
| <b>Grip material</b>                  | Vinyl or leather look polyurethane   |
| <b>Grip color</b>                     | Black, grey                          |
| <b>Spokes</b>                         | Brushed 316L stainless steel         |
| <b>Center cap</b>                     | Leather                              |
| <b>Floating cap</b>                   | Available upon request.              |
| <b>Standard 3/4" hub</b>              | Included                             |
| <b>QDH hub</b>                        | n.a.                                 |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22 |

| <b>Model</b>             | <b>Part No.</b> | <b>Description</b>   |
|--------------------------|-----------------|--|
| <b>FALIER V B/BRU/L</b>  | 24733G          | Black vinyl grip with grey stitches, SS brushed spokes, SS brushed cover |
| <b>FALIER PU B/BRU/B</b> | 24734J          | Black polyurethane grip, SS brushed spokes, SS brushed cover             |
| <b>FALIER PU G/BRU/G</b> | 24735L          | Grey polyurethane grip, SS brushed spokes, SS brushed cover              |

## Captiva HU/B - Heated steering wheel Vero Volante Italiano

new



VERO VOLANTE ITALIANO



Captiva HU/B

- Power switch embedded in the spoke
- Two available heating modes: **COMFORT** and **HIGH**
- Sliding contacts power supply
- LED dimmer (day/night)
- Low voltage monitoring and disconnection
- 12V DC and 24V DC power supply (50 W draw)
- Fits front mount Ultraflex hydraulic helms UP 25-28-33-39-45 (UP18 and UP20 excluded)
- Fits Ultraflex electronic tilt helms
- Fits all Ultraflex tilt mechanisms, featuring internal routing of the wire
- Class IP68
- Patented

Ø = 350 mm (13.8")

Depth = 85 mm (3.34")

# Captiva HU/B - Heated steering wheel

Vero Volante Italiano

**new**



Captiva HU/B



|                                       |   |
|---------------------------------------|---|
| <b>Diameter</b>                       | 350 mm (13.8")  |
| <b>Grip material</b>                  | Front: polished 316L stainless steel; Rear: TPU                       |
| <b>Grip color</b>                     | Polished stainless steel and black TPU                                |
| <b>Rear grip</b>                      | Black TPU   |
| <b>Spokes</b>                         | Polished 316L stainless steel and TPU with black methacrylate inserts |
| <b>Nut</b>                            | Polished stainless steel  |
| <b>Standard 3/4" hub</b>              | Included  |
| <b>QDH hub</b>                        | n.a.  |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22                                  |

| Model               | Part No. | Description   |
|---------------------|----------|---|
| <b>Captiva HU/B</b> | 24995P   | Heated steering wheel, SS front grip and TPU rear grip, stainless steel and TPU spokes with black methacrylate inserts, |

## Captiva BK - Captiva B Vero Volante Italiano

new



VERO VOLANTE ITALIANO



Captiva BK

3-spoke steering wheel, available with incorporated knob or without knob.  
Polished 316L stainless steel and black TPU spokes with black methacrylate inserts.  
Polished 316L stainless steel front grip, black TPU rear grip.  
Polished stainless steel nut.  
Captiva B is compatible with **Knob SK 25458S** as retrofit.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 85 mm (3.34")

new



Captiva B



Captiva BK



Captiva B + Knob SK



|                                       |   |
|---------------------------------------|---|
| <b>Diameter</b>                       | 350 mm (13.8")  |
| <b>Grip material</b>                  | Front: polished 316L stainless steel; Rear: TPU                       |
| <b>Grip color</b>                     | Polished stainless steel and black TPU                                |
| <b>Rear grip</b>                      | Black TPU   |
| <b>Spokes</b>                         | Polished 316L stainless steel and TPU with black methacrylate inserts |
| <b>Nut</b>                            | Polished stainless steel  |
| <b>Standard 3/4" hub</b>              | Included  |
| <b>QDH hub</b>                        | n.a.  |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22                                  |

| Model             | Part No. | Description  |
|-------------------|----------|--|
| <b>Captiva BK</b> | 25454HU  | SS and TPU grip, stainless steel and TPU spokes with black methacrylate inserts, incorporated knob |
| <b>Captiva B</b>  | 24994M   | SS and TPU grip, stainless steel and TPU spokes with black methacrylate inserts                    |
| <b>Knob SK</b>    | 25458S   | Speed knob for Captiva B steering wheel  |



Captiva GK - Captiva G - Captiva SFK - Captiva SF  
Vero Volante Italiano

new



VERO VOLANTE ITALIANO



Captiva G

3-spoke steering wheel, available with incorporated knob or without knob.  
Polished 316L stainless steel and black TPU spokes with painted ABS inserts.  
Polished 316L stainless steel front grip, black TPU rear grip.  
Polished stainless steel nut.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 85 mm (3.34")

Captiva GK - Captiva G - Captiva SFK - Captiva SF  
Vero Volante Italiano

new



Captiva G



Captiva GK

new



Captiva SF



Captiva SFK

|                            |  |
|----------------------------|--|
| Diameter                   | 350 mm (13.8")   |
| Grip material              | Front: polished 316L stainless steel; Rear: TPU                |
| Grip color                 | Polished stainless steel and black TPU                         |
| Rear grip                  | Black TPU  |
| Spokes                     | Polished 316L stainless steel and TPU with colored ABS inserts |
| Nut                        | Polished stainless steel                                       |
| Standard 3/4" hub          | Included   |
| QDH hub                    | n.a.   |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22                           |

| Model       | Part No. | Description  |
|-------------|----------|--|
| Captiva GK  | 25851U   | SS and TPU grip, stainless steel and TPU spokes with grey painted ABS inserts incorporated knob    |
| Captiva G   | 25853Y   | SS and TPU grip, stainless steel and TPU spokes with grey painted ABS inserts                      |
| Captiva SFK | 25850S   | SS and TPU grip, stainless steel and TPU spokes with seafoam painted ABS inserts incorporated knob |
| Captiva SF  | 25852W   | SS and TPU grip, stainless steel and TPU spokes with seafoam painted ABS inserts.                  |



VERO VOLANTE ITALIANO



Contarini TPU/SS

3-spoke steering wheel.  
Polished 316L stainless steel spokes.  
Polished 316L stainless steel and TPU grip.  
Stainless steel cover, black painted center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 79,5 mm (3.13")



**Contarini TPU/SS**



**Contarini TPU/SS with KNOB SK**



|                                       |                                       |
|---------------------------------------|---------------------------------------|
| <b>Diameter</b>                       | 350 mm (13.8")                        |
| <b>Grip material</b>                  | TPU and polished 316L stainless steel |
| <b>Grip color</b>                     | Black and polished stainless steel    |
| <b>Spokes</b>                         | Polished 316L stainless steel         |
| <b>Center cap</b>                     | Black painted                         |
| <b>Floating cap</b>                   | n.a.                                  |
| <b>Standard 3/4" hub</b>              | Included                              |
| <b>QDH hub</b>                        | n.a.                                  |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22  |

| <b>Model</b>            | <b>Part No.</b> | <b>Description</b>                         |
|-------------------------|-----------------|--|
| <b>Contarini TPU/SS</b> | 69199S          | Black TPU and SS grip, SS spokes, SS cover |
| <b>Knob SK</b>          | 25458S          | Speed knob for Contarini steering wheel    |

## Siestakey Vero Volante Italiano



VERO VOLANTE ITALIANO



Siestakey B

2-spoke steering wheel.  
Polished 316L stainless steel and TPU spokes.  
Polished 316L stainless steel and black TPU grip.  
Black cover.

Hub included - standard 3/4" taper

Ø = 368 mm (14.5")

Depth = 90 mm (3.54")



**Siestakey B**



**Siestakey B with KNOB SK**



|                                       |  |
|---------------------------------------|--|
| <b>Diameter</b>                       | 368 mm (14.5")                         |
| <b>Grip material</b>                  | Polished 316L stainless steel and TPU  |
| <b>Grip color</b>                     | Polished stainless steel and black TPU |
| <b>Spokes</b>                         | Polished 316L stainless steel          |
| <b>Cover</b>                          | Black                                  |
| <b>Floating cap</b>                   | n.a.                                   |
| <b>Standard 3/4" hub</b>              | Included                               |
| <b>QDH hub</b>                        | n.a.                                   |
| <b>Certifications &amp; standards</b> | CE, UKCA, NMMA; ISO 23411 & ABYC P22   |

| <b>Model</b>       | <b>Part No.</b> | <b>Description</b>                            |
|--------------------|-----------------|---|
| <b>Siestakey B</b> | 68188F          | SS and black TPU grip, SS spokes, black cover |
| <b>Knob SK</b>     | 25458S          | Speed knob for Siestakey steering wheel       |

**new**



VERO VOLANTE ITALIANO



**Keywest BLCK**

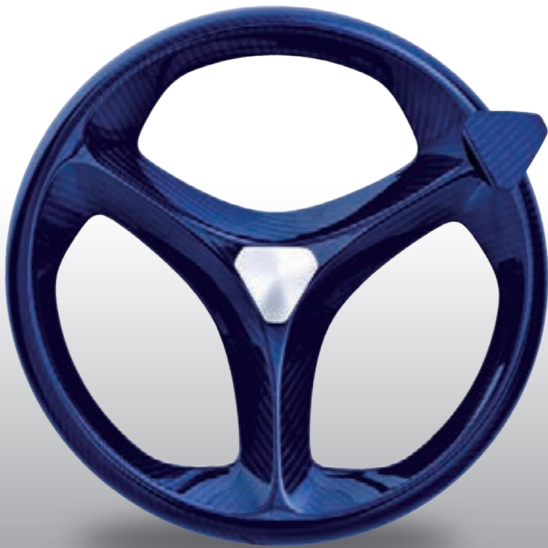
Carbon fiber 3-spoke wheel.  
Available with incorporated knob or without knob.  
Black TPU rear grip.

Hub included - standard da 3/4" taper.

Ø = 350 mm (13.8")

Depth = 96 mm (3.77")

new



Keywest BLCK



Keywest PCK

new



Keywest BLC



Keywest PC

|                            |  |
|----------------------------|--|
| Diameter                   | 350 mm (13.8")                             |
| Frame                      | Carbon fiber                               |
| Grip material              | Polished, matt, blue carbon fiber and TPU. |
| Spokes                     | Carbon fiber and TPU                       |
| Floating cap               | n.a.                                       |
| Standard 3/4" hub          | Included                                   |
| QDH hub                    | n.a.                                       |
| Certifications & standards | CE, UKCA, NMMA; ISO 23411 & ABYC P22       |

| Model        | Part No. | Description   |
|--------------|----------|---|
| Keywest BLCK | 25481L   | Polished blue carbon fiber and TPU grip and spokes. Knob included |
| Keywest PCK  | 25479A   | Polished carbon fiber and TPU grip and spokes. Knob included      |
| Keywest MCK  | 25480J   | Matt carbon fiber and TPU grip and spokes. Knob included          |
| Keywest BLC  | 25484T   | Polished blue carbon fiber and TPU grip and spokes.               |
| Keywest PC   | 25482N   | Polished carbon fiber and TPU grip and spokes.                    |
| Keywest MC   | 25483R   | Matt carbon fiber and TPU grip and spokes.                        |



## QDH - Quick Disconnect Hub Steering wheels accessories

QDH - Quick Disconnect Hub allows for easy removal of the steering wheel from the cockpit.

**QDH** 23013D Quick disconnect hub for standard 3/4" taper

Suitable with Ultraflex® steering wheels: please refer to steering wheel application chart



**QDH**



### X63 - Standard Hub



**X63** 40119D Standard Hub

Please refer to steering wheel application chart

### Protection cover



**Protection cover** 22824Z Protection cover with Ultraflex logo

Also available with customized logo (minimum quantity ordered: 20 pieces).

## Knobs for steering wheels Accessories



**KNOB UST**



**KNOB21**



**KNOB V56**



**KNOB SK**



**KNOB67**



**KNOB93**

| Model           | Part No. | Knob suitable for the following steering wheels:  |
|-----------------|----------|---|
| <b>KNOB UST</b> | 21721H   | Giannutri, Domino, Ustica, Levanzo, Montecristo, Imperiale PU   |
| <b>KNOB21</b>   | 42371A   | V21, V25, V20, V01, V10, V28, V52, V31, V24, V57, V35, V23, V29, V65, V58, V53, V30, V66, V62, V82, V74/40, V77/40, V85 |
| <b>KNOB V56</b> | 23600F   | V56, Morosini PU, Foscari PU, Adorno  |
| <b>KNOB SK</b>  | 25458S   | Captiva, Contarini, Siestakey   |
| <b>KNOB67</b>   | 40677R   | V67, V63  |
| <b>KNOB93</b>   | 40647F   | V93   |

# Steering wheel accessories

## Application chart

| X63  | KNOB UST   | KNOB21   | KNOB67              | KNOB93     | KNOB V56  | KNOB SK                                      |
|--|--|--|---------------------|------------|---|--|
| <p>CORSICA,<br/>V15,<br/>MYKONOS,<br/>SANTORINI,<br/>NISIDA,<br/>PIANOSA,<br/>PALMARIA,<br/>CAPRAIA,<br/>PANTELLERIA,<br/>DOMINO,<br/>TAVOLARA,<br/>VIVARA,<br/>BUDELLI,<br/>USTICA,<br/>LEVANZO,<br/>MONTECRISTO,<br/>RAZZOLI,<br/>CAPRI,<br/>ASINARA</p> | <p>GIANNUTRI,<br/>DOMINO,<br/>USTICA,<br/>LEVANZO,<br/>MONTECRISTO,<br/>IMPERIALE PU</p> | <p>V21,<br/>V25,<br/>V20,<br/>V01,<br/>V10,<br/>V28,<br/>V52,<br/>V31,<br/>V24,<br/>V57,<br/>V35,<br/>V23,<br/>V29,<br/>V65,<br/>V58,<br/>V53,<br/>V30,<br/>V66,<br/>V62,<br/>V82,<br/>V74/40,<br/>V77/40,<br/>V85</p> | <p>V67,<br/>V63</p> | <p>V93</p> | <p>V56,<br/>MOROSINI PU,<br/>FOSCARI PU,<br/>ADORNO</p> | <p>CAPTIVA,<br/>CONTARINI,<br/>SIESTAKEY</p> |

## Steering wheel accessories Application chart

| FLOATING CAP   | QDH - QUICK DISCONNECT HUB  | PADDLE TRIM WITH TILT  | PADDLE TRIM WITH FRONT MOUNT HELM  | FABRIC COVER   |
|--|---|--|--|--|
| <p>V15,<br/>RAZZOLI,<br/>MONTECRISTO,<br/>ODERICO,<br/>TRON,<br/>SPINOLA,<br/>DOLFIN,<br/>CONTARINI,<br/>MANIN,<br/>GRIMANI,<br/>LOREDAN</p> | <p>ASINARA,<br/>CORSICA,<br/>V15,<br/>MYKONOS,<br/>SANTORINI,<br/>NISIDA,<br/>PIANOSA,<br/>PALMARIA,<br/>CAPRAIA,<br/>PANTELLERIA,<br/>GIANNUTRI,<br/>DOMINO,<br/>TAVOLARA,<br/>VIVARA,<br/>BUDELLI,<br/>USTICA,<br/>LEVANZO,<br/>MONTECRISTO,<br/>RAZZOLI,<br/>CAPRI,<br/>MOROSINI,<br/>FOSCARI,<br/>ADORNO,<br/>MANIN,<br/>GRIMANI,<br/>LOREDAN</p> | <p>ASINARA,<br/>FREGOSO,<br/>GRITTI,<br/>FALIER,<br/>GUARCO,<br/>CAPTIVA,<br/>CORSICA,<br/>V21,<br/>V01,<br/>V10,<br/>V24,<br/>V56,<br/>V70,<br/>V57,<br/>V35,<br/>V29,<br/>V30,<br/>V66,<br/>V62,<br/>V15,<br/>SANTORINI,<br/>NISIDA,<br/>PIANOSA,<br/>PALMARIA,<br/>CAPRAIA,<br/>PANTELLERIA,<br/>DOMINO,<br/>TAVOLARA,<br/>VIVARA,<br/>BUDELLI,<br/>USTICA,<br/>LEVANZO,<br/>MONTECRISTO,<br/>ODERICO,<br/>IMPERIALE,<br/>DOLFIN,<br/>MOROSINI,<br/>FOSCARI,<br/>ADORNO,<br/>CONTARINI,<br/>SIESTAKEY,<br/>MANIN,<br/>GRIMANI,<br/>LOREDAN,<br/>DORIA</p> | <p>ASINARA,<br/>FREGOSO,<br/>GRITTI,<br/>SORANZO,<br/>GUARCO,<br/>VIVALDI,<br/>FALIER,<br/>CAPTIVA,<br/>V99,<br/>CORSICA,<br/>V21,<br/>V25,<br/>V20,<br/>V01,<br/>V10,<br/>V24,<br/>V56,<br/>V70,<br/>V57,<br/>V35,<br/>V29,<br/>V30,<br/>V66,<br/>V62,<br/>V82,<br/>V15,<br/>SANTORINI,<br/>NISIDA,<br/>PIANOSA,<br/>PALMARIA,<br/>CAPRAIA,<br/>PANTELLERIA,<br/>DOMINO,<br/>TAVOLARA,<br/>VIVARA,<br/>BUDELLI,<br/>USTICA,<br/>LEVANZO,<br/>MONTECRISTO,<br/>RAZZOLI,<br/>ODERICO,<br/>IMPERIALE,<br/>DOLFIN,<br/>MOROSINI,<br/>FOSCARI,<br/>ADORNO,<br/>CONTARINI,<br/>SIESTAKEY,<br/>BALBI,<br/>MANIN,<br/>GRIMANI,<br/>LOREDAN,<br/>DORIA</p> | <p>ASINARA,<br/>FREGOSO,<br/>GRITTI,<br/>SORANZO,<br/>GUARCO,<br/>VIVALDI,<br/>FALIER,<br/>CAPTIVA,<br/>V38,<br/>V60,<br/>V99,<br/>CORSICA,<br/>V21,<br/>V25,<br/>V20,<br/>V01,<br/>V10,<br/>V24,<br/>V56,<br/>V70,<br/>V57,<br/>V30,<br/>V66,<br/>V62,<br/>V82,<br/>V15,<br/>SANTORINI,<br/>NISIDA,<br/>PIANOSA,<br/>CAPRAIA,<br/>DOMINO,<br/>TAVOLARA,<br/>VIVARA,<br/>BUDELLI,<br/>MONTECRISTO,<br/>RAZZOLI,<br/>BOCCANEGRA,<br/>ODERICO,<br/>TRON,<br/>SPINOLA,<br/>IMPERIALE,<br/>DOLFIN,<br/>MOROSINI,<br/>FOSCARI,<br/>ADORNO,<br/>CONTARINI,<br/>BALBI,<br/>GRIMANI,<br/>LOREDAN,<br/>DORIA,<br/>KEYWEST</p> |

## Paddle Trim



For complete control of engine trim and tilt, trim tabs, jackplates, PowerPole(R) and other on board systems, the innovative Paddle Trim system is the answer.

Adaptable to existing front mount hydraulic and tilt helms, the Paddle Trim is ergonomically designed to allow the driver to make precise adjustments to the attitude of the boat or other systems without removing his hand from the steering wheel.

**PTS-1** - 43051L - Single paddle kit including one paddle and the brackets to attach to a tilt or to a front mount helm

**PTS-2** - 43052N - Two paddles and the brackets to attach it to a tilt or to a front mount helm



Single or dual

Adjustable positioning

Tilt or front mount

### Features

- Available both in single and dual versions (for either two equal or two different outputs).
- Both single or dual paddle can be positioned at various angles for the most comfortable choice.
- Equipped with one water proof "MOM.ON-OFF-MOM.ON" switch (2 switches on dual version).
- Max load 2 Amp @ 12VDC.
- Suitable for any kind of steering wheel dish. Max wheel dia. 400 mm (15.7").
- Easy to install on the following Ultraflex® steering systems:
  - front and tilt mount hydraulic helms
  - tilt mount mechanical helms
- Wiring harness, labels and mounting hardware kit are included. The mounting plate, which differs between front and tilt mount installation, is to be ordered separately.









### KTR kit

- Kit relay **KTR** - 42860S:
  - It allows a Paddle Trim pair to control electrical loads up to 10 Amp (e.g. Trim Tabs Uflex®).
  - Easy to use and to install, through connectors with pre-crimped contacts.



KTR kit

## Paddle Trim labels

|      | ENGINE TRIM & TILT  | JACKPLATE   | TRIM TABS  | HORN  |
|------|---|---|--|---|
| UP   |  |  |  |  |
| DOWN |  |  |  |  |

## Order guide

| DESCRIPTION   | P. No  | SINGLE QTY | DUAL QTY |
|---|--------|------------|----------|
| - Single function control device                          | 42857D | 1          | 2        |
| - Mounting plate for tilt mount helms (mech or hydraulic) | 42858F | 1          | 1        |
| or:   |        |            |          |
| - Mounting plate for front mount hydraulic helms          | 42859H | 1          | 1        |
| - <b>KTR</b> kit relay for loads exceeding 5 Amp          | 42860S | 1          | 2        |



## Vero Volante Italiano

### The brand



VERO VOLANTE ITALIANO

“VERO VOLANTE ITALIANO” is the registered trademark which distinguishes the steering wheels for pleasure boats produced by Ultraflex.

They are conceived by Italian designers, engineered and manufactured in Italy by employing genuine Italian components and technologies according to Ultraflex quality management system.

All ULTRAFLEX steering wheels meet the directive 2013/53/ EU requirements about pleasure boats.

All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards

## Vero Volante Italiano

### Maintenance

- Periodically clean the steering wheel to remove any salt deposit: rinse with fresh water and dry with a clean cloth
- Do not use any aggressive soap or alcohol based cleaner or solvent that may damage the steering wheel
- Use specific cleaning products on leather finished steering wheels; automotive leather equipment cleaners and cloths are the most indicated
- Always protect the steering wheel with its own canvas cover during non-use periods





# Power A Mark II™ Electronic control system

## Power A Mark II™

- Private protocol CAN-bus for data transmission
- Suitable for mechanical shift and throttle as well as electronic Throttle add shift
- Connection of multiple stations up to 4 controls
- Modular system
- Direct communication with electronic engines (SAE J 1939 or NMEA 2000)
- Plug'n play connectivity
- Automatic engine synchronization
- Dock assist
- Fully programmable shift delays
- Personalized label upon request
- Available installation also for 3 or 4 engines\*

\*Please, contact our Technical Department for 3 or 4 engine installations.

The easy to install PowerA Mark II™ control system provides fingertip operation of throttle and shift levers.

Using reliable and precise digital data transmission, this single or dual function control system is specifically designed to work on mechanically controlled as well as electronic and electro-hydraulic gas and diesel inboards, sterndrives and outboards.

The PowerA Mark II™ comes with many features including Dock Assist, which offers the operator the opportunity to reduce the sensitivity of the throttle function for easier dockside handling.

Other standard features include RPM Synchronization, which reduces engine vibration and improves fuel economy, a High Idle feature to increase RPM where higher idle is necessary for cold engine operations, and provided our Technical Assistance, a programmable Trolling Valve Control and neutral Warm Up.

The stylish and ergonomically designed control makes the PowerA Mark II™ suitable for many types of applications ranging from sport boats, yachts and commercial applications.

Available with and without trim, the control has audible and visual interfaces which alert the operator to the current status of the control system.

With the ability to control up to 4 outboard engines from up to 4 different stations, the PowerA Mark II™ is a modular and flexible system with simple to install components.

The unique Control Unit Display of the PowerA Mark II™ provides simple touch pad programming with descriptive information regarding the set up, tuning and diagnostics of the system.

The Power A Mark II is a system that can replace mechanical controls either on fully mechanical engines, or on fully electronic engines, or on engines with the combination of both characteristics.



### STANDARD CONTROL STATIONS:

#### Control without trim:

- Single engine - 42009G chrome
- Single engine - 42426Z black
- Twin engines - 42011T chrome
- Twin engines - 42425X black

**IP protection: IP66**

#### Control with trim:

- Single engine - 42010R chrome
- Single engine - 42427B black
- Twin engines - 42012V chrome
- Twin engines - 42428D black

**IP protection: IP66**

### COMPACT CONTROL STATIONS:

#### Control without trim:

- Single engine - 43923V chrome
- Twin engines - 43924X chrome

**IP protection: IP66**

|                                    |   |
|------------------------------------|---|
| Control stations                   | up to 4                                 |
| Control stations IP Protection     | IP66                                    |
| Power supply                       | min. 9V / Max 32V                       |
| Working temperature                | -25°C to +75°C                          |
| Electronic throttle output voltage | double output 0 - 5V and or - 2,5V      |
| Electronic throttle output PWM     | 0-100%, frequency from 200HZ to 1 KHZ   |
| Electronic throttle output current | 4 - 10MA                                |
| Digital throttle output            | SAEJ 1939, NMEA 2000®                   |
| Trolling valve output voltage      | 0 - 5V                                  |
| Trolling valve output PWM          | 0-100%, frequency from 100HZ to 1 KHZ   |
| Trolling valve output current      | 4 - 20MA                                |
| Electric shift control             | 2 or 3 ON/OFF or proportional solenoids |
| Certifications                     | CEI EN60945 UNI-EN ISO 11547            |

#### SAFETY DEVICES

- Start in-gear PROTECTION(start inhibition with shifted gear)
- Audible and visual diagnostic failure alarm (READABLE MESSAGES ON THE CONTROL UNIT DISPLAY)
- Proportional shift delays
- Programmable working parameters
- Meets CEI EN 60945 standards

#### Compatibility with all mechanical throttle engines

#### Compatibility with all electronic throttle engines

- Cummins, Detroit Diesel, Scania, Iveco, FPT, Lombardini, VM Motori, FNM, Yanmar, CMD-Volkswagen, Hyundai etc.

The Power A Mark II™ electronic system actuators cannot be installed in those rooms where ignition-proof devices are required.



The “Power A Mark II™ - Installation and User Manual” describes activities, operations, technical specifications which must be followed during the installation and/or usage of the product, in order to keep a valid warranty and obtain the better performance. Description and drawings in that manual are suitable to allow an easy installation and safe use of the product by skilled personnel. In case of doubt and/or for any information, please contact our Technical Service.

**PLEASE REFER TO LIMITED WARRANTY CONDITIONS REPORTED IN THIS CATALOGUE.**

## Power A Mark II™ Modular components

Control Unit



**PA2-CU** - 42017F

**PA2-CU 4 engines Control Unit** - 43157 D

Control Unit: user interface for the configuration, settings and diagnostic of all the modules in a system.

IP protection: IP65

Dim.: 215 x 120 mm (8.5" x 4.7")

V-Throttle  
I-Throttle



**PA2-VT** - 42018H - for 0-5V interfaces (voltage)

**PA2-IT** - 42019K - for 4-20 mA interfaces (current)

They supply the throttle electronic signal. Required for use with direct connection to electronic throttle on the engine.

IP protection: IP65

Dim.: 205 x 110 mm (8" x 4.3")

SAEJ-Throttle



**PA2-SAEJT** - Customized

It supplies the digital signals to CAN SAEJ 1939 or NMEA 2000 interfaces

IP protection: IP65

Dim.: 205 x 110 mm (8" x 4.3")

PWM-Throttle



**PA2-PWMT** - 42020U

It supplies the electrical signals to PWM interfaces

IP protection: IP65

Dim.: 205 x 110 mm (8" x 4.3")

## Shift Unit



### PA2-SU - 42023A

It controls up to 2 shifts with solenoids. Required for use with direct connection to the electrical shift unit on the transmission.

IP protection: IP65

Dim.: 210 x 120 mm (8.3" x 4.7")

## E-Troll Electronic or electric



Control Unit for Trolling Valve both electronic (0-5V; 4-20mA) and electric (PWM) interface, designed according to customer's specifications. For controls with Trolling Valve please contact our Technical Service for custom configuration.

## Power Unit



### PA2-PU - 42026G

Provides power for up to 4 modules with the input combination of up to 2 batteries, 12 and 24V. Required for all PowerA Mark II installations.

IP protection: IP65

Dim.: 205 x 110 mm (8" x 4.3")

## M-Actuator



### PA2-MA - 42027J

The electromechanical actuators can control any mechanical interface (throttle shift or custom made trolling valve) through MACHZero and C8 mechanical cables.

IP protection: IP66

Length: 320 mm (12.6")

| MODEL         | P. No.       | DESCRIPTION                            | FEATURES                        | No. OF ENGINES | ENGINE TYPE                          |
|---------------|--------------|--|---------------------------------|----------------|--------------------------------------|
| V-Throttle    | 42018H       | Throttle with analog voltage interface | Redundant voltage input, IVS.   | 1 - 2          | FPT, Yanmar, Mercruiser, Lombardini. |
| V-Throttle    | 42437E       | Throttle with analog voltage interface | Redundant voltage input, IVS.   | 1 - 2          | Volkswagen                           |
| I-Throttle    | 42019K       | Throttle with current analog interface | Current outputs.                | 1 - 2          | 4 - 20 mA throttle engines           |
| PWM-Throttle  | 42020U       | Throttle with PWM interface            | PWM outputs                     | 1 - 2          | Perkins, Caterpillar                 |
| SAEJ-Throttle | Personalized | Throttle with SAEJ 1939 interface      | CAN DeviceNet SAEJ 1939 outputs | 1 - 2          | SAEJ 1939 engines                    |
| NMEA-Throttle | Personalized | Throttle with NMEA 2000 interface      | CAN DeviceNet NMEA 2000 outputs | 1 - 2          | NMEA 2000 engines                    |

CHART B - Throttle cables

| MODEL                                 | APPLICATION                                 | LENGTH (m) | P. No. | CONNECTORS  |
|---------------------------------------|---|------------|--------|---|
| Universal V-Throttle cable            | Not redundant 5V cable/1 engine             | 2          | 42029N | None  |
|                                       |   | 4          | 42030X |   |
| FPT V-Throttle cable                  | FPT engines 0 – 5 V cable (J-INV connector) | 2          | 42350S | FPT, all engines with J-INV connector             |
|                                       |   | 4          | 42351U |   |
| FPT V-Throttle cable                  | FPT engines 0 – 5 V cable (J-D connector)   | 2          | 42348F | FPT, all engines with J-D connector               |
|                                       |   | 4          | 42349H |   |
| VW V-Throttle cable (4-5-6 cylinder)  | VW engines 0 – 5 V cable                    | 2          | 42033D | VW, 4, 5 and 6 cylinder                           |
|                                       |   | 4          | 42034F |   |
| Mercruiser 4.2 Black V-Throttle cable | Mercruiser engines 0 – 5 V cable            | 2          | 42035H | Mercruiser 4.2 black engines                      |
|                                       |   | 4          | 42036K |   |
| Mercruiser QSD V-Throttle cable       | Mercruiser engines 0 – 5 V cable            | 2          | 42037M | Mercruiser QSD engines                            |
|                                       |   | 4          | 42038P |   |
| Lombardini V-Throttle cable           | Lombardini engines 0 – 5 V cable            | 2          | 42039S | 180 and 240 HP Lombardini engines.                |
|                                       |   | 4          | 42040A |   |
| Yanmar V-Throttle cable               | Yanmar engines 0 – 5 V cable                | 2          | 42041C | Yanmar BY engines                                 |
|                                       |   | 4          | 42042E |   |
| Universal I/ PWM-Throttle cable       | PWM throttle cable with no connector        | 2          | 42043G | Compatible with CAT electronic engines C30/C32    |
|                                       |   | 4          | 42044J |   |
| Universal SAEJ1939-Throttle cable     | SAEJ1939 cable with no connector            | 2          | 42045L | None  |
|                                       |   | 4          | 42046N |   |
| NMEA2000 Throttle cable               | NMEA2000 cable                              | 1          | 42047R | DeviceNet cable Drop type for NMEA2000 connection |
|                                       |   | 3          | 42048T |   |
|                                       |   | 7          | 42049V |   |
| Hyundai V-Throttle cable              | Hyundai engines 0 – 5 V cable               | 2          | 42288P | Hyundai engines                                   |
|                                       |   | 4          | 42289S |   |
| Perkins PWM-Throttle cable            | Perkins engine PWM Throttle cable           | 2          | 42374G | Perkins engines                                   |
|                                       |   | 4          | 42373E |   |

**CHART C - Main system cables**

| DESCRIPTION                                      | APPLICATION                                  | LENGTH (m) | P. No. | CONNECTORS                                 |
|--|--|------------|--------|--|
| <b>Main power supply cable</b>                   | Main power supply of the system              | 1          | 42052H | One each battery                           |
|  |  | 3          | 42053K |  |
|  |  | 7          | 42054M |  |
|  |  | 10         | 42055P |  |
| <b>Power cable extension</b>                     | Power extension cable for modules connection | 1          | 42056S | One each mechanical actuator or shift unit |
|  |  | 3          | 42057U |  |
|  |  | 7          | 42058W |  |
|  |  | 10         | 42059Y |  |
| <b>Shift cable</b>                               | Solenoid connection cable                    | 1          | 42060G | One each solenoid shift                    |
|  |  | 3          | 42061J |  |
|  |  | 7          | 42062L |  |
|  |  | 10         | 42063N |  |
| <b>3 solenoid Shift cable (neutral solenoid)</b> | 3 solenoid connection cable                  | 1          | 42072P | One each 3 solenoid shift                  |
|  |  | 3          | 42073S |  |
|  |  | 7          | 42074U |  |
|  |  | 10         | 42075W |  |
| <b>CAN cable</b>                                 | Network connection cable                     | 1          | 73639T | CAN cable                                  |
|  |  | 3          | 73680P |  |
|  |  | 7          | 73681S |  |
|  |  | 10         | 71021K |  |
|  |  | 15         | 71031N |  |
|  |  | 20         | 71032R |  |

**Note:**

Should the engine inverter need the neutral solenoid, the proper shift cable must be used.  
Custom wiring can be done, upon request

**CHART D - Troll cables**

| DESCRIPTION                    | APPLICATION                                  | LENGTH (m) | P. No. | CONNECTORS |
|--------------------------------|--|------------|--------|------------|
| <b>Universal V-Troll cable</b> | 0-5 V cable with no redundancy               | 2          | 42068Z | None       |
|                                |  | 4          | 42069B |            |
| <b>Universal I-Troll cable</b> | 0.20 mA output cable, no connectors included | 2          | 42070K | None       |
|                                |  | 4          | 42071M |            |

**Spare parts**

| MODEL                       | DESCRIPTION   | P. No. | Q.TY                |
|-----------------------------|---|--------|---------------------|
| <b>Cable connection kit</b> | Kit to connect the mechanical cable to the actuator | 41898N | 1 for each actuator |
| <b>Conduit clamp kit</b>    | Conduit clamp kit for mechanical cable              | 41897L | 1 for each actuator |

| ENGINE  | NO. OF ENGINES                                      | COMPONENTS                            | P. No.         | Q.TY |
|---|---|---------------------------------------|----------------|------|
| <b>PwA II-EE</b><br><b>Electronic throttle</b><br><b>Electric shift</b>   | <b>Single Engine</b>                                | Single control with trim (or no trim) | Select control | 1    |
|   |   | Control Unit                          | 42017F         | 1    |
|   |   | E-Throttle unit                       | Chart A        | 1    |
|   |   | E-Shift unit                          | 42023A         | 1    |
|   |   | Throttle cable                        | Chart B        | 1    |
|   | Shift cable   | Chart C                               | 1              |      |
|   | Power supply cable (general)                        | Chart C                               | 1              |      |
|   | CAN cable   | Chart C                               | 3              |      |
|   | Network terminators                                 | 42028L                                | 1              |      |
|   | Power Unit (optional for second battery)            | 42026G                                | 1              |      |
| Power cable extension (optional for second battery)                       | Chart C   | 1                                     |                |      |
| Power supply cable (optional for second battery)                          | Chart C   | 1                                     |                |      |
| <b>Two Engines</b>  | Dual control with trim (or no trim)                 | Select control                        | 1              |      |
|   | Control Unit  | 42017F                                | 1              |      |
|   | E-Throttle unit                                     | Chart A                               | 1              |      |
|   | E-Shift unit  | 42023A                                | 1              |      |
|   | Throttle cable                                      | Chart B                               | 2              |      |
| Shift cable   | Chart C   | 2                                     |                |      |
| Power supply cable (general)  | Chart C   | 1                                     |                |      |
| CAN cable   | Chart C   | 3                                     |                |      |
| Network terminators   | 42028L  | 1                                     |                |      |
| Power Unit (optional for second battery)                                  | 42026G  | 1                                     |                |      |
| Power cable extension (optional for second battery)                       | Chart C   | 1                                     |                |      |
| Power supply cable (optional for second battery)                          | Chart C   | 1                                     |                |      |
| <b>PwA II-EM</b><br><b>Electronic throttle</b><br><b>Mechanical shift</b> | <b>Single Engine</b>                                | Single control with trim (or no trim) | Select control | 1    |
|   |   | Control Unit                          | 42017F         | 1    |
|   |   | E-Throttle unit                       | Chart A        | 1    |
|   |   | Mechanical actuator                   | 42027J         | 1    |
|   |   | Throttle cable                        | Chart B        | 1    |
|   | CAN cable   | Chart C                               | 3              |      |
|   | Power supply cable (general)                        | Chart C                               | 1              |      |
|   | Network terminators                                 | 42028L                                | 1              |      |
|   | Power Unit (optional for second battery)            | 42026G                                | 1              |      |
|   | Power cable extension (optional for second battery) | Chart C                               | 1              |      |
| Power supply cable (optional for second battery)                          | Chart C   | 1                                     |                |      |
| <b>Two Engines</b>  | Dual control with trim (or no trim)                 | Select control                        | 1              |      |
|   | Control Unit  | 42017F                                | 1              |      |
|   | E-Throttle unit                                     | Chart A                               | 1              |      |
|   | Mechanical actuator                                 | 42027J                                | 2              |      |
|   | Throttle cable                                      | Chart B                               | 2              |      |
| CAN cable   | Chart C   | 4                                     |                |      |
| Power supply cable (general)  | Chart C   | 1                                     |                |      |
| Network terminators   | 42028L  | 1                                     |                |      |
| Power Unit  | 42026G  | 1                                     |                |      |
| Power extension cable   | Chart C   | 2                                     |                |      |
| Power supply cable (optional for second battery)                          | Chart C   | 1                                     |                |      |
| <b>For each additional station add:</b>                                   |   |                                       |                |      |
| <b>Single Engine:</b>   | Single lever control station with trim (or no trim) | Select control                        | 1              |      |
|   | CAN cable   | Chart C                               | 1              |      |
| <b>Two Engines:</b>   | Dual lever control station with trim (or no trim)   | Select control                        | 1              |      |
|   | CAN cable   | Chart C                               | 1              |      |

| ENGINE                                  | NO. OF ENGINES  | COMPONENTS  | P. No.   | Q.TY           |   |
|---|---|---|--|----------------|---|
| <b>PwA II-ME</b>                        | <b>Single Engine</b>                                  | Single control with trim (or no trim)               | Select control                                   | 1              |   |
|   |   | Control Unit  | 42017F   | 1              |   |
|   |   | E-Throttle unit                                     | 42023A   | 1              |   |
|   |   | Mechanical actuator                                 | 42027J   | 1              |   |
|   |   | Throttle cable                                      | Chart C  | 1              |   |
|   |   | CAN cable   | Chart C  | 3              |   |
|   |   | Power supply cable (general)                        | Chart C  | 1              |   |
|   |   | Network terminators                                 | 42028L   | 1              |   |
|   |   | Power Unit (optional for second battery)            | 42026G   | 1              |   |
|   |   | Power cable extension (optional for second battery) | Chart C  | 2              |   |
|   | <b>Mechanical throttle</b>                            | Power supply cable (optional for second battery)    | Chart C  | 1              |   |
|   | <b>Electronic shift</b>                               | <b>Two Engines</b>                                  | Dual control with trim (or no trim)              | Select control | 1 |
|   |   |   | Control Unit                                     | 42017F         | 1 |
|   |   |   | E-Throttle unit                                  | 42023A         | 1 |
| Mechanical actuator                     |   |   | 42027J   | 2              |   |
| Throttle cable                          |   |   | Chart C  | 2              |   |
| CAN cable                               |   |   | Chart C  | 4              |   |
| Power supply cable (general)            |   |   | Chart C  | 1              |   |
| Network terminators                     |   |   | 42028L   | 1              |   |
| Power Unit                              |   |   | 42026G   | 1              |   |
| Power extension cable                   |   |   | Chart C  | 3              |   |
|   | Power supply cable (optional for second battery)      | Chart C   | 1  |                |   |
| <b>PwA II-MM</b>                        | <b>Single Engine</b>                                  | Single control with trim (or no trim)               | Select control                                   | 1              |   |
|   |   | Control Unit  | 42017F   | 1              |   |
|   |   | Mechanical actuator                                 | 42027J   | 2              |   |
|   |   | CAN cable   | Chart C  | 3              |   |
|   |   | Power supply cable (general)                        | Chart C  | 1              |   |
|   |   | Network terminators                                 | 42028L   | 1              |   |
|   |   | Power Unit  | 42026G   | 1              |   |
|   |   | Power extension cable                               | Chart C  | 2              |   |
|   |   | Power supply cable (optional for second battery)    | Chart C  | 1              |   |
|   | <b>Two Engines</b>                                    | Dual control with trim (or no trim)                 | Select control                                   | 1              |   |
|   |   | Control Unit  | 42017F   | 1              |   |
|   |   | Mechanical actuator                                 | 42027J   | 4              |   |
|   |   | CAN cable   | Chart C  | 5              |   |
|   |   | Power supply cable (general)                        | Chart C  | 1              |   |
|   |   | Network terminators                                 | 42028L   | 1              |   |
|   |   | Power Unit  | 42026G   | 1              |   |
|   |   | Power extension cable                               | Chart C  | 4              |   |
|   |   | Power supply cable (optional for second battery)    | Chart C  | 1              |   |
|   | <b>Mechanical throttle</b><br><b>Mechanical shift</b> | <b>Three Engines</b>                                | Dual control with trim (or no trim)              | Select control | 1 |
|   |   |   | Control Unit                                     | 42017F         | 1 |
|   |   |   | Control Unit 3/4 engines                         | 43157D         | 1 |
|   |   |   | Mechanical actuator                              | 42027J         | 6 |
| CAN cable                               |   |   | Chart C  | 8              |   |
| Power supply cable (general)            |   |   | Chart C  | 2              |   |
| Network terminators                     |   |   | 42028L   | 1              |   |
| Power Unit                              |   |   | 42026G   | 2              |   |
| Power extension cable                   |   |   | Chart C  | 6              |   |
|   |   |   | Power supply cable (optional for second battery) | Chart C        | 2 |
| <b>Four Engines</b>                     | Dual control with trim (or no trim)                   | Select control                                      | 1  |                |   |
|   | Control Unit  | 42017F  | 1  |                |   |
|   | Control Unit 3/4 engines                              | 43157D  | 1  |                |   |
|   | Mechanical actuator                                   | 42027J  | 8  |                |   |
|   | CAN cable   | Chart C   | 10   |                |   |
|   | Power supply cable (general)                          | Chart C   | 2  |                |   |
|   | Network terminators                                   | 42028L  | 1  |                |   |
|   | Power Unit  | 42026G  | 2  |                |   |
|   | Power extension cable                                 | Chart C   | 8  |                |   |
|   |   | Power supply cable (optional for second battery)    | Chart C  | 2              |   |
| <b>For each additional station add:</b> |   |   |  |                |   |
| <b>Single Engine:</b>                   | Single lever control station with trim (or no trim)   | Select control                                      | 1  |                |   |
|   | CAN cable   | Chart C   | 1  |                |   |
| <b>Two Engines:</b>                     | Dual lever control station with trim (or no trim)     | Select control                                      | 1  |                |   |
|   | CAN cable   | Chart C   | 1  |                |   |



# Power A Mark II™

## Order guide

### CHART E - Components for Trolling Valve systems\*



| ENGINE  | NO. OF ENGINES | COMPONENTS                   | P. No.                       | Q.TY        |       |
|---|----------------|------------------------------|------------------------------|-------------|-------|
| Mechanical trolling valve   | Single Engine  | Mechanical actuator (Troll)  | 42027J                       | 1           |       |
|   |                | CAN cable                    | Chart C                      | 1           |       |
|   |                | Power cable extension        | Chart C                      | 1           |       |
| Mechanical trolling valve   | Twin Engines   | Mechanical actuator          | 42027J                       | 2           |       |
|   |                | Power Unit                   | 42026G                       | 0 (*)       |       |
|   |                | CAN cable                    | Chart C                      | 2           |       |
|   |                | Power supply cable (general) | Chart C                      | 0 (*)       |       |
|   |                | Power cable extension        | Chart C                      | 2           |       |
| (*) When there are no more free sockets in the existing power unit, add one Power Unit with one or two power supply cables according to battery number. Refer to the diagram on installation manual.        |                |                              |                              |             |       |
| Electric troll (proportional solenoid)  | Single Engine  | Shift Unit                   | 42023A                       | 1(**)       |       |
|   |                | CAN cable                    | Chart C                      | 1(**)       |       |
|   |                | Power cable extension        | Chart C                      | 1(**)       |       |
|   |                | Cavo Shift con Troll         | Chart C                      | 1           |       |
|   | Single Engine  | Twin Engines                 | Shift Unit                   | 42023A      | 1(**) |
|   |                |                              | CAN cable                    | Chart C     | 1(**) |
|   |                |                              | Power cable extension        | Chart C     | 1(**) |
|   |                |                              | Power Unit                   | 42026G      | 0 (*) |
|   |                |                              | Power supply cable (general) | Chart C     | 0 (*) |
|   |                |                              | Shift cable with Troll       | Chart C     | 2     |
| (*) When there are no more free sockets in the existing power unit, add one Power Unit with one or two power supply cables according to battery number. Refer to the diagram on installation manual.        |                |                              |                              |             |       |
| (**) When a shift unit is already present in the system, it can control the electric troll by using the proper cable. When a shift box is not present, add one to the system with the shift and CAN cables. |                |                              |                              |             |       |
| Electronic Troll (0-5V, 4-20mA)   | Single Engine  | E-Troll Unit                 | Custom made                  | 1           |       |
|   |                | CAN cable                    | Chart C                      | 1           |       |
|   |                | Troll cable                  | Chart D                      | 1           |       |
|   | Twin Engines   | Twin Engines                 | E-Troll Unit                 | Custom made | 1     |
|   |                |                              | CAN cable                    | Chart C     | 1     |
|   |                |                              | Troll cable                  | Chart D     | 2     |

\*Before ordering, please contact our Technical Department



## Ultraflex control boxes



All Ultraflex control boxes are made specifically for the marine environment, using materials and working processes which offer long life and safety for the most extreme conditions

### How control boxes work

A boat's steering system consists of many components, all of which are essential to ensure proper operation and safety in case of emergency manoeuvres.

Among the components used to control the throttle and the boat's direction there are the Ultraflex control boxes.

These are designed to have a correct feeling between the user and the boat.



## Recommendations when choosing a control box

A correct selection of the control box depends on various factors such as:

- **Communication with engine:** Ultraflex control boxes can be mechanical (when both throttle and shift cable is in use), electronic (when both throttle and shift cable are controlled by a position sensor) and hybrid (when using the throttle position sensor and the inverter cable).
- **Spaces on board:** the control boxes are usually “Top Mount” and “Side Mount”. The “Top Mount” models are installed on the dashboard, the “Side Mount” models on one side of the boat. Attention must be paid to the space around the controls as the rotation of the lever must not be prevented; moreover, in case of mechanical control boxes, it is necessary to ensure the correct routing of the control cables.
- **Design:** Ultraflex control boxes are designed with the aim to follow as much as possible the style of the boat on which they will be installed.

## Warnings

All the control boxes, as they are steering elements, must be kept in perfect condition at all times to ensure their operation. Furthermore, in case of installation with mechanical and hybrid control boxes, the cables and their smoothness inside the conduit must be regularly checked. For a correct maintenance, please refer to the user and maintenance manuals supplied with Ultraflex products.

It is recommended to use in combine with Ultraflex controls a “Universal Kill Switch”: a safety device to switch the engine off in case of accidental step away of the driver from the driving position.

## Universal Kill Switch



KILL SWITCH - 76691L

- Suitable with most outboard, inboard and sterndrive engines.
- Swivel carabiner eliminates lanyard tangling
- Corrosion resistant
- IP67

# B400

## Single lever side mount controls

|                           |  |
|---------------------------|--|
| Lever                     | Single lever                             |
| Lever control             | Dual action control                      |
| Assembly                  | Side mount                               |
| Installation              | Horizontally or vertically               |
| Applications              | Sailing boats, inboard                   |
| Version                   | Fully mechanical                         |
| Adjustable friction       | Yes                                      |
| Engine Warm up button     | Yes                                      |
| X41 Neutral safety switch | Not included - to be ordered separately  |
| EN ISO 11547              | Yes, when X41 safety switch is installed |
| Control cables            | C2, C8, MachZero                         |

|      |        |   |
|------|--------|---|
| B400 | 42076Y | B400 Control Box - Fully mechanical version |
|------|--------|---|



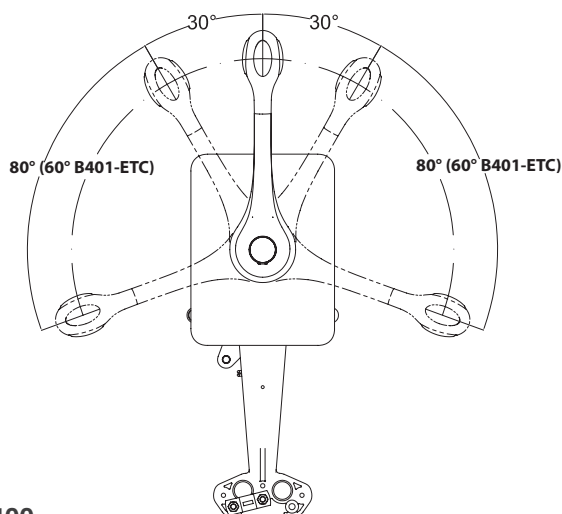
B400

Featuring AISI 316 stainless steel lever and bezel, the B400 has a sleek and modern design which is ideal for sailboats. The B400 has an universal control mechanism that allows for both “push” or “pull” for throttle and shift, push button warm up, and will accept 33C style cables without any adapters.

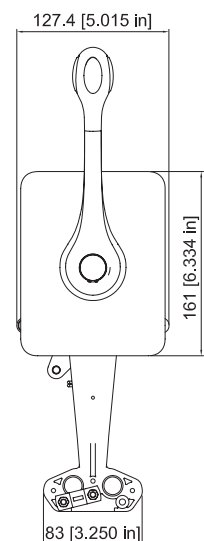
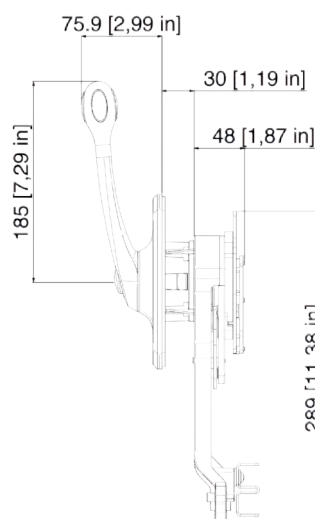
- 316 stainless steel lever and flange for a better resistance in the marine environment
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a throttle friction system easily adjustable
- Push-in button for throttle operation in Neutral (ENGINE WARM UP).
- Neutral safety switch **X41** – 38130F (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X41 safety switch is installed

### Control cables

- Accept Ultraflex C2, C8, MACHZero control cables (no kit required)



B400



# B401-ETC (Electronic Throttle Control)

## Hybrid single lever side mount control

|                                  |  |
|----------------------------------|--|
| <b>Lever</b>                     | Single lever   |
| <b>Lever control</b>             | Dual action control  |
| <b>Assembly</b>                  | Side mount   |
| <b>Installation</b>              | Horizontally or vertically   |
| <b>Applications</b>              | Sailing boats, inboard   |
| <b>Version</b>                   | Hybrid<br>mechanical shift<br>electric throttle                      |
| <b>Output voltage range</b>      | Chosen by the customer between 0 & 5V                                |
| <b>Power supply</b>              | 5V +/-10%, linearity +/-1%   |
| <b>Adjustable friction</b>       | Yes  |
| <b>Engine Warm up button</b>     | Yes  |
| <b>X41 Neutral safety switch</b> | Included   |
| <b>EN ISO 11547</b>              | Yes, when X41 safety switch is installed                             |
| <b>Control cables</b>            | C2, C8, MachZero   |
| <b>B401-ETC 42077A</b>           | Control Box - Hybrid version (mechanical shift, electronic throttle) |



B401-ETC

B401-ETC (Electronic Throttle Control) version is available on request. The sensor has an analog output signal which can be single or redundant. The output voltage range is chosen by the customer between 0 and 5V. Power supply 5V +/-10%, linearity +/-1%.

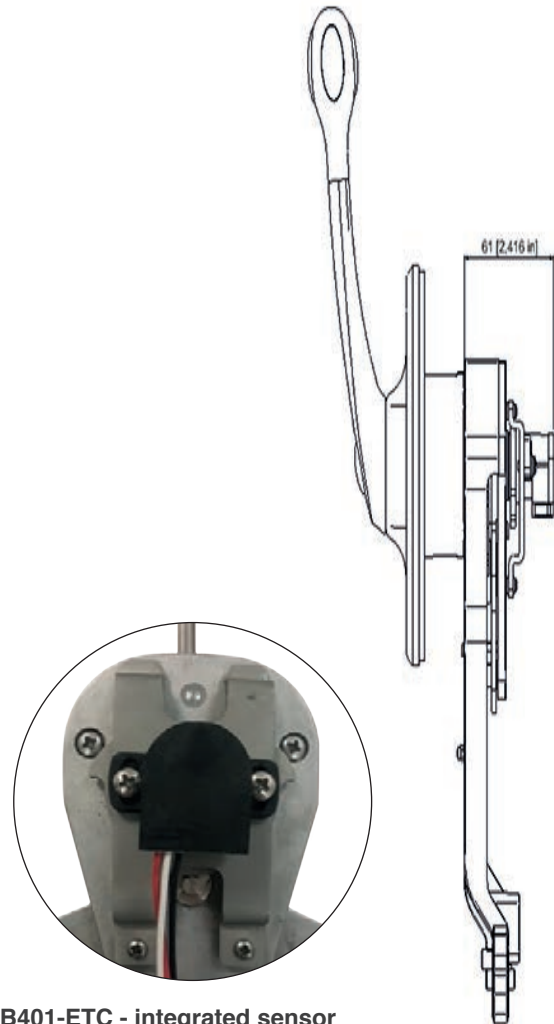
Featuring AISI 316 stainless steel lever and bezel, the B401-ETC has a sleek and modern design which is ideal for sailboats.

B401-ETC has an universal control mechanism that allows for both “push” or “pull” for throttle and shift, push button warm up, and will accept 33C style cables without any adapters.

- 316 stainless steel lever and flange for a better resistance in the marine environment
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a throttle friction system easily adjustable
- Push-in button for throttle operation in Neutral (ENGINE WARM UP).
- Neutral safety switch **X41** – 38130F included prevents in-gear starting
- Exceeds EN ISO 11547 standards when X41 safety switch is installed

### Control cables

- Accept Ultraflex C2, C8, MACHZero control cables (no kit required)



B401-ETC - integrated sensor

B401-ETC

## B310 and B310-ETC series

### Mechanical and hybrid single lever side mount controls



B310CH

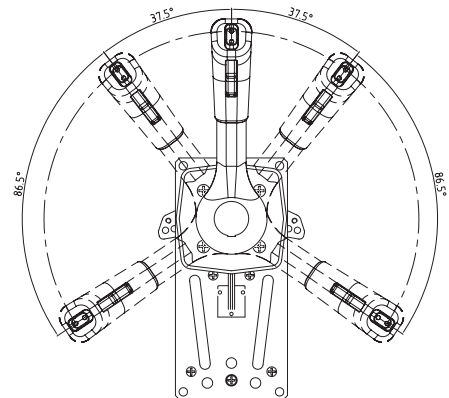


B310B



B310BR

|  |  |
|--|--|
| Lever  | Single lever   |
| Lever control                                | Dual action control  |
| Assembly                                     | Side mount   |
| Installation                                 | Horizontally or vertically   |
| Applications                                 | Inboard, outboard, sterndrives                                     |
| Version                                      | Fully mechanical or hybrid (mechanical shift, electronic throttle) |
| Adjustable friction                          | Yes  |
| Engine Warm up button                        | Yes  |
| X41 Neutral safety switch                    | Not included mechanical controls only                              |
| EN ISO 11547                                 | Yes, when X41 safety switch is installed                           |
| Control cables                               | C2, C8, C14, MachZero, Mach14                                      |
| Control cables that require a connection kit | C5, C16, Mach5 (K35); C22 (KB1)                                    |



The B310 controls combine elegance, functionality and versatility.

Available with chrome plated, burl or soft touch control levers, the B310 series can be used on outboards, sterndrives and inboard applications.

The universal control design allows for the connection of 33C Universal style cable and OMC (Johnson/Evinrude) cables with adapters included.

Mercury Gen I cables can be easily connected with the addition of the K35 connection kit

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a throttle friction system adjustable from outside
- Pull-out handle disengages shift for warm-up
- Neutral safety switch **X41** – 38130F (optional) prevents in-gear starting. **X41** switch is included in the hybrid controls.
- Exceeds EN ISO 11547 standards when X41 safety switch is installed
- All models are provided with positive lock-in neutral to prevent accidental gear engagement
- All models are provided with a power trim switch conveniently located in the handle grip that enables an easy tilting of the engine

#### Control cables

For use with:

- All Ultraflex control cables except C36 and MACH36
- Ultraflex C5, C16, MACH5 and Mercury® cables require K35 – 34730U connection kit
- Ultraflex C22 cables require KB1 – 39964L connection kit

## B310 and B310-ETC series Mechanical and hybrid single lever side mount controls



**new**

**B310B-ETC**



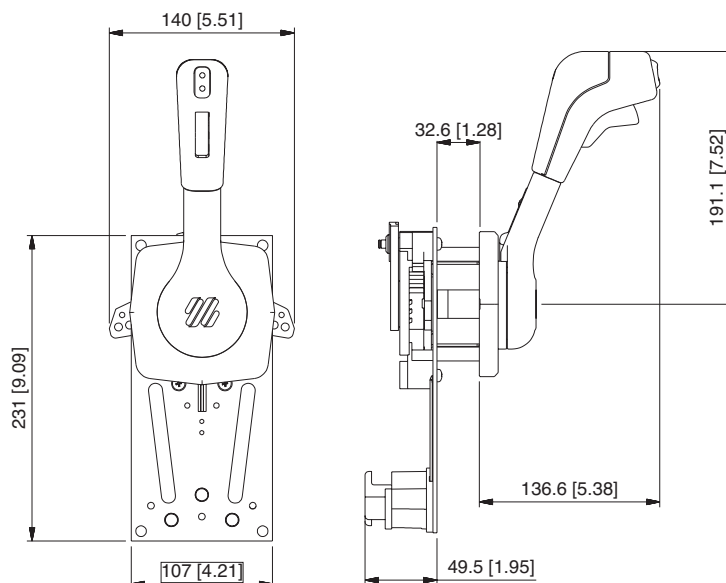
CE UK  
CA

**B310B-NT No Trim**

B310B-ETC (Electronic Throttle Control) version is available on request. The sensor has an analog output signal which can be single or redundant.

The output voltage range is chosen by the customer between 0 and 5V. Power supply 5V +/-10%, linearity +/-1%.

|                  |        |   |
|------------------|--------|---|
| <b>B310CH</b>    | 41789H | Chrome plated version, provided with a positive lock-in neutral and trim switch |
| <b>B310BR</b>    | 41788F | Burl version, provided with a positive lock-in neutral and trim switch          |
| <b>B310B</b>     | 41790S | Black version, provided with a positive lock-in neutral and trim switch         |
| <b>B310B-NT</b>  | 42628M | Black version, Provided with a positive lock-in neutral and without trim switch |
| <b>B310B-ETC</b> | 44041N | Hybrid version (mechanical shift, electronic throttle)                          |



**B310CH - B310BR - B310B - B310B-ETC**



## B183 - B184 - B85 - B183-ETC - B184-ETC - B85-ETC

### Mechanical or hybrid single lever side mount controls



**B183**  
B183-ETC **new**



**B184 - with Trim**  
B184-ETC **new**

Mechanical or hybrid single lever / dual action control to operate both throttle and shift.  
Suitable for any type of boat with outboard engine

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a throttle friction system adjustable from outside
- Pull-out handle disengages shift for warm-up
- Neutral safety switch **X41** – 38130F (optional) prevents in-gear starting. **X41** switch is included in the hybrid controls.
- Exceeds EN ISO 11547 standards when X41 safety switch is installed
- Provided with positive lock-in neutral to prevent accidental gear engagement

**B184** model is provided with a **power trim switch** conveniently located in the handle grip that enables an easy tilting of the engine

**B85** model has a smooth design for use on sailboats.

|   | <b>B183</b>                                 | <b>B184</b>                                 | <b>B85</b>                                  |
|---|---|---|---|
| <b>Lever</b>  | Single lever                                | Single lever                                | Single lever                                |
| <b>Lever control</b>                                    | Dual action control                         | Dual action control                         | Dual action control                         |
| <b>Assembly</b>   | Side mount                                  | Side mount                                  | Side mount                                  |
| <b>Installation</b>                                     | Horizontally or vertically                  | Horizontally or vertically                  | Horizontally or vertically                  |
| <b>Applications</b>                                     | Inboard                                     | Inboard, outboard, stern drives             | Inboard, sailboats                          |
| <b>Version</b>  | Fully mechanical or hybrid                  | Fully mechanical or hybrid                  | Fully mechanical or hybrid                  |
| <b>Adjustable friction</b>                              | Yes   | Yes   | Yes   |
| <b>Pull-out handle for warm-up</b>                      | Yes   | Yes   | Yes   |
| <b>Positive lock-in neutral</b>                         | Yes   | Yes   | Yes   |
| <b>Power trim switch</b>                                | No  | Yes   | No  |
| <b>X41 Neutral Safety Switch</b>                        | Not included<br>mechanical controls only    | Not included<br>mechanical controls only    | Not included<br>mechanical controls only    |
| <b>EN ISO 11547</b>                                     | Yes, when X41 safety switch<br>is installed | Yes, when X41 safety switch<br>is installed | Yes, when X41 safety switch<br>is installed |
| <b>Control cables</b>                                   | C2, C8, MachZero, Mach14                    | C2, C8, MachZero, Mach14                    | C2, C8, MachZero, Mach14                    |
| <b>Control cables that require<br/>a connection kit</b> | C5, C16, Mach5 (K35)                        | C5, C16, Mach5 (K35)                        | C5, C16, Mach5 (K35)                        |

# B183 - B184 - B85 - B183-ETC - B184-ETC - B85-ETC

## Mechanical or hybrid single lever side mount controls



B85

B85-ETC **new**

|             |        |  |
|-------------|--------|--|
| <b>B183</b> | 38945B | Provided with a positive lock-in neutral                 |
| <b>B184</b> | 38946D | Provided with a positive lock-in neutral and trim switch |
| <b>B85</b>  | 35682I | Provided with a positive lock-in neutral                 |

B183, B184, B85 are available also in the hybrid version (mechanical shift and electronic throttle)

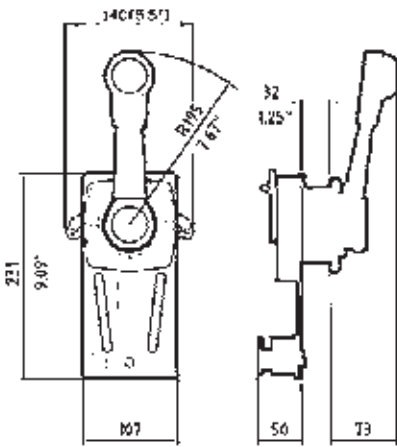
|                 |        |  |
|-----------------|--------|--|
| <b>B183-ETC</b> | 44020E | Provided with a positive lock-in neutral                 |
| <b>B184-ETC</b> | 43983P | Provided with a positive lock-in neutral and trim switch |
| <b>B85-ETC</b>  | 44040L | Provided with a positive lock-in neutral                 |

B183-ETC - B184-ETC - B85-ETC (Electronic Throttle Control) version are available on request.

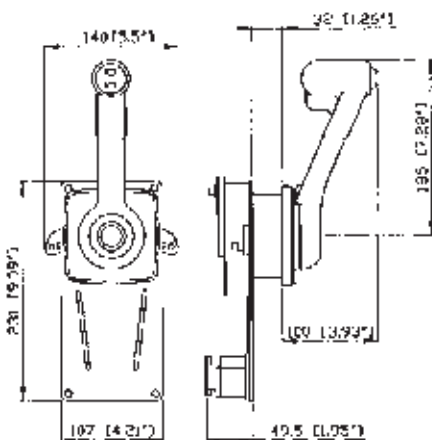
The sensor has an analog output signal which can be single or redundant. The output voltage range is chose by the customer between 0 and 5V. Power supply 5V +/-10%, linearity +/-1%.

### Control cables:

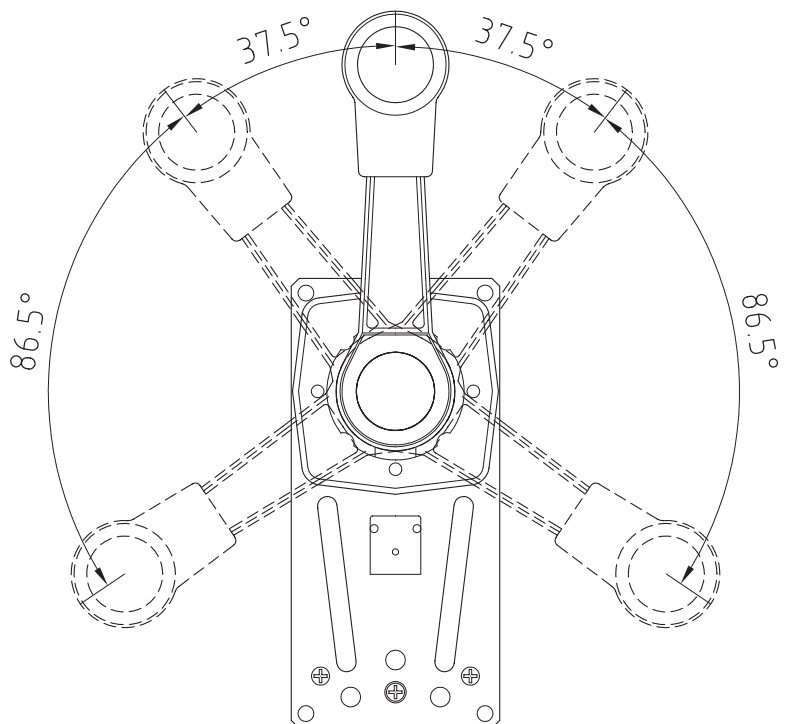
- For use with all Ultraflex engine control cables except C22, C36 and MACH36.
- Ultraflex C5, C16 and MACH5 cables require K35 – 34730U connection kit
- Ultraflex C22 cable requires KB1 – 39964L connection kit



B85 - B85-ETC



B183 - B183-ETC B184 - B184-ETC



## B110 - B110/KS

### Single lever console mount controls



**B110B**



**B110W**



Single lever / dual action control to operate both throttle and shift.  
Suitable for any type of boat with outboard engine or sterndrive units.

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Provided with an easy adjustable brake tension release system
- Push-in button for throttle operation in neutral (engine warm-up)
- Lock in neutral trigger to prevent accidental ingaging
- X41 (with IP67 Protection) and X48 optional neutral safety switches available to prevent in-gear starting
- Exceeds EN ISO 11547 standards when X41 and X48 safety switch is installed
- Center console trim switch thumb operated

|                 |        |                                       |
|-----------------|--------|---------------------------------------|
| <b>B110B</b>    | 39367S | Black, with trim, with no kill switch |
| <b>B110W</b>    | 43521Y | White, with trim, with no kill switch |
| <b>B110B/KS</b> | 43522A | Black, with trim, with kill switch    |
| <b>B110W/KS</b> | 43523C | White, with trim, with kill switch    |

|   |  |
|---|--|
| <b>Lever</b>  | Single lever   |
| <b>Lever control</b>                                    | Dual action control                                    |
| <b>Assembly</b>   | Side mount   |
| <b>Applications</b>                                     | Inboard, outboard, sterndrives                         |
| <b>Version</b>  | Fully mechanical                                       |
| <b>Adjustable friction</b>                              | Yes  |
| <b>Engine warm up button</b>                            | Yes  |
| <b>lock-in trigger</b>                                  | Yes  |
| <b>Power trim switch</b>                                | Yes  |
| <b>Kill Switch</b>                                      | Provided on the KS version                             |
| <b>Lever Stroke</b>                                     | +/- 95°  |
| <b>X41 Neutral Safety Switch - with IP67 Protection</b> | Not included - to be ordered separately                |
| <b>X48 Neutral Safety Switch</b>                        | Not included - to be ordered separately                |
| <b>EN ISO 11547</b>                                     | Yes, when X41 or X48 safety switch are installed       |
| <b>Control cables</b>                                   | C2, C8, MachZero                                       |
| <b>Control cables that require a connection kit</b>     | C5, Mach5 (K74); C36, Mach36 (K75); C14, Mach14 (K76); |

# B110 - B110/KS

## Single lever console mount controls



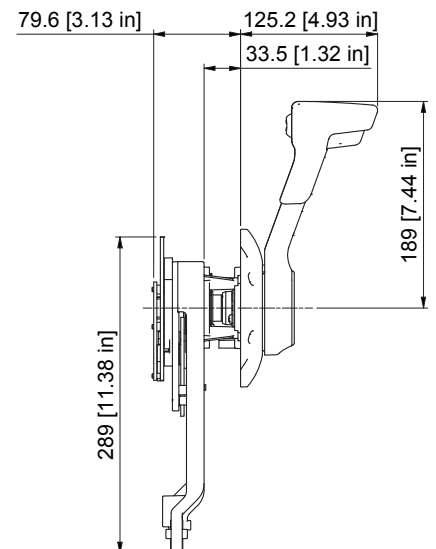
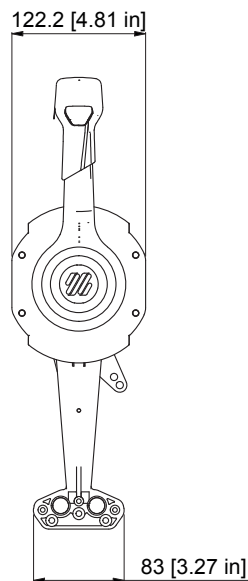
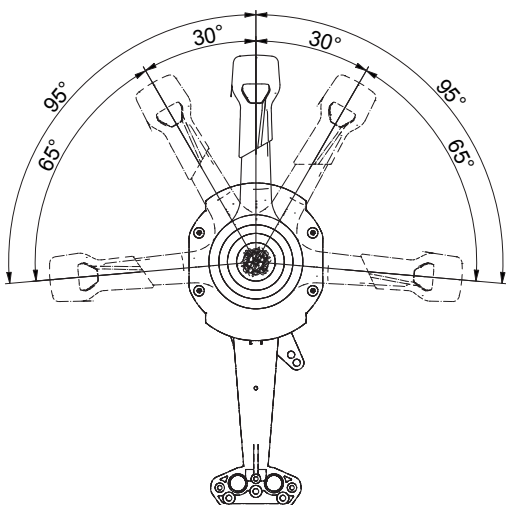
B110B/KS



B110W/KS

### Control cables

- For use with Ultraflex C2, C8 and MachZero control cables
- Ultraflex C5 and Mach5 cables require the K74 - 43518K connection kit
- Ultraflex C36 and Mach36 cables require the K75 - 43519M connection kit
- Ultraflex C14 and Mach14 cables require the K76 - 43520W connection kit



B110

# B110-ETC (Electronic Throttle Control)

## Hybrid single lever console mount controls



**B110B-ETC**



**B110W-ETC**



B110 ETC (Electronic Throttle Control) is a Single lever / dual action control to operate both throttle and shift and is a version of the B110 Control box Available on request.

The sensor has an analog output signal which can be single or redundant.

The output voltage range is chosen by the customer between 0 and 5V. Power supply 5V +/-10%, linearity +/-1%.

For ETC controls please contact our technical Service for Custom Configuration.

|   |  |
|---|--|
| <b>Lever</b>  | Single lever   |
| <b>Lever control</b>                                    | Dual action control                                    |
| <b>Assembly</b>   | Side mount   |
| <b>Applications</b>                                     | Inboard, outboard, sterndrives                         |
| <b>Version</b>  | Hybrid - mechanical shift, electric throttle           |
| <b>Electronic Throttle Control</b>                      | Yes  |
| <b>Output voltage range</b>                             | Chosen by the customer between 0 & 5V                  |
| <b>Power supply</b>                                     | 5V +/-10%, linearity +/-1%                             |
| <b>Adjustable friction</b>                              | Yes  |
| <b>Engine warm up button</b>                            | Yes  |
| <b>lock-in trigger</b>                                  | Yes  |
| <b>Power trim switch</b>                                | Yes  |
| <b>Kill Switch</b>                                      | Provided on the KS version                             |
| <b>Lever Stroke</b>                                     | +/- 95°  |
| <b>X41 Neutral Safety Switch - with IP67 Protection</b> | Included   |
| <b>X48 Neutral Safety Switch</b>                        | Not included - to be ordered separately                |
| <b>EN ISO 11547</b>                                     | Yes, when X41 or X48 safety switch are installed       |
| <b>Control cables</b>                                   | C2, C8, MachZero                                       |
| <b>Control cables that require a connection kit</b>     | C5, Mach5 (K74); C36, Mach36 (K75); C14, Mach14 (K76); |

|                     |        |                                       |
|---------------------|--------|---------------------------------------|
| <b>B110B-ETC</b>    | 43751S | Black, with trim, with no kill switch |
| <b>B110W-ETC</b>    | 43750P | White with trim, with no kill switch  |
| <b>B110B/KS-ETC</b> | 43749F | Black, with trim, with kill switch    |
| <b>B110W/KS-ETC</b> | 43748D | White, with trim, with kill switch    |



**B110B/KS-ETC**

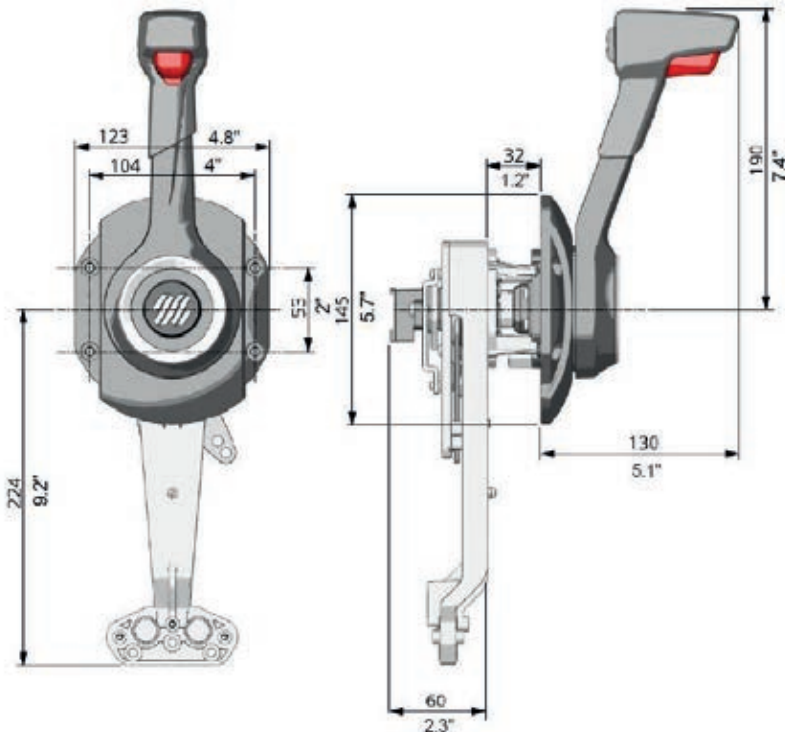


**B110W/KS-ETC**

# B110-ETC (Electronic Throttle Control) Hybrid single lever console mount controls



## B110B-ETC B110W-ETC



Suitable for any type of boat with outboard engine, inboard or sterndrive units.

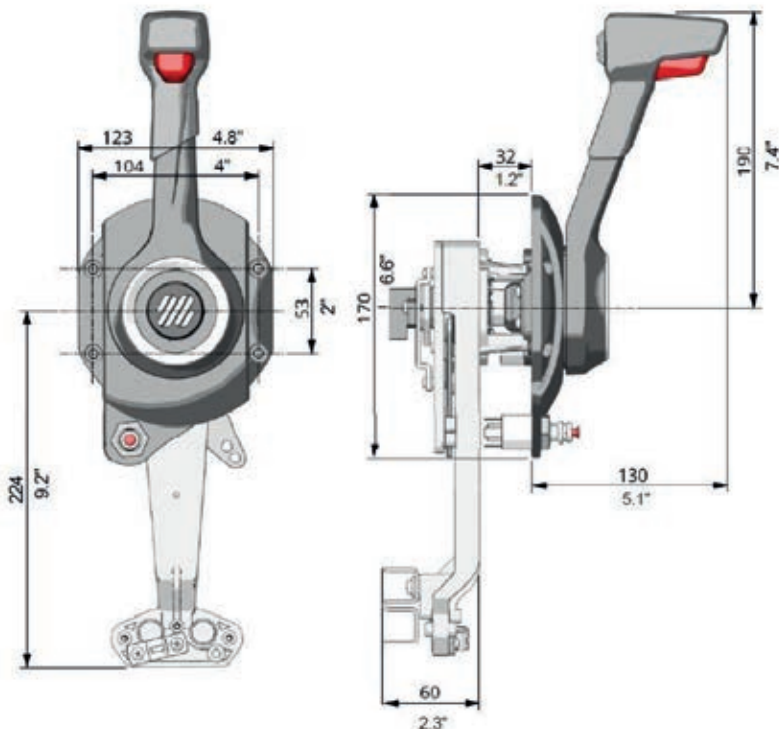
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Provided with an easy adjustable brake tension release system externally reachable.
- Push-in button for throttle operation in neutral (engine warm-up)
- Lock in neutral trigger to prevent accidental engaging
- X41 (IP67 protection) 38130F and X48 - 43527L (optional) safety switches available to prevent in-gear starting
- Exceeds EN ISO 11547 standards when X41 or X48 safety switch is installed
- Center console trim switch thumb operated

### Control cables

- For use with Ultraflex C2, C8 and MachZero control cables
- Ultraflex C5 and Mach5 cables require the K74 – 43518K connection kit
- Ultraflex C36 and Mach36 cables require the K75 – 43519M connection kit
- Ultraflex C14 and Mach14 cables require the K76 – 43520W connection kit

**NOTE:** Customizable configuration for the ETC hybrid controls is available contacting our Technical Service

## B110B/KS-ETC B110W/KS-ETC



## B89 -B90

### Single lever side mount controls



B90



B89



Single lever / dual action control to operate both throttle and shift.

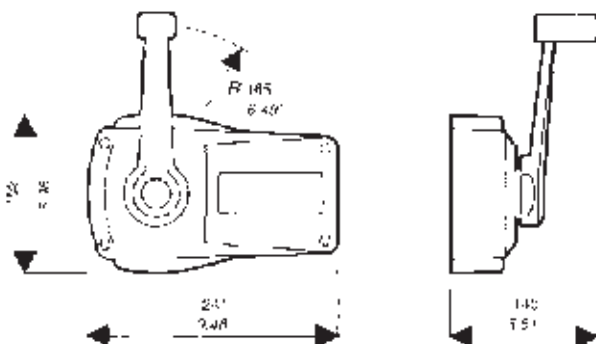
Suitable for any type of boats with outboard, inboard or I/O power plants.

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Made of painted marine aluminum
- Pull-out handle disengages shift for warm-up
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- Provided with a positive lock-in neutral to prevent accidental gear engagement

#### Control cables

- For use with all Ultraflex engine control cables except C22, C36 and MACH36.
- Ultraflex C5, C16 and MACH5 cables require K35 – 34730U connection kit.
- To connect C14 and MACH14 cables to engine, use K51 – 32526N connection kit.

|   |  |
|---|--|
| <b>Lever</b>  | Single lever                                       |
| <b>Lever control</b>                                | Dual action control                                |
| <b>Assembly</b>                                     | Side mount   |
| <b>Applications</b>                                 | Inboard  |
| <b>Material</b>                                     | Painted marine aluminum                            |
| <b>Version</b>                                      | Fully mechanical                                   |
| <b>Adjustable friction</b>                          | No   |
| <b>Pull-out handle for warm-up</b>                  | Yes  |
| <b>Positive lock-in neutral</b>                     | Yes  |
| <b>Power trim switch</b>                            | No   |
| <b>Lever Stroke</b>                                 | +/- 95°  |
| <b>X12 Neutral Safety Switch</b>                    | Not included - to be ordered separately            |
| <b>EN ISO 11547</b>                                 | Yes, when X12 safety switch is installed           |
| <b>Control cables</b>                               | C2, C8, MachZero                                   |
| <b>Control cables that require a connection kit</b> | C5, C16, Mach5 (K35); C14, Mach14 (K51);           |
| <b>B89</b>  | 36151G Ivory finish with positive lock-in neutral. |
| <b>B90</b>  | 36152H Black finish with positive lock-in neutral. |



Lock-in neutral



**B501CHT**



**B502CH**



**B501BT/L**



**B502BT**

With a focus on efficiency these controls have been specifically designed to improve the functionality of control systems, making the boat easier to control.

Available with and without lock in neutral and with and without trim switches.

Single lever / dual action control to operate both throttle and shift,

Twin lever for 2 Engines with Trim / dual action control to operate both throttle and shift.

Suitable for any type of boats with inboard, outboard or I/O power plants

Trim can operate simultaneously both engines ( trim switch on the levels) or independently (trim switch on the housing).

It enables easy and safe shifting by preventing accidental gear engagement unless engine is idling

- The housing is made of high resistance ABS, with die cast levers, available in 2 versions:
  - Chrome plated housing and levers
  - Gun metal housing and levers
- Push in button to disengage shift for engine warm-up
- **X12** – 34543Q (optional) neutral safety switch which prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed

#### **Control cables**

For use with all Ultraflex control cables

- C14 and MACH14 cables require no kit
- For C2, C8 and MACHZero cables the connection kit K59 – 40144C is included
- C5, C16 and MACH5 cables require K60 Kit – 40145E
- C36 and MACH36 cables require K62 Kit – 40147J
- C22 cable requires K61 Kit – 40146G



## B501 - B502 series

### Top mount controls

#### Controls with lock in neutral

|                  |        |  |
|------------------|--------|--|
| <b>B501CHT/L</b> | 43028S | Single engine, with lock and trim<br>- Chrome plated |
| <b>B502CHT/L</b> | 43258K | Double engine, with lock and trim<br>- Chrome plated |
| <b>B501BT/L</b>  | 43036R | Single engine, with lock and trim<br>- Gun metal     |
| <b>B502BT/L</b>  | 43259M | Double engine, with lock and trim<br>- Gun metal     |

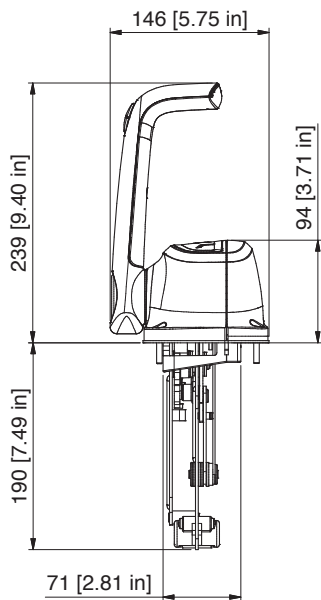


|   | B501-B502  | B501-B502 with trim  | B501-B502 with trim and lock in neutral  |
|---|--|--|--|
| <b>Lever</b>  | Single lever/Twin lever for 2 engines  | Single lever/Twin lever for 2 engines  | Single lever/Twin lever for 2 engines  |
| <b>Level control</b>                                | Dual action control  | Dual action control  | Dual action control  |
| <b>Assembly</b>                                     | Top mount  | Top mount  | Top mount  |
| <b>Housing Material</b>                             | High resistance ABS  | High resistance ABS  | High resistance ABS  |
| <b>Applications</b>                                 | Inboard  | Inboard, outboard & sterndrive   | Inboard, outboard & sterndrive   |
| <b>Version</b>                                      | Fully mechanical   | Fully mechanical   | Fully mechanical   |
| <b>Adjustable friction</b>                          | Yes  | Yes  | Yes  |
| <b>Pull-out handle for warm-up</b>                  | Yes  | Yes  | Yes  |
| <b>Positive lock-in neutral</b>                     | No   | No   | Yes  |
| <b>Power trim switch</b>                            | No   | Yes  | Yes  |
| <b>X12 Neutral Safety Switch</b>                    | Not included - to be ordered separately  | Not included - to be ordered separately  | Not included - to be ordered separately  |
| <b>EN ISO 11547</b>                                 | Yes, when X12 safety switch is installed   | Yes, when X12 safety switch is installed   | Yes, when X12 safety switch is installed   |
| <b>Control cables</b>                               | C14, Mach14  | C14, Mach14  | C14, Mach14  |
| <b>Control cables that require a connection kit</b> | C2, C8, MachZero (K59 incluso); C5, C16, Mach5 (K60); C36, Mach36 (K62); C22 (K61) | C2, C8, MachZero (K59 incluso); C5, C16, Mach5 (K60); C36, Mach36 (K62); C22 (K61) | C2, C8, MachZero (K59 incluso); C5, C16, Mach5 (K60); C36, Mach36 (K62); C22 (K61) |

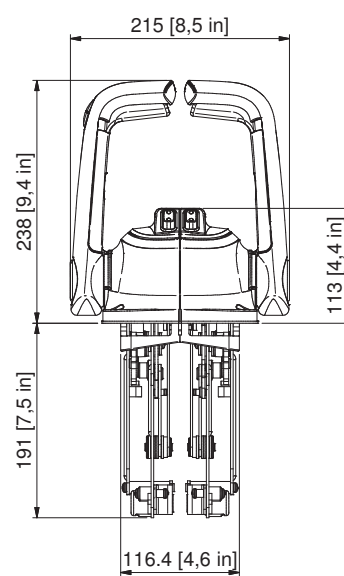
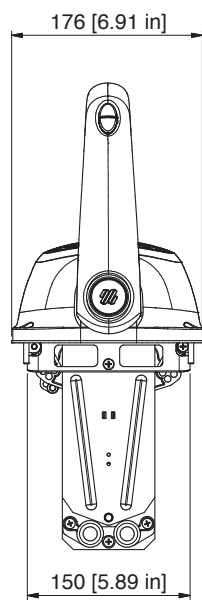
## B501 - B502 series Top mount controls

|                |        |  |
|----------------|--------|--|
| <b>B501CH</b>  | 43023F | Single engine, no trim - Chrome plated   |
| <b>B501CHT</b> | 43024H | Single engine, with trim - Chrome plated |
| <b>B502CH</b>  | 43025K | Double engine, no trim - Chrome plated   |
| <b>B502CHT</b> | 43256F | Double engine, with trim - Chrome plated |

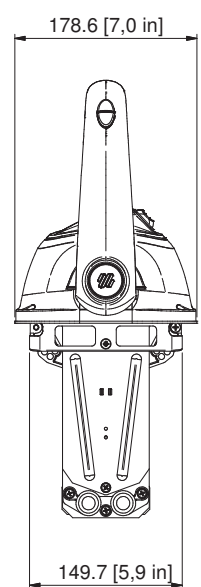
|               |        |                                      |
|---------------|--------|--------------------------------------|
| <b>B501B</b>  | 43031E | Single engine, no trim - Gun metal   |
| <b>B501BT</b> | 43032G | Single engine, with trim - Gun metal |
| <b>B502B</b>  | 43033J | Double engine, no trim - Gun metal   |
| <b>B502BT</b> | 43257H | Double engine, with trim - Gun metal |



**B501 - B502 Dimensions**



**B502CHT/L - B502BT/L Dimensions**



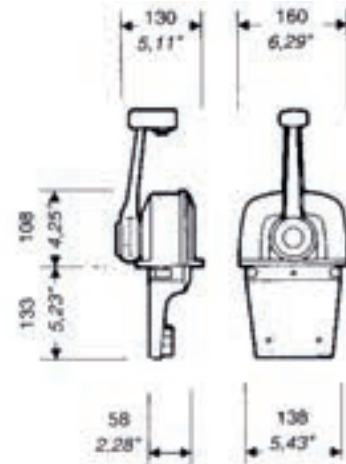
## B65 - B76 - B73 - B77

### Single lever top mount controls

**B65**  
B76 with trim



**B73**  
B77 with trim



Single lever / dual action control to operate both throttle and shift.

Suitable for any type of boats with inboard (B65 e B73) outboard or I/O power plants (B76 e B77, Trim version)

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, chrome plated or with a black powder coat finish
- Pull-out handle disengages shift for engine warm-up
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- **B76 and B77** models have a power Trim switch conveniently located in the handle grip that enables for easy tilting of the engine.

#### Control cables

- For use with all Ultraflex engine control cables except C22, C36 and MACH36.
- Ultraflex C5, C16 and MACH5 cables require K35 kit – 34730U

|   |  |
|---|--|
| <b>Lever</b>  | Single lever   |
| <b>Lever control</b>                                | Single lever   |
| <b>Assembly</b>                                     | Top mount  |
| <b>Applications</b>                                 | Inboard (B65, B73), outboard & sterndrive (B76, B77) |
| <b>Version</b>                                      | Fully mechanical                                     |
| <b>Material</b>                                     | Marine aluminum                                      |
| <b>Adjustable friction</b>                          | No   |
| <b>Pull-out handle for warm-up</b>                  | Yes  |
| <b>Positive lock-in neutral</b>                     | No   |
| <b>Power trim switch</b>                            | Provided on the B76, B77 versions                    |
| <b>X12 Neutral Safety Switch</b>                    | Not included - to be ordered separately              |
| <b>EN ISO 11547</b>                                 | Yes, when X12 safety switch is installed             |
| <b>Control cables</b>                               | C2, C8, MachZero, C14, Mach14                        |
| <b>Control cables that require a connection kit</b> | C5, C16, Mach5 (K35)                                 |

|            |        |  |
|------------|--------|--|
| <b>B65</b> | 34731V | Chromed Single lever control for one engine.                             |
| <b>B76</b> | 35312E | Chromed Single lever control for one engine, with trim.                  |
| <b>B73</b> | 35007U | Single lever control for one engine, Black Powder coat finish            |
| <b>B77</b> | 35313F | Single lever control for one engine, Black Powder coat finish, with trim |



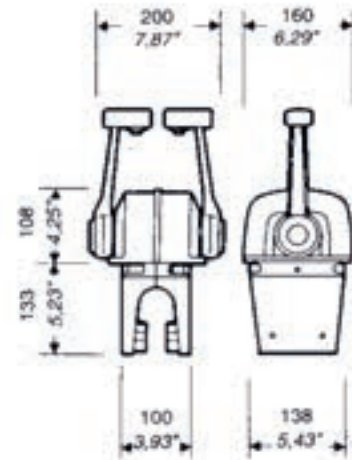
**Handle with trim**

## B66 - B78 - B74 - B79 Single lever top mount controls

B66  
B78 with trim



B74  
B79 with trim



Twin lever control for 2 engines

Dual action control to operate both throttle and shift.

Suitable for any type of boats with inboard (B66 e B74) outboard or I/O power plants (B78 e B79, Trim version)

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, chrome plated or with a black powder coat finish
- Pull-out handle disengages shift for engine warm-up
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- **B78 and B79** models have a power Trim switch conveniently located in the handle grip that enables for easy tilting of the engine.

### Control cables

- For use with all Ultraflex engine control cables except C22, C36 and MACH36.
- Ultraflex C5, C16 and MACH5 cables require K35 kit – 34730U

|   |   |
|---|---|
| <b>Lever</b>  | Twin lever for 2 engines                                |
| <b>Level control</b>                                    | Dual action control                                     |
| <b>Assembly</b>   | Top mount   |
| <b>Applications</b>                                     | Inboard (B66, B74),<br>outboard & sterndrive (B78, B79) |
| <b>Version</b>  | Fully mechanical  |
| <b>Materials</b>  | Marine aluminum   |
| <b>Adjustable friction</b>                              | No  |
| <b>Pull-out handle for warm-up</b>                      | Yes   |
| <b>Positive lock-in neutral</b>                         | No  |
| <b>Power trim switch</b>                                | Provided on the B78, B79 versions                       |
| <b>X12 Neutral Safety Switch</b>                        | Not included -<br>to be ordered separately              |
| <b>EN ISO 11547</b>                                     | Yes, when X12 safety switch<br>is installed             |
| <b>Control cables</b>                                   | C2, C8, MachZero, C14, Mach14                           |
| <b>Control cables that require<br/>a connection kit</b> | C5, C16, Mach5 (K35)                                    |

|            |        |  |
|------------|--------|--|
| <b>B66</b> | 34732W | Chromed twin lever control<br>for two engines.                             |
| <b>B78</b> | 35314G | Chromed twin lever control<br>for two engines, with trim                   |
| <b>B74</b> | 35008B | Twin lever control for two engines,<br>Black Powder coat finish            |
| <b>B79</b> | 35315H | Twin lever control for two engines,<br>Black Powder coat finish, with Trim |



Handle with trim

## B301 - B302

### “Low profile” single lever top mount controls

Compact single lever controls offering a unique low profile style compared to other controls available on the market  
Single lever / dual action control to operate both throttle and shift.

Suitable for any type of boat with inboard engine

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, chrome plated
- Push in button disengages shift for engine warm-up
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed

#### Control cables

- For use with all Ultraflex control cables
- C14 and MACH14 cables require no kit
- for C2, C8 and MACHZero cables the connection kit K59 – 40144C is included
- C5, C16 and MACH5 cables require K60 Kit – 40145E
- C36 and MACH36 cables require K62 Kit – 40157J
- C22 cable requires K61 Kit – 40146G



B301CR



B302CR



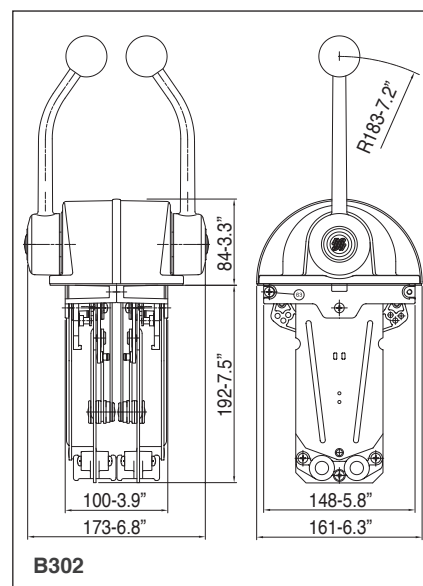
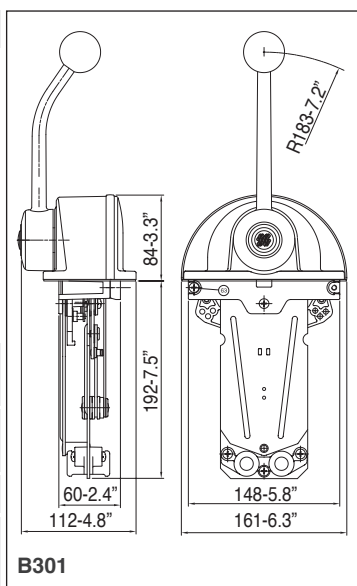
2 X75 Optional



B302CR + 2 X75

|        |        |                             |
|--------|--------|-----------------------------|
| B301CR | 40140U | Single lever for one engine |
| B302CR | 40141W | Twin lever for two engines  |
| X75    | 40662B | Silver knob optional        |

|   |  |
|---|--|
| <b>Lever</b>  | Single lever   |
| <b>Lever control</b>                                | Dual action control  |
| <b>Assembly</b>                                     | Top mount  |
| <b>Applications</b>                                 | Inboard  |
| <b>Version</b>                                      | Fully mechanical   |
| <b>Material</b>                                     | Chromed marine aluminum  |
| <b>Adjustable friction</b>                          | Yes  |
| <b>Push in button (wam-up)</b>                      | Yes  |
| <b>Positive lock-in neutral</b>                     | No   |
| <b>Power trim switch</b>                            | No   |
| <b>X12 Neutral Safety Switch</b>                    | Not included - to be ordered separately  |
| <b>EN ISO 11547</b>                                 | Yes, when X12 safety switch is installed   |
| <b>Control cables</b>                               | C14, Mach14  |
| <b>Control cables that require a connection kit</b> | C2, C8, MachZero (K59 inclusio); C5, C16, Mach5 (K60); C36, Mach36 (K62); C22 (K61); |



# B301 - B302

## “Low profile” single lever top mount controls

Compact single lever controls offering a unique low profile style compared to other controls available on the market  
Single lever / dual action control to operate both throttle and shift.  
Suitable for any type of boat with inboard engine

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, with black powder coat finish
- Push in button disengages shift for engine warm-up
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed

### Control cables

- For use with all Ultraflex control cables
- C14 and MACH14 cables require no kit
- for C2, C8 and MACHZero cables the connection kit K59 – 40144C is included
- C5, C16 and MACH5 cables require K60 Kit – 40145E
- C36 and MACH36 cables require K62 Kit – 40157J
- C22 cable requires K61 Kit – 40146G



B301B



B302B



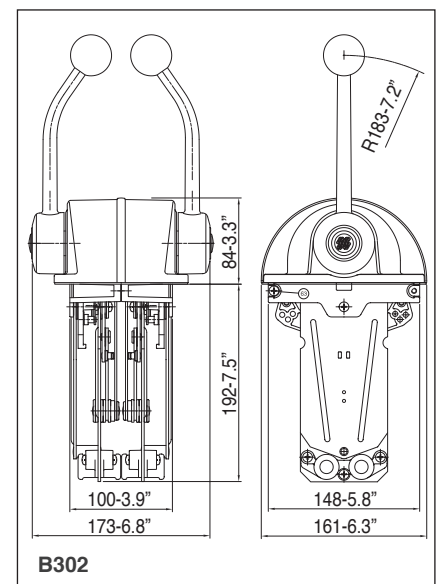
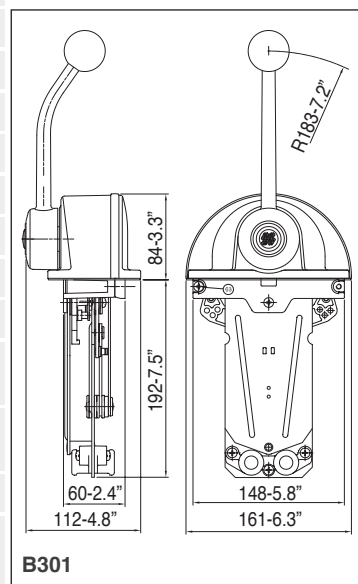
2 X75 Optional



B302B + 2 X75

|       |        |                             |
|-------|--------|-----------------------------|
| B301B | 40142Y | Single lever for one engine |
| B302B | 40143A | Twin lever for two engines  |
| X75   | 40662B | Silver knob optional        |

|  |   |
|--|---|
| Lever  | Single lever  |
| Lever control                                | Dual action control   |
| Assembly                                     | Top mount   |
| Applications                                 | Inboard   |
| Version                                      | Fully mechanical  |
| Material                                     | Black marine aluminum   |
| Adjustable friction                          | Yes   |
| Push in button (wam-up)                      | Yes   |
| Positive lock-in neutral                     | No  |
| Power trim switch                            | No  |
| X12 Neutral Safety Switch                    | Not included - to be ordered separately   |
| EN ISO 11547                                 | Yes, when X12 safety switch is installed  |
| Control cables                               | C14, Mach14   |
| Control cables that require a connection kit | C2, C8, MachZero (K59 incluso); C5, C16, Mach5 (K60); C36, Mach36 (K62); C22 (K61); |



## B103 - B104

### Single lever top mount controls

Single lever / dual action control to operate both throttle and shift.  
Suitable for any type of boat with inboard engine



- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of chrome plated marine aluminum
- Pull-out handle disengages shift for warm-up
- Neutral safety switch X43 – 38160L (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X43 safety switch is installed

#### Control cables

- For use with C2, C8 and MACHZero Ultraflex engine control cables
- Only for B103, To connect C22 cable use **K33** – 38378D connection kit



B103



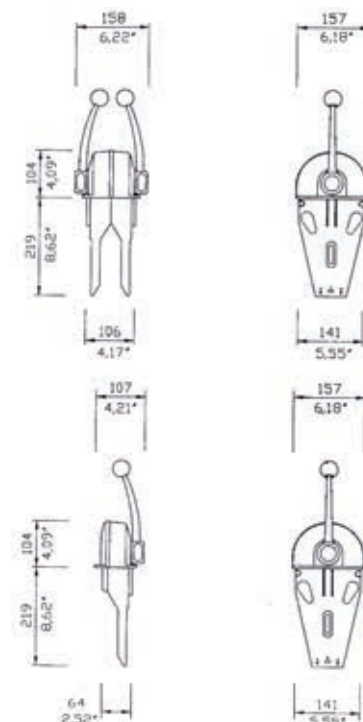
B104



B104+ 2 X55

|             |        |                                     |
|-------------|--------|-------------------------------------|
| <b>B103</b> | 37923K | Single lever control for one engine |
| <b>B104</b> | 37924L | Twin lever control for two engines  |
| <b>X55</b>  | 39421V | Silver knob Optional                |

|   |  |
|---|--|
| <b>Lever</b>  | Single lever                             |
| <b>Lever control</b>                                | Dual action control                      |
| <b>Assembly</b>                                     | Top mount                                |
| <b>Applications</b>                                 | Inboard                                  |
| <b>Version</b>                                      | Fully mechanical                         |
| <b>Material</b>                                     | Marine aluminum                          |
| <b>Pull-out handle for warm-up</b>                  | Yes                                      |
| <b>Positive lock-in neutral</b>                     | No                                       |
| <b>Power trim switch</b>                            | No                                       |
| <b>X43 Neutral Safety Switch</b>                    | Not included - to be ordered separately  |
| <b>EN ISO 11547</b>                                 | Yes, when X43 safety switch is installed |
| <b>Control cables</b>                               | C2, C8, MachZero                         |
| <b>Control cables that require a connection kit</b> | B103 - C22 (K33)                         |



# B505-ESTC (Electronic Shift Throttle Control) Electric single lever top mount control

Ergonomic and compact single lever control, designed to control outboards and sterndrive electric engines.

B505-ESTC is **customizable**:

- Sensor output
- Lever switch (Trim - standard - or lock-in trigger)
- Switches



- Compact single lever controls offering a unique low profile style compared to other controls available on the market
- Equipped with adjustable clutch to set the throttle hardness.
- Fully electronic lever; the installed position sensor output can be customized
- Sensor output is redundant and can be chosen by the customer between 0 and 5V
- Equipped with 3 customizable switches - Standard version has High idle, warm, dock functions
- Provided with an easy adjustable brake tension release system
- Lock in neutral trigger to prevent accidental ingaging
- Equipped with a trim switch (standard version), but it's possible to request the version with the lock-in trigger, instead of the trim function.
- Thermoplastic material with a soft touch grip.

For the sensor configuration of B505-ESTC control, please contact our Technical Service Department.

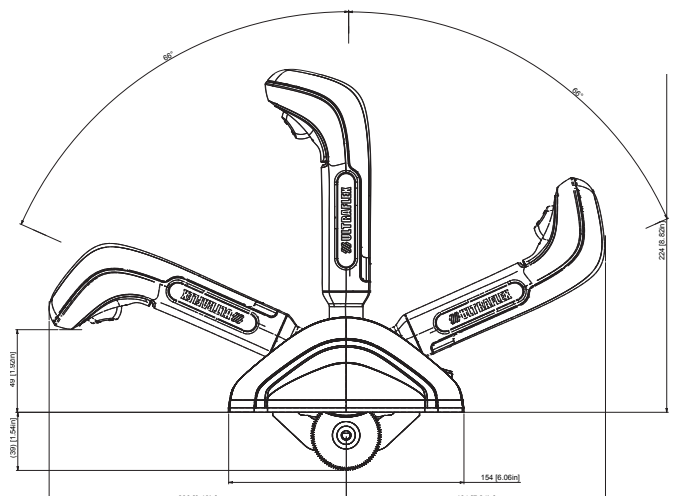
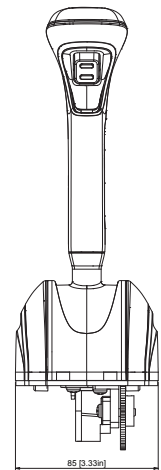
|                                    |                                       |
|------------------------------------|---------------------------------------|
| <b>Lever</b>                       | Single lever                          |
| <b>Lever control</b>               | Dual action control                   |
| <b>Assembly</b>                    | Front mount                           |
| <b>Applications</b>                | Inboard, outboard, sterndrives        |
| <b>Version</b>                     | Electronic                            |
| <b>Electronic Throttle Control</b> | Yes                                   |
| <b>Output voltage range</b>        | Chosen by the customer between 0 & 5V |
| <b>Power supply</b>                | 5V +/-10%, linearity +/-1%            |
| <b>Adjustable friction</b>         | Yes                                   |
| <b>Engine warm up button</b>       | No                                    |
| <b>lock-in trigger</b>             | Customizable                          |
| <b>Power trim switch</b>           | Yes - standard version                |
| <b>Kill Switch</b>                 | No                                    |
| <b>Lever Stroke</b>                | +/- 66°                               |

**B505-ESTC**    43581T    Black, with trim, with no kill switch



Customizable switches

B505-ESTC





## B204 - B208

### Twin lever top mount control - mechanical version



Two lever / single action control: each lever operates separately either the throttle or the shift

Suitable for any type of boat with inboard engine

- Flush mount suitable for exposed positions such as fly bridge
- Levers structure made of die cast zinc alloy provided with a soft thermoplastic ergonomical handgrip
- Adjustable friction to avoid throttle creep and positive detent for shift
- Provided with an interlock kit to prevent accidental gear engagement
- Adjustable ratchet for precise throttle operation obtained applying to the gas lever the optional kit K52 – 37382B
- Neutral safety switch **X12 – 34543Q** (optional) prevents in-gear starting
- Raked throttle handle and straight gear handle for a better manoeuvring
- Exceeds EN ISO 11547 standards when **X12** safety switch is installed

#### Control Cables

- For use with Ultraflex C2, C8, MACHZero and all 33C style engine control cables
- Ultraflex C22 and all 43C style cables require K22 – 34713Q connection kit



**B204R with interlock**



**B208R with interlock**

|              |        |                            |
|--------------|--------|----------------------------|
| <b>B204R</b> | 37383C | Throttle and shift - black |
| <b>B208R</b> | 37654C | Throttle and shift - white |

|   |  |
|---|--|
| <b>Lever</b>  | Single lever                             |
| <b>Lever control</b>                                | Dual action control                      |
| <b>Assembly</b>                                     | Top mount                                |
| <b>Applications</b>                                 | Inboard, jet boats                       |
| <b>Version</b>                                      | Fully mechanical                         |
| <b>Adjustable friction</b>                          | Yes                                      |
| <b>X12 safety switch</b>                            | Not included - to be ordered separately  |
| <b>EN ISO 11547</b>                                 | Yes, when X12 safety switch is installed |
| <b>Control cables</b>                               | C2, C8, MachZero                         |
| <b>Control cables that require a connection kit</b> | C22 (K22)                                |

# B204R - B208R (ETC - ESC - ESTC) Twin lever top mount control - hybrid version



Two lever / single action control: each lever operates separately either the throttle or the shift

Suitable for any type of boat with outboard engine or I/O power plants

- Especially suitable for jet boats, throttle and/or shift control is provided by a 0-5V voltage signal.
- Flush mount suitable for exposed positions such as fly bridge
- Levers structure made of die cast zinc alloy provided with a soft thermoplastic ergonomical handgrip
- Adjustable friction to avoid throttle creep and positive detent for shift
- Provided with an interlock kit to prevent accidental gear engagement
- Adjustable ratchet for precise throttle operation obtained applying to the gas lever the optional kit K52 – 37382B
- Neutral safety switch **X12** – 34543Q prevents in-gear starting
- Raked throttle handle and straight gear handle for a better manoeuvring
- Exceeds EN ISO 11547 standards when X12 safety switch is installed

## Black finish

|                   |        |  |
|-------------------|--------|--|
| <b>B204R-ETC</b>  | 42832L | Throttle controlled by an electric signal, shift by a mechanical cable   |
| <b>B204R-ESC</b>  | 42775B | Shift controlled by an electrical signal, throttle by a mechanical cable |
| <b>B204R-ESTC</b> | 42776D | Throttle and shift controlled by an electrical signal                    |

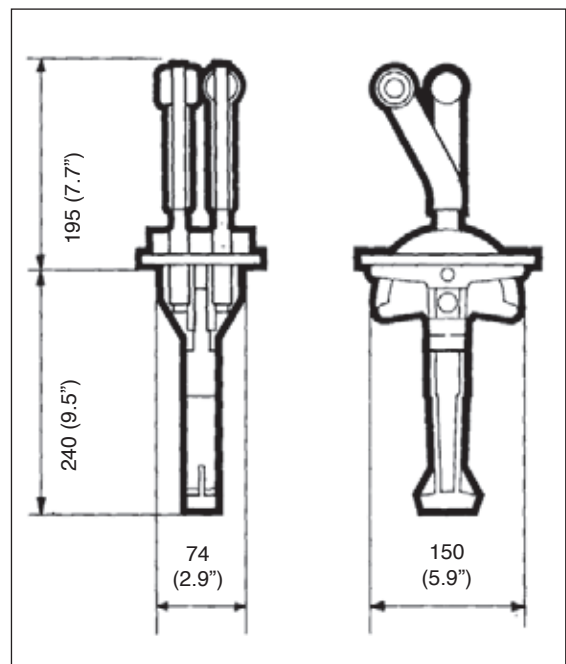
## White finish

|                   |        |  |
|-------------------|--------|--|
| <b>B208R-ETC</b>  | 42835T | Throttle controlled by an electric signal, shift by a mechanical cable   |
| <b>B208R-ESC</b>  | 42833N | Shift controlled by an electrical signal, throttle by a mechanical cable |
| <b>B208R-ESTC</b> | 42834R | Throttle and shift controlled by an electrical signal                    |

## Control cables

- For use with Ultraflex C2, C8, MACHZero and all 33C style engine control cables
- Ultraflex C22 and all 43C style cables require K22 – 34713Q connection kit

|   |  |
|---|--|
| <b>Lever</b>  | Two lever                                |
| <b>Lever control</b>                                | Single action control                    |
| <b>Assembly</b>                                     | Top mount                                |
| <b>Applications</b>                                 | Inboard, jet boats                       |
| <b>Version</b>                                      | Hybrid                                   |
| <b>Adjustable friction</b>                          | Yes                                      |
| <b>Output voltage range</b>                         | Chosen by the customer between 0 & 5V    |
| <b>X12 safety switch</b>                            | Included                                 |
| <b>EN ISO 11547</b>                                 | Yes, when X12 safety switch is installed |
| <b>Control cables</b>                               | C2, C8, MachZero                         |
| <b>Control cables that require a connection kit</b> | C22 (K22)                                |



## B46 - B58 - B50 - B59

### Twin lever top mount controls

Two lever / single action control: each lever operates separately either the throttle or the shift.  
Suitable for any type of boat with inboard engine.

- Flush mount suitable for exposed positions such as fly bridge
- Made of marine aluminum with chrome plated lever
- Adjustable friction to avoid throttle creep and positive detent for shift. Both can be adjusted from the outside
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- B58 model is provided with an interlock kit to prevent accidental gear engagement
- Exceeds EN ISO 11547 standards when X12 safety switch is installed

#### Control cables:

For use with Ultraflex C2, C8 and MACHZero engine control cables.  
Ultraflex C22 cable requires K22 – 34713Q connection kit

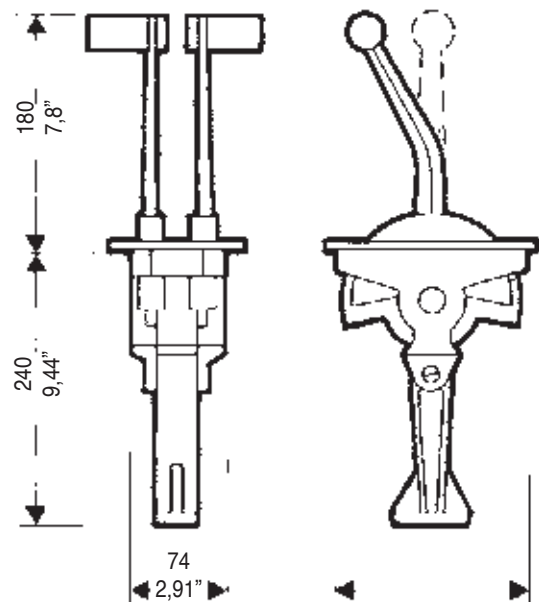
|  |  |
|--|--|
| Lever  | Two lever                                |
| Lever control                                | Single action control                    |
| Assembly                                     | Top mount                                |
| Applications                                 | Inboard                                  |
| Version                                      | Fully mechanical                         |
| Material                                     | Marine aluminum                          |
| Adjustable friction                          | Yes                                      |
| Lever Stroke                                 | +/-95°                                   |
| lock-in trigger                              | No                                       |
| Power trim switch                            | No                                       |
| X12 safety switch                            | Not included - to be ordered separately  |
| EN ISO 11547                                 | Yes, when X12 safety switch is installed |
| Control cables                               | C2, C8, MachZero                         |
| Control cables that require a connection kit | C22 (K22)                                |

#### Bent levers

|      |        |  |
|------|--------|--|
| B46  | 34461P | Throttle and shift   |
| B46T | 34462Q | Throttle only  |
| B46S | 34463R | Shift only   |
| B58R | 34570W | Throttle and shift with interlock. Right hand installation |
| B58L | 34716T | Throttle and shift with interlock. Left hand installation  |



**Straight levers**  
B50  
B59 with interlock



#### Straight levers

|      |        |  |
|------|--------|--|
| B50  | 34464S | Throttle and shift   |
| B50T | 34465T | Throttle only  |
| B50S | 34466U | Shift only   |
| B59R | 34571X | Throttle and shift with interlock. Right hand installation |
| B59L | 34717U | Throttle and shift with interlock. Left hand installation  |



Two lever / single action control: each lever operates separately either the throttle or the shift.  
Suitable for any type of boat with inboard engine

- Made of aluminum, chrome plated finish
- Throttle lever is provided with adjustable friction system and shift lever with forward, reverse and neutral detents
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- In dual station applications the L23 – 31649B selector unit has to be used
- Exceeds EN ISO 11547 standards when X12 safety switch is installed

**Control cables**

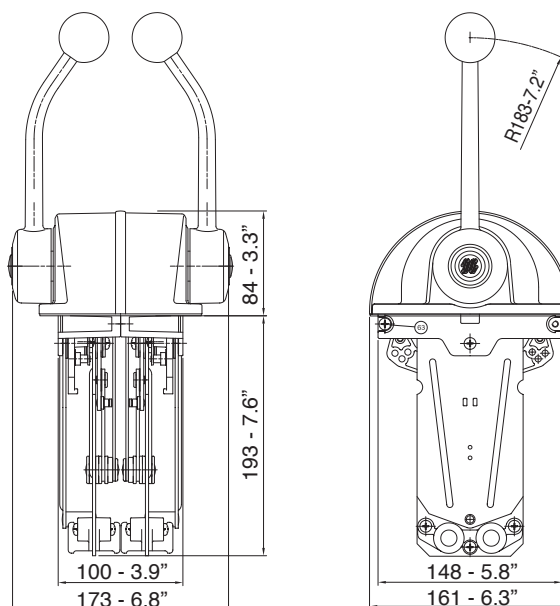
- Use with all Ultraflex control cables
- C14 and MACH14 cables require no kit
- For C2, C8 and MACHZero cables the connection kit K67 – 40705T is included
- C5, C16 and MACH5 cables require K63 kit – 40757N
- C22 cable requires K64 kit – 40758R
- C36 and MACH36 cables require K65 kit – 40759T



B322

|       |        |                    |
|-------|--------|--------------------|
| B322  | 40669S | Throttle and shift |
| B322T | 40670A | Throttle only      |
| B322S | 40673G | Shift only         |

|  |   |
|--|---|
| Lever  | Two lever   |
| Lever control                                | Single action control   |
| Assembly                                     | Top mount   |
| Applications                                 | Inboard   |
| Version                                      | Fully mechanical  |
| Material                                     | Aluminum  |
| Adjustable friction                          | Yes   |
| X12 safety switch                            | Not included - to be ordered separately   |
| EN ISO 11547                                 | Yes, when X12 safety switch is installed  |
| Control cables                               | C14, Mach14   |
| Control cables that require a connection kit | C2, C8, MachZero (K59 incluso); C5, C16, Mach5 (K60); C36, Mach36 (K62); C22 (K64); |



B322 - B324

## B99 - B102

### Twin lever top mount controls



Two lever / single action control: each lever operates separately either the throttle or the shift  
Suitable for any type of boat with inboard engine

- All the four versions are provided with the shift lever detents and with a friction system adjustable from the outside of the throttle lever
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- Suitable for exposed positions such as fly bridge

#### Control cables

- For use with Ultraflex C2, C8 and MACHZero engine control cables
- Ultraflex C22 cable requires K32 – 34662Z connection kit



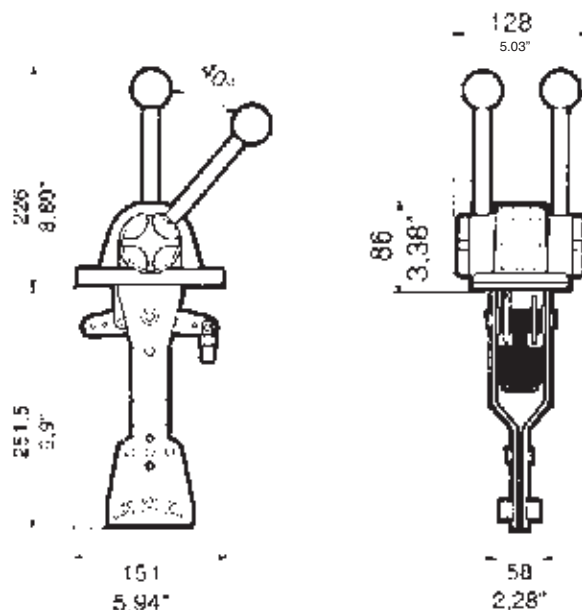
B102

|      |        |   |
|------|--------|---|
| B99  | 36854N | Throttle and shift - Black painted with chrome levers |
| B102 | 36899G | Throttle and shift - Black painted                    |



B99

|  |  |
|--|--|
| Lever  | Two lever                                |
| Lever control                                | Single action control                    |
| Assembly                                     | Top mount                                |
| Applications                                 | Inboard                                  |
| Version                                      | Fully mechanical                         |
| X12 safety switch                            | Not included - to be ordered separately  |
| EN ISO 11547                                 | Yes, when X12 safety switch is installed |
| Control cables                               | C2, C8 MachZero                          |
| Control cables that require a connection kit | C22 (K32);                               |



## B47 - B49 Twin lever side mount controls

Suitable for small outboard engines.

- Made of nylon fiberglass with anodized aluminum levers
- Left or right side mount installation

### Control cables

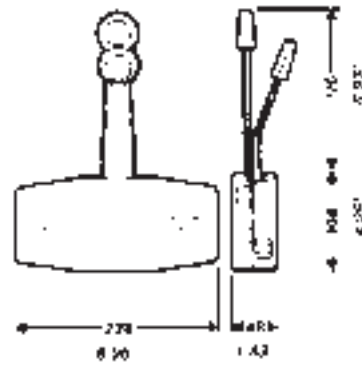
- For use with Ultraflex engine control cables:
  - C14 and MACH14 with K23 – 32773D connection kit
  - C2, C8, and MACHZero with K25 – 32775F connection kit
  - C5 and MACH5 without connection kit



B49

B47

|   |   |
|---|---|
| <b>Lever</b>  | Two lever                                     |
| <b>Lever control</b>                                | Single action control                         |
| <b>Assembly</b>                                     | Side mount                                    |
| <b>Applications</b>                                 | Outboard                                      |
| <b>Version</b>                                      | Fully mechanical                              |
| <b>X12 safety switch</b>                            | Not included - to be ordered separately       |
| <b>EN ISO 11547</b>                                 | Yes, when X12 safety switch is installed      |
| <b>Control cables</b>                               | C5, Mach5                                     |
| <b>Control cables that require a connection kit</b> | C14, Mach14 (K23);<br>C2, C8, MachZero (K25); |



|            |        |            |
|------------|--------|------------|
| <b>B47</b> | 32770A | Light grey |
| <b>B49</b> | 33283S | Black      |

## B35 Single action control box

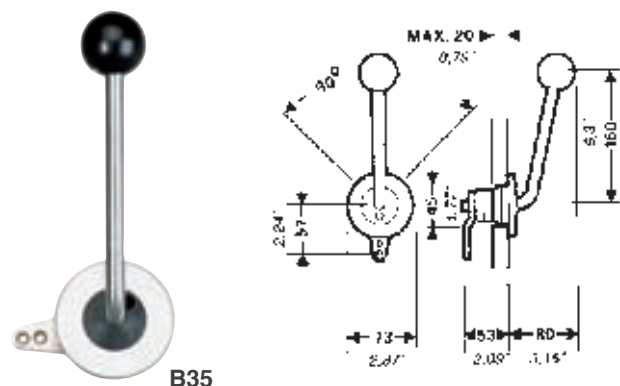
- Lever and flange all stainless steel
- Flush side mount installation
- Particularly suitable for throttle control or hydraulic shift operation
- Provided with adjustable friction and detents

### Control cables

- For use with Ultraflex C2, C8 and MACHZero engine control cables

|                       |                       |
|-----------------------|-----------------------|
| <b>Lever control</b>  | Single action control |
| <b>Assembly</b>       | Side mount            |
| <b>Version</b>        | Fully mechanical      |
| <b>Control cables</b> | C2, C8, MachZero      |

|            |        |                 |
|------------|--------|-----------------|
| <b>B35</b> | 32386A | Stainless steel |
|------------|--------|-----------------|



B35

# Accessories for control boxes

**KB1 - 39964L**

Kit to connect C22 cable to B310, B183, B184 controls.

**K22 - 34713Q**

Kit to connect C22 cable to top mount two lever control boxes, B46, B50, B58, B59, B204, B208, B322, B324

**K23 - 32773D**

Kit to connect C14 and MACH14 cables to B47 and B49 control boxes.

**K25 - 32775F**

Kit to connect C2, C8 and MACHZero cables to B47 and B49 control boxes.

**K32 - 34662Z**

Kit to connect C22 cable to top mount two lever control boxes B99, B101 and B102.

**K33 - 38378D**

Kit to connect C22 cable to B103 control box.

**K35 - 34730U**

Kit to connect C5, C16 and MACH5 cables to single lever control boxes, except B301, B302, B103 and B104.

**K51 - 32526N**

Kit to connect C14 and MACH14 cables to engine for use with B89 and B90 controls.

**K59 - 40144C**

Kit to connect C2, C8 and MACHZero cables to B301 and B302 controls (supplied with the box).

**K60 - 40145E**

Kit to connect C5, C16 and MACH5 cables to B301 and B302 control boxes.

**K61 - 40146G**

Kit to connect C22 cable to B301 and B302 control boxes.

**K62 - 40147J**

Kit to connect C36 and MACH36 cables to B301 and B302 control boxes.

**K63 - 40757N**

Kit to connect C5, C16, MACH5 cables to B322 and B324 controls.

**K64 - 40758R**

Kit to connect C22 cable to B322 and B324 controls.

**K65 - 40759T**

Kit to connect C36 and MACH36 cables to B322 and B324 controls.

**K67 - 40705T**

Kit to connect C2, C8 and MACHZero cables to B322 and B324 controls (supplied with the box)

**K74 - 43518K**

Kit to connect C5 and MACH5 cables to B110 controls

**K75 - 43519M**

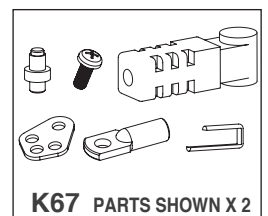
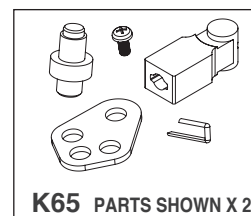
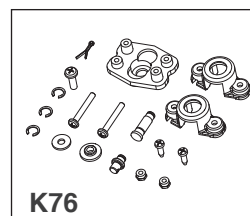
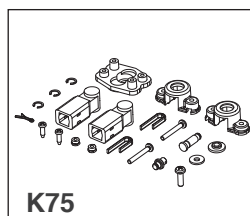
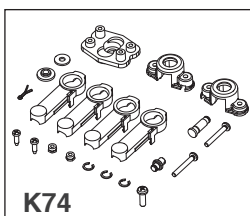
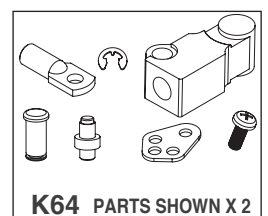
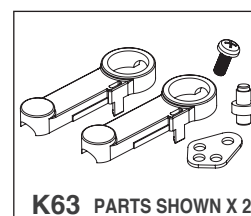
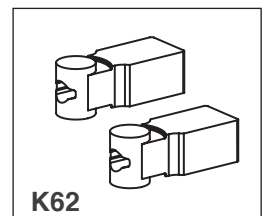
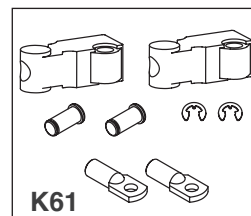
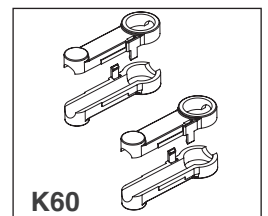
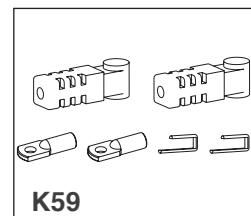
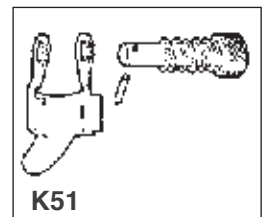
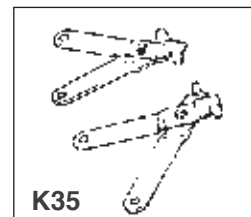
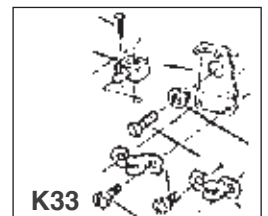
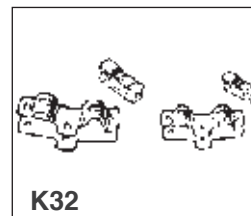
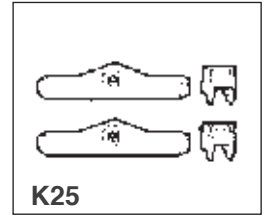
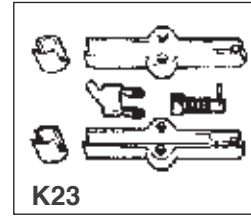
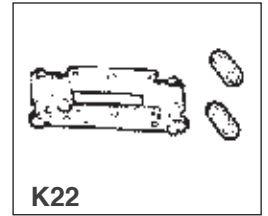
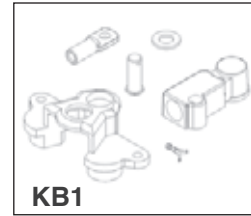
Kit to connect C36 and MACH36 cables to B110 controls

**K76 - 43520W**

Kit to connect C14 and MACH14 cables to B110 controls

**K83 - 42836V**

Kit to connect C48 cable to B310, B183, B184 controls



## Accessories for control boxes

### X12 - 34543Q

Neutral safety switch to prevent in-gear starting.

### X41 - 38130F

Neutral safety switch to prevent in-gear starting, suitable for B400, B110 and hybrid controls.

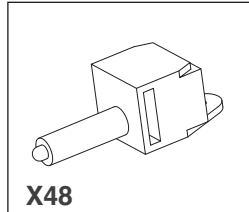
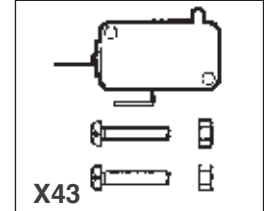
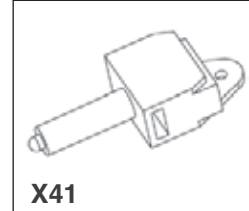
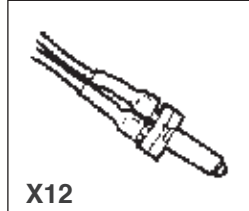
IP67 protection.

### X43 - 38160L

Neutral safety switch to prevent in-gear starting, suitable for B103 and B104 controls.

### X48 - 43527L

Neutral safety switch to prevent in-gear starting, suitable for B110 controls. It allows to connect a double signal. IP67 protection.



## Control box - control cable application matrix

### Single lever controls

| MODEL    | B400 | B183 - B184 - B85<br>B310 Series | B110 | B301 - B302<br>B501 Series | B103 | B104 | B73 - B74<br>B77 - B79 | B89 - B90 |
|----------|------|----------------------------------|------|----------------------------|------|------|------------------------|-----------|
| C2       | X    | X                                | X    | K59*                       | X    | X    | X                      | X         |
| C8       | X    | X                                | X    | K59*                       | X    | X    | X                      | X         |
| C14      | -    | X                                | K76  | X                          | -    | -    | X                      | X         |
| C5       | -    | K35                              | K74  | K60                        | -    | -    | K35                    | K35       |
| C36      | -    | -                                | K75  | K62                        | -    | -    | -                      | -         |
| C16      | -    | K35                              | -    | K60                        | -    | -    | K35                    | K35       |
| C22      | -    | -                                | -    | K61                        | K33  | -    | -                      | -         |
| MACHZero | X    | X                                | X    | K59*                       | X    | X    | X                      | X         |
| MACH5    | -    | K35                              | K74  | K60                        | -    | -    | K35                    | K35       |
| MACH36   | -    | -                                | K75  | K62                        | -    | -    | -                      | -         |
| MACH14   | -    | X                                | K76  | X                          | -    | -    | X                      | X         |

\*: Supplied with the control

X: No kit required

- : No connection

### Twin lever controls

| MODEL    | B322 - B324 | B46 - B50 - B58<br>B59 - B204R - B208R | B99 - B101 - B102 | B47 - B49 | B35 |
|----------|-------------|--|-------------------|-----------|-----|
| C2       | K67*        | X                                      | X                 | K25       | X   |
| C8       | K67*        | X                                      | X                 | K25       | X   |
| C14      | X           | -                                      | -                 | K23       | -   |
| C5       | K63         | -                                      | -                 | X         | -   |
| C36      | K65         | -                                      | -                 | -         | -   |
| C16      | K63         | -                                      | -                 | X         | -   |
| C22      | K64         | K22                                    | K32               | -         | -   |
| MACHZero | K67*        | X                                      | X                 | K25       | X   |
| MACH5    | K63         | -                                      | -                 | X         | -   |
| MACH36   | K65         | -                                      | -                 | -         | -   |
| MACH14   | X           | -                                      | -                 | K23       | -   |

\*: Supplied with the control

X: No kit required

- : No connection



# Engine control cables

## How to measure



FOR NEW INSTALLATION, measure A + B distance from the control along an unobstructed cable routing to clutch and / or throttle connection.

Round this dimension off to the next whole foot: you will have your cable length.

We recommend that the cable bends have a minimum radius of about 8" (200 mm).

For outboard engine installations, it is necessary to add three feet to the obtained length, in order to allow the engine movement.

To determine the needed length of the REPLACEMENT CABLE, measure it from tip to tip.

When ordering, specify the cable length in feet, rounding the dimension off to the next whole value.

If any kit is required to complete the cable connection, consult the appropriate section in this catalogue.

### OUTBOARD

$$A + B + 3' (90 \text{ cm}) = L$$



### INBOARD/STERNDRIVE

$$A + B = L$$




### SELECTION OF ENGINE CONTROL CABLES

|            | ENGINE  | ULTRAFLEX ENGINE CONTROL CABLES |               |
|------------|---|---------------------------------|---------------|
| OUTBOARD   | Mercury® and Gen. II™ Controls  | C36 - MACH36                    |               |
|            | Mercury®<br>Mariner® over 50 hp (37kW)                                  | C5 - MACH5                      |               |
|            | Mariner® up to 50 hp (37kW)   | C16                             |               |
|            | Force®<br>Selva®<br>Yamaha®<br>Suzuki®<br>Tohatsu®<br>Honda®<br>Nissan® | C2 - C8 - MACHZero              |               |
|            | Johnson® - Evinrude® - BRP®   | After 1979 C14-MACH14           |               |
|            | JET   | Weber®                          | C40 - C48     |
|            |   | Rotax®                          | C40RT - C42RS |
| STERNDRIVE | Mercruiser® and Gen. II™ Controls                                       | C36 - MACH36                    |               |
|            | Mercruiser®   | C5 - MACH5                      |               |
|            | OMC® - BRP®   | After 1979 C14-MACH14           |               |
|            | Volvo Penta®<br>Yanmar®<br>Volkswagen®                                  | C2 - C8<br>MACHZero - C22       |               |
| INBOARD    |   | C2 - C8 - MACHZero - C22        |               |

# MACH™ series control cables

## High efficiency and flexibility

For the ultimate in efficiency and response, the Mach Series cables deliver unmatched results. They have been specifically designed to make even the most complex of cable installations result in smooth, easy and precise shift and throttle movement. 

### High Performance

The PATENTED “high performance” MACH™ Cables are the result of our decades of experience in producing high quality, long lasting, flexible cables. The innovative core design maximizes efficiency and minimizes lost motion, while the exclusive design of the conduit provides extremely high level of flexibility.



### Features & performance

- Available in the following configurations:
  - **MACHZero** - Universal style (like C2, C8)
  - **MACH5** - Mercury® style (like C5)
  - **MACH14** - Current OMC® - BRP® style (like C14)
  - **MACH36** - Gen II Mercury® style (like C36)
- Suitable for outboard – inboard and sterndrive engines
- High efficiency for smooth operation
- High flexibility for reduced bend radius. Ideal for long complex cable routings
- Maintenance free
- Stainless steel cables end fittings
- High resistance blue outer jacket against abrasion, UV and chemicals



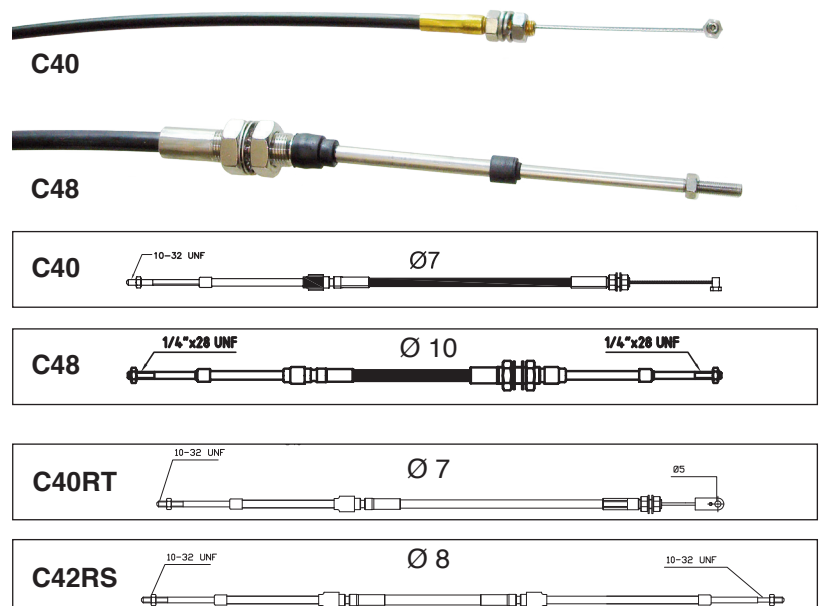
### Control cables for Jet engines

**C40** Stroke: 86 mm (3.4")  
Throttle Cable for Weber® jet engines

**C48** Stroke: 84 mm (3.3")  
Shift and throttle cable for jet boats 40 Class. Suitable for Teleflex® controls. With K83 - 42836V connection kit is suitable for use with Ultraflex B310, B183, B184 controls.

**C40RT** Throttle Cable for Rotax® jet engines

**C42RS** Shift Cable for Rotax® jet engines



# Engine control cables

**C2** Stroke: 87 mm (3.4")  
For use with inboard, sterndrive and outboard engines with appropriate accessories.

**C8** Stroke: 87 mm (3.4")  
For use with inboard, sterndrive and outboard engines, with appropriate accessories.

**MACHZero** 87 mm (3.4")  
For use with inboard, sterndrive and outboard engines.  
Ideal for high performance applications, long cable runs and complex routings. Blue color jacket.

**C14** Stroke: 75 mm (3")  
For BRP® - Evinrude® (OMC®) engines manufactured from 1979 to date.

**MACH14** Stroke: 75 mm (3").  
For BRP® - Evinrude® (OMC®) engines manufactured from 1979 to date.  
Blue color jacket  
High performance applications

**C36** Stroke: 87 mm (3.4")  
For Mercury® and Mercruiser® engines and Mercury® Generation II™ series controls.

**MACH36** Stroke: 87 mm (3.4").  
For Mercury® and Mercruiser® engines and Mercury® Generation II™ series controls.  
Blue color jacket  
High performance applications

**C5** Stroke: 95 mm (3.75")  
For Mercury® and Mercruiser® engines.

**MACH5** Stroke: 95 mm (3.75").  
For Mercury® and Mercruiser® engines.  
Blue color jacket  
High performance applications

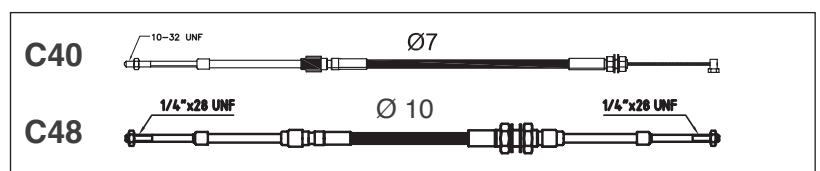
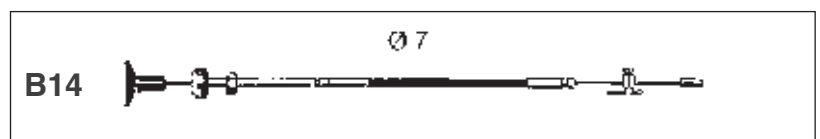
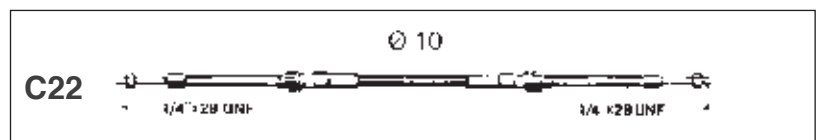
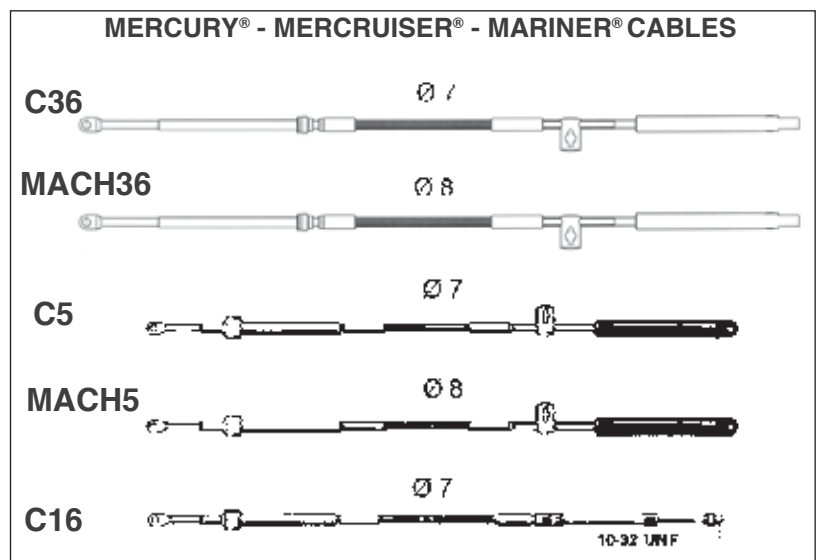
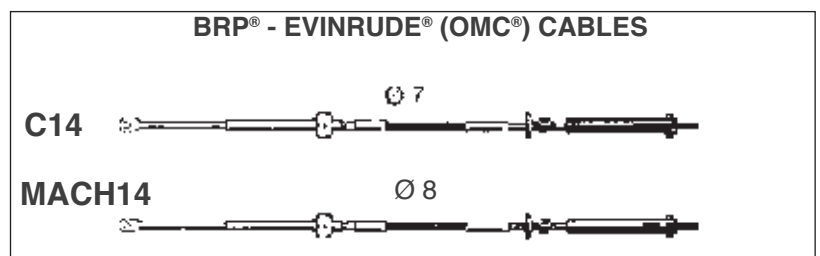
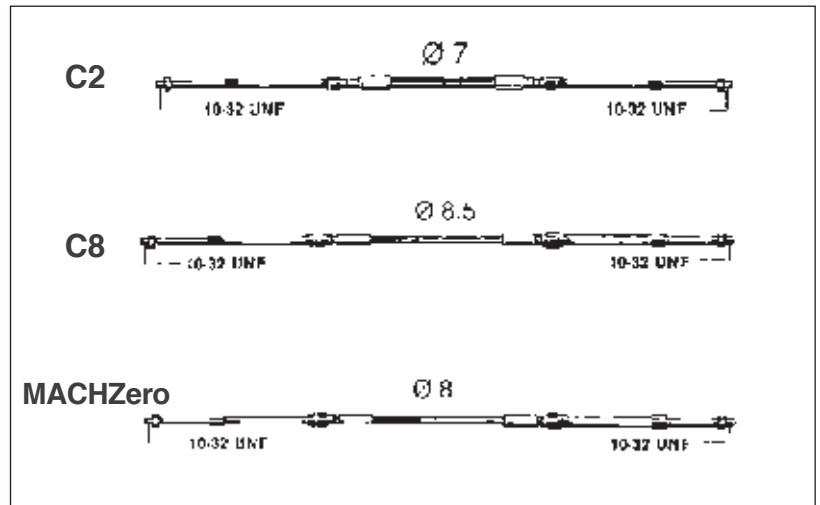
**C16** Stroke: 80 mm (3.1"). For Mariner® engines up to 40 hp.

**C22** Stroke: 80 mm (3.1")  
Stainless steel clamp fittings. Recommended for heavy duty applications.

**B14** Stroke: 70 mm (2.8")  
Designed for throttle, fuel shut-off and other applications. Supplied with L13 and L14 clamp and shim.

**C40** Stroke: 86 mm (3.4")  
Throttle Cable for Weber® jet engines

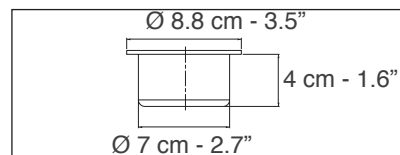
**C48** Stroke: 84 mm (3.3")  
Shift and throttle cable for jet boats 40 Class



## Accessories for engine control cables

### K68 - 40895B

Recessed bulkhead support for B14 cable.



### L2 - 30324D

Cable clamp block

### L3 - 30325E

Shim and clamp block.

Fits C2, C8 and MACHCZero cables.

### L7 - 38078U

Ball joint 10-32 UNF.

Stainless steel, fits C2, C8 and MACHCZero cables.

### L12 - 30334F

Cable end fitting.

Fits C2, C8 and MACHCZero cables.

### L13 - 30335G

Stop collar. Fits B14 cables.

### L14 - 30336H

Cable clamp block.

Fits C2, C8 and MACHCZero cables.

### L25 - 31906D

Clevis 10-32 UNF.

Fits C2, C8 and MACHCZero cables.

### L26 - 33517N

Clevis 1/4" x 28 threaded.

Fits C22 cable.

### L28 - 43228A

0.3" cable terminal.

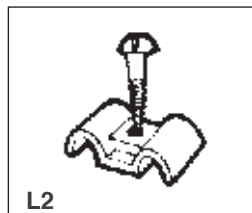
Fits C48 Jet boat cable.

### K56 - 39237C

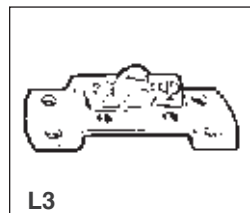
Adapts C2, C8 and MACHCZero cables for use with Mercury engines.

### K57 - 39238E

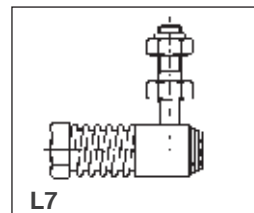
Adapts C2, C8 and MACHCZero cables for use with BRP® - Evinrude engines.



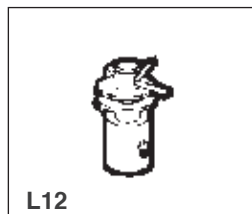
L2



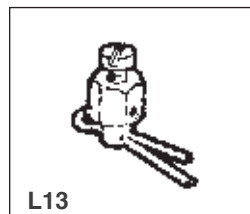
L3



L7



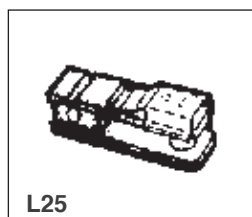
L12



L13



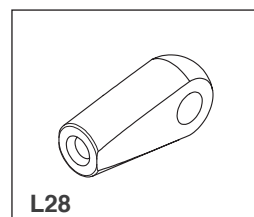
L14



L25



L26



L28



K56



K57

## Monofilament polyester braided sleeves for cables

Available in UFLEX

### STANDARDS:

- Compliant with RoHS 2002/95/CE specifications
- NF EN 60684-1 (10-2003)
- NF EN 60684-2 (01-1998) modified by  
NF EN 60684-2/A1 (12-2003)  
NF EN 60684-2/A2 (05/2006)
- NF EN 60684-3 sheets 340 to 342 (4-2003)



| NOMINAL INTERNAL DIAMETER | PART No. 1 m length | PART No. 10 m length | PART No. 20 m length | BULK PART No. 100 m length | ROLL WEIGHT Kg |
|---------------------------|---------------------|----------------------|----------------------|----------------------------|----------------|
| 10 mm (0.39")             | 23622S              | 24853T               | 24858D               | 68180N                     | 8,0            |
| 15 mm (0.59")             | 23623U              | 24854V               | 24859F               | 20540Y                     | 12,16          |
| 20 mm (0.78")             | 23624W              | 24855X               | 24863W               | 20542C                     | 17,8           |
| 25 mm (0.98")             | 23625Y              | 24856Z               | 24861S               | 20543E                     | 20,2           |
| 30 mm (1.18")             | 23626A              | 24857B               | 24862U               | 20544G                     | 27,0           |

# Accessories for engine control cables

## Throttle converter

The Throttle Converter allows to steer a tension controlled engine with a mechanical control box.

The system converts the mechanical input from a control cable into an electrical output to the engine.

Suitable either for new installations and refitting, it allows to use an existing mechanical control and connect it to the electrical input of the new engine's throttle.

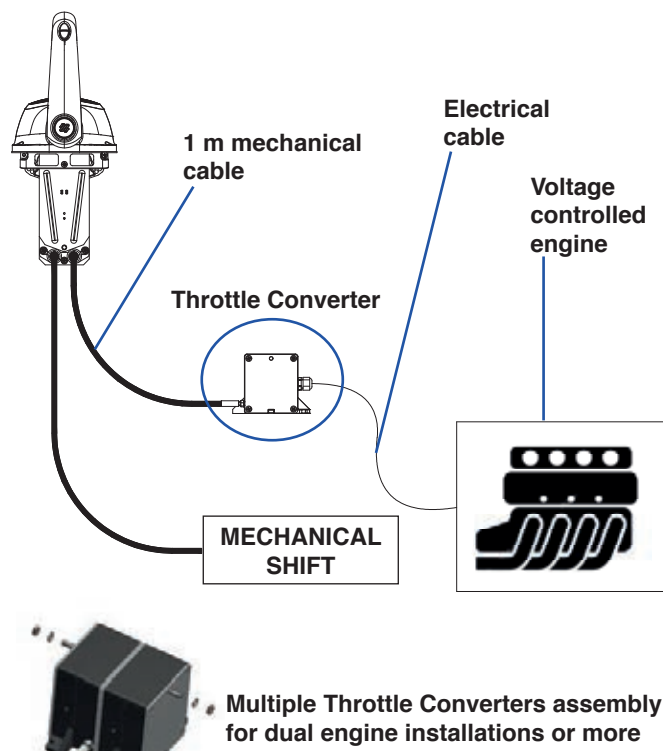
Throttle Converters can be easily packed together for multiple engines.

- Equipped with 1 m (3.28 ft) mechanical cable with C2, C8 universal end fitting
- 76 mm (3") minimum stroke, 80 mm (3.15") maximum stroke.
- 30 cm (1 ft) electrical wire length

Throttle Converter is suitable for most of the voltage controlled engines. For further information, please contact our Technical Assistance Service

Mechanical side IP65  
Sensor IP67

Throttle converter TC - 43501S

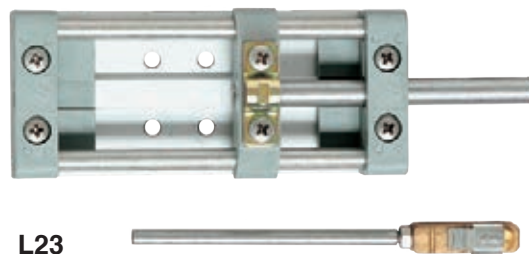


## Selector unit for dual station applications

Selector unit for use with single lever controls in dual station applications. It enables independent control over throttle and shift from either the main station or the flying bridge station.

**NOTE:** before changing station, throttle must be on idling position and shift in neutral.

L23 - 31649B - only for inboard and sterndrive engines



## YAMAHA engine kits 2T \*

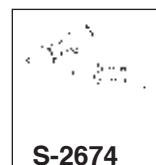
K8 - 30321A for 25 hp engines

K14F - 38098C for 10/15 hp engines

S-2674 - 32654X Yamaha Throttle Connector

S-2675 - 32655Y Yamaha Shift Connector

\* Minimum order quantity:  
10 pieces for part number



## Available spare parts

## Mechanical products

### WARNING

In order to maintain the correct functionality of the product, the replacement with spare parts has to be made by qualified technicians only.

### T67

|                           |        |
|---------------------------|--------|
| Black bezel               | 59336W |
| White bezel               | 59601U |
| Zinc-chrome steel bushing | 56402K |
| Installation kit          | 38070K |
| Shaft kit                 | 70550J |

### M58

|                      |        |
|----------------------|--------|
| Lock nut engine side | 55170M |
|----------------------|--------|

### T85

|                                |        |
|--------------------------------|--------|
| Black bezel                    | 59336W |
| White bezel                    | 59601U |
| Shaft kit                      | 70549A |
| Spent travel nylon tube        | 59869F |
| Plastic ferrule for nylon tube | 59857Z |
| Cable lock-in screw            | 59926R |
| Installation kit               | 41165S |

### T71FC - T72FC - T73NRFC

|                                |        |
|--------------------------------|--------|
| 90° Black bezel                | 58051L |
| 90° White bezel                | 71942H |
| 20° Black bezel                | 70068H |
| Shaft kit                      | 70549A |
| Cable lock-in screw            | 70022G |
| Spent travel nylon tube        | 59869F |
| Plastic ferrule for nylon tube | 59857Z |

### T91 - T93ZT

|                                |        |
|--------------------------------|--------|
| 90° Black bezel                | 58051L |
| 90° White bezel                | 71942H |
| 20° Black bezel                | 70068H |
| Shaft kit                      | 70549A |
| Cable lock-in screw            | 74871C |
| Spent travel nylon tube        | 59869F |
| Plastic ferrule for nylon tube | 59857Z |

### X52 - X66 Tilt Mechanisms

|             |        |
|-------------|--------|
| Upper cover | 72297K |
| Lower cover | 70140N |
| Gasket      | 70138C |

### TM87J - TM87O

|                         |        |
|-------------------------|--------|
| Screw kit               | 77229U |
| Steering system cap kit | 43894R |

### Steering Wheels

|                                  |        |
|----------------------------------|--------|
| Stainless steel TS silver screws | 60697Q |
| Stainless steel TS black screws  | 60698T |
| Stainless steel TB silver screws | 66734W |
| Black cap for V32                | 58078Y |
| White cap for V32                | 58079Z |
| Grey cap for V32                 | 70155C |
| Black cap for V33                | 59763O |
| White cap for V33                | 59764P |
| Grey cap for V33                 | 59765Q |
| Black cap for V45                | 59061O |
| White cap for V45                | 59002D |
| Grey cap for V45                 | 71108Y |
| Black cap for V38                | 59061O |
| White cap for V38                | 59002D |
| Black cap for Antigua            | 70161X |
| White cap for Antigua            | 70162Z |
| Grey cap for Antigua             | 70163B |
| Wood cap for V23 and V35         | 56384G |

### B301CR - B302CR - B301B - B302B - B322

|                                   |        |
|-----------------------------------|--------|
| Lever assembly with black knob    | 40897F |
| Lever assembly with red knob B322 | 40898H |
| Black knob                        | 72054G |
| Red knob                          | 72020N |
| Chrome rear cover B301CR          | 71461R |
| Black painted rear cover B301B    | 71501A |
| Gasket for B301CR - B301B         | 71366X |
| Gasket for B302CR - B302B - B322  | 71516P |
| Installation kit B301             | 40170D |
| Installation kit B302             | 40192P |
| Installation kit B322             | 40703N |

## Available spare parts

## Mechanical products

### WARNING

In order to maintain the correct functionality of the product, the replacement with spare parts has to be made by qualified technicians only.

|   |          |
|---|----------|
| <b>B400</b>   |          |
| Screw kit   | 43866K   |
| <b>B501 - B502</b>                                    |          |
| B501 coponents kit                                    | 43128W   |
| B502 components kit                                   | 43129Y   |
| <b>B103 - B104</b>                                    |          |
| Lever with handle                                     | 60909N   |
| Black knob  | 34830001 |
| X55 Silver knob B103/B104                             | 39421V   |
| Gasket for B103                                       | 61425E   |
| Gasket for B104                                       | 61426G   |
| Rear cover for B103                                   | 61738C   |
| Installation kit B103                                 | 60979B   |
| Installation kit B104                                 | 60804D   |
| <b>B65 - B66 - B73 - B74 - B76 - B77 - B78 - B79</b>  |          |
| Lever assembly B66 – B65 – B73 – B74                  | 57076R   |
| Lever assembly with trim B76-B77-B78-B79              | 57459E   |
| Chrome rear cover                                     | 55529Z   |
| Black rear cover                                      | 55608X   |
| Installation kit B65                                  | 35147J   |
| Installation kit B66                                  | 30078K   |
| Installation kit B73                                  | 30049F   |
| Installation kit B74                                  | 35366S   |
| Installation kit B76                                  | 36134F   |
| Installation kit B77                                  | 30016Q   |
| Installation kit B78                                  | 36135G   |
| Installation kit B79                                  | 30017R   |
| <b>B310CH - B310BR - B310B</b>                        |          |
| Lever assembly B310CH                                 | 73158A   |
| Lever assembly B310BR                                 | 72119J   |
| Lever assembly B310B                                  | 73177E   |
| Screw cover flange B310CH - B310BR - B310B            | 72110P   |
| Chrome plated external flange B310CH - B310BR - B310B | 72108D   |
| Black internal flange B310CH - B310BR - B310B         | 72109F   |
| Installation kit B310CH - B310BR - B310B              | 72222B   |
| <b>B183 - B184 - B85</b>                              |          |
| Lever assembly B183                                   | 70013F   |
| Lever assembly B184                                   | 70020C   |
| Cover for B183 – B184 – B85                           | 56012A   |
| Flange for B183 – B184 – B85                          | 56011V   |
| Installation kit B103                                 | 38947F   |
| Installation kit B184                                 | 38979V   |
| Installation kit B85                                  | 36008C   |
| <b>B89 - B90</b>                                      |          |
| Black lever with lock                                 | 58245T   |
| White lever with lock                                 | 57899L   |
| Installation kit B89 - B90                            | 36168R   |
| <b>B46 - B50 - B58 - B59</b>                          |          |
| Cover   | 57960T   |
| Black knob  | 32394A   |
| Red knob  | 32472Q   |
| Installation kit                                      | 35365R   |
| <b>B99 - B102</b>                                     |          |
| Red knob B99 – B102                                   | 58266Y   |
| Black knob B99 – B102                                 | 53185V   |
| Installation kit B99 – B102                           | 35391A   |
| <b>B14 Engine Stop Cable</b>                          |          |
| B14 Kit   | 59976G   |
| <b>B110</b>   |          |
| Switch with Logo                                      | 43644R   |
| Lever assembly  | 43645T   |
| Flange + seal kit                                     | 43646V   |
| Screw kit   | 43647X   |
| 33C cables screw kit                                  | 43648Z   |
| <b>B505</b>   |          |
| Seal kit  | 43649B   |
| Top and side cover kit                                | 43650K   |

## Available spare parts

## Hydraulic products

### HELM PUMPS

|  |        |
|--|--------|
| Vented filler plug kit with valve              | 40801N |
| Non vented filler plug kit                     | 40800L |
| Shaft seal kit from UP25 to UP39               | 40875V |
| Shaft seal kit for UP20                        | 42310D |
| Installation kit for UP20 F                    | 42861U |
| Installation kit for UP20 T                    | 42864A |
| Installation kit for:                          |        |
| UP25 F/25 F/28 F/33 F/39 F/45 F and UP28-SVS   | 42862W |
| Installation kit for UP25 T/28 T/33 T/39 T/45T | 42864A |
| Installation kit for UP28 R/33 R/39 R/45 R     | 42863Y |
| Nylon round flange for X57                     | 70666E |
| Nylon square flange for X64                    | 70670V |
| Chrome plated cover ring - X68                 | 40894Z |
| Pump filling kit                               | 42960W |

### UC81-OBF OUTBOARD CYLINDER

|   |        |
|---|--------|
| Bull horn mounting bracket                  | 42851R |
| Through tube stainless steel rod            | 42852T |
| Spacer kit                                  | 42853V |
| Tiller arm connecting                       | 42854X |
| Replaceable heads kit + Seal kit + Tool kit | 43473P |

### UC94-OBF OUTBOARD CYLINDER (DISCONTINUED)

|   |        |
|---|--------|
| Black bull horn mounting bracket            | 42837X |
| Through tube stainless steel rod            | 42666W |
| Spacer kit                                  | 40878B |
| Tiller arm connecting                       | 42838Z |
| Seal kit for UC94-OBF P. No: 40154F, 40161C | 41919U |
| Tool kit for UC94-OBF P. No: 40154F, 40161C | 41920C |
| Seal kit for UC94-OBF P. No: 42918X, 42968N | 43174D |
| Tool kit for UC94-OBF P. No: 42918X, 42968N | 43175F |

### UC95-OBF OUTBOARD CYLINDER

|                                    |        |
|------------------------------------|--------|
| Black bull horn mounting bracket   | 42837X |
| Through tube stainless steel rod   | 42666W |
| Spacer kit                         | 40878B |
| Tiller arm connecting              | 42838Z |
| Tool kit for UC95-OBF              | 43446L |
| Replaceable heads kit for UC95-OBF | 43444G |

### UC128-OBF OUTBOARD CYLINDER

|   |        |
|---|--------|
| Black bull horn mounting bracket  | 43248G |
| Through tube stainless steel rod  | 39491T |
| Spacer kit  | 41812Z |
| Plastic cap kit   | 41810V |
| UC128 Hardware kit (link arm)   | 39979A |
| Tiller arm connecting kit (ultrabolt)   | 40822X |
| Shaft screws kit  | 43255D |
| Replaceable heads kit for UC128-OBF P. No: 43231N, 43232R, 43233T, 43234V, 43235X | 43350X |
| Tool kit for UC128-OBF P. No: 43231N, 43232R, 43233T, 43234V, 43235X              | 43395W |

### UC128-SVS OUTBOARD CYLINDER

|  |        |
|--|--------|
| Tiller arm connecting kit (ultrabolt)                              | 42081R |
| Tool kit for UC128-SVS P.No: 43870A, 43872E, 43871C, 43873G        | 43868P |
| Replaceable heads kit for UC128-SVS 43870A, 43872E, 43871C, 43873G | 43869S |

### UC130-SVS OUTBOARD CYLINDER

|  |         |
|--|---------|
| Tiller arm connecting kit (ultrabolt)                                    | 42081 R |
| Replaceable heads kit for UC130-SVS P.No: 43225U, 43226W, 43223P, 43224S | 43364J  |
| Tool kit for UC130-SVS P.No: 43225U, 43226W, 43227Y                      | 43386V  |

### UC120 OUTBOARD CYLINDERS

|  |        |
|--|--------|
| Replaceable heads kit for UC120 cylinder | 43572S |
| Tool kit for UC120 cylinder              | 43614F |

### WARNING

In order to maintain the correct functionality of the product, the replacement with spare parts has to be made by qualified technicians only.



## Available spare parts

## Hydraulic products

|  |        |
|--|--------|
| <b>UC68-OBS OUTBOARD CYLINDER</b>            |        |
| Stainless steel tilt tube extension          | 39495B |
| <b>UC132-OBS OUTBOARD CYLINDER</b>           |        |
| Stainless steel tilt tube extension          | 39495B |
| Extension rod connecting pin                 | 40917J |
| <b>ZTF</b>                                   |        |
| Replaceable heads kit for UC128-ZTF cylinder | 43350X |
| Tool kit for UC128-ZTF cylinder              | 43395W |
| Tilt tube stainless steel rod                | 42666W |
| Spacer kit                                   | 41812Z |
| Plastic cap kit                              | 41810X |
| Engine rod bolt and screw kit                | 41809L |
| KIT M2 (Mercury®) mechanical cables          | 43642L |
| KIT Y (Yamaha®) mechanical cables            | 43640G |
| KIT S2 (Suzuki®) mechanical cables           | 43641J |
| KIT ND1-MM (Mercury®)                        | 43636S |
| KIT ND1-Y (Yamaha®)                          | 43639Y |
| KIT QU1-Y (Yamaha®)                          | 43638W |
| KIT QU1-S (Suzuki®)                          | 43635P |
| Nickel plate plug+ o-ring kit                | 43637U |
| <b>INBOARD CYLINDERS</b>                     |        |
| Balljoint for UC69-I                         | 40883U |
| Balljoint for UC116-I                        | 39477Z |
| Balljoint for UC168-I and UC215-I            | 39478B |
| Balljoint for UC293-I                        | 40178W |
| Balljoint for UC378-I                        | 41310Y |
| Balljoint and shim for UC69-I                | 40884W |
| Balljoint and shim for UC116-I               | 39479D |
| Balljoint and shim for UC168-I and UC215-I   | 39480M |
| Balljoint and shim for UC293-I               | 40180G |
| Balljoint and shim for UC378-I               | 41311A |
| <b>STERNDRIVE CYLINDERS</b>                  |        |
| Extension rod connecting pin                 | 40917J |
| <b>NUT AND SLEEVE</b>                        |        |
| Brass nut and sleeve                         | 71004K |
| Nickel plated brass nut and sleeve           | 71013L |

### WARNING

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