

The background of the entire page is a high-contrast, blue-toned photograph of a ship's hull cutting through turbulent, white-capped waves. The ship's structure, including the hull and what appears to be a propeller or stern section, is visible on the right side, moving from the upper right towards the lower left. The water is a deep, vibrant blue, while the wave crests are bright white, creating a dynamic and powerful visual. The Ultraflex logo, consisting of four slanted parallel bars followed by the word "ULTRAFLEX" in a bold, sans-serif font, is positioned in the upper left quadrant.

ULTRAFLEX

Leader in Marine Product Innovation

2023

HIGHLIGHTS



RACK AND PINION STEERING SYSTEMS

page 21 to 24



TIE BARS AND BRACKETS

page 75 to 80



POWER A MKII COMPACT

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INTEGRA JS



INTEGRA JS - Electronic Power Steering Systems

page 93 to 117



GRITTI CARBON LC B/SS/R
STEERING WHEEL

page 199



CAPTIVA STEERING WHEEL

page 210 to 211



ULTRAFLEX GROUP
88 years
1935-2023



1935 - 2023

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.



ULTRAFLEX

Steering and control systems
for pleasure boats



UFLEX

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





ULTRAFLEX - Factory in Casella



UFLEX & ULTRAFLEX - Headquarter in Busalla



UFLEX - Factory in Tregnago



UCS - UFLEX - Factory in Borgo Fornari



IL - Factory in Leivi



UFLEX USA - Factory in Sarasota

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.

OUTBOARD AND STERNDRIVE HYDRAULIC STEERING SYSTEMS

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Packaged outboard hydraulic steering systems

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Selecting an outboard hydraulic steering system - cross reference

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Standard outboard hydraulic steering systems

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SILVERSTEER™ High performance outboard hydraulic steering systems

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MASTERDRIVE
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steering systems**

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INTEGRA
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STEERING SYSTEMS**

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**Accessories and fittings for
outboard hydraulic steering systems**

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BubbleBuster™
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Selecting an inboard hydraulic steering system

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Power assisted inboard steering system

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ELECTRONIC CONTROL SYSTEM

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

For any further information please contact our Technical Service.



MANAGEMENT SYSTEM CERTIFICATE

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

This is to certify that the management system of

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

Via Crose, 2 - 16015 Casella (GE) - Italy
and the sites as mentioned in the appendix accompanying this certificatehas 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 (IAF 18, 19)**Evaluated according to the requirements of Technical Regulations RT-09**Place and date:
Vimercate (MB), 16 November
2020For 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 68 99 905, www.dnvgl.it

MANAGEMENT SYSTEM CERTIFICATE

Certificate No:
248429-2017-AQ-ITA-ACCREDIAInitial certification date:
08 April 2002Valid:
21 November 2020 - 20 November 2023

This is to certify that the management system of

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

Via Crose, 2 - 16015 Casella (GE) - Italy
and the sites as mentioned in the appendix accompanying this certificatehas been found to conform to the Quality Management System standard:
ISO 9001:2015

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 2020For 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 68 99 905, www.dnvgl.it

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.

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 steering systems components as steering helms, steering cables and steering wheels are all marked CE in compliance with the EEC Directive 2013/53/EU and the rules ISO 8848. Ultraflex hydraulic steering system components are all marked CE in compliance with the EEC Directive 2013/53/EU and the rule ISO 10592. The CE Examination on the ULTRAFLEX steering systems has been carried out by an Institute certified by the European Commission.

Ultraflex electronic control components are EMC certificated and CE marked in conformity with CEI EN60945 and UNI-EN ISO 11547 standards.

Integra electronic steering system components are marked CE in conformity with ISO25197 standards.

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.



MECHANICAL STEERING SYSTEMS

Suggestions and warnings

Selecting a mechanical steering system

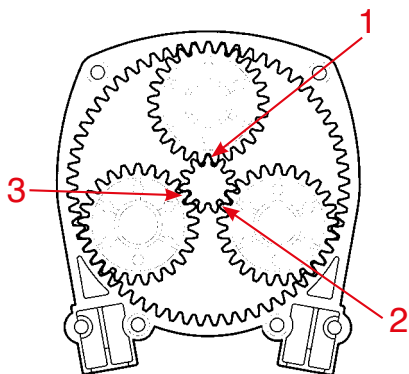
Selection of the appropriate mechanical steering system is an important factor for the safety and functionality of your boat.

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

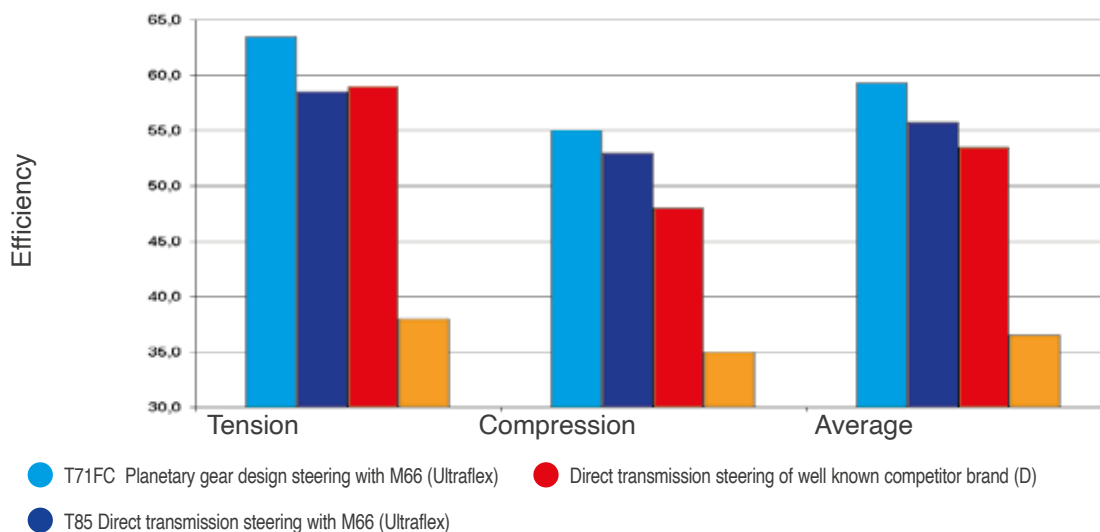


Ultraflex mechanical steering helms T71FC, T73NRFC, T91, T93ZT as well as dual cable versions and tilt wheel versions use a **Planetary Gear Design**.

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

MECHANICAL STEERING SYSTEMS

Suggestions and warnings

The importance of an Anti-feedback 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 Anti-feedback** steering helms T73NRFC, T74NRFC, TM87J + G87ZT, TM87O + G87ZT, T93ZT, T103ZT, T88NR 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 Anti-feedback** 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

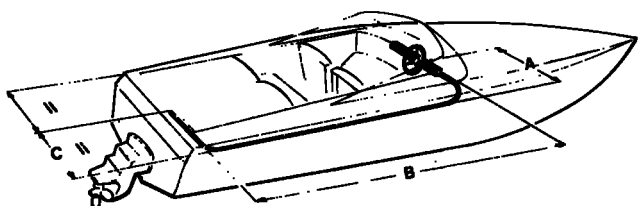
and cable length measurement

- 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	Ultraflex hydraulic steering systems are recommended for boats that exceed 50 mph. Always follow engine manufacturer's instructions.
OUTBOARD 	up to 40 kW (55cv)	T67	
	BOAT LENGTH		
INBOARD 	up to 30' (9m)	T85 - T71FC - T81FC - T73NRFC - T83NRFC - TM87O - T91 T93ZT - T101 - T103ZT	
		Twin cable rotary steering systems	
STERNDRIVE POWER ASSISTED 	up to 35' (10.5m)	T71FC - T81FC - T73NRFC - T83NRFC - TM87O - T91 - T93ZT - T101 - T103ZT	
		Twin cable rotary steering systems	
JET BOATS 		T85 T71FC - T81FC - TM87O - T91 - T101	
		Twin cable rotary steering systems	
		TM87J	

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.

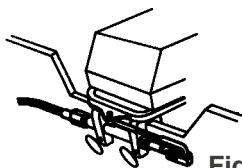


Fig. 1

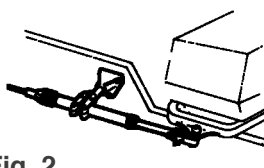


Fig. 2

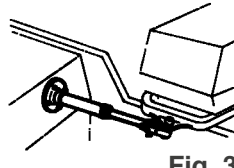


Fig. 3

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

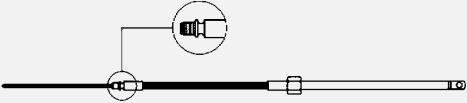
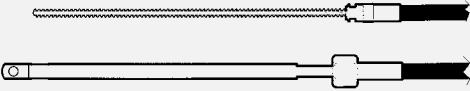

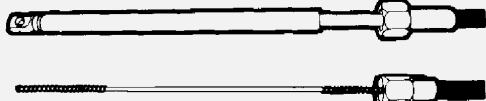

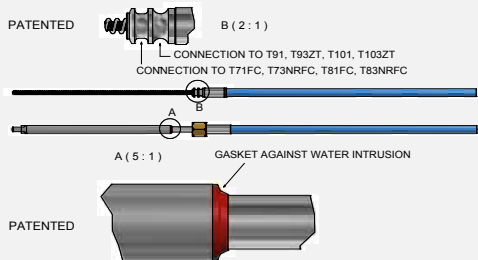
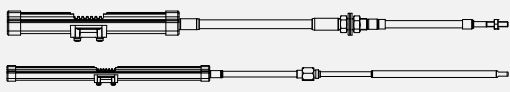
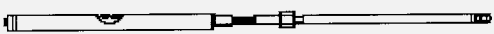
TRANSOM SUPPORT OR SPLASHWELL MOUNTING - Fig. 2-3

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 CABLE	STEERING HELM	ADAPTOR REQUIRED
M58 	T67 Ultraflex C230/C231 Morse® Compac - T® Teleflex® 805 TX®	none
M66 	T85 - T71FC - T72FC - T73NRFC - T74NRFC - T81FC - T83NRFC - Ultraflex Safe - TQC® - NFB Safe -TII® - NFB 4.2® Teleflex® - D290 Morse® T71 - T72 - T73NR - T74NR - T81 - T83NR Ultraflex (discontinued)	none K66 - 38432Q 
M47 - DISCONTINUED USE M66 + K66 	T71 - T72 - T73NR - T74NR - T81 - T83NR Ultraflex (discontinued) T85 - T71FC - T72FC - T73NRFC - T74NRFC - T81FC - T83NRFC Ultraflex	none K46 -35679L 
M90 Mach 	T91 - T93ZT T101 - T103ZT T85 - T71FC - T72FC - T73NRFC - T74NRFC - T81FC - T83NRFC Ultraflex Safe - TQC® - NFB Safe TII® NFB 4.2® Teleflex® - D290 Morse®	none
TM87J - TM87O 	G87 - G87ZT - G89 - G89ZT Ultraflex. Not compatible with TM86	none
TM86 - DISCONTINUED 	G86 - G88NR - G96 - G98NR Ultraflex. Not compatible with TM87J and TM87O	none
NOTE: Will not work with dual cable helms		

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

CE



- 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



T67

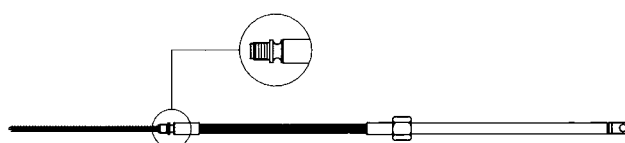
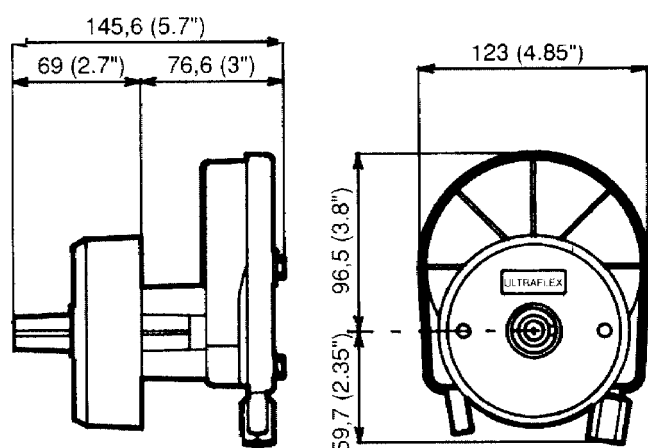


T67W

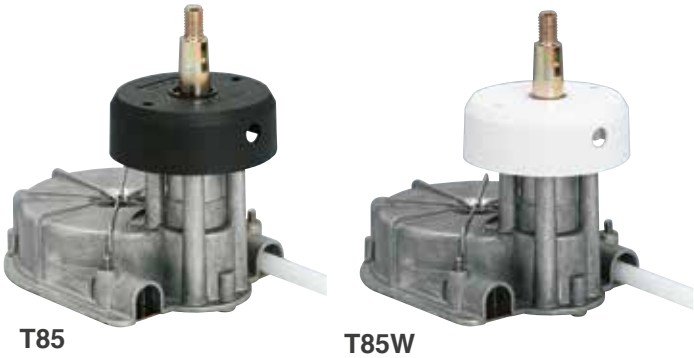
COMPONENTS - TO BE ORDERED SEPARATELY

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

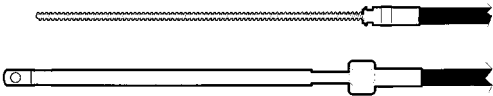
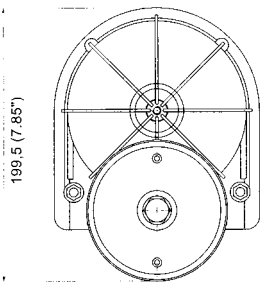
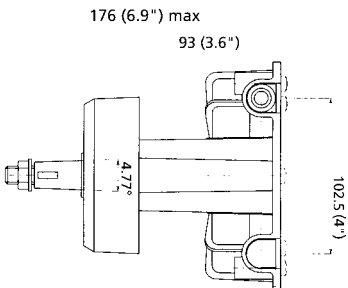


- All stainless steel cable output ends
- Made of corrosion resistant materials
- Particularly suitable where clearance is limited
- Minimal feedback
- T85 steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Exceeds ISO 8848 safety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

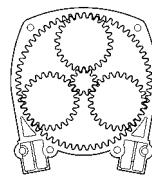


M66

T71FC - T72FC Rotary steering systems

CE

Planetary
Gear Design



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

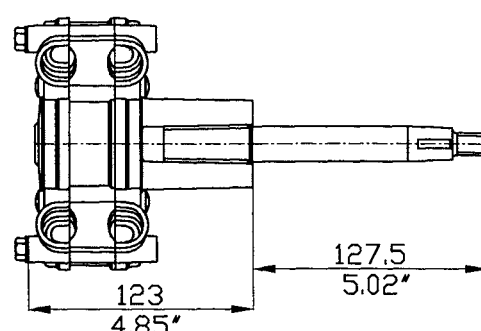
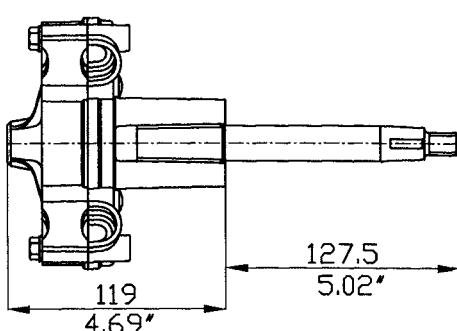
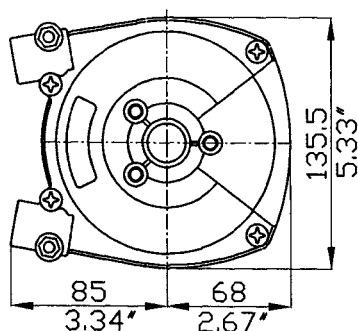
NOTE

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 - 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")

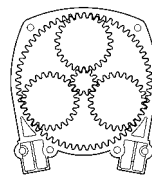


T73NRFC - T74NRFC

Anti-Feedback rotary steering systems

CE

Planetary
Gear Design



T73NRFC



T74NRFC

- Easy and safe steering: a patented anti-feedback 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 and T74NRFC 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
- T73NRFC is available in package with ROTECH-III
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

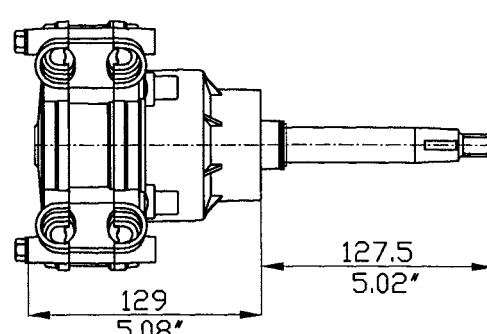
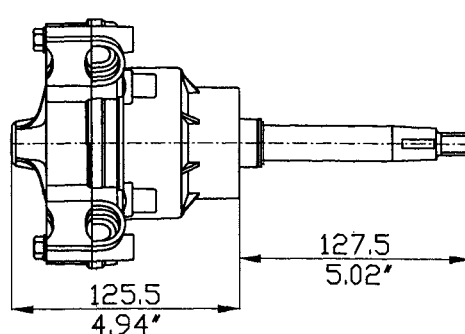
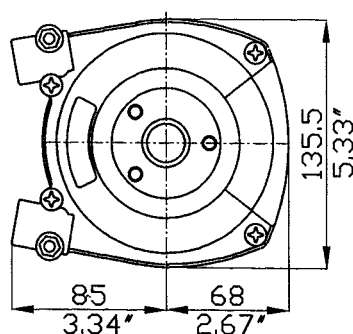
NOTE

T74NRFC steering system requires 2 cables

COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
T73NRFC	38869M	Anti-feedback single cable steering helm
T74NRFC	38870W	Anti-feedback 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 - 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")

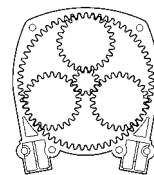


T81FC - T83NRFC

Anti-Feedback rotary tilt steering systems



Planetary
Gear Design



T81FC with X52



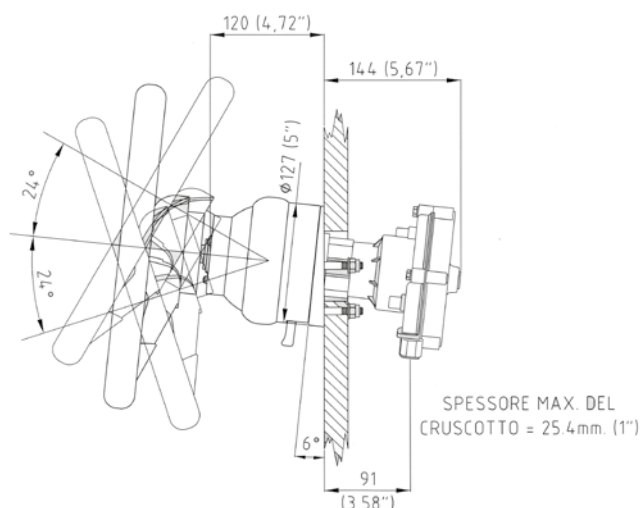
X52

- 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	38867H	Single cable steering helm
T83NRFC	38868K	Anti-feedback single cable steering Helm
X52	39250U	Tilt mechanism
M66 - 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")



RACK AND PINION STEERING SYSTEMS



new



G87



G87ZT

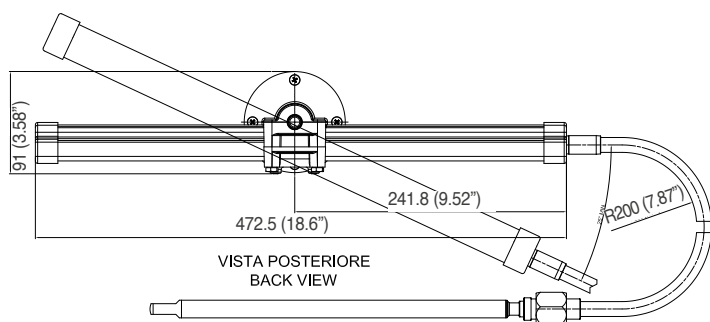


- All stainless steel cable output ends
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, patented anti-feedback, eliminates the continuous load on the driver caused by the propeller torque
- TM87O steering systems are not to be used on boats equipped with engines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

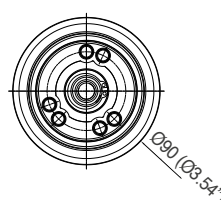
COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
TM87O	43840R	Preassembled helm with steering cable
G87	43838E	Standard helm assembly
G87ZT	43837C	Zero torque helm assembly
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

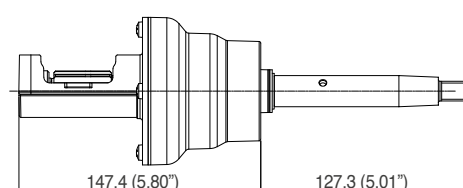
Installation	90° or 20°
TM87O stroke	200 mm (3.7")
Lock-to-lock steering wheel turns	approx 3,3
Max. steering wheel diameter	420 mm (16.5")
Min. steering cable bend radius	200 mm (7.9")



TM87O



G87 and G87ZT



RACK AND PINION TILT STEERING SYSTEMS



new

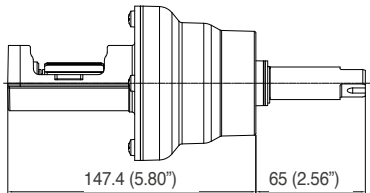
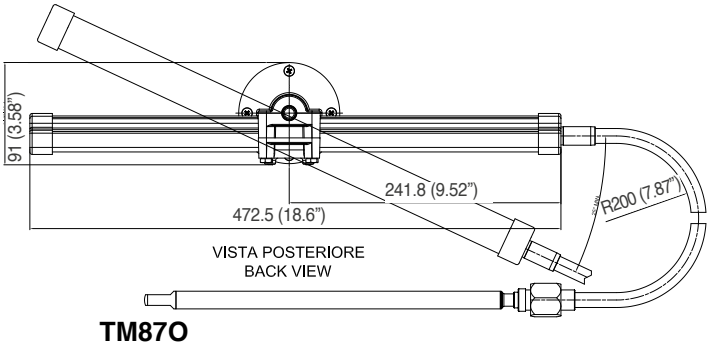


COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
TM87O	43840R	Preassembled helm with steering cable
G89	43844Z	Standard helm with X52 tilt mechanism (to be ordere separately)
G89ZT	43845B	Zero torque helm with X52 tilt mechanism (to be ordere separately)
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
X52	39250U	Tilt mechanism

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")

- All stainless steel cable output ends
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, patented anti-feedback, 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



RACK AND PINION STEERING SYSTEMS FOR JET BOATS



new



G87



G87ZT

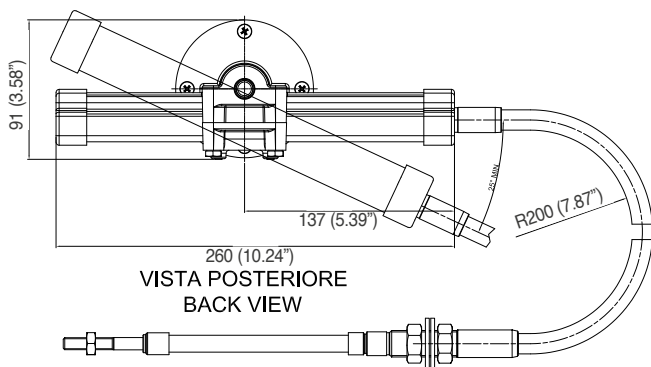


- All stainless steel cable output ends
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, patented anti-feedback, eliminates the continuous load on the driver caused by the propeller torque
- TM87J steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Optional steering wheel
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

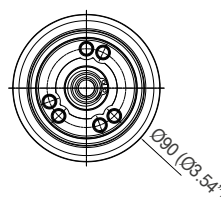
COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
TM87J	43839G	Preassembled helm with steering cable
G87	43838E	Standard helm assembly
G87ZT	43837C	Zero torque helm assembly
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

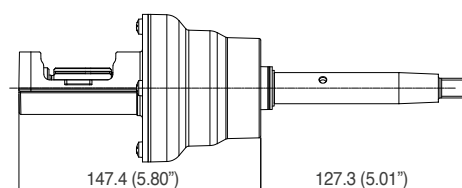
Installation	90° or 20°
TM87J stroke	93 mm (3.7")
Lock-to-lock steering wheel turns	approx 1,5
Max. steering wheel diameter	420 mm (16.5")
Min. steering cable bend radius	200 mm (7.9")



TM87J



G87 and G87ZT



RACK AND PINION TILT STEERING SYSTEMS FOR JET BOATS



new



G89



G89ZT



G89 + X52

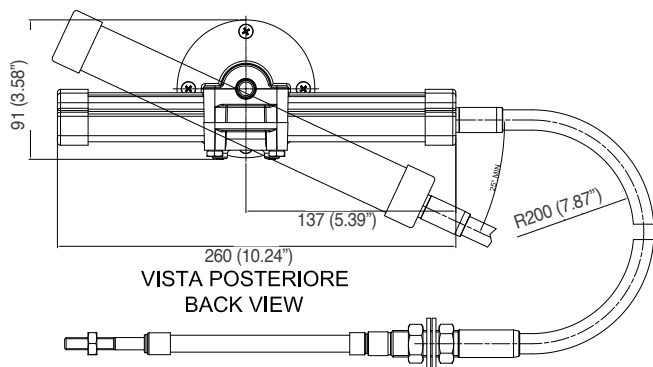
- All stainless steel cable output ends
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, patented anti-feedback, eliminates the continuous load on the driver caused by the propeller torque
- TM87J steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Optional steering wheel
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards



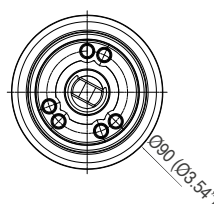
COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
TM87J	43839G	Preassembled helm with steering cable
G89	43844Z	Standard helm with X52 tilt mechanism (to be ordered separately)
G89ZT	43845B	Zero torque helm with X52 tilt mechanism (to be ordered separately)
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
X52	39250U	Tilt mechanism

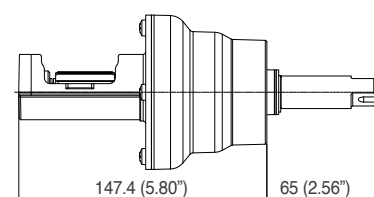
Installation	90° or 20°
TM87J stroke	93 mm (3.7")
Lock-to-lock steering wheel turns	approx 1,5
Max. steering wheel diameter	420 mm (16.5")
Min. steering cable bend radius	200 mm (7.9")



TM87J



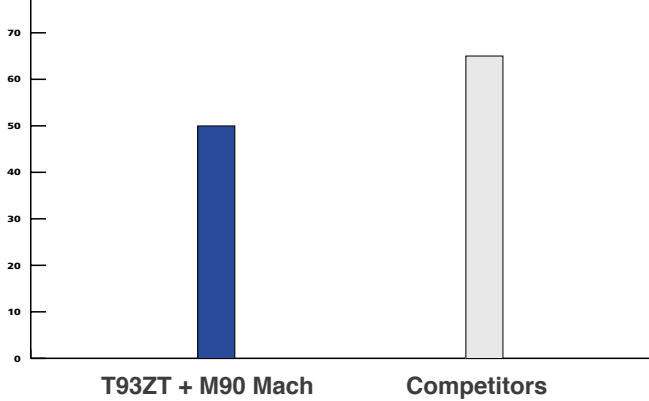
G89 and G89ZT



T91 -T93ZT (ZERO TORQUE) High Performance steering systems - Torque Comparison

Backlash on the steering system comparison

Steering wheel angle comparison

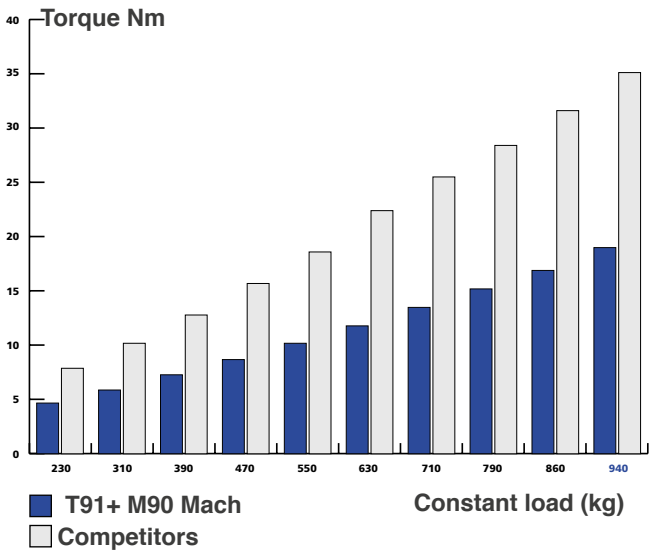


The quality of a mechanical steering system depends on its efficiency (less driving effort) in push & pull load and low backlash on the steering wheel.

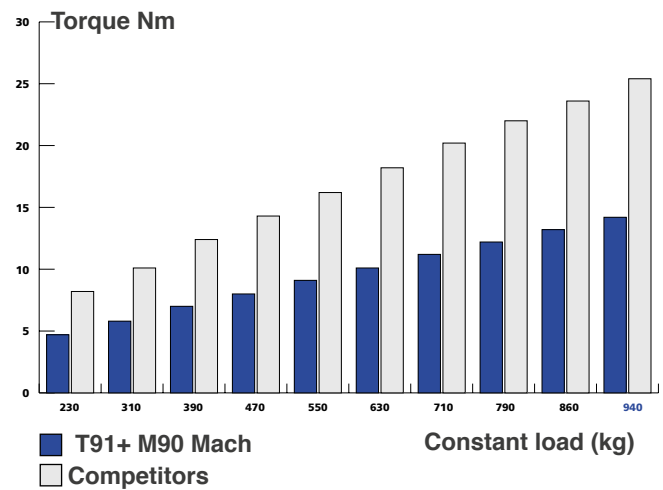
Ultraflex **T91** and **T93ZT** steering systems, fitted with the M90 Mach single-cable, are the best mechanical steering systems on the market today. They combine a minimal backlash with higher efficiency and they guarantee results with very narrow cable bends.

Torque comparison with Push & Pull load - radius 200m

Push load:

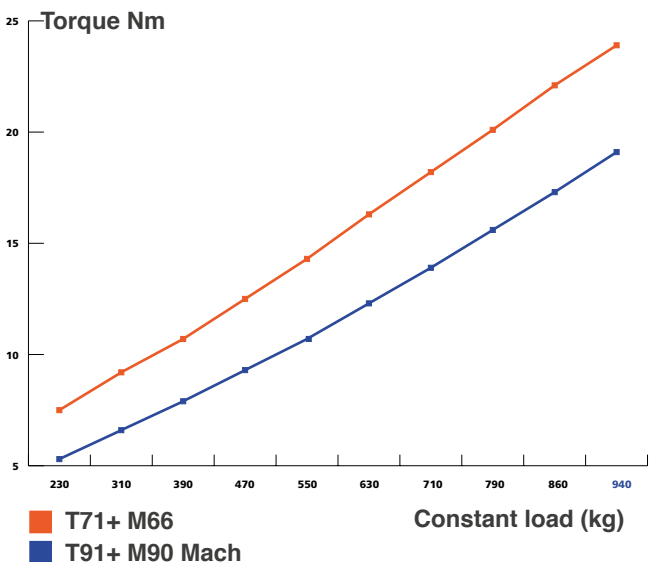


Pull load:

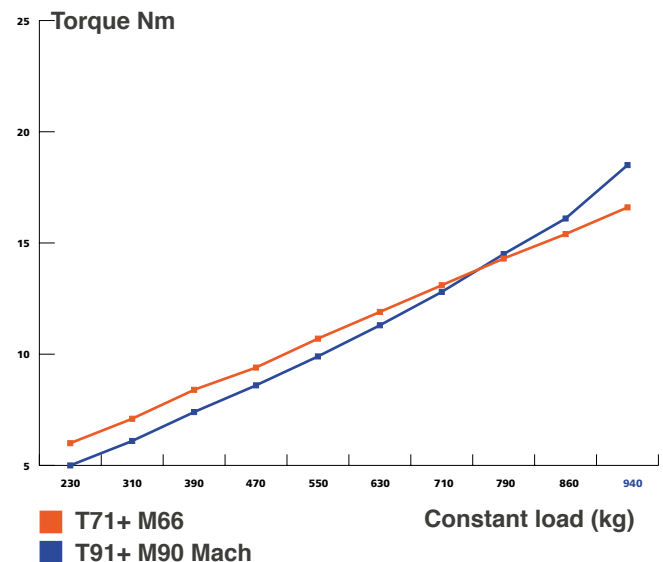


Torque comparison with Push & Pull load - radius 100m

Push load:



Pull load:



T91

High performance rotary steering systems

CE

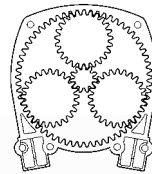


T91 high performance



T91 with X91 bezel

Planetary
Gear Design

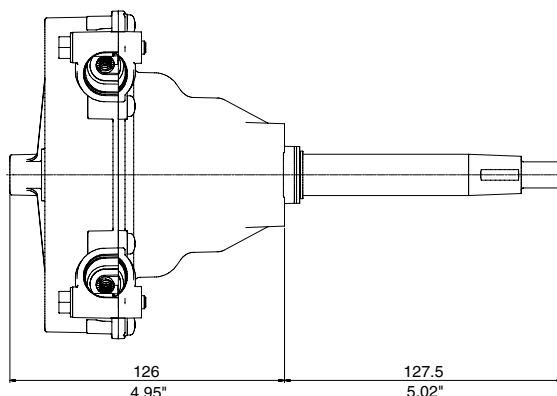
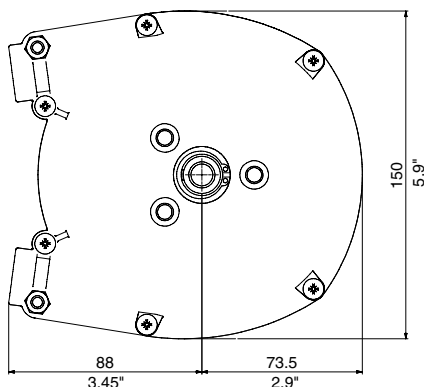


M90 Mach
(Patented)

- 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 system

CE



T93ZT high performance



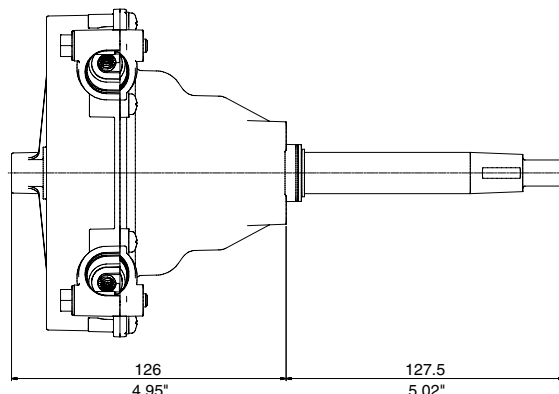
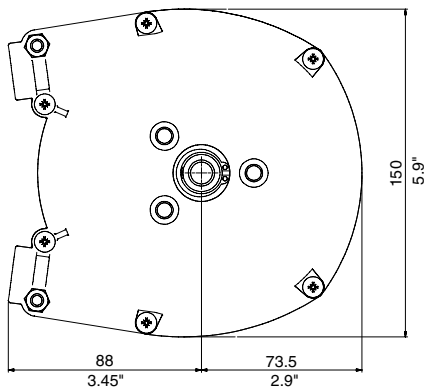
T93ZT with X91 bezel



- 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	42548U	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")	



ROTARY STEERING SYSTEM MOUNTING BEZELS



X34	36654B	Black bezel, mounting 90°
X34W	40654C	White bezel, mounting 90°



X35	36655C	Black bezel, mounting 20°
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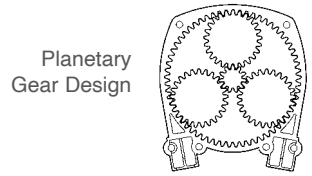
X91	42850N	Chrome plated bezel, mounting 90°
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X90	42646P	Chrome plated bezel with steering lock device, mounting 90°
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Model	Bezel included	X34 / X34W	X35	X90	X91
T67	X	-	-	-	-
T85	X	-	-	-	-
T71FC	-	X	X	-	X
T72FC	-	X	X	-	X
T73NRFC	-	X	X	-	X
T74NRFC	-	X	X	-	X
TM87J	-	X	X	X	X
TM87O	-	X	X	X	X
T91	-	X	X	X	X
T93ZT	-	X	X	X	X

T101 - T103ZT (ZERO TORQUE) High performance tilt steering systems



T101 high performance



T101 shown with X52 tilt mechanism



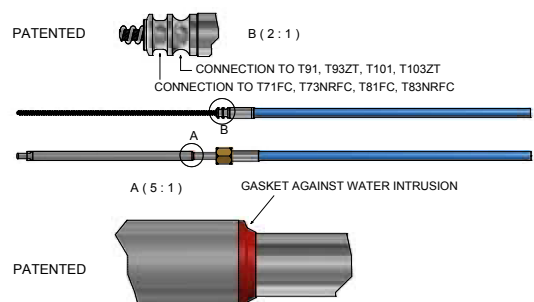
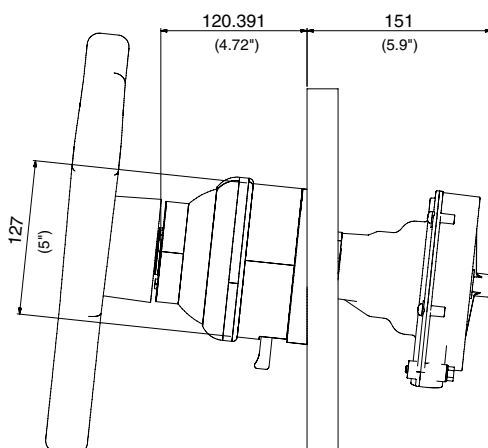
T103ZT high performance

- 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

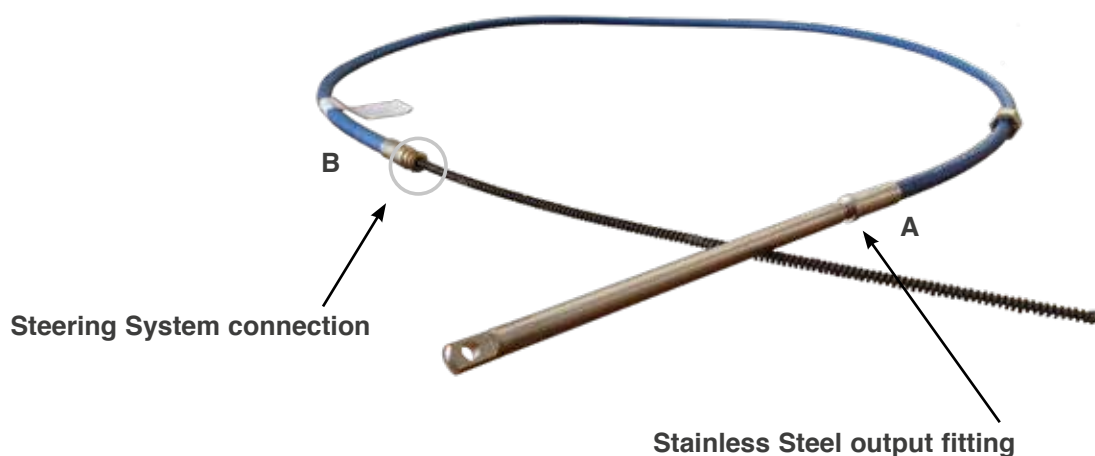
Model	Part No.	Description
T101	42839B	Single cable steering helm
T103ZT	42840K	Zero torque single cable steering helm
X52	39250U	Tilt mechanism
M90	-	Steering cable
Steering wheel	-	See steering wheels section
Accessories	-	See accessories section

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

CE



PATENTED

Connection to:
T71FC, T73NRFC,
T81FC, T83NRFC



Connection to:
T91, T93ZT, T101, T103ZT

GASKET AGAINST WATER INTRUSION

PATENTED



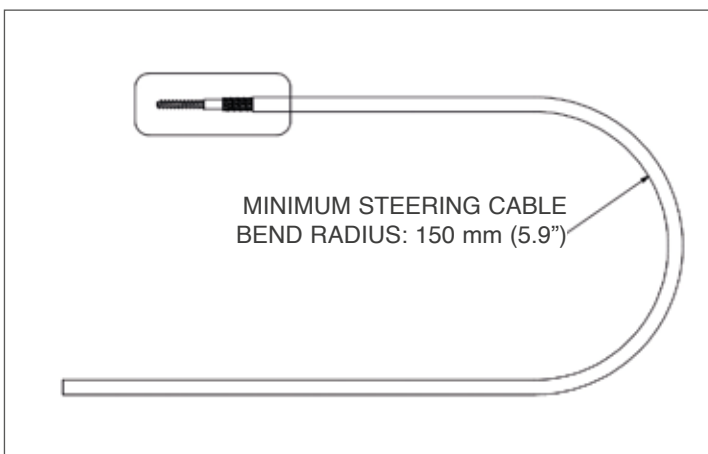
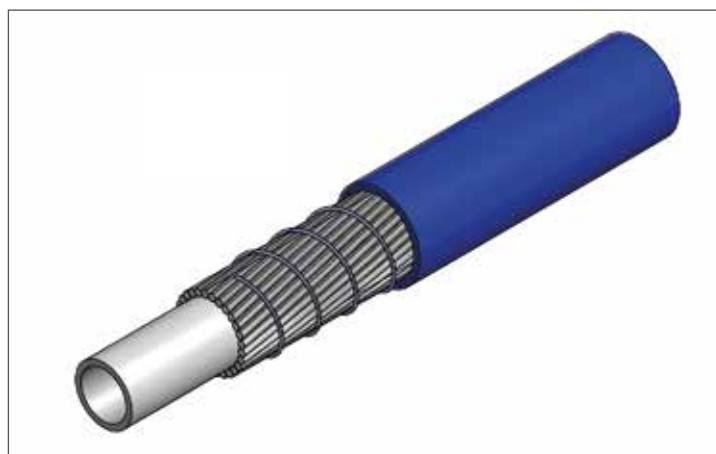
Specifically designed for high performance and high efficiency applications, M90 Mach cable (patented) offers increased flexibility and durability by top quality materials and construction.

- 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

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



PACKAGED MECHANICAL 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 - anti-feedback 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, the Fourtech offers performance, flexibility and durability increased by top quality materials and construction. Centered on the main drive shaft, this helm requires less room behind the dash and is a direct “drop in” replacement for competing system; requires no new holes for installation.
The package includes helm (PLANETARY GEAR DESIGN), bezel and highly flexible M90 Mach cable (patented) 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 non reversible High Performance
Bezel	X34 - 90° bezel
Steering cable	M90 Mach

ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

Steering cable supports



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

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

Engine connection kits



A74SS	41256V	Stainless steel tiller arm for some Johnson®, Evinrude®, BRP® engines
A73SS	41255T	Stainless steel tiller arm for some Mercury® engines
A75	34459X	Clevis

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

Steering cables adaptors



K46

K46 35679L
Adaptor to connect M47 steering cables (discontinued) to Morse® D290 and Ultraflex® FC type steering helms



K66

K66 38432Q
Adaptor to connect M66 steering cables to Ultraflex® threaded steering helms (discontinued)

ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

Profilament polyester braided sleeveings 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

Typical installations

INSTALLATION	CABLE SUPPORT + ENGINE CONNECTION KIT	INSTALLATION	CABLE SUPPORT + ENGINE CONNECTION KIT
A	S39 or S61 or S62 + A75	C	A73SS or A74SS
B	S40 + A75	D	S55 + A75
A = With clamp block		C = With tiller arm	
B = With splashwell		D = With 90° rudder support	

ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

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 centers 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



A 88

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 Engine centers Adj. from 550 mm (21.6") to 700 mm (27.5")

A92/950 Engine centers Adj. from 700 mm (27.5") to 950 mm (37.4")

A92/700 40892V Tie bar

A92/950 40893X Tie bar



A 92

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")



R1 B

R2 B

R3 B

R4 B

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")



R1 W

R2 W

R3 W

R4 W

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")



R1 G

R2 G

R3 G



OUTBOARD AND STERNDRIVE HYDRAULIC STEERING SYSTEMS

Package kit hydraulic steering systems

MAX HORSEPOWER	KIT	HELM	CYLINDER (1)	FLEX HOSES (2)	OIL litres	WHEEL TURNS	OPTIONAL
115 hp	GOTECH-OBF	UP18	UC81-OBF	KIT OB-GT/M-60	2	4,5	Steering wheel 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 Flange X74 Thru hull R5; R5SS; R8; R9
	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	
	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 Flange X74 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 Flange X64; X57 Thru hull R5; R5SS; R8; R9
	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	
	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 appropriate section



GOTECH-OBF



GOTECH-OBS



GOTECH-I



HYCO-OBS



HYCO-I



HYCO-OBS/M



HYCO-I/M



HYTECH-OBF



HYTECH-OBF/M



**NAUTECH-1
NAUTECH-3**



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

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

Package kit hydraulic steering systems



HORSEPOWER	KIT	HELM	CYLINDER (1)	FLEX HOSES (2)	OIL litres	WHEEL TURNS	OPTIONAL
> 300 hp (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/ USER INTERFACE	OIL litres	WHEEL TURNS	ORDERED SEPARATELY
> 300 hp (please refer to max power applicable)	MD32-F	UH32-F	UPMD/UCMD	4	4,1	- Outboard cylinder UC130-SVS (1) - Inboard cylinder (1) - X66 tilt mechanism - 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



SVS-28, SVS 33



MD

Hydraulic steering systems - 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	
ULTRAFLEX®	SEASTAR®
UP18	BayStar™ HH4311
UP20 F	BayStar™ HH4314
UP20 T	BayStar™ HH4315
UP25 F	Seastar™ 1.4 HH5269
UP25NV F	-
UP25 T	Seastar™ 1.4 HH6544
UP28 F	Seastar™ 1.7 HH5271
UP28 T	Seastar™ 1.7 HH6541
UP 28 R	Seastar™ 1.7 HH5261
UP33 F	Seastar™ 2.0 HH5273
UP33NV F	Seastar™ 2.0 HH5760
UP33 T	Seastar™ 2.0 HH6543
UP33 R	-
UP39 F	Seastar™ 2.4 HH5272
UP39 T	Seastar™ 2.4 HH6542
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

CYLINDERS	
ULTRAFLEX®	SEASTAR®
UC81-OBF	-
UC95-OBF	Baystar™ HC4645
UC128-OBF	Seastar™ HC5345
UC130-SVS	Seastar™ HC6345
UC68-OBS	-
UC132-OBS	Seastar™ HC5370/5328
UC69-I	Baystar™ HC4461-3
UC116-1	Seastar™ HC5312
UC168-I	Seastar™ HC5314
UC215-I	Seastar™ HC5319
UC293-I	-
UC378-I	-

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	-	-	-

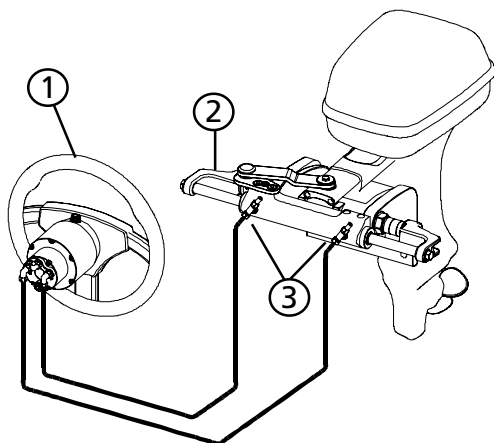
Recommended

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	-	-

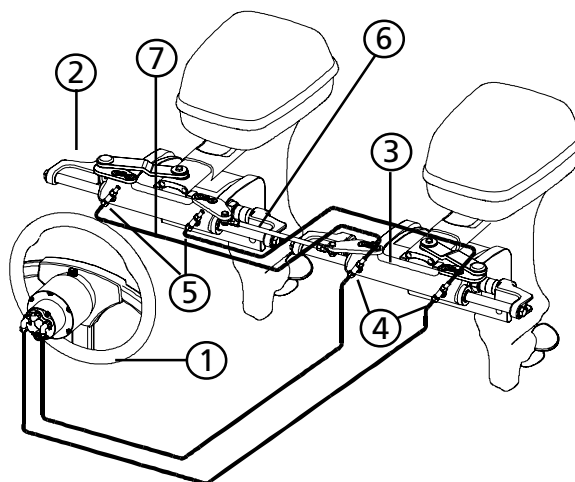
Recommended

SINGLE STATION / SINGLE ENGINE:



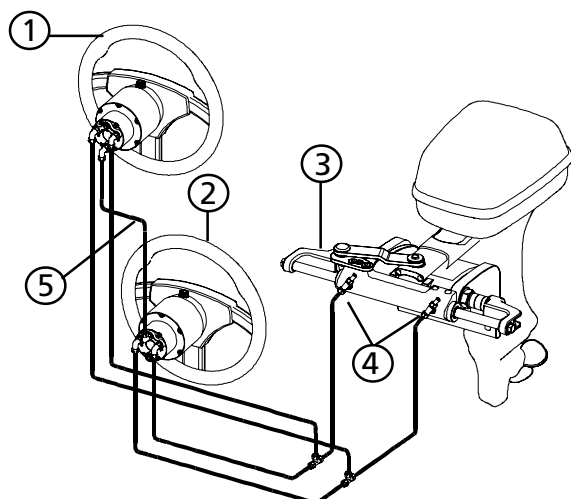
- 1. helm
- 2. starboard cylinder
- 3. bleed valves

SINGLE STATION / DUAL ENGINE:



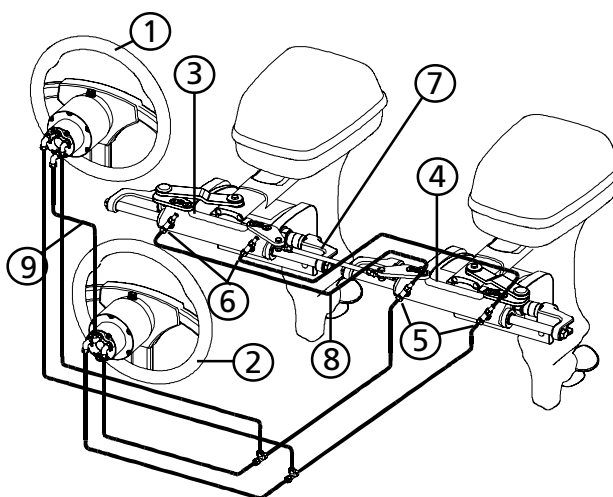
- 1. helm
- 2. starboard cylinder
- 3. port cylinder
- 4. "T" fittings
- 5. bleed valves
- 6. tie bar
- 7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

DUAL STATION / SINGLE ENGINE



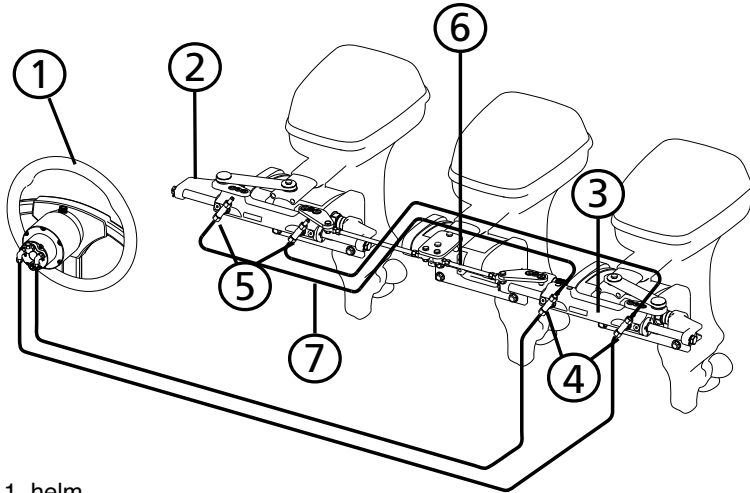
- 1. upper station helm
- 2. lower station helm
- 3. starboard cylinder
- 4. bleed valves
- 5. kit OB-2S

DUAL STATION / DUAL ENGINE



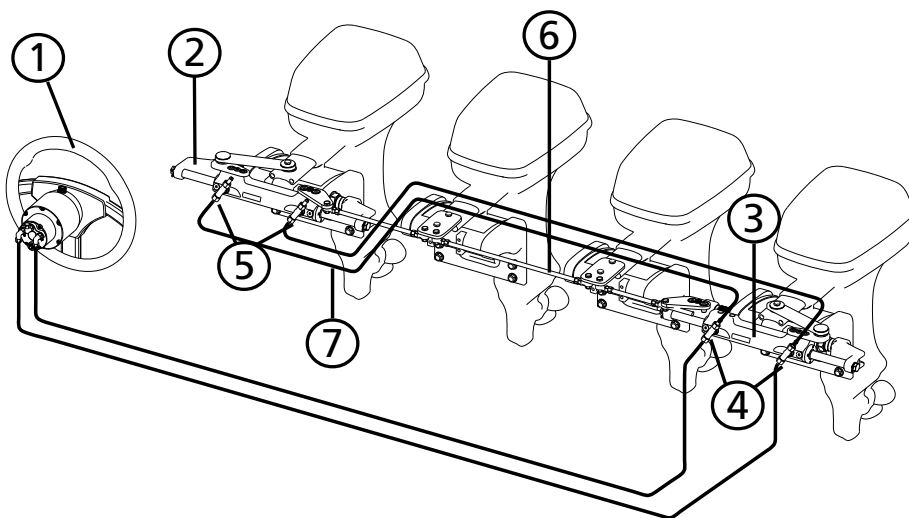
- 1. upper station helm
- 2. lower station helm
- 3. starboard cylinder
- 4. port cylinder
- 5. "T" fittings
- 6. bleed valves
- 7. tie bar
- 8. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)
- 9. kit OB-2S

SINGLE STATION / THREE ENGINES



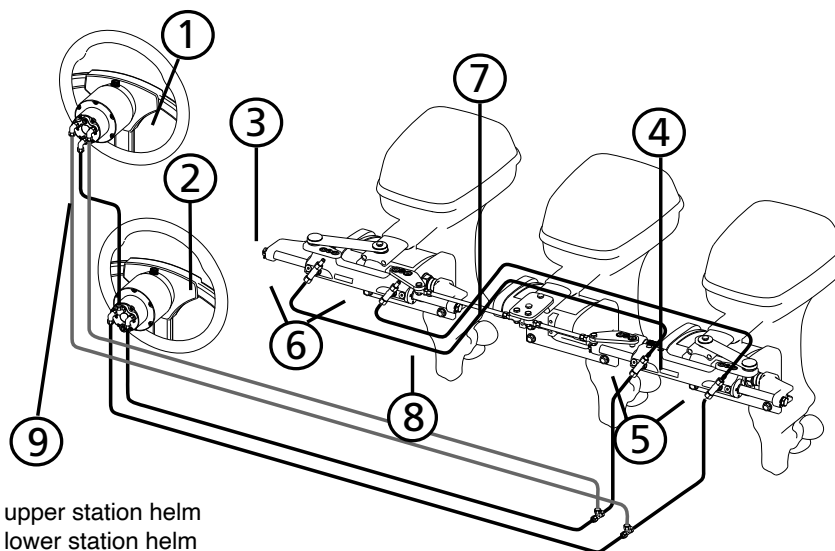
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

SINGLE STATION / FOUR ENGINES



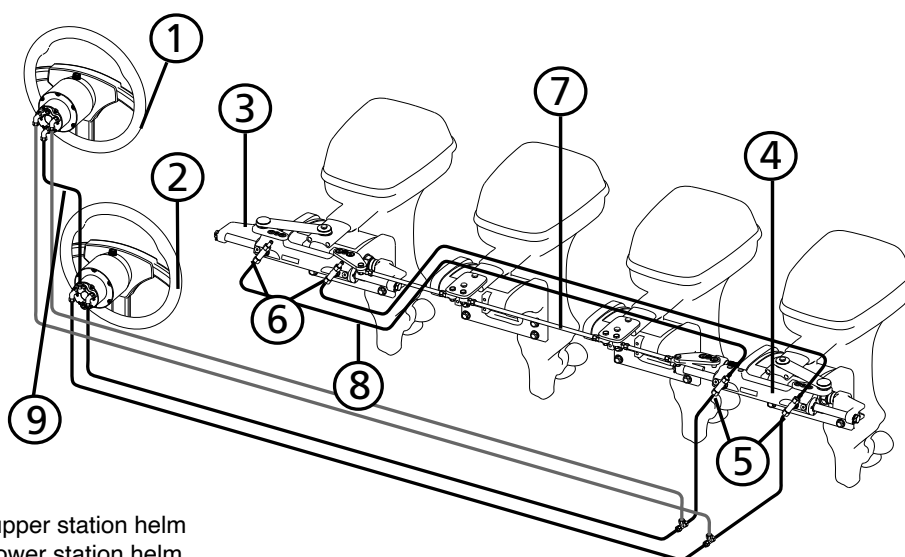
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

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 system Tilt mechanism

Tilt mechanism suitable for tilt mount helms

CE



X52

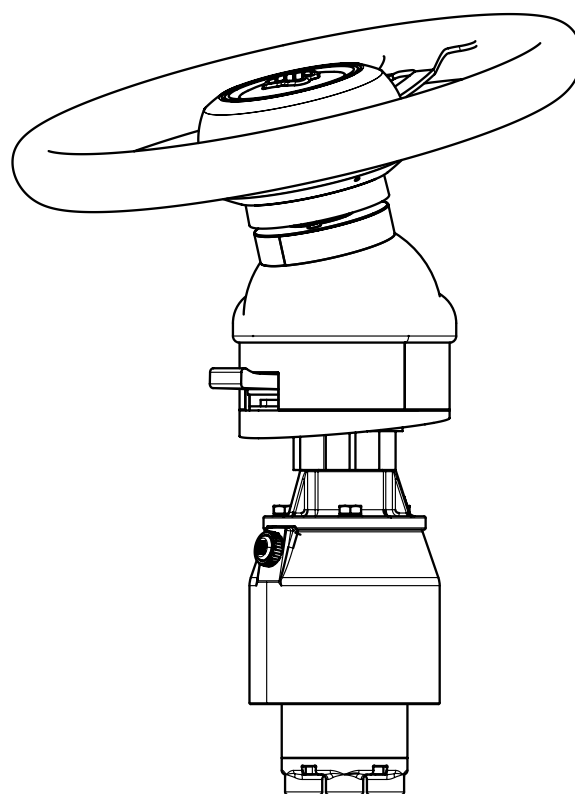


X66



X70-SVS

Model	Part No.	Description
X52	39250U	Tilt mechanism
X66	40613M	Tilt mechanism
X70-SVS	41880T	Tilt mechanism



X52, X70-SVS, X66

Adjustable steering wheel systems

Tilt mechanism

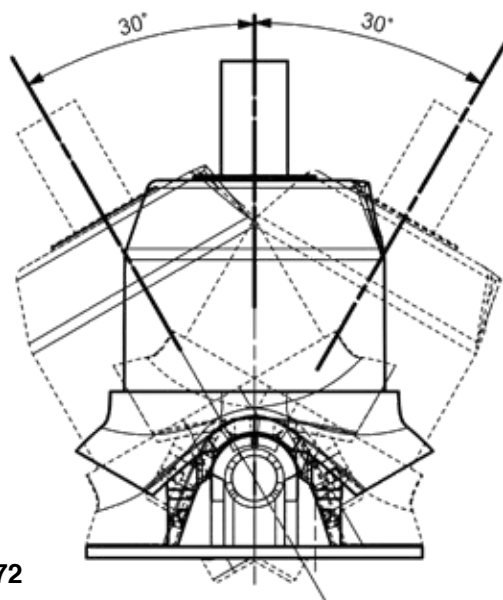
Tilt mechanism suitable for front mount helms



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



X72



X72

X72	43140K	Tilt range of 60° and five locking positions
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Tilt mechanism application for mechanical steering systems

TILT MECHANISM	Part No.	T81, T83NRFC	T96, T98NR	T101, T103ZT
X52	39250U	X	X	X

Tilt mechanism application for hydraulic and electronic steering systems

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

UP18

Intermediate mount position helm

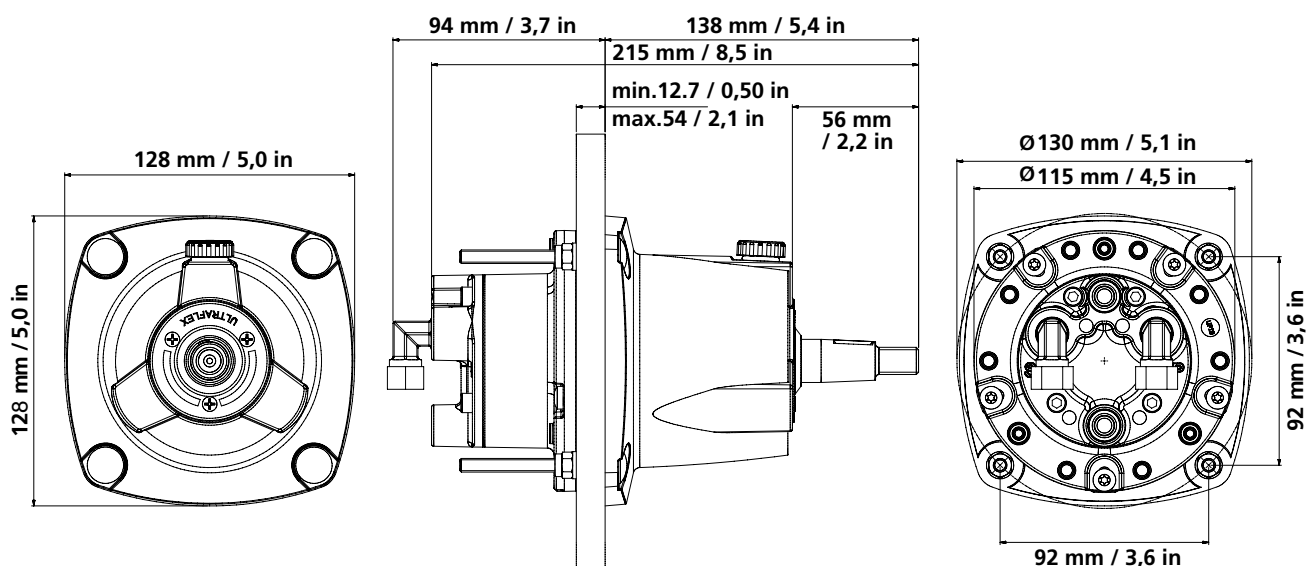


UP18

- 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 cylinder only
- Intermediate mount position helm pump

Mounting	intermediate
Displacement / revolution	18 cc- 1.1 cu.in
No. of pistons	5
Relief valve setting	55 Bar - 800 PSI
Max. wheel diameter	508 mm (20")
Weight	3,6 kg (8 lbs")

Model	Part No.	Description
UP18	43182C	Intermediate mount position helm



UP18 DIMENSIONS

UP20F - Front mount helm
UP20T - Tilt mount helm



UP20T + X52



UP20F



UP20F + X74

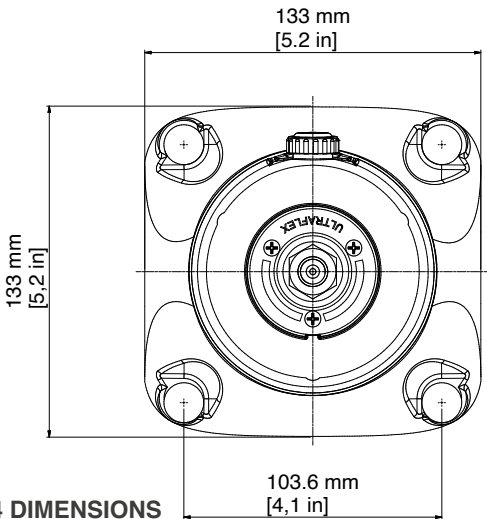
- Built-in lock valve for positive rudder lock
- Integrated relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Corrosion proof composite housing
- Easy accessible lock valve and shaft seal for replacement
- Includes 90° adjustable fittings for 3/8" hose
- KIT F (optional):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

For UP20T pump

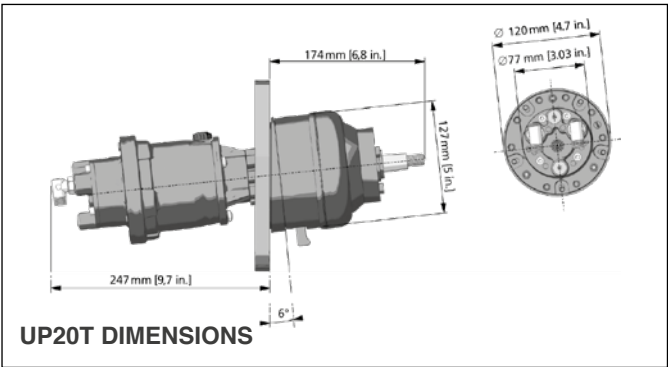
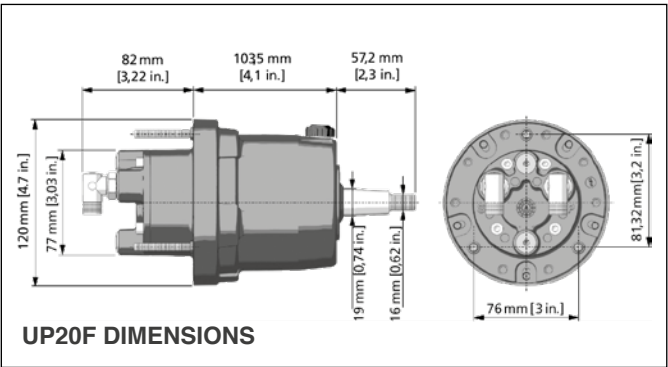
- Tilt mechanism: **X52** - 39250U tilt range of 48° and five locking positions

For UP20F pump

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



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

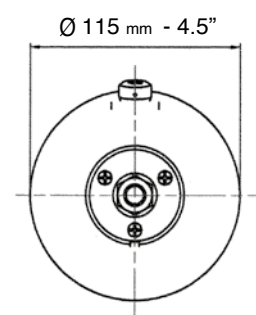
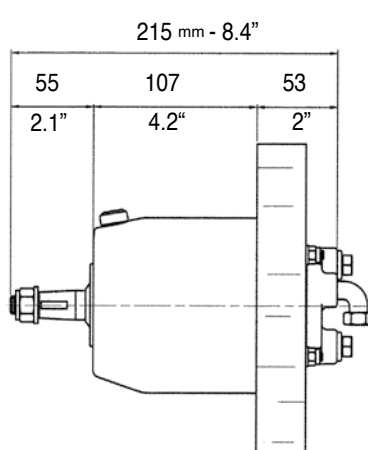
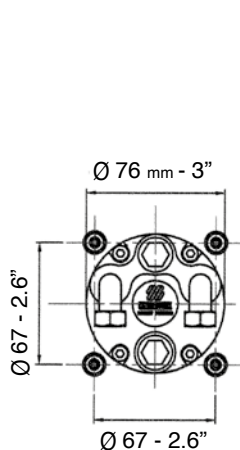
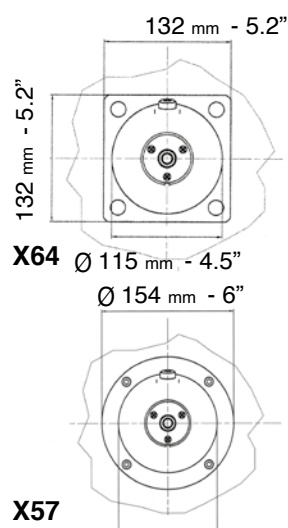


X64 with front mount helm

X57 with front mount helm

- 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 pumps with intermediate dashboard position.
- Tilt mechanism: X72 43140K tilt range of 60° and five locking positions•

MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM 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



UP25F, UP28F, UP33F, UP39F, UP45F DIMENSIONS

UP25T - UP28T - UP33T - UP39T - UP45T

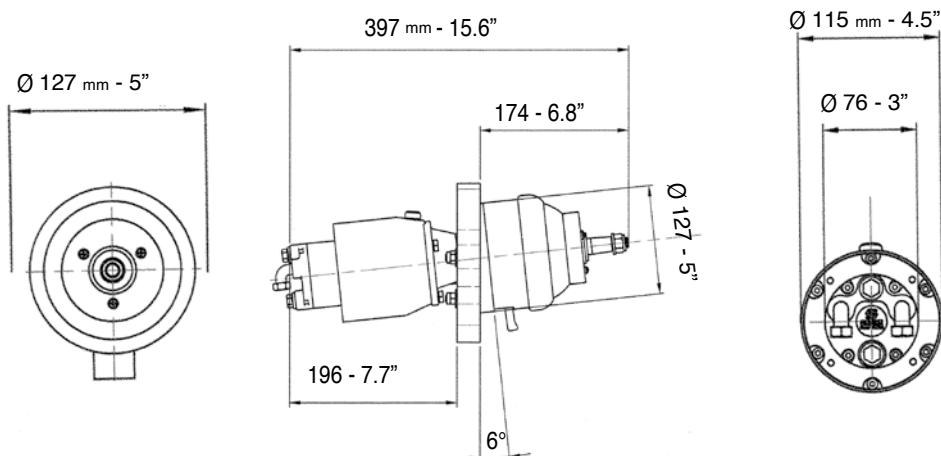
Tilt mount helms



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/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM 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

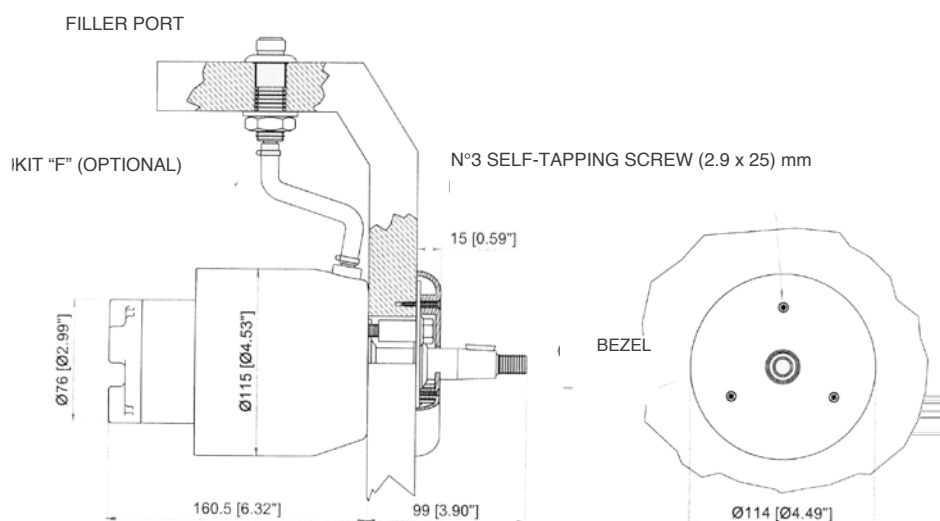
UP28R - UP33R - UP39R - UP45R

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)
- **UP45** and **UP39** pumps are available also for inboard applications.
- 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

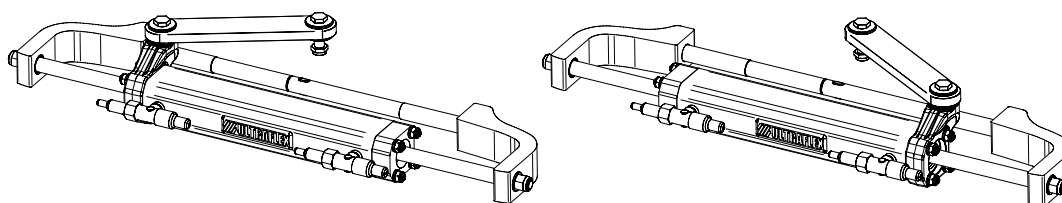
UC81-OBF

Front mount cylinder

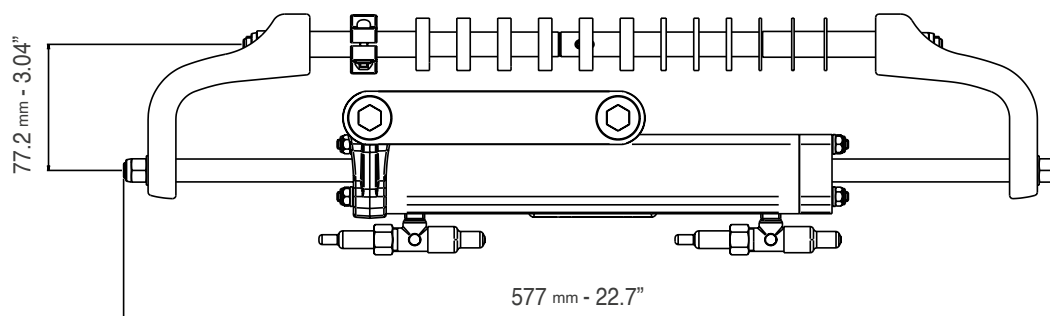


UC81-OBF - Balanced: the number of turns lock-to-lock is equal port to starboard and vice-versa.
Front mount cylinder for outboard engines up to 115 hp
Replaceable cylinder end caps

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



- 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

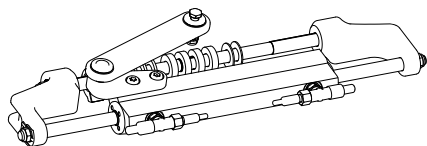
NOTE: non suitable with starboard link arms LA1, LA2, LA3 for UC128-OBF cylinder.

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

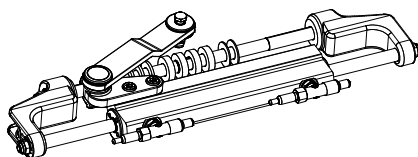
Volume	95 cc - 5.8 cu.in.
Output force	278 kg (613 lbs)
Internal diameter	30 mm (1.18")
Stroke	186 mm (7.3")
Fittings for high pressure flex hose	3/8"
Bleed fittings	DN5 quick disconnect

UC95-OBF

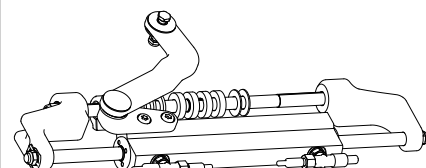
Front mount cylinder



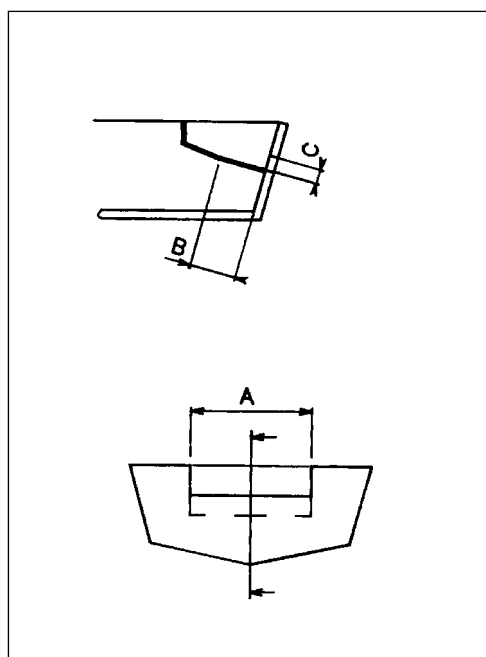
UC95-OBF/1 - 43515D



UC95-OBF/2 - 43535K

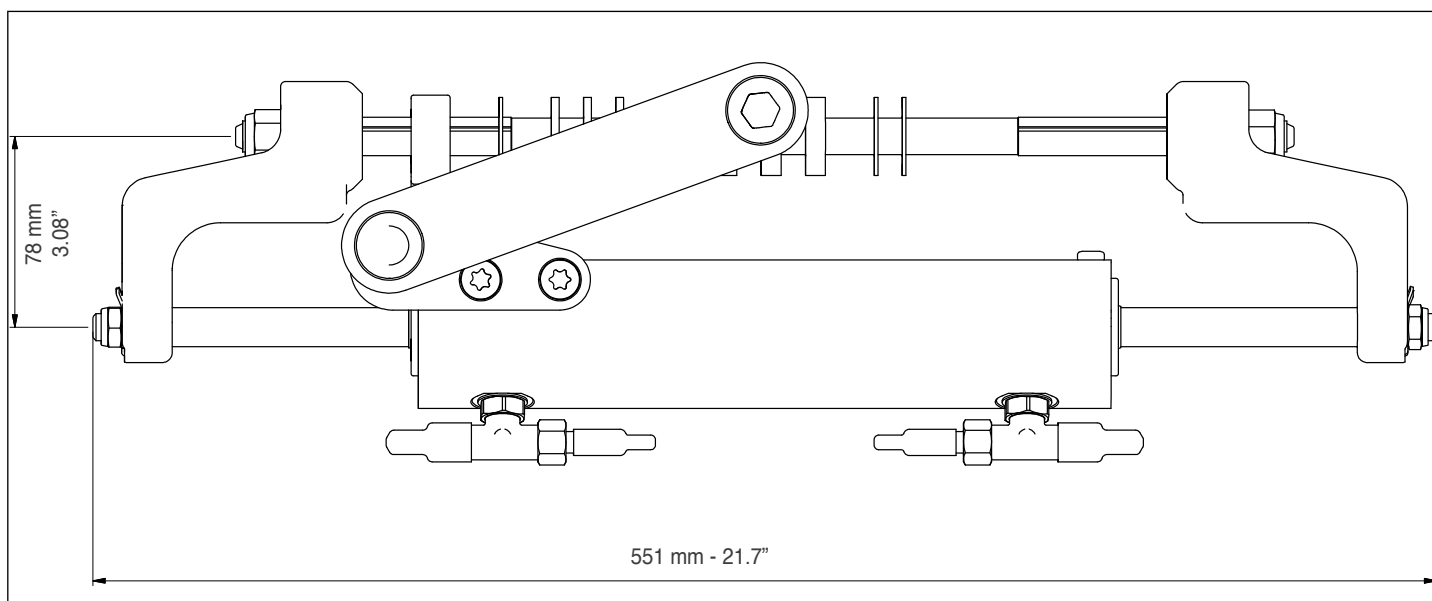


UC95-OBF/3 - 43516F



Splashwell dimension requirements

Engine No.	1
A	540 mm (21.25")
B	152 mm (5.98")
C	152 mm (5.98")



UC95-OBF DIMENSIONS

ENGINE	MODEL	YEAR	CYLINDER	P. No.
Mercury® 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	2000-to date	UC95-OBF/1	43515D
	100-115-150 EFI 4S	2007-to date	UC95-OBF/1	43515D
	175-V6 FOURSTROKE	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® Nissan®	115-120-140 2S	2004-to date	UC95-OBF/1*	43515D
	70-90-115 TLDI 4S	2004-to date	UC95-OBF/1	43515D
	BFT60-75-90-100 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 Shark®	DTORQUE 111	2020-to date	UC95-OBF/1	43515D

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

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

NOTE:

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

WARNING

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

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

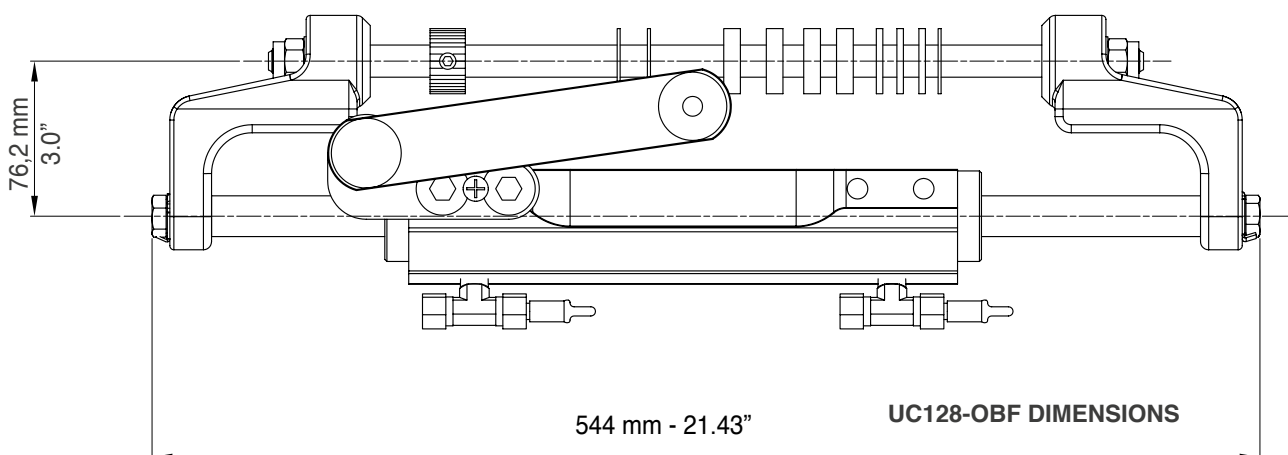
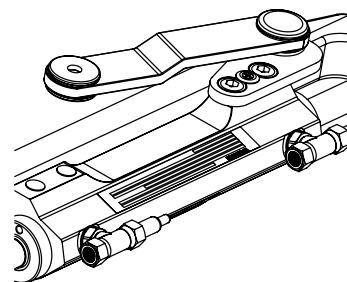
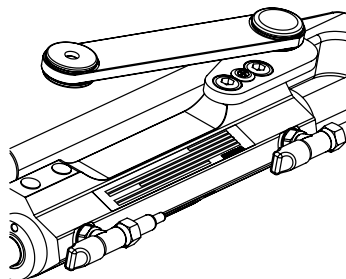
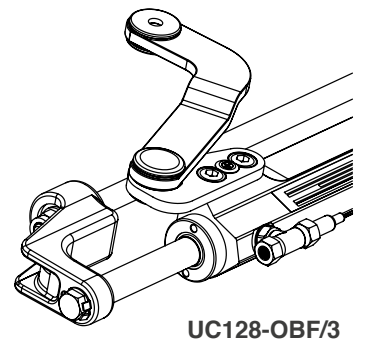
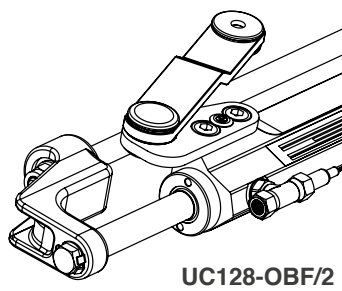
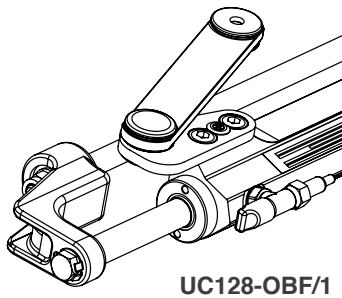
- UC128-OBF cylinder is built with heavy duty stainless steel cylinder rod, seals and link assemblies, is simple to install and fits almost every 2 and 4 stroke outboard engine on the market.
- UC128-OBF cylinders are recommended for use with UP25, UP28, UP33 and UP39 series helms and preassembled hoses (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

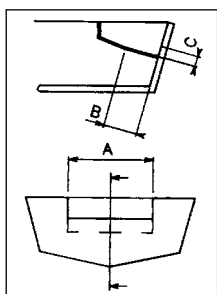
Volume	120 cc - 7.3 cu.in.
Output force	450 kg (992 lbs)
Internal diameter	35 mm (1.37")
Stroke	185 mm (7.28")
Fittings for high pressure flex hose	3/8"
Bleed fittings	DN5 quick connect

UC128-OBF Front mount cylinder



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® 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 175-200 V6	2018-to date	UC128-OBF/1	43231N
	FOURSTROKE 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-F150-F175-F200 L4	2002-to date	UC128-OBF/1	43231N
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- 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 Shark®	DTORQUE 111	2018-to date	UC128-OBF/1	43231N


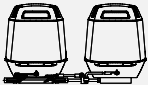

NOTE:

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.

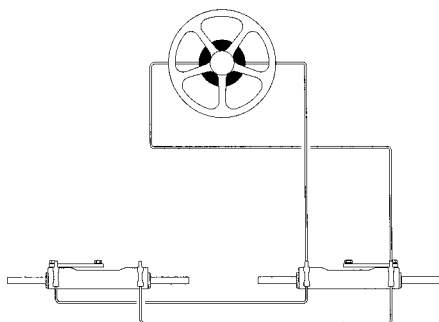
UC128-OBF Order guide

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

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)

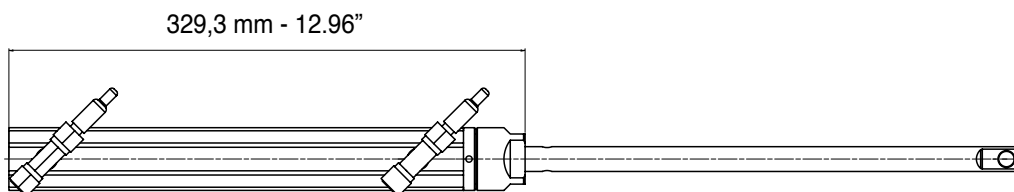
APPLICATIONS:

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

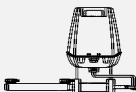
Volume	68/100 cc - 7.3 cu.in.
Output force	185/270 kg (408/595 lbs)
Internal diameter	25 mm (0.98")
Stroke	203 mm (8")
Fittings for high pressure flex hose	3/8"

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

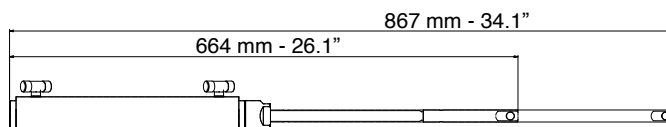


UC68-OBS

Order guide

SYSTEM	APPLICATION	WHEEL TURNS	COMPONENTS	MODEL	Q.TY
Single engine Single cylinder 	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")

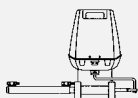
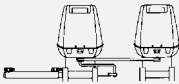

APPLICATIONS: not recommended for use in installations where the boat speed exceeds 55 mph (48 knots) or 60 mph (52 knots) for dual cylinder / dual engines installations

Not intended for use in racing applications

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

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

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

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

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-crimped 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/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



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™

CE



X72

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.

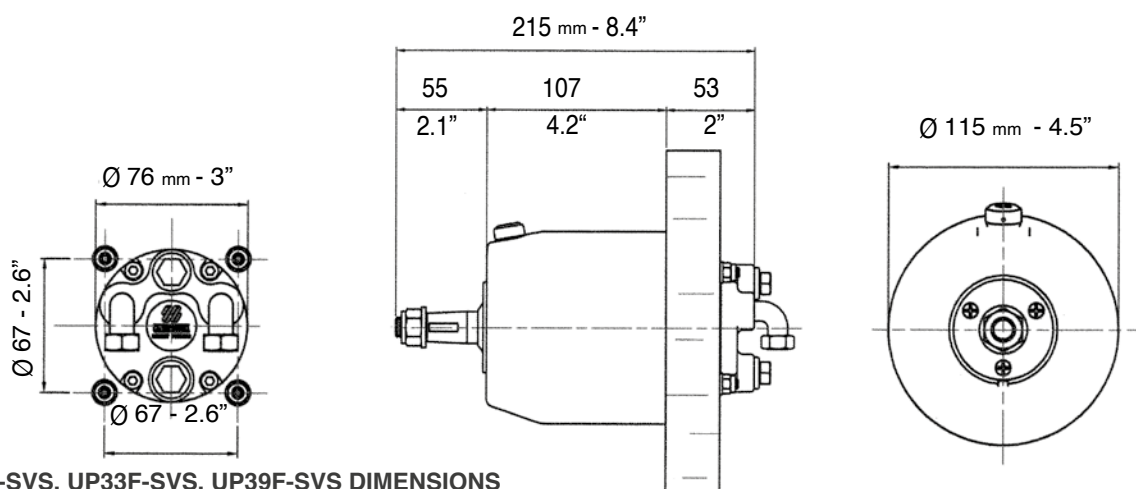
The SVS helms have to be coupled with the UC130-SVS cylinders and the Kit OB-SVS hoses, which are also specifically designed for high torque applications. SVS Helm pumps feature stainless steel shafts and 90° adjustable nickel-plated brass fittings.

- 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



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.

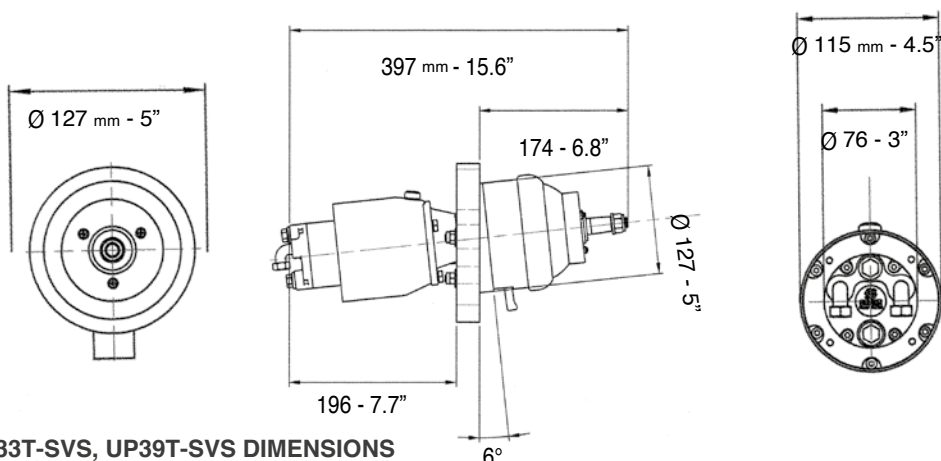
The SVS helms have to be coupled with the UC130-SVS cylinders and the Kit OB-SVS hoses, which are also specifically designed for high torque applications.

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/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM 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™

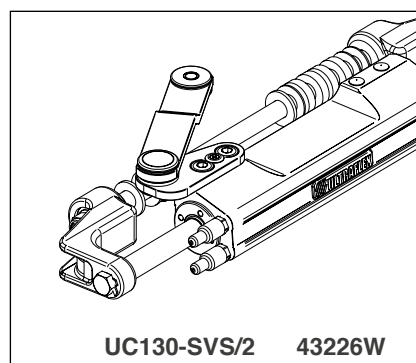
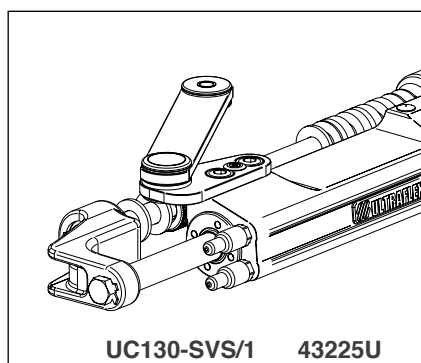


UC130-SVS

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	432225U	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

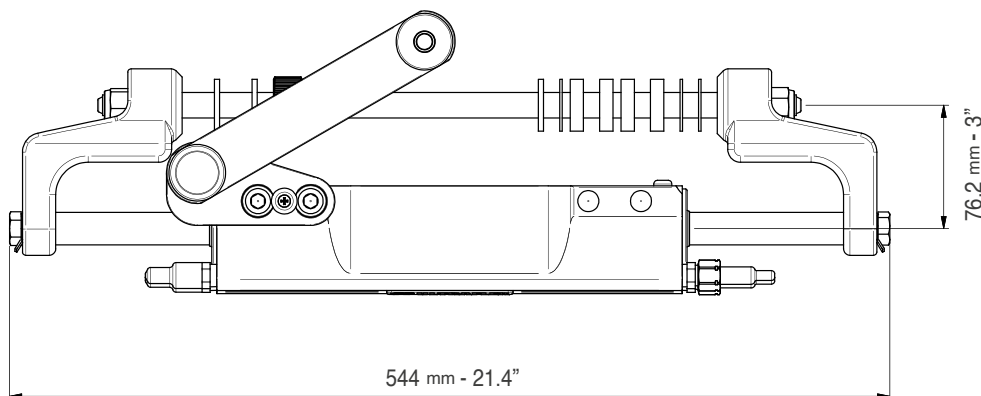
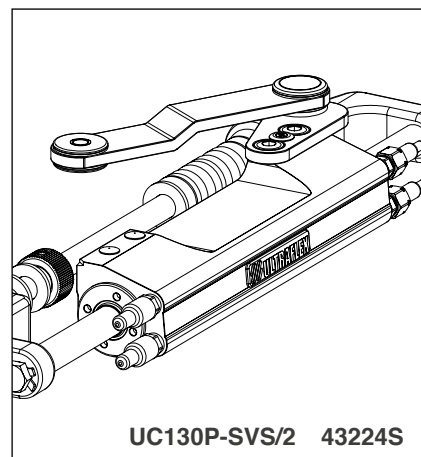
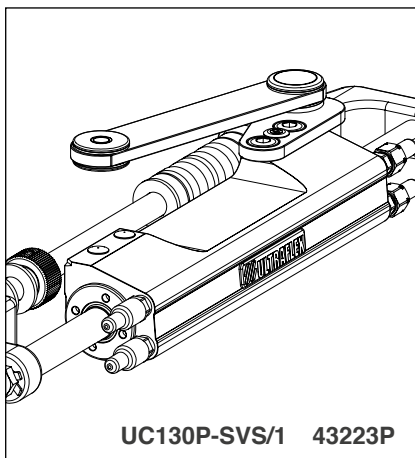


SILVERSTEER™



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® 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

UC130-SVS

High Performance front mount cylinder




SYSTEM	APPLICATION	WHEEL TURNS	COMPONENTS	MODEL	Q.TY
Single Engine Single Cylinder 	Up to 350 hp max	4,6 (UP28)	Cylinder	UC130-SVS	1
			Helm pump	UP28 or UP33-SVS	1
			Hose Kit	KIT OB-SVS	1
		3,9 (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


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.

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

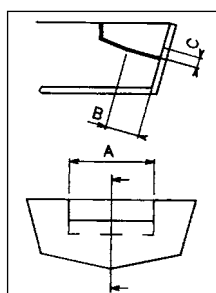
For a second station add:

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

<div>Dual engine Dual cylinder</div> <div></div>	Up to 600 hp max (non-counter rotating engines)	6,6 (UP39)	Cylinder	UC130-SVS	1
	Up to 700 hp max (counter rotating engines)		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



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"

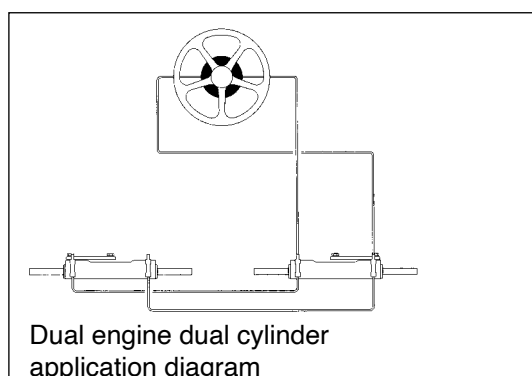
For twin engine applications minimum engine center distance is 650 mm (26")

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-crimped 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-crimped 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-crimped 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 engines

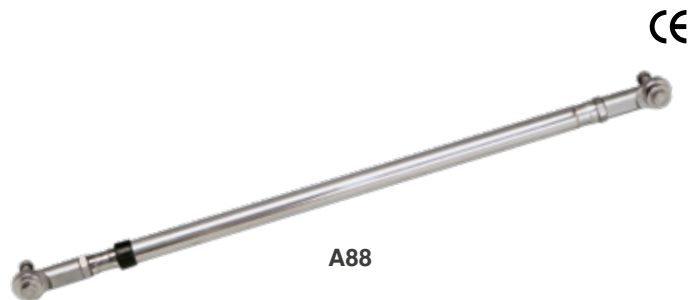
A88

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



A88 application example

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

A92/700	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



A92 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. 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 with brackets 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 different lengths available:
From 26" to 29" center engines distance
From 29" to 34.5" center engines distance



A96 M/Y-29	43496C	From 26" to 29" center engines distance - Mercury® and Yamaha® engines
A96 M/Y-34.5	43497E	From 29" to 34.5" center engines distance - Mercury® and Yamaha® engines
A96 S/H-29	43897X	From 26" to 29" center engines distance - Suzuki® and Honda® engines
A96 S/H-34.5	43898Z	From 29" to 34.5" center engines distance - 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
Honda®	115-135-150 OHC BF
	200 SOHC BF
	225 A6
Yamaha®	F115-150-200-225-250 4T
Suzuki®	DF70-80-90 4T
	DF100-115-140-150-175 4T
	DF200-250-300 DOHC 4T

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

A95 Tie bars with brackets for twin outboard engine/dual UC128-OBF or UC130-SVS cylinders

- 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 different lengths available:
From 26" to 32" center engines distance
From 32" to 37.5" center engines distance



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

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

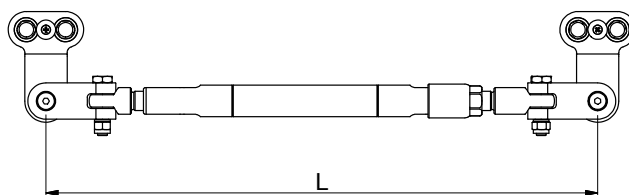
UC130-SVS/2 - 43226W

UC130-SVS/3 - 43227Y

UC130P port cylinders:

UC130P-SVS/1 - 43223P

UC130P-SVS/2 - 43224S



ENGINE CENTER DISTANCE:

660 mm (26") L= 455 mm (18")

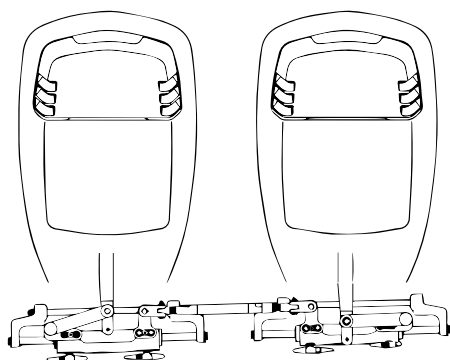
813 mm (32") L= 608 mm (24")

952 mm (37.5") L= 747 mm (29.5")

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.



A95 - application example



UC128 + A95



UC130 + A95

Suzuki® DF100-115-140 4S twin outboard engine/twin UC128-OBF tie bar

A90 - 40138H

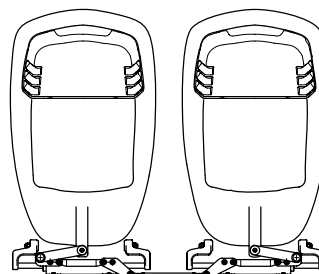
- Suitable for applications with dual UC128-OBF front mount cylinder
- All stainless steel components
- Electropolished stainless steel ball joints
- Allows to tilt the engines independently
- Applicable to engine centers variable from 660 mm (26") to 950 mm (37.4").



A90



UC128 + A90



A90 - application example

A97 - Tie bars with brackets for triple outboard engine/dual UC128OBF or UC130-SVS

Suitable for applications with triple outboard engines and dual cylinders UC128-OBF or UC130-SVS

- Also available in semi-assembled bars and brackets

- 2 different lengths available:

From 26" to 30" center engines distance

From 30" to 35.5" center engines distance

A97 M/Y-30	43513Z	From 26" to 30" center engines distance - Mercury® and Yamaha® engines
A97 M/Y-35.5	43514B	From 30" to 35.5" center engines distance - Mercury® and Yamaha® engines
A97 S/H-30	43905T	From 26" to 30" center engines distance - Suzuki® and Honda® engines
A97 S/H-35.5	43906V	From 30" to 35.5" center engines distance - Suzuki® and Honda® engines

new



A97 S/H-30

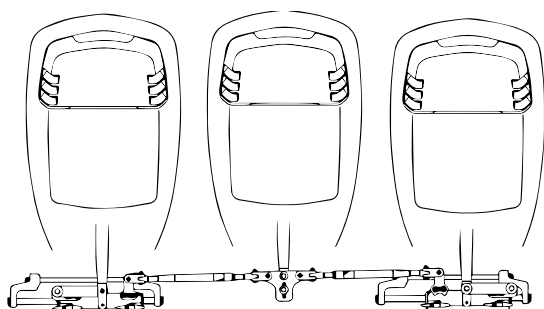


A97 M/Y-30



UC130 + A97

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. Suitable for use with SilverSteer these AISI 304 electropolished and passivated stainless steel tie bars are simple to install and allow for independent trimming of engines with minimal effect on engine alignment.



A97 - application example

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

A98 - Tie bars with brackets for quad outboard engine/dual UC128OBF or UC130-SVS

new

Suitable for applications with quad outboard engines and dual cylinders UC128-OBF or UC130-SVS

- Also available in semi-assembled bars and brackets

From 26" to 32" center engines distance



A98 S/H



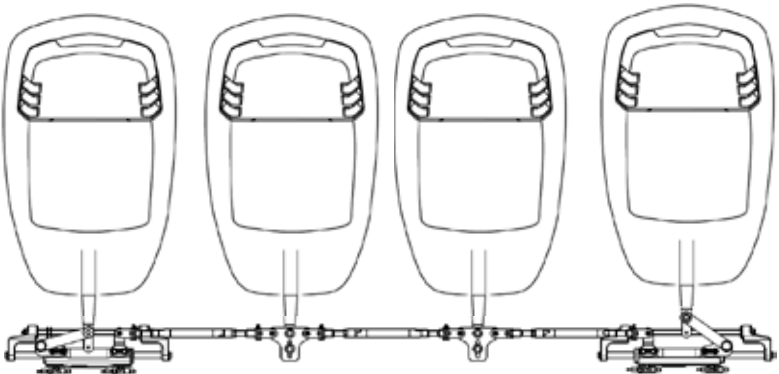
A98 M/Y



UC128 + A98

A98 M/Y	43542G	From 26" to 32" center engines distance - Mercury® and Yamaha® engines
A98 S/H	43909B	From 26" to 32" center engines distance - 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. Suitable for use with SilverSteer these AISI 304 electropolished and passivated stainless steel tie bars are simple to install and allow for independent trimming of engines with minimal effect on engine alignment.



A98 - application example

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

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



new

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



new

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)



new

CONNECTING BAR ASSEMBLY - 43920N

Connecting bar assembly compatible with:

A98 M/Y (central tie bar)

A98 S/H (central tie bar)



new

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	



new

CYLINDER SIDE BRACKET FOR TIE BARS - SUZUKI® AND HONDA® ENGINES - 43913S

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	



new

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



new

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	



new

MERCURY® BRACKET KIT - 43911M

Mercury® bracket kit compatible with:

A97 M/Y-30	A98 M/Y
A97 M/Y-35.5	



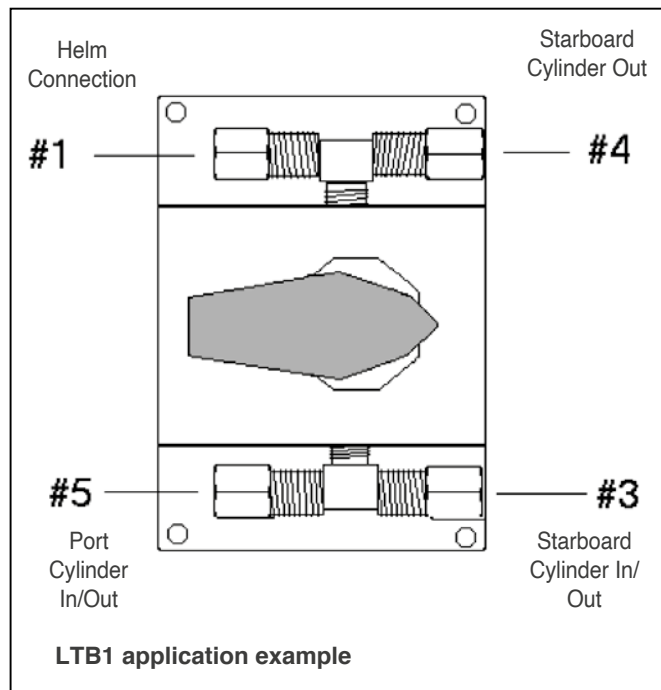
new

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

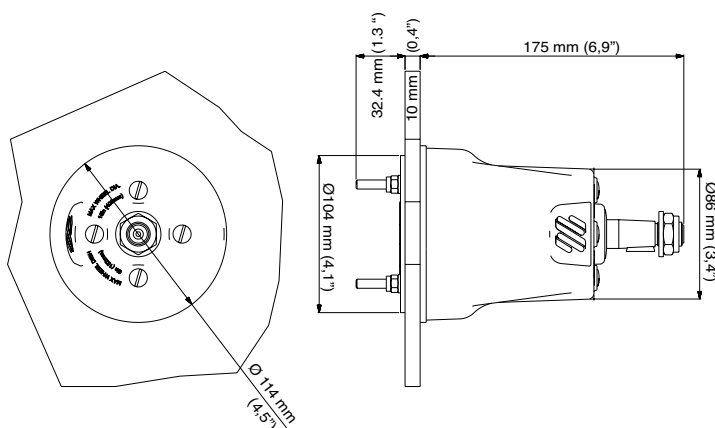


UH

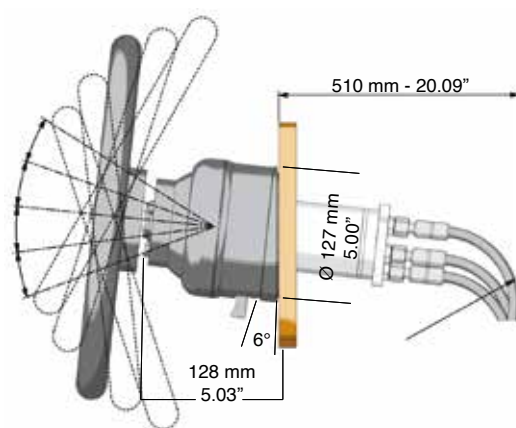
MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	APPLICATION	No. OF STATIONS	MAXIMUM WHEEL DIA.
UH32-F	42091U	front mount	32cc - 1.95 cu.in	single cylinder	1	406 mm - 16"
UH32-T	42092W	with X66 tilt	32cc - 1.95 cu.in	single cylinder	1	406 mm - 16"
UH40-F	42093Y	front mount	40cc - 2.44 cu.in	dual cylinder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

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



X66



MDF-90

Masterdrive™ Power Assisted Outboard Steering System

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

- **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.



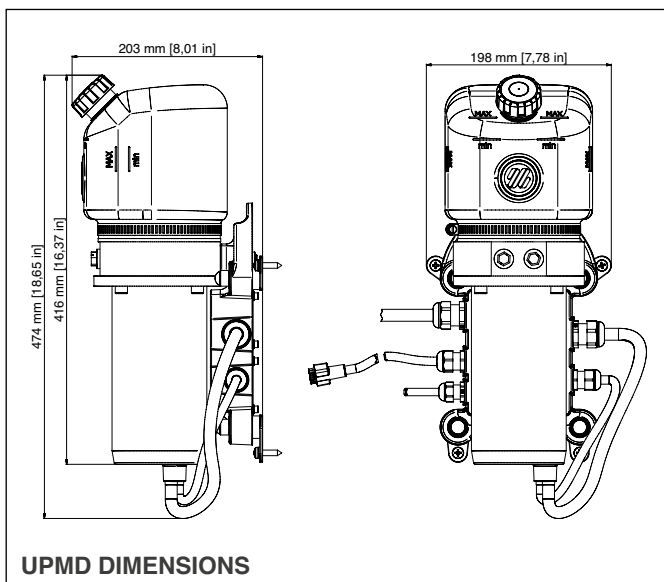
K81



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)

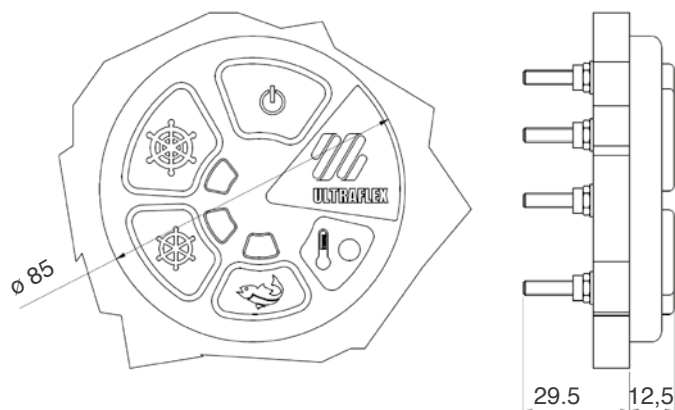


UPMD

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 DIMENSIONS



UCMD

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



KIT MD

Masterdrive™ Power Assisted Outboard Steering System

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-crimped 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



KIT MD 2

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

To order separately:

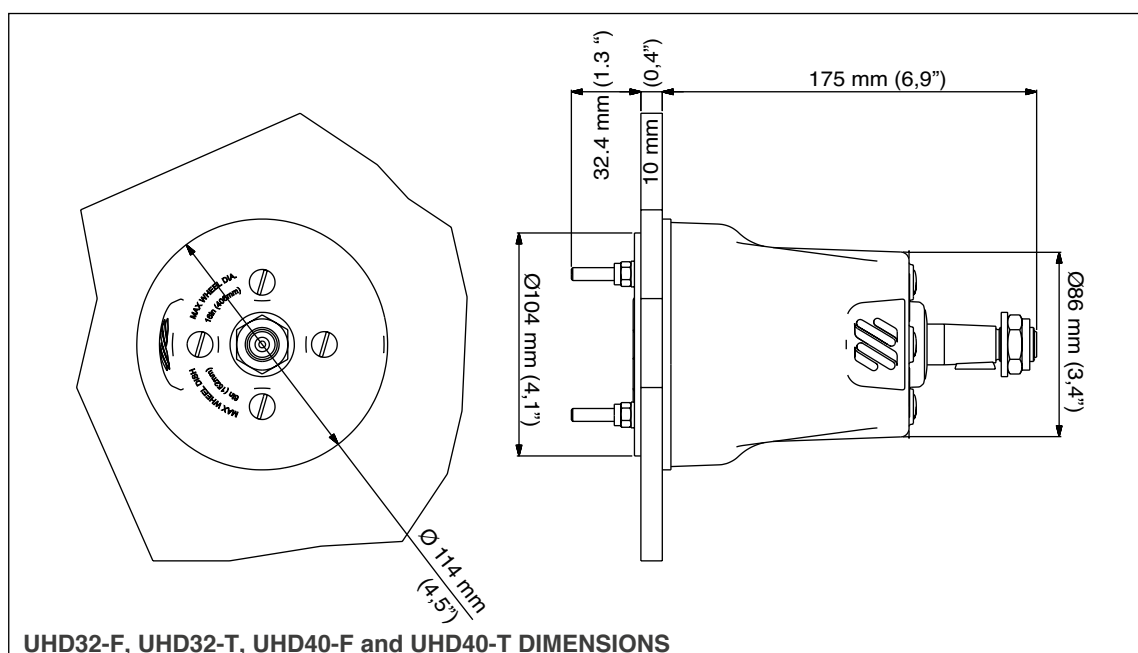
1x Kit OB-SVS with length equal to the distance between the main helm pump and the secondary helm pump

2x Kits OB-SVS: select the desired length

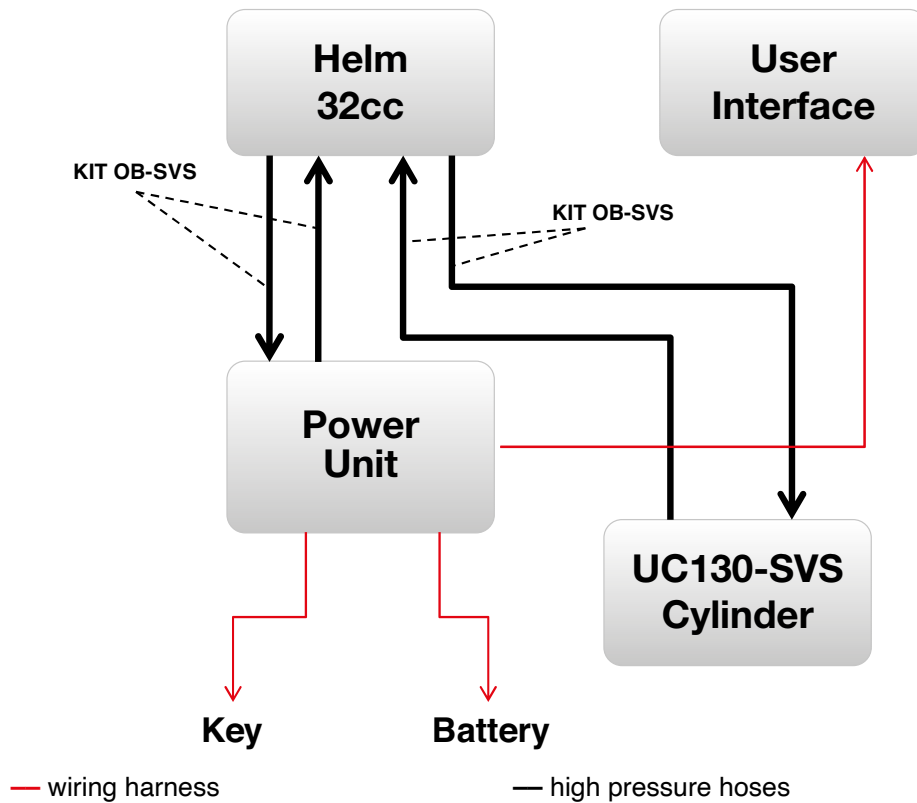
For dual cylinder applications, order:

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

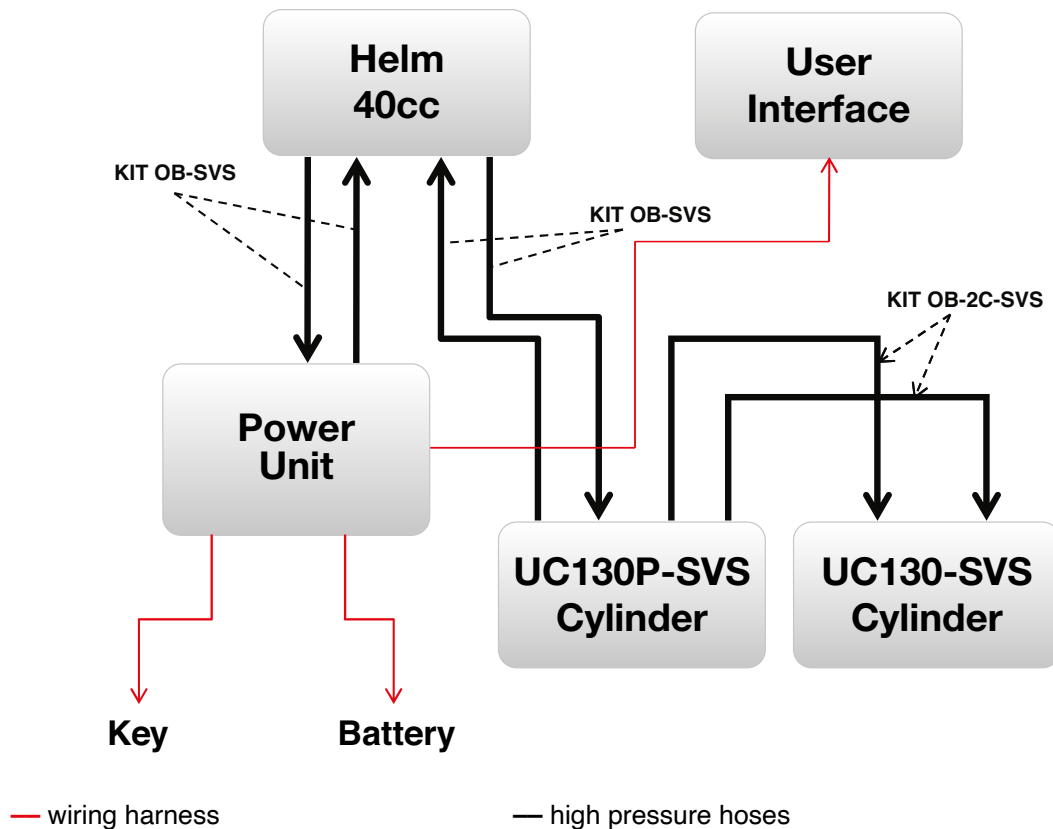
The tilt mechanism **X66** – 40613M and the wheel are to be ordered separately.



Single cylinder single station application

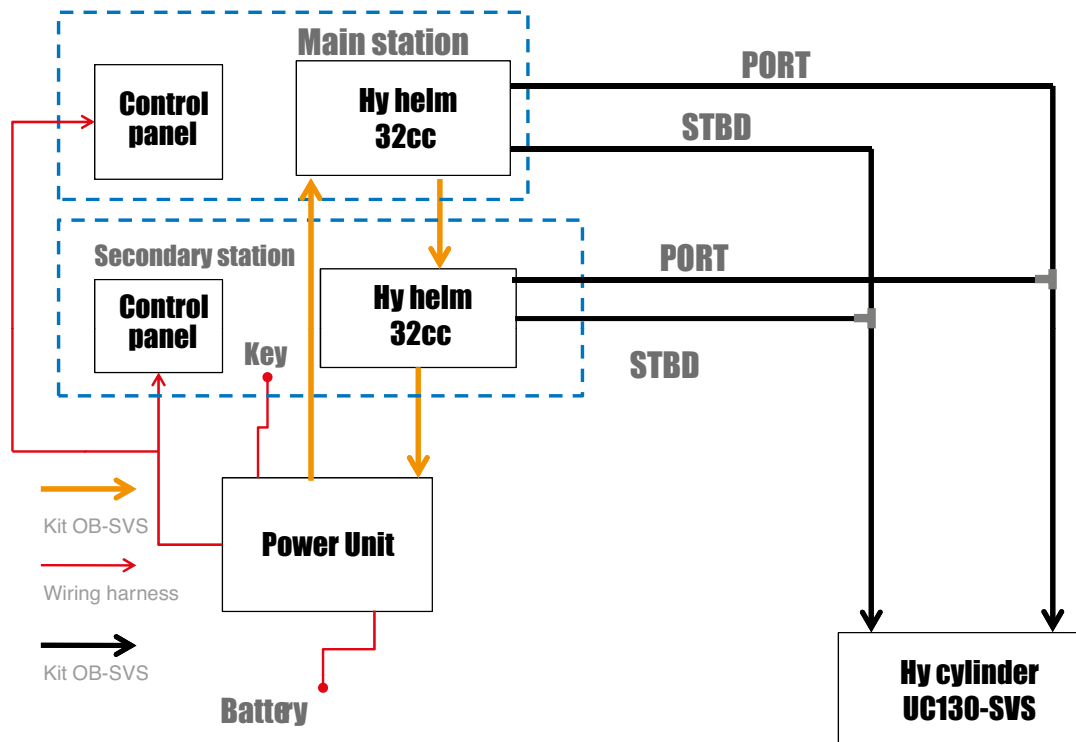


Dual cylinder single station application

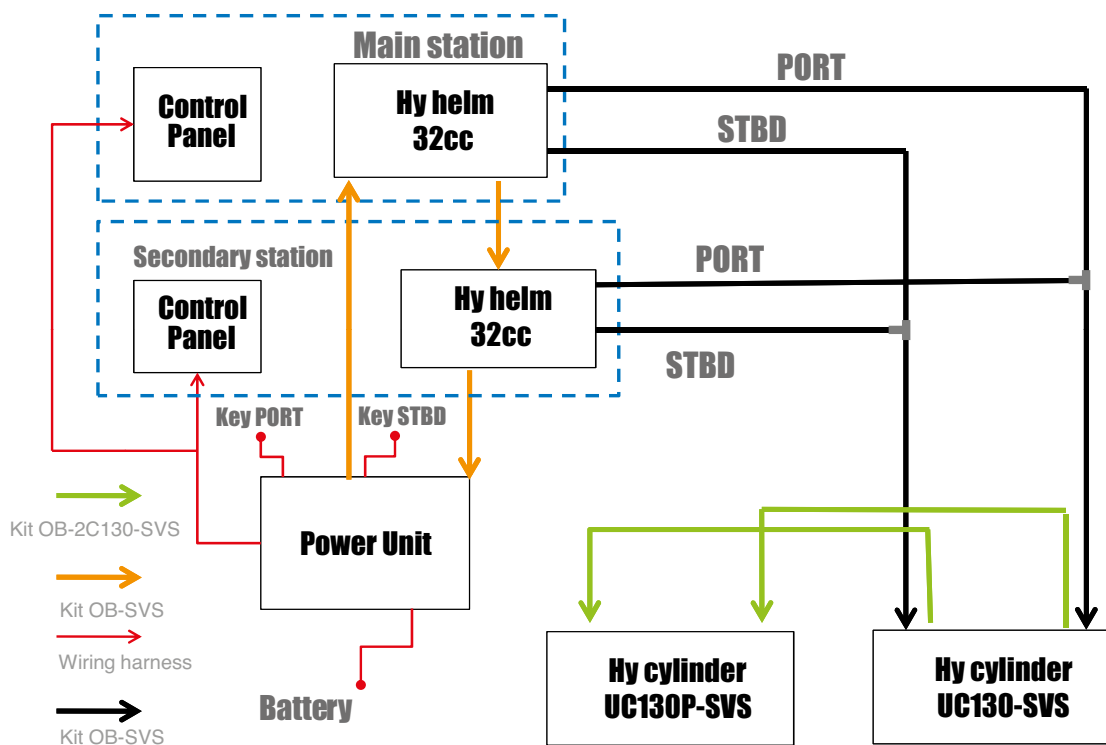


Masterdrive™ Power Assisted Outboard Steering System

Single cylinder dual station application



Dual cylinder dual station application



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

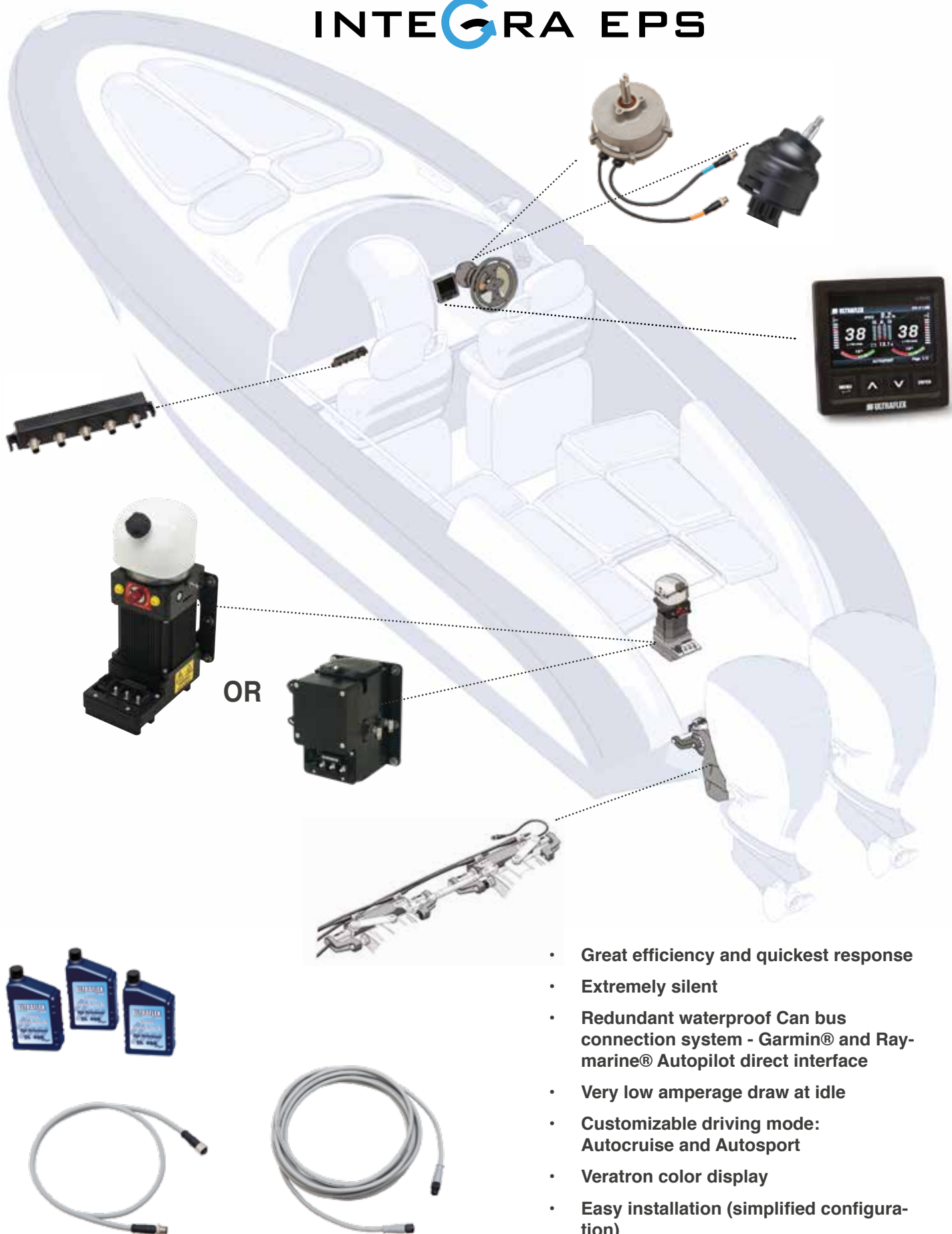
APPLICATION	COMPONENTS	PART NUMBER	Q.TY
Single engine single cylinder	KIT MD32-F packaged MasterDrive™ kit includes 32cc front mount helm UC130/1-SVS SilverSteer™ cylinder (or UC130/2-SVS) KIT OB-SVS hydraulic hose kit Steering wheel	42098 J 43225 U (43226 W) specify length wheel selection	1 1 1 1
	KIT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

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

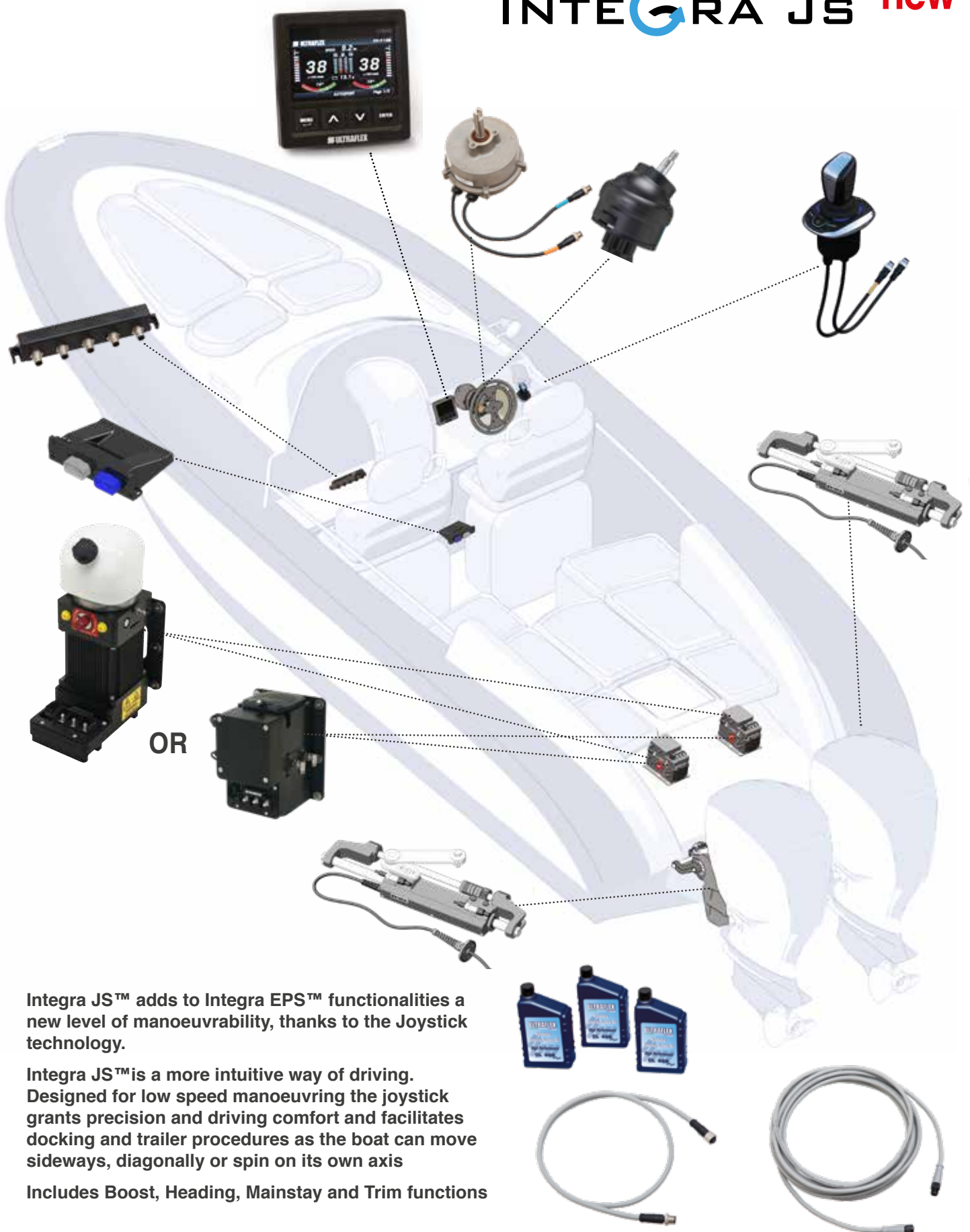
Integra EPS™

Outboard electronic power steering systems

INTEGRA EPS



INTEGRA JS **new**



- **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, Mainstay 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 installations	Single, dual, triple or quad	
N. of engines per motor pump unit	up to 4	up to 2
Autopilot direct interface	Garmin® and Raymarine®	
Customizable Driving mode	Yes, Autocruise and Autosport	
Customizable wheel effort	Yes	
Normative conformities	ISO 25197, ISO 10592, ABYC P21, P24, P27	
Ignition Protected SAE J1171	Yes	

System components

System components	Integra EPS™	Integra JS™
UIH - Tilt mount electronic helm	✓	✓
UJS - Integra JS™ joystick	-	✓
UGW - Integra JS™ Gateway	-	✓
X52 - Adjustable steering wheel tilt mechanism	✓	✓
UID - Veratron-VDO color display	✓	✓
BCM - Body Control Module – CAN Bus network module	✓	✓
UIP - High Power electro-hydraulic power unit	✓	✓
UIPC - Compact electro-hydraulic power unit	✓	✓
UC120E - Heavy duty hydraulic cylinder with integrated sensor	✓	✓
UC120P-OBF - Heavy duty hydraulic cylinder port side for multiple engine applications	✓	✓
Tie bar - According to the specific application	✓	✓
KIT OB-SVS - Hydraulic kevlar hoses with pre crimped fittings	✓	✓
CAN Bus wires - Can Bus power wires	✓	✓
KBD3 - Purging kit with twin spiralled hoses with connectors (optional)	✓	✓
OL460 - 3 litres 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**
- **Very low amperage**
- Veratron® colour display
- **Customizable driving mode**: the user can choose between Autocruise and Autosport driving mode
- **Autopilot direct interface with Garmin® Reactor™ 40 Steer-by-wire and Raymarine® EV - 2 SBW**
- **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, **Mainstay** function, to maintain boat position via GPS connection and the **Trim** function.



Integra™

Outboard electronic power steering systems

UIH1 - Electronic helm

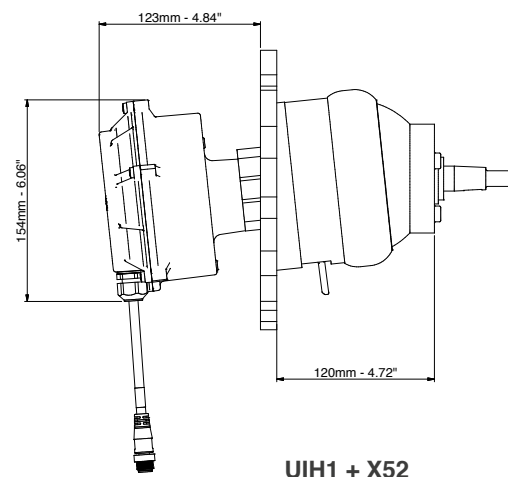
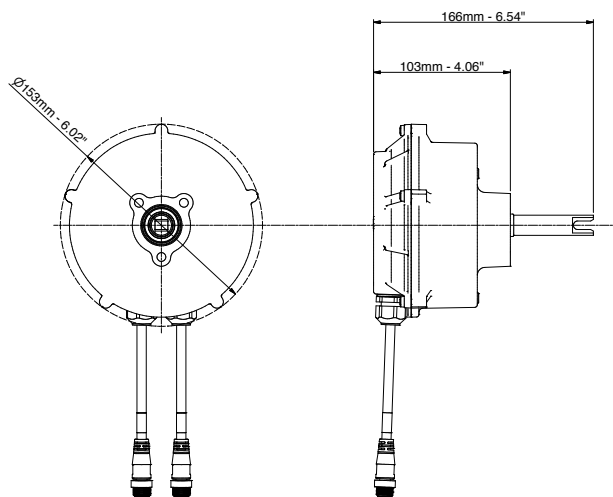
- Electronic steering helm tilt mount (**X52** - 39250U)
- Easy to install, no oil or hydraulic hoses

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: Mainstay function to maintain boat position via GPS connection
- CAN Bus communication by means of 2 DeviceNet® connectors

UJS	43922T	Integra JS™ joystick
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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.

new



UGW-S

UGW-S	43934A	Suzuki® Gateway
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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
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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

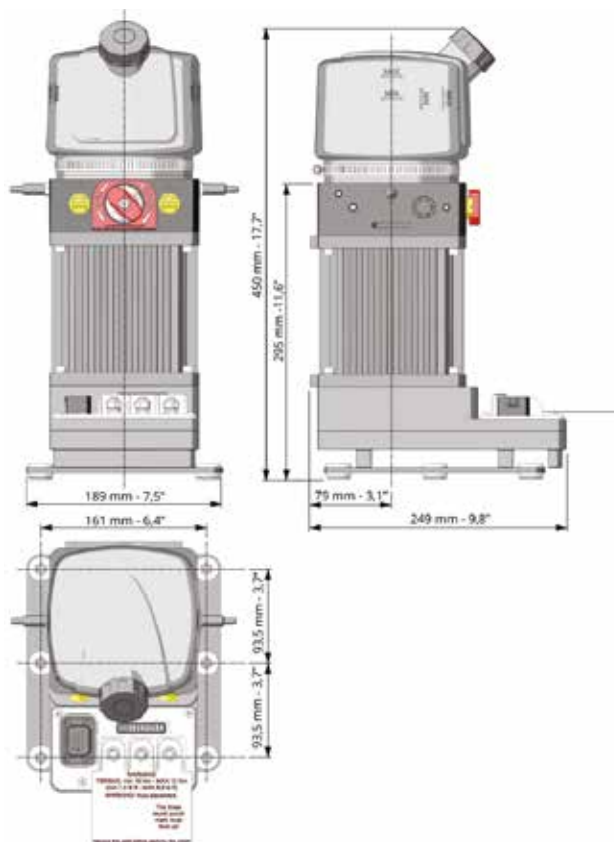
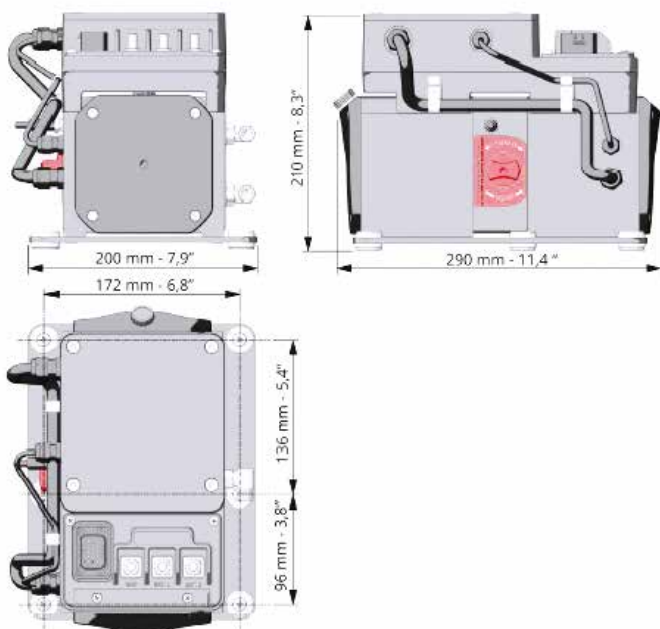


new

UIPC



UIP



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

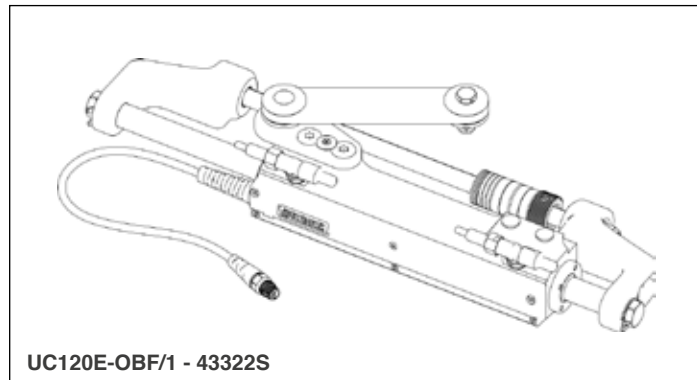
UC120 Cylinders



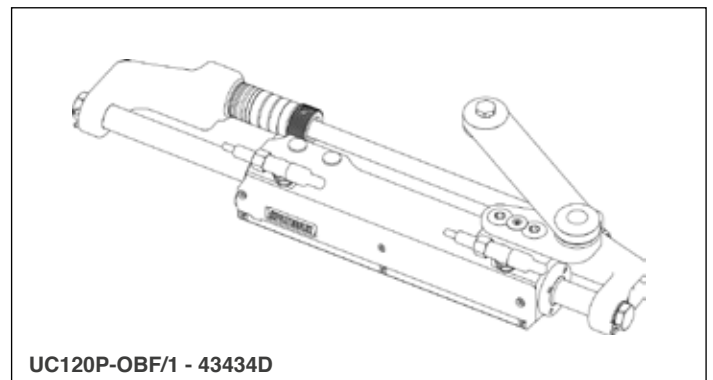
UC120E



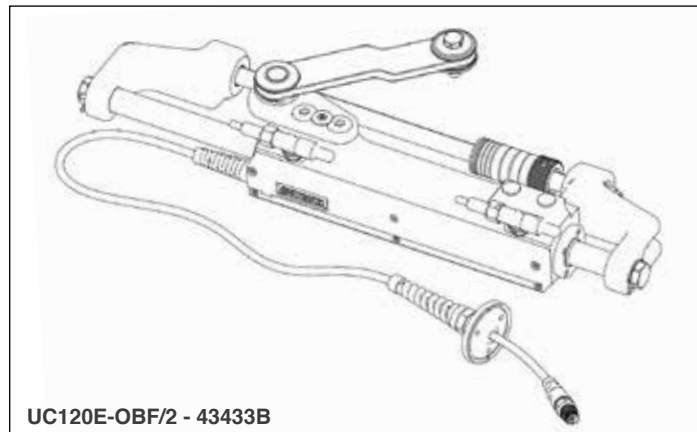
UC120P-OBF



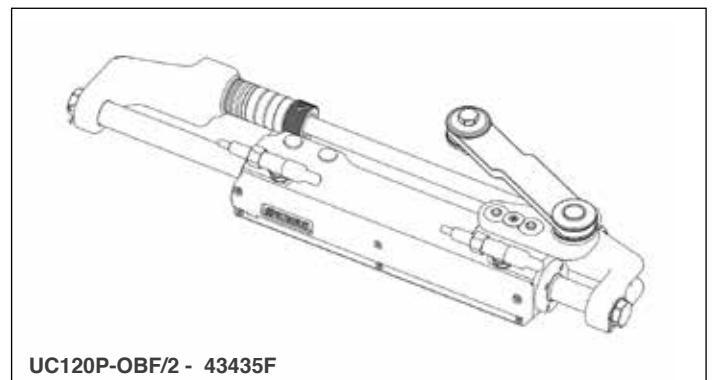
UC120E-OBF/1 - 43322S



UC120P-OBF/1 - 43434D



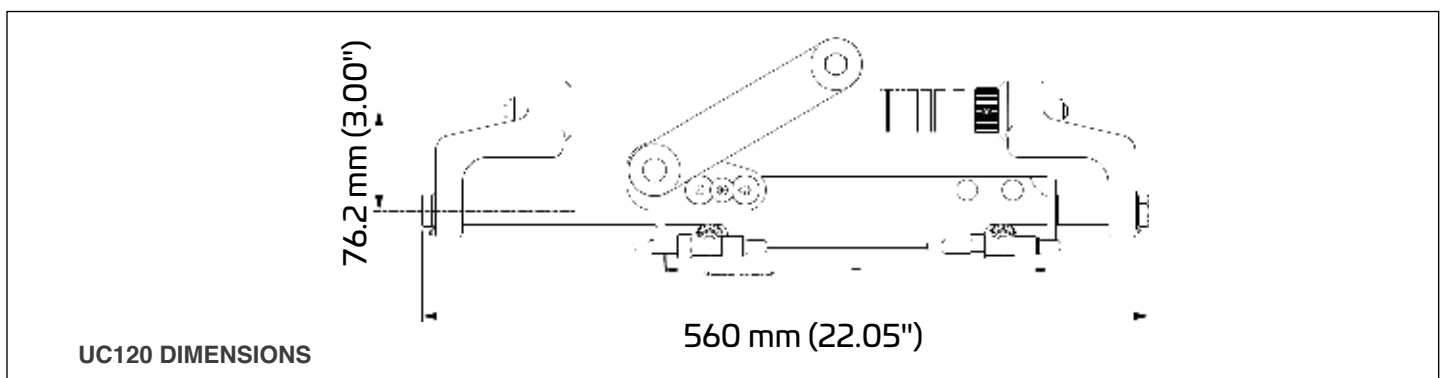
UC120E-OBF/2 - 43433B



UC120P-OBF/2 - 43435F

- **UC120E:** heavy-duty cylinder with integrated sensor
- **UC120P-OBF:** heavy-duty port cylinder for two, three or four outboard engine applications

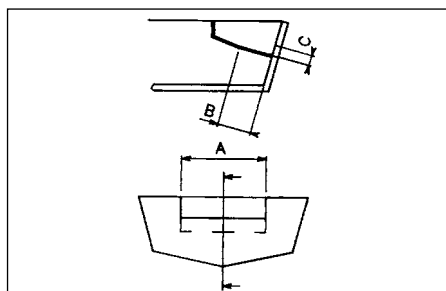
Volume	120 cc - 7.5 cu. in
Output force	800 kg - 1764 lbs
Internal diameter	36.5 mm - 1.44"
Stroke	184 mm - 7.24"
Oil	OL460



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® Mariner®	115-125-150 EFI 2S	1990-2007	UC120E-OBFF/1	43322S
	225-250 EFI 2S	2000-2007	UC120E-OBFF/1	43322S
	135-150-175 OPTIMAX	1999-2018	UC120E-OBFF/1	43322S
	200-225-250 OPTIMAX	1999-2018	UC120E-OBFF/1	43322S
	RACING 300 OPTIMAX	1999-2011	UC120E-OBFF/1	43322S
	250 SALTWATER EFI 4S	2007-2011	UC120E-OBFF/1	43322S
	135-150-175-200 VERADO L4	2004-2012	UC120E-OBFF/1	43322S
	FOURSTROKE 175-200 V6	2018-to date	UC120E-OBFF/1	43322S
	FOURSTROKE 225-300 V8	2018-to date	UC120E-OBFF/1	43322S
Evinrude®	E115-E130-E135 2S V4	1995-to date	UC120E-OBFF/2	43433B
	E150-E175-E200-E225-E250-E300 2S V6	1995-to date	UC120E-OBFF/2	43433B
Yamaha®	150F-200F-250G 2S	1990-2008	UC120E-OBFF/2	43433B
	150 HPDI VMAX 2S	1996-2007	UC120E-OBFF/2	43433B
	175-200-225-250-300 HPDI VMAX 2S	2000-2008	UC120E-OBFF/2	43433B
	F115-F150 EFI 4S	2000-2008	UC120E-OBFF/1	43322S
	F200-F225-F250 4S	1999-2007	UC120E-OBFF/2	43433B
	F115-F150-F175-F200 L4	2002-2007	UC120E-OBFF/1	43322S
	F200-F225-F250-F300 V6 4S	2004-to date	UC120E-OBFF/2	43433B
	F350 4S V8	2006-to date	UC120E-OBFF/1	43322S
Honda®	BF135-BF150 4S	2005-to date	UC120E-OBFF/1	43322S
	BF150 V-TEC 4S	2008-to date	UC120E-OBFF/1	43322S
	BF175-BF200-BF225- BF250 4S	2001-to date	UC120E-OBFF/1	43322S
Suzuki®	DF100-115-140 4S	2008-to date	UC120E-OBFF/1	43322S
	DF150-175-DF200 L4 4S	2006-to date	UC120E-OBFF/1	43322S
	DF200-DF225-DF250-DF300-DF350 V6 4S	2004-to date	UC120E-OBFF/2	43433B
Tohatsu®	115-120-140 2S	2004-to date	UC120E-OBFF/2	43433B
	70-90-115 TLDI 4S	2004-to date	UC120E-OBFF/1	43322S
	BFT 115-150-200-225-250 4S	2014-to date	UC120E-OBFF/1	43322S
	BFT60-75-90	2015-to date	UC120E-OBFF/1	43322S
Selva®	80 PORTOFINO/TIGERSHARK 2S	1995-2008	UC120E-OBFF/1	43322S
	150 WHITE SHARK 2S	2001-2007	UC120E-OBFF/2	43433B
	100EFI MARLIN - 115 EFI NARWHAL	2000-to date	UC120E-OBFF/1	43322S
	225 BEAKED WHALE 4S	2019-to date	UC120E-OBFF/2	43433B
	150EFI KILLER WHALE 4S - 200 SEI WHALE 4S	2000-to date	UC120E-OBFF/1	43322S
Johnson®	BJ90-115-140 4S	2001-2007	UC120E-OBFF/1	43322S
	J90-115 V4 2S	1995-2007	UC120E-OBFF/2	43433B
	J150-175 V6 2S	1995-2007	UC120E-OBFF/2	43433B
	J200-225 V6 4S	2004-2007	UC120E-OBFF/2	43433B
OXE®	125-150-175-200HP DIESEL	2018-to date	UC120E-OBFF/1	43322S
	300 HP DIESEL	2020-to date	UC120E-OBFF/1	43322S
COX®	300 HP	2020-to date	UC120E-OBFF/2	43433B

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

Tie bars suitable with Integra electronic power steering systems only

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

new



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

A96-120 tie bars are also available in semi-assemblies: bars without brackets and clamps.

A95-120 - Tie bar for twin outboard engine/dual cylinders UC120E and UC120P-OBF

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

new



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

A95-120 tie bars are also available in semi-assemblies: bars without brackets and clamps.

Integra™ Tie bars with brackets

A97-120 - Tie bar for triple outboard engines/two cylinders UC120E and UC120P-OBF

Tie bars suitable with Integra electronic power steering systems only

new

Two different lengths available:

From 26" to 30" center engines distance

From 30" to 35.5" center engines distance



A97 S/H-120-30



A97 M/Y-120-30

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

A97-120 tie bars are also available in semi-assemblies: bars without brackets and clamps.

A98-120 - Tie bar for quad outboard engines/two cylinders UC120E and UC120P-OBF

From 26" to 32" center engines distance

new



A98 S/H-120



A98 M/Y-120

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

A98-120 tie bars are also available in semi-assemblies: bars without brackets and clamps.

Integra™ Tie bars - Connecting bar assemblies without brackets

CONNECTING BAR ASSEMBLY - 43913C

Connecting bar assembly compatible with:

A96 M/Y-120-29

A95 M/Y-120-32

A96 S/H-120-29

A95 S/H-120-32



new

CONNECTING BAR ASSEMBLY - 43919E

Connecting bar assembly compatible with:

A96 M/Y-120-34.5

A95 M/Y-120-37.5

A97 M/Y-120-35.5

A96 S/H-120-34.5

A95 S/H-120-37.5

A97 S/H-120-35.5



new

CONNECTING BAR ASSEMBLY - 43921R

Connecting bar assembly compatible with:

A97 M/Y-120-30

A98 M/Y-120 (external tie bar)

A97 S/H-120-30

A98 S/H-120 (external tie bar)



new

CONNECTING BAR ASSEMBLY - 43920N

Connecting bar assembly compatible with:

A98 M/Y-120 (central tie bar)

A98 S/H-120 (central tie bar)



new

Integra™ Brackets for tie bars

CYLINDER SIDE BRACKET FOR TIE BARS ON MERCURY® AND YAMAHA® ENGINES - 43914U

Cylinder side bracket suitable for the following tie bars:

A96 M/Y-120-29	A95 M/Y-120-32	A97 M/Y-120-30	A98 M/Y-120
A96 M/Y-120-34.5	A95 M/Y-120-37.5	A97 M/Y-120-35.5	



new

CYLINDER SIDE BRACKET FOR TIE BARS ON SUZUKI® AND HONDA® ENGINES - 43915W

Cylinder side bracket suitable for the following tie bars:

A96 S/H-120-29	A95 S/H-120-32	A97 S/H-120-30	A98 S/H-120
A96 S/H-120-34.5	A95 S/H-120-37.5	A97 S/H-120-35.5	



new

ENGINE SIDE BRACKET FOR A96MY-120 TIE BARS ON MERCURY® AND YAMAHA® ENGINES - 43916Y

Engine side bracket suitable for the following tie bar:

A96 M/Y-120-29
A96 M/Y-120-34.5



new

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

Engine side bracket suitable for the following tie bars:

A96 S/H-120-29	A97 M/Y-120-30	A98 M/Y-120
A96 S/H-120-34.5	A97 M/Y-120-35.5	A98 S/H-120
	A97 S/H-120-30	
	A97 S/H-120-35.5	



new

MERCURY® BRACKET KIT - 43911M

Mercury® bracket kit suitable for the following tie bars:

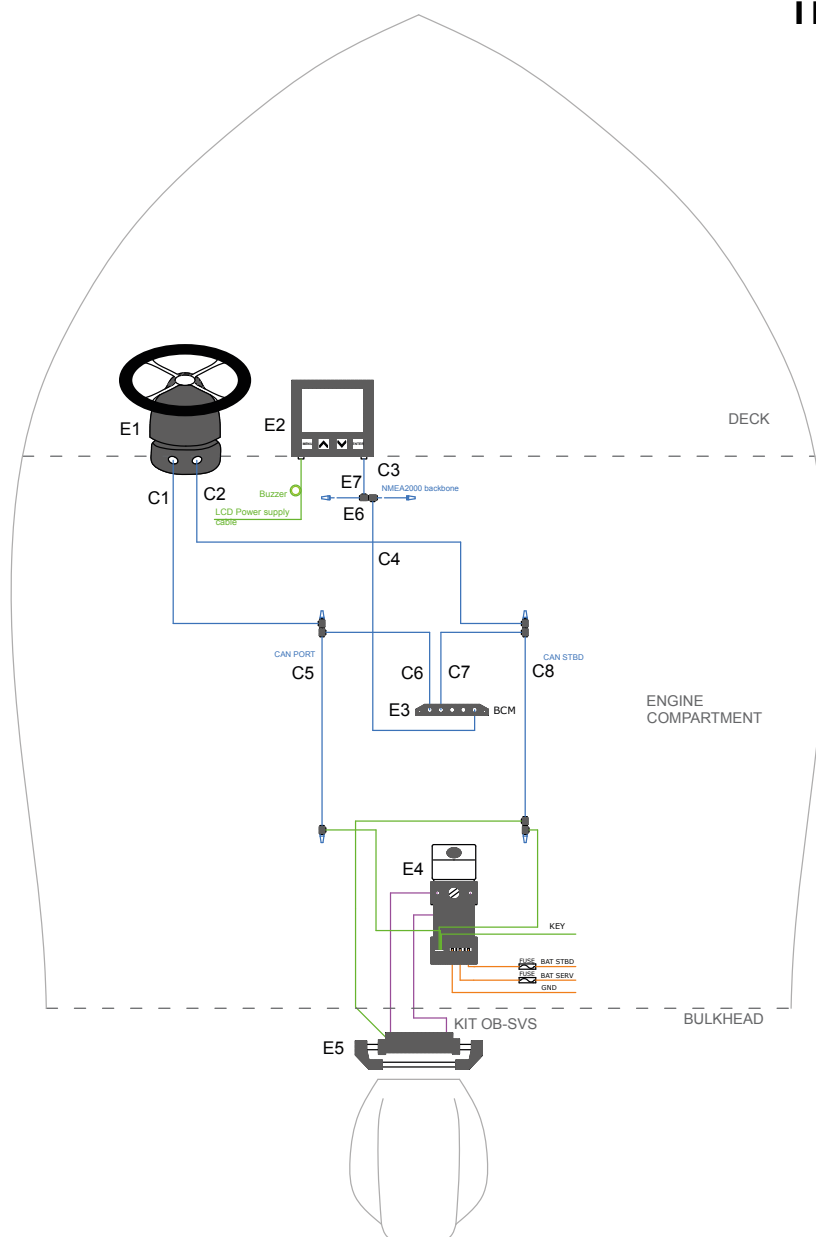
A97 M/Y-120-30	A98 M/Y-120
A97 M/Y-120-35.5	



new

Single engine, single cylinder

INTEGRA EPS



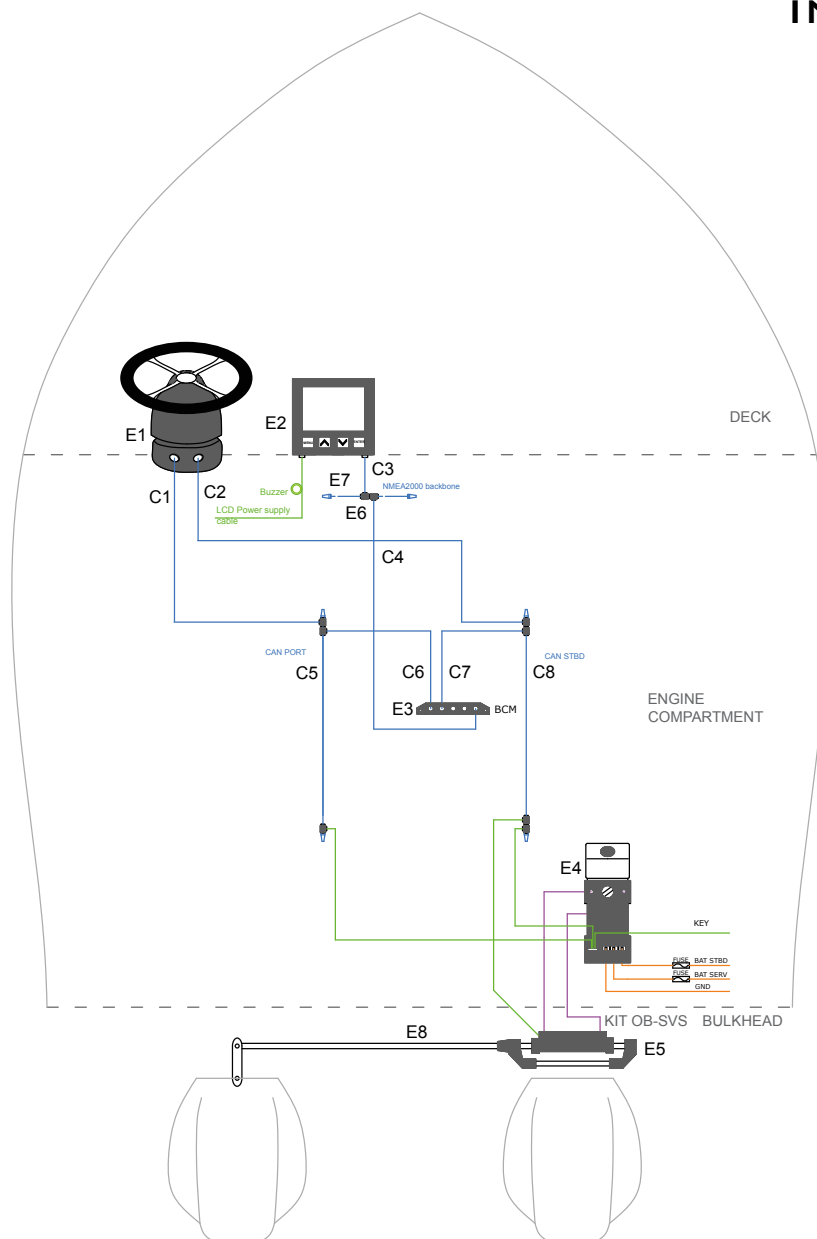
Main components

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 Cylinder with sensor included - 43322S	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

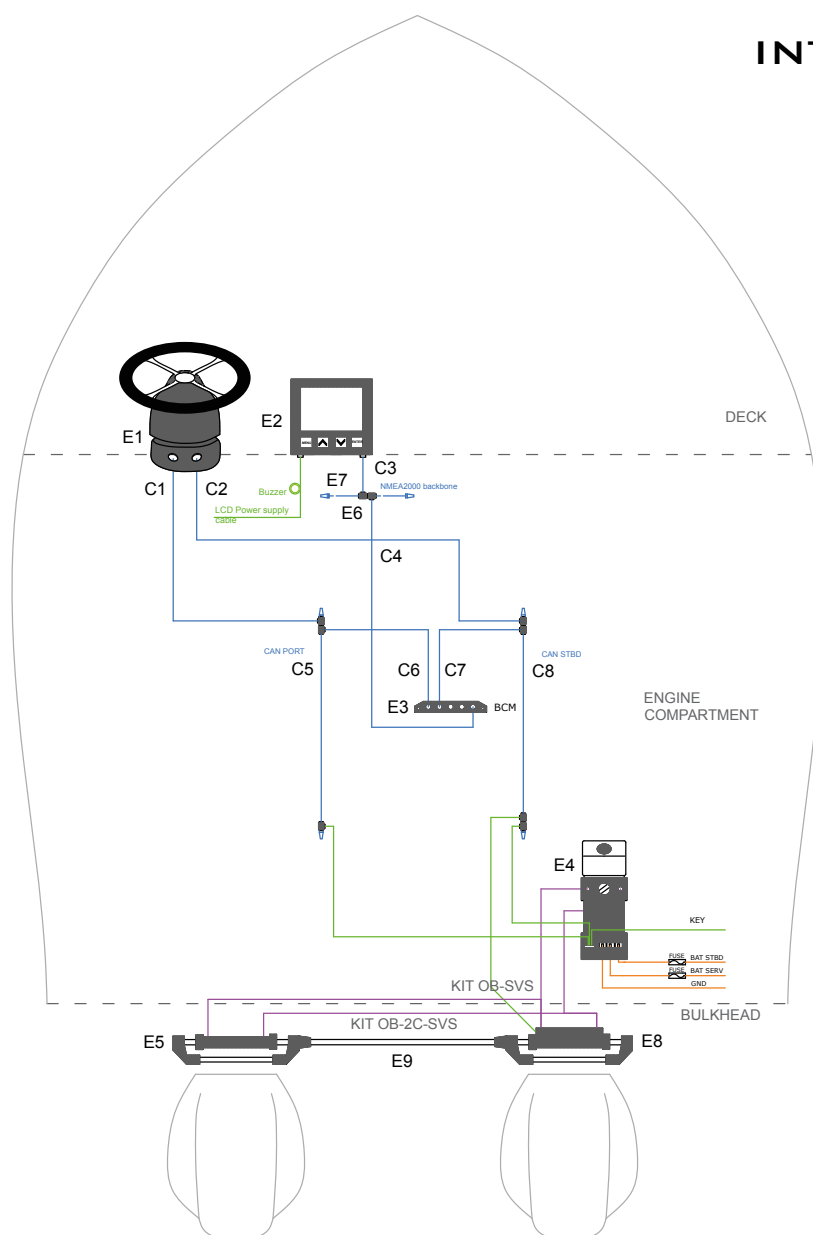


Main components

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 Cylinder with sensor included - 43322S	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

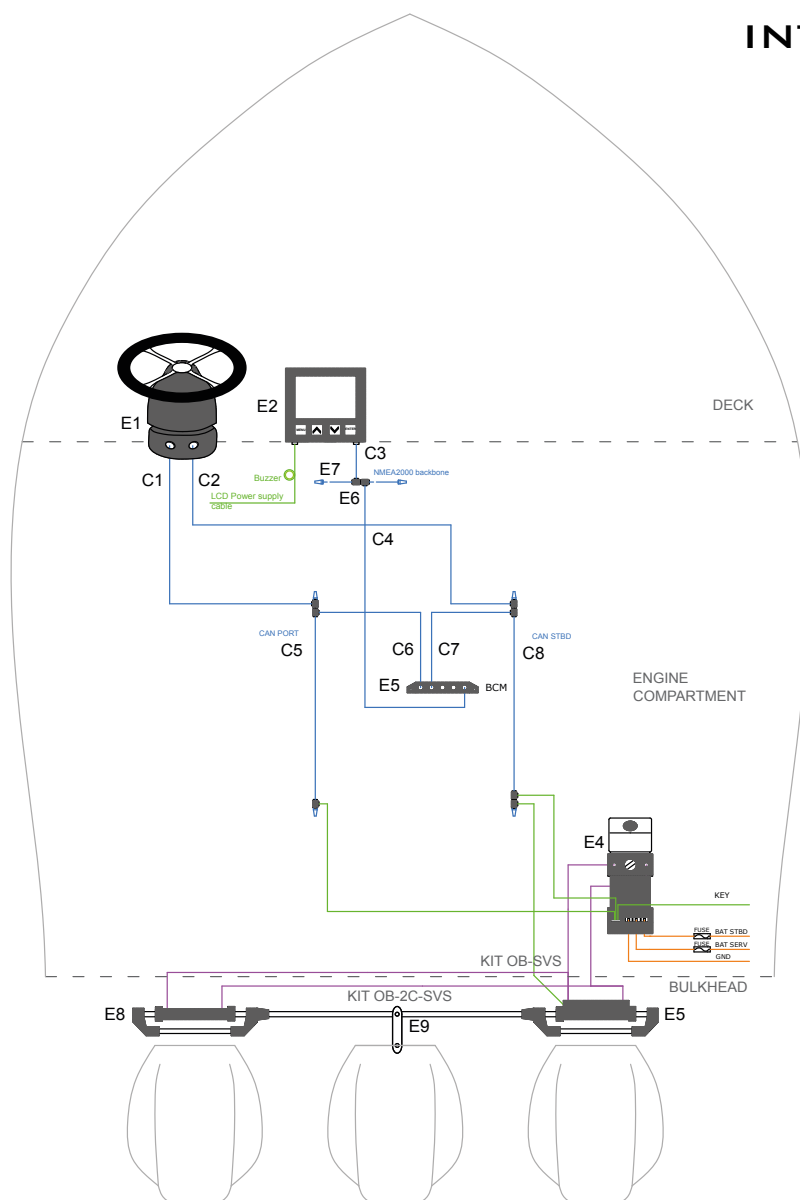
Dual engine, dual cylinder

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-OBF Port cylinder - 43434D	1
E6	CAN bus - Tee connection - 43578E	9
E7	CAN bus - Terminator pair - 43576A	3
E8	UC120E Cylinder with sensor included - 43322S	1
E9	A95-120 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

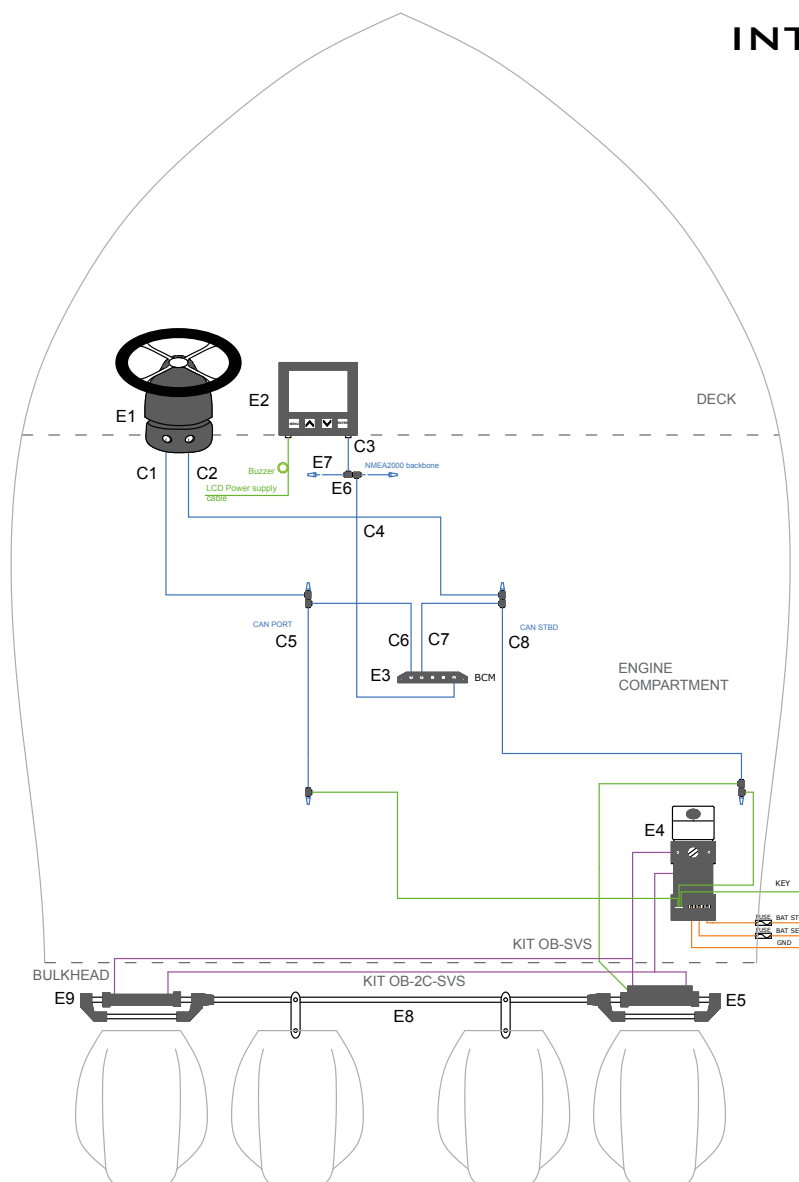


Main components

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 Cylinder with sensor included - 43322S	1
E6	CAN bus - Tee connection - 43578E	9
E7	CAN bus - Terminator pair - 43576A	3
E8	UC120P-OBF Port cylinder 43434D	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

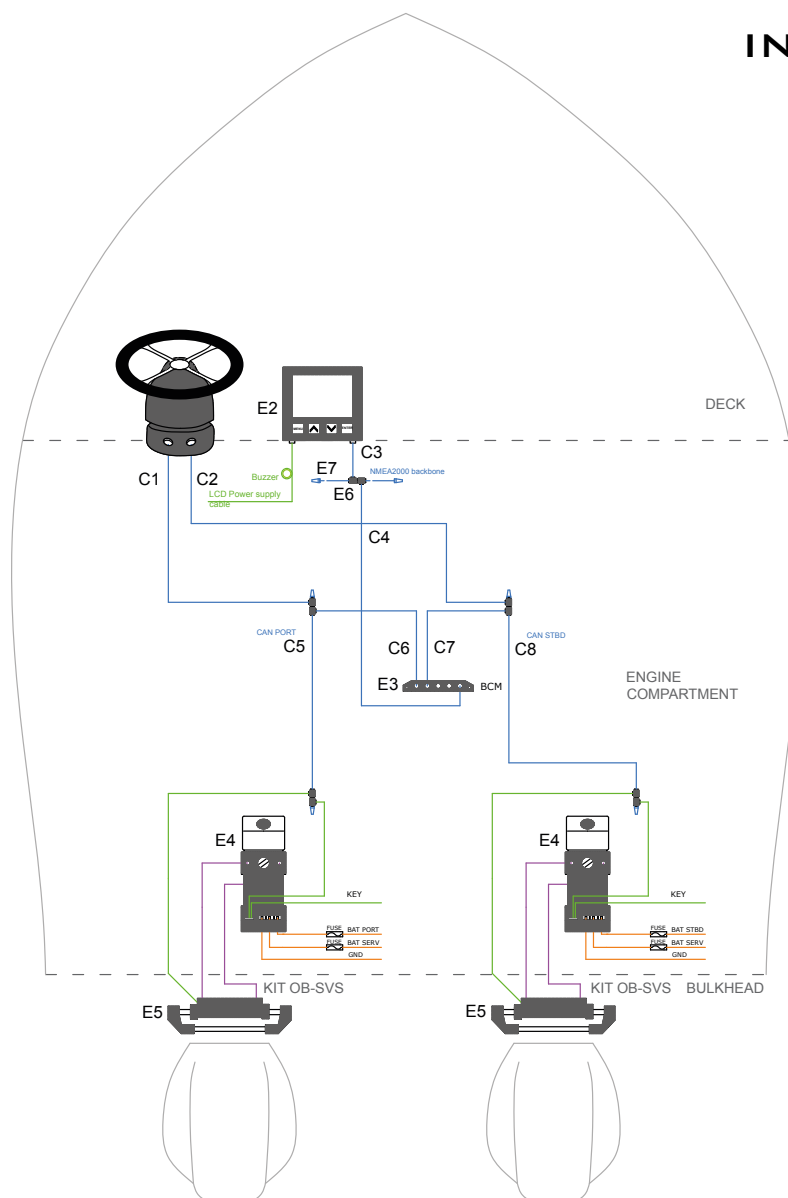
Quad engine, dual cylinder

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 Cylinder with sensor included - 43322S	1
E6	CAN bus - Tee connection - 43578E	9
E7	CAN bus - Terminator pair - 43576A	3
E8	UC120P-OBF Port cylinder - 43434D	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

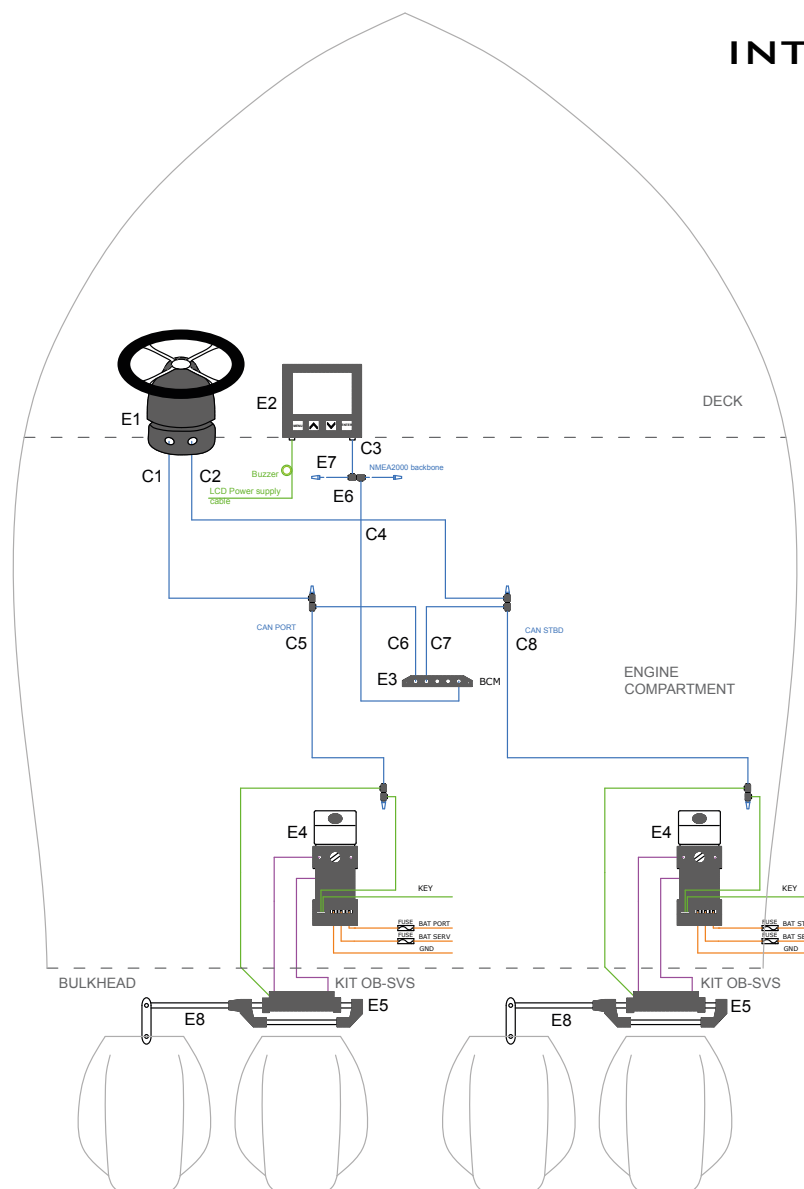


Main components

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 Cylinder with sensor included - 43322S	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

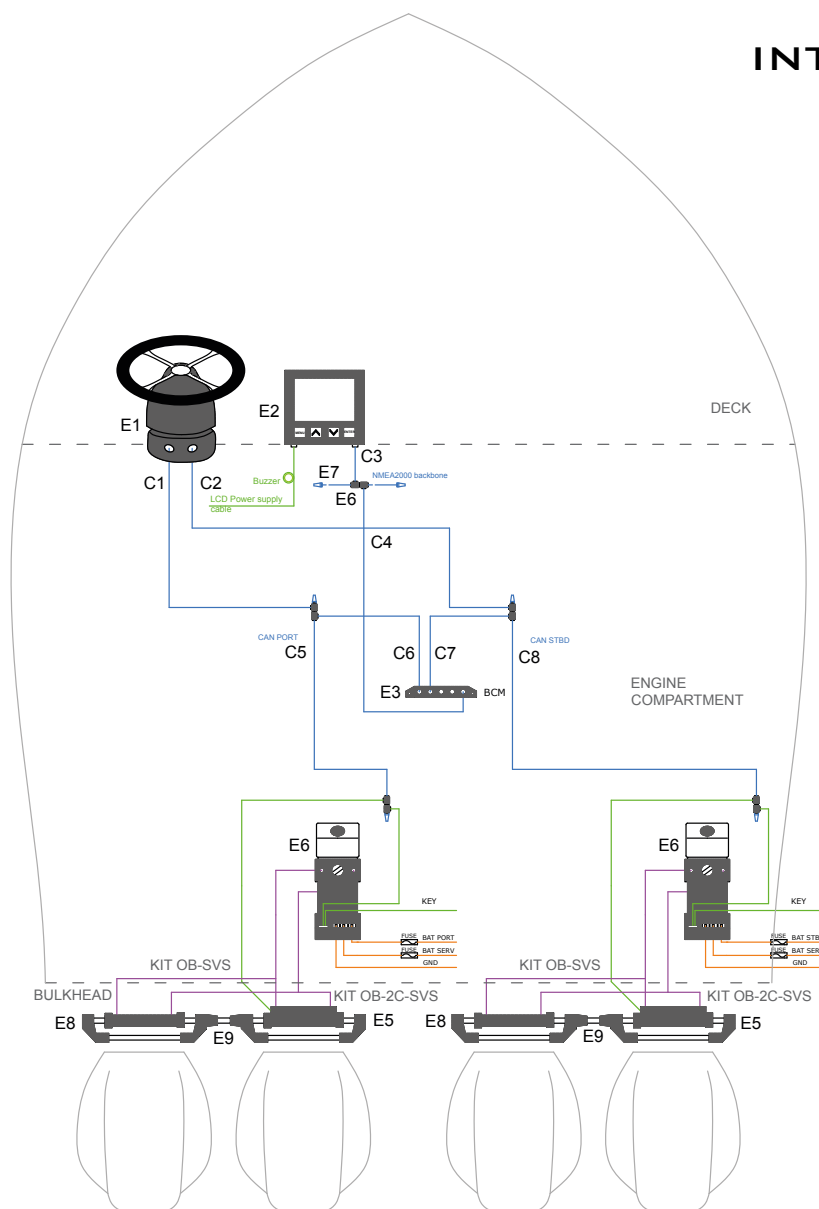
Quad engine, dual cylinder, dual power unit

INTEGRA 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	2
E5	UC120E Cylinder with sensor included - 43322S	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

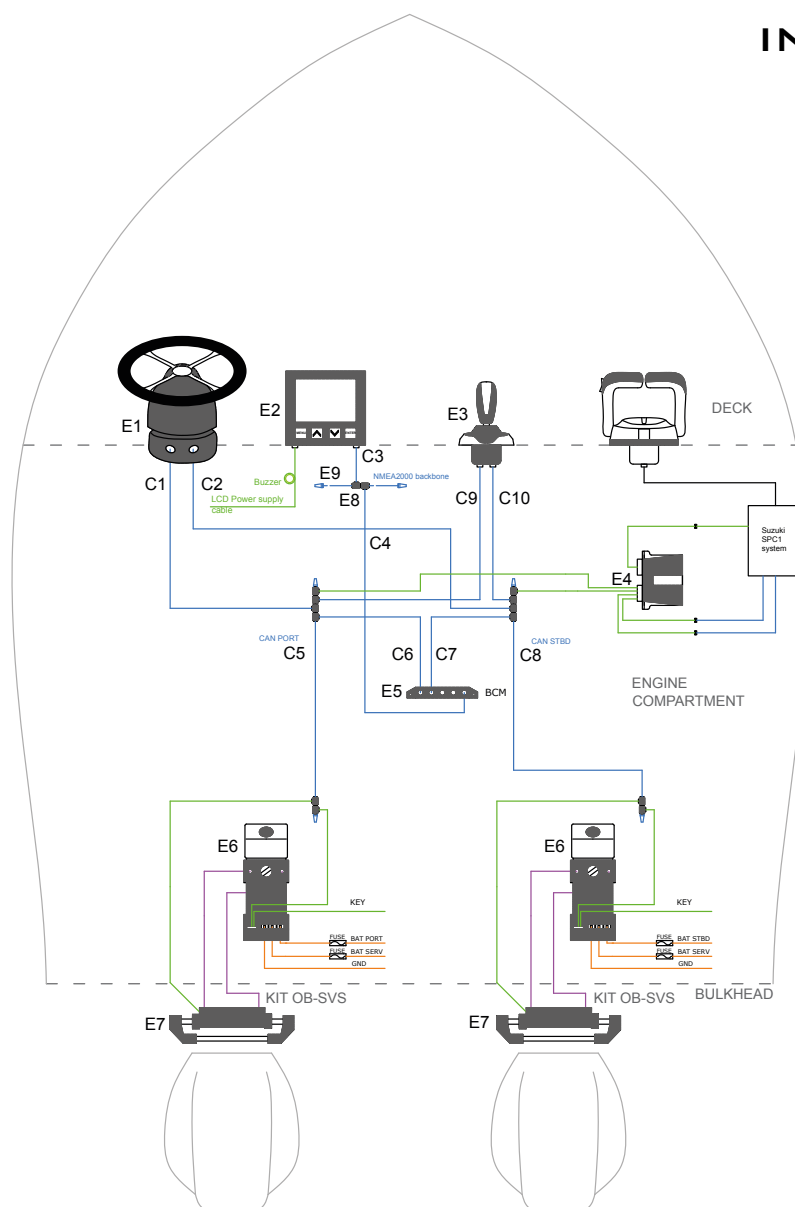


Main components

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 Cylinder with sensor included - 43322S	2
E6	CAN bus - Tee connection - 43578E	14
E7	CAN bus - Terminator pair - 43576A	3
E8	UC120P-OB Port cylinder 43434D	2
E9	A95-120 tie bar	2
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

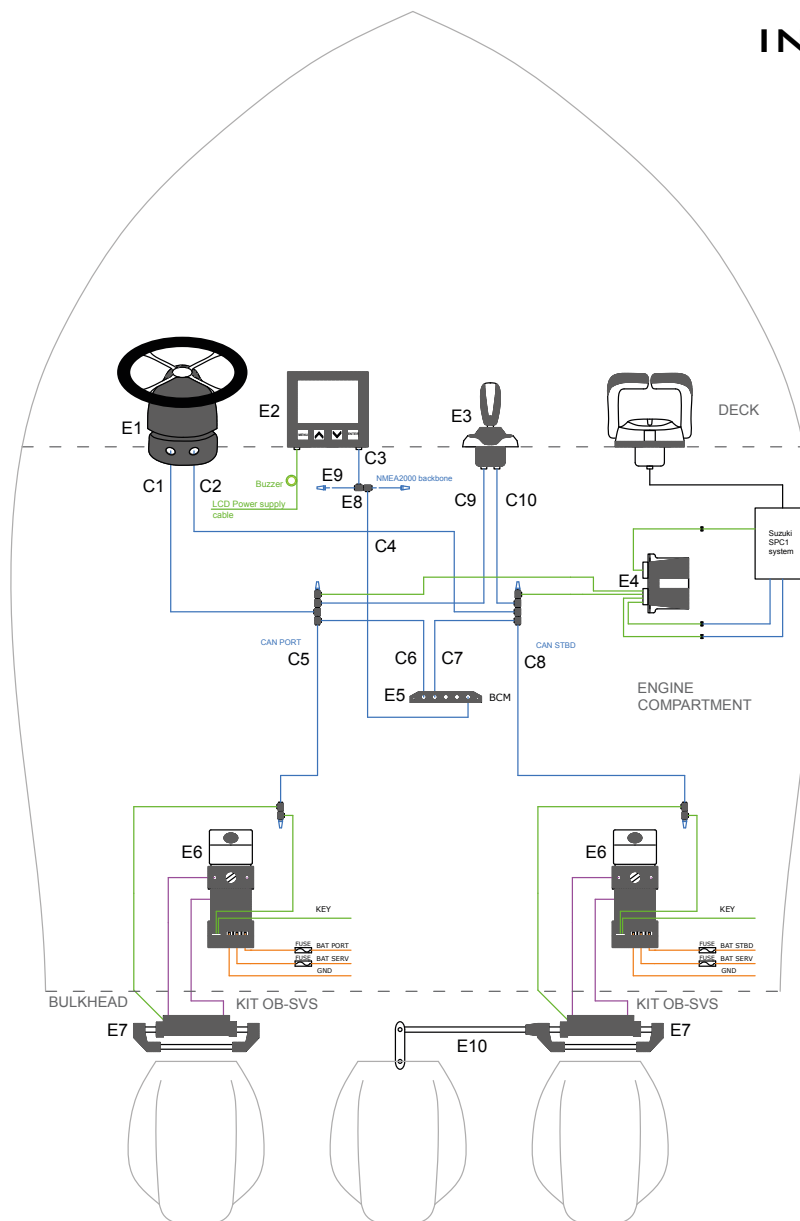
Dual engine, dual cylinder, dual power unit

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 Cylinder with sensor included - 43322S	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

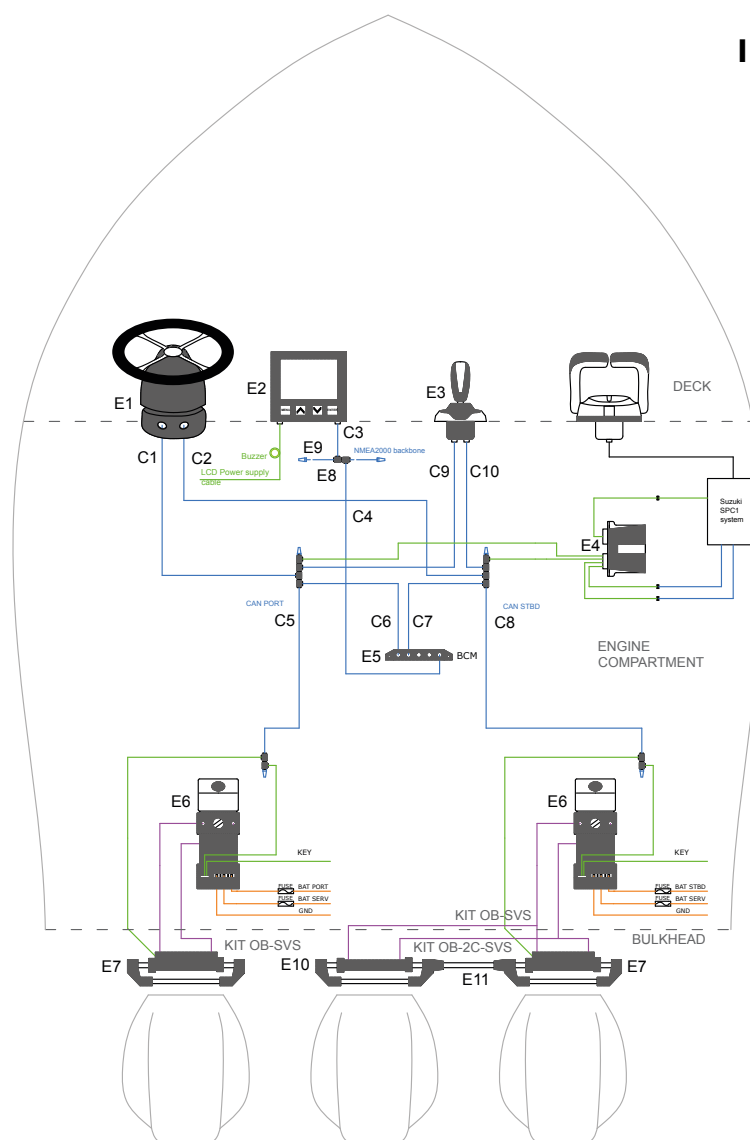


Main components

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 Cylinder with sensor included - 43322S	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

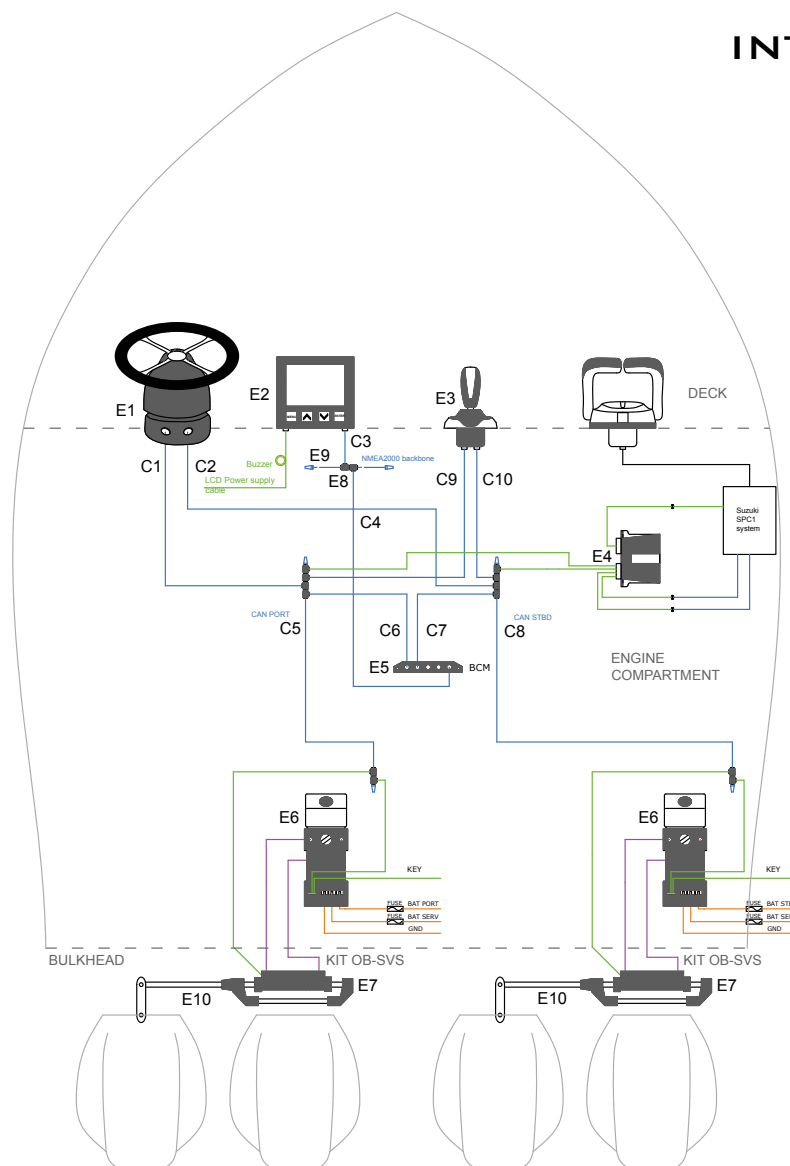
Triple, triple cylinder, dual power unit

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 Cylinder with sensor included - 43322S	2
E8	CAN bus - Tee connection - 43578E	14
E9	CAN bus - Terminator pair - 43576A	3
E10	UC120P-OBF Port cylinder - 43434D	1
E11	A95-120 tie bar	1
C1-C10	CAN-bus cables - length on request	10
KIT OB-SVS	Hydraulic hoses kit - length on request	2
KIT OB-2C-SVS	Hydraulic hoses kit - length on request	1

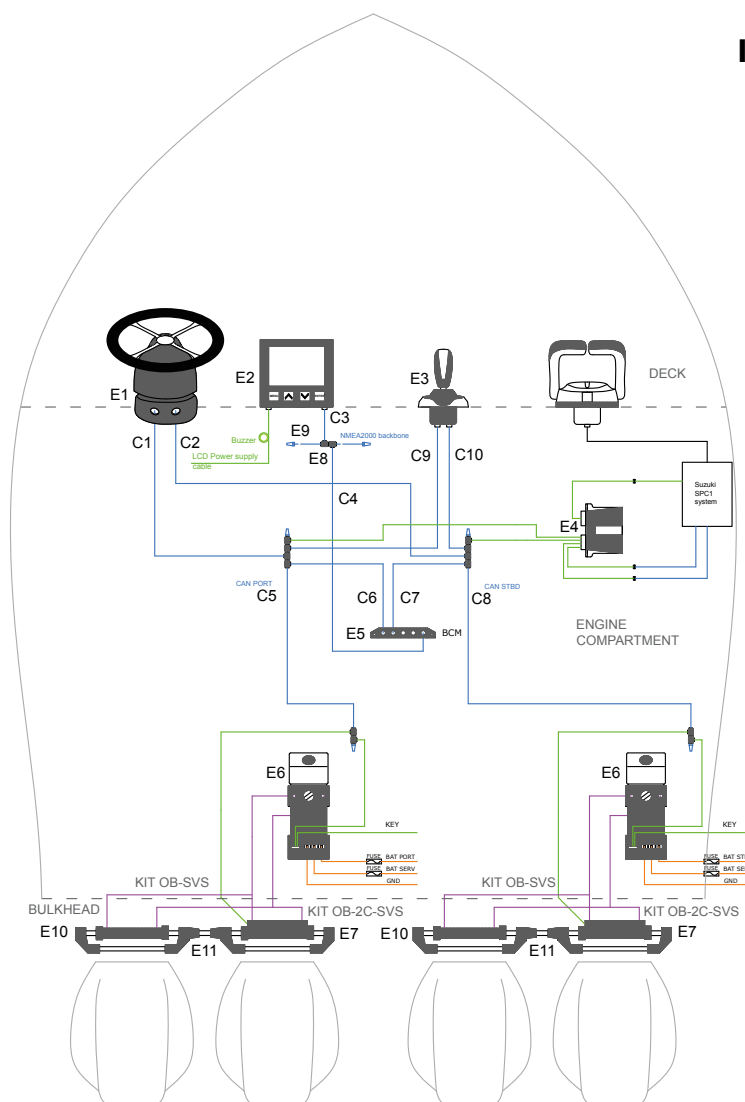


Main components

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 Cylinder with sensor included - 43322S	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, 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 Cylinder with sensor included - 43322S	2
E8	CAN bus - Tee connection - 43578E	14
E9	CAN bus - Terminator pair - 43576A	3
E10	UC120P-OBP Port cylinder - 43434D	2
E11	A95-120 tie bar	2
C1-C10	CAN-bus cables - length on request	10
KIT OB-SVS	Hydraulic hoses kit - length on request	2
KIT OB-2C-SVS	Hydraulic hoses kit - length on request	2

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



CE

UC132-OBS - Side Mount Cylinder

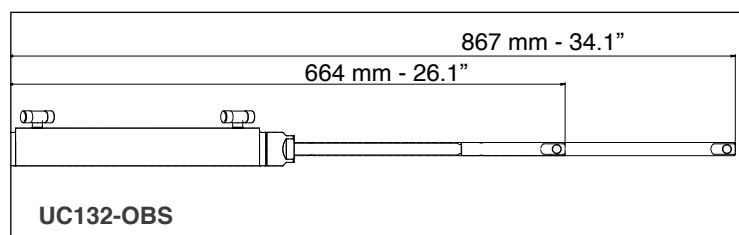
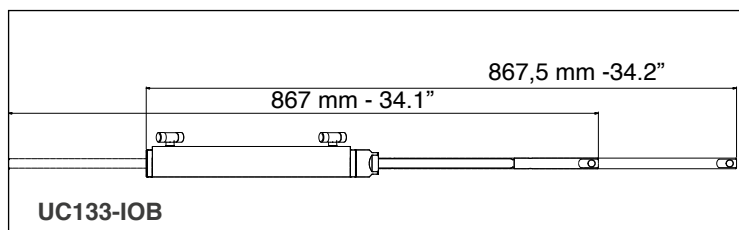
- UC132-OBS Unbalanced: the wheel number of turns lock-to-lock is not equal port to starboard and vice-versa
- This side mount cylinder features a turning nut for a fast and easy installation to the engine tube (PATENTED)
 - Clearance required at the engine tube side: 375 mm (14.76")

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 Balanced	UC132-OBS - 39430 W Unbalanced
Volume	132 cc - 8 cu. in	132 / 163 cc - 8 / 9.95 cu. in
Torque	66 kgm - - 5738 lbs. in	
Output force	464 kg -1023 lbs	464 / 574 kg - 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) Fittings	For high pressure flex hose	For high pressure 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
MERCURISER®	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
Max rudder torque: 66 kgm - 5738 lbs. in

Components	Model	Qty	For additional station add: 1 UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB hose Kit, extra OL 150, 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
Max rudder torque: 66 kgm - 5738 lbs. in

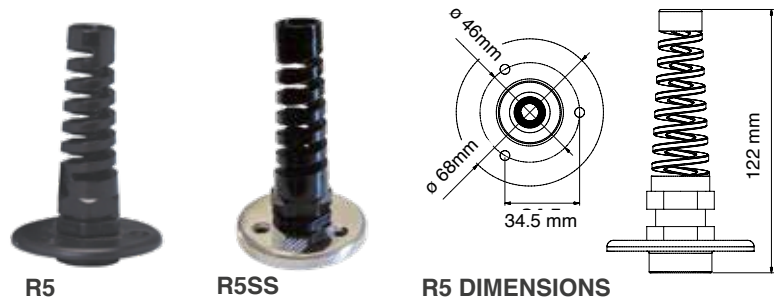
Components	Model	Qty	For additional station add: 1 UP33 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB hose Kit, extra OL 150, 1 steering wheel
Helm pump	UP33	1	
Cylinder	see application	1	
Hose kit	KIT OB	1	
Oil	OL 150	3	
Steering wheel	(Wheel selection)	1	

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.

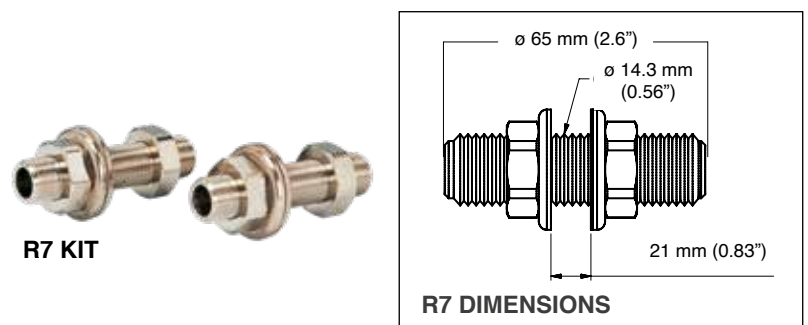
R5	39510U	Bulkhead hose kit
R5SS	42419C	Bulkhead hose kit with stainless steel flange



R7 - 3/4" Bulkhead fitting kit

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

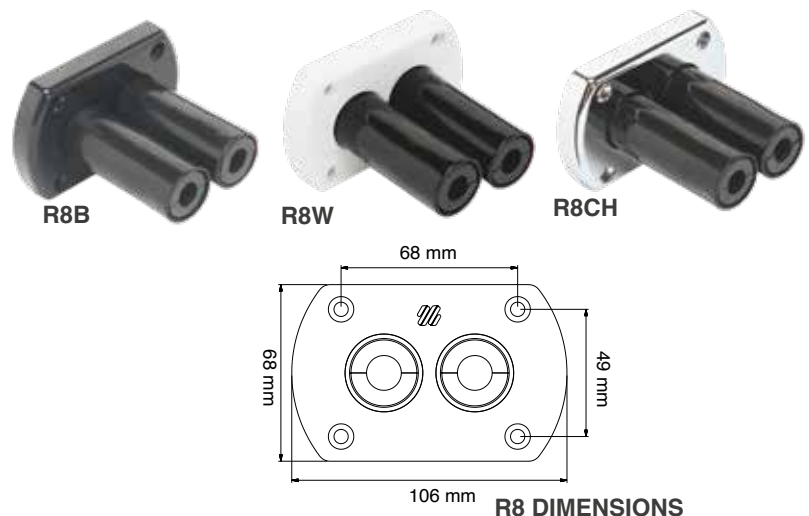
R7	40819J	3/4" bulkhead fitting kit
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R8 - Dual thru-hull hose kit

Connection flange available in three different colours

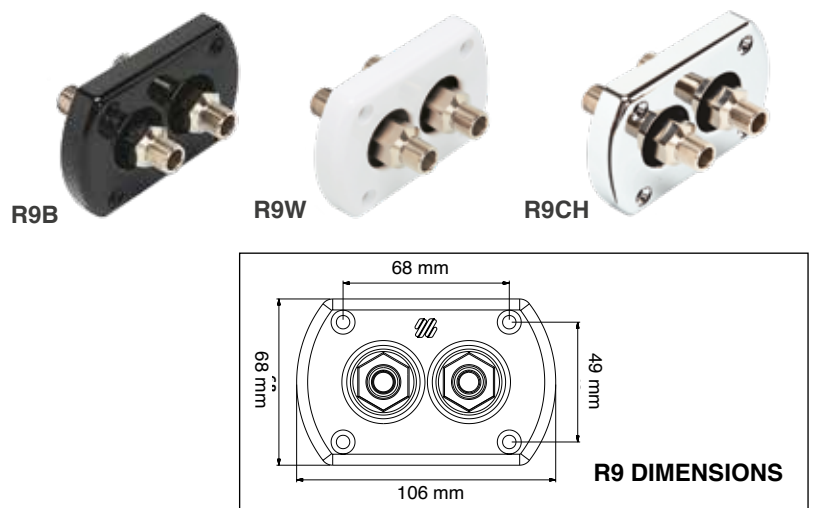
R8B	41299P	Connection flange - black
R8W	41300V	Connection flange - white
R8CH	41301X	Connection flange - chrome plated



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



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 flexibility of the installations and integration with autopilot

TU1/4	42573N	1/4" tubing for outboard engines applications with Gotech™ only. Available per metre
TU5/16	41305F 42574R 41389R	5/16" nylon tubing recommended for outboard engines applications and fittings OB-F5/16 Available per metre (41305F), 50 m (164 ft) coils (42574R) and 150 m (492 ft) coils (41389R).
OB-F1/4	42656T	Two reusable fittings featuring turning nut for use with 1/4" hydraulic hose for Gotech™ only.
OB-F5/16	42670L	Two reusable fittings featuring turning nut for use with 5/16" hydraulic hose and connection for 3/8" fitting
KIT 2M-5/16	41822C	Kit with 2 bend restrictors 5/16"
TU95	70701D	3/8" nylon tubing. It is not recommended in the applications where the total tubing run exceeds 50 ft (15 m). 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 - 76988L

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

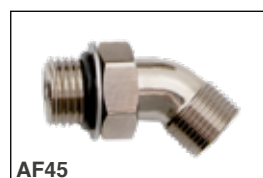
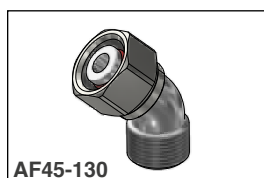
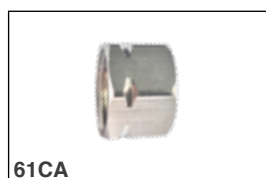
9/16" (14.3 mm) nickel plated brass straight fitting

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



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)



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.

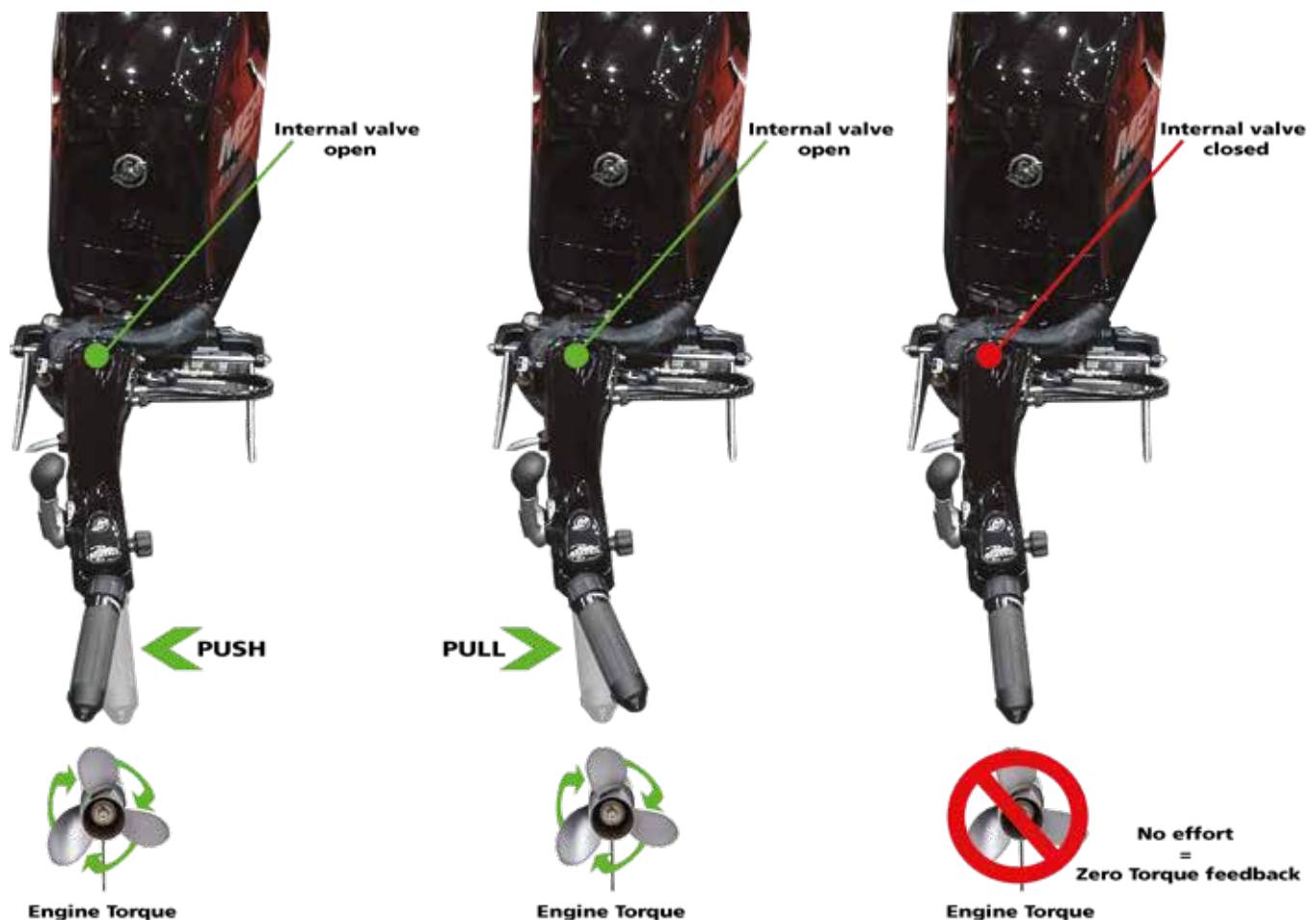
How the ZTF tiller system works

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

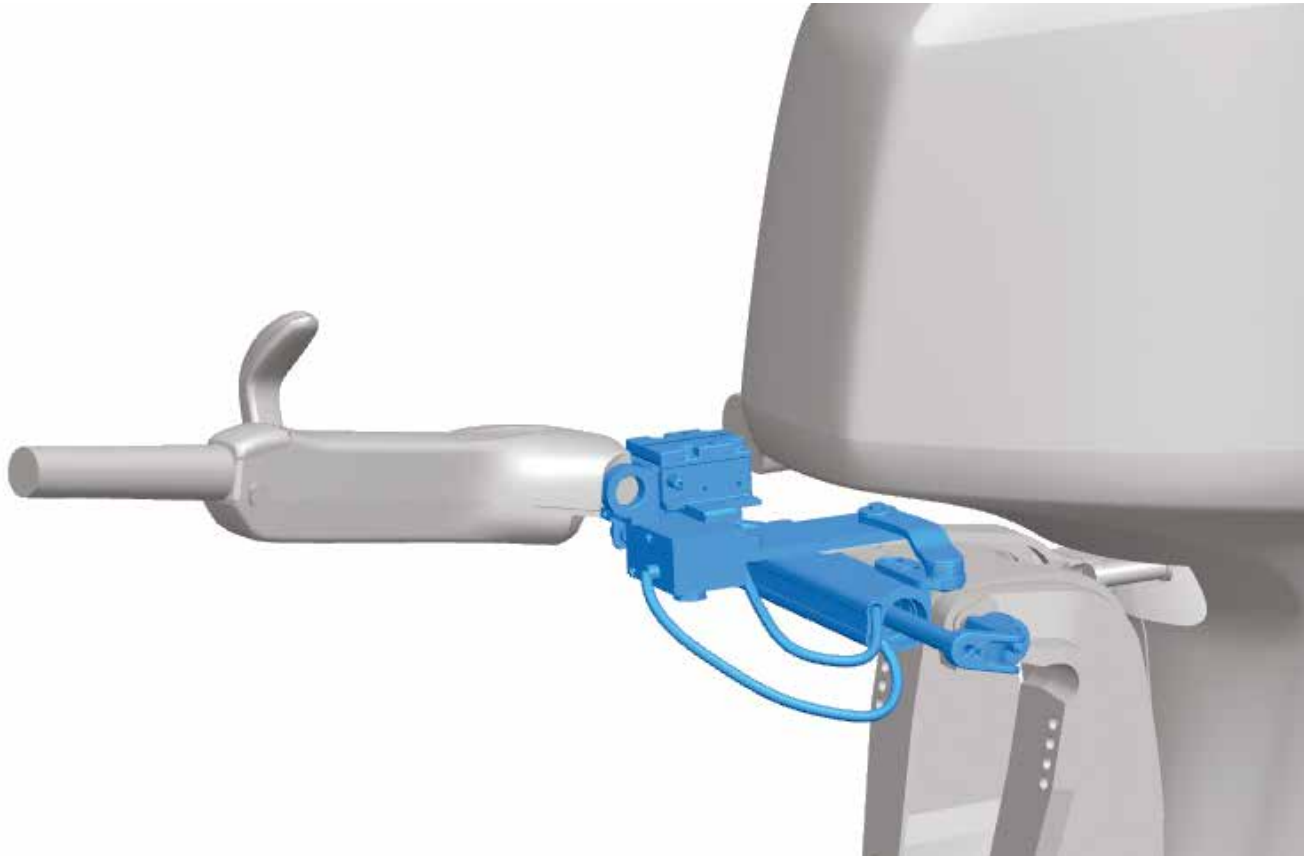
Pull on the end of the tiller handle and the valve opens allowing you to steer.

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

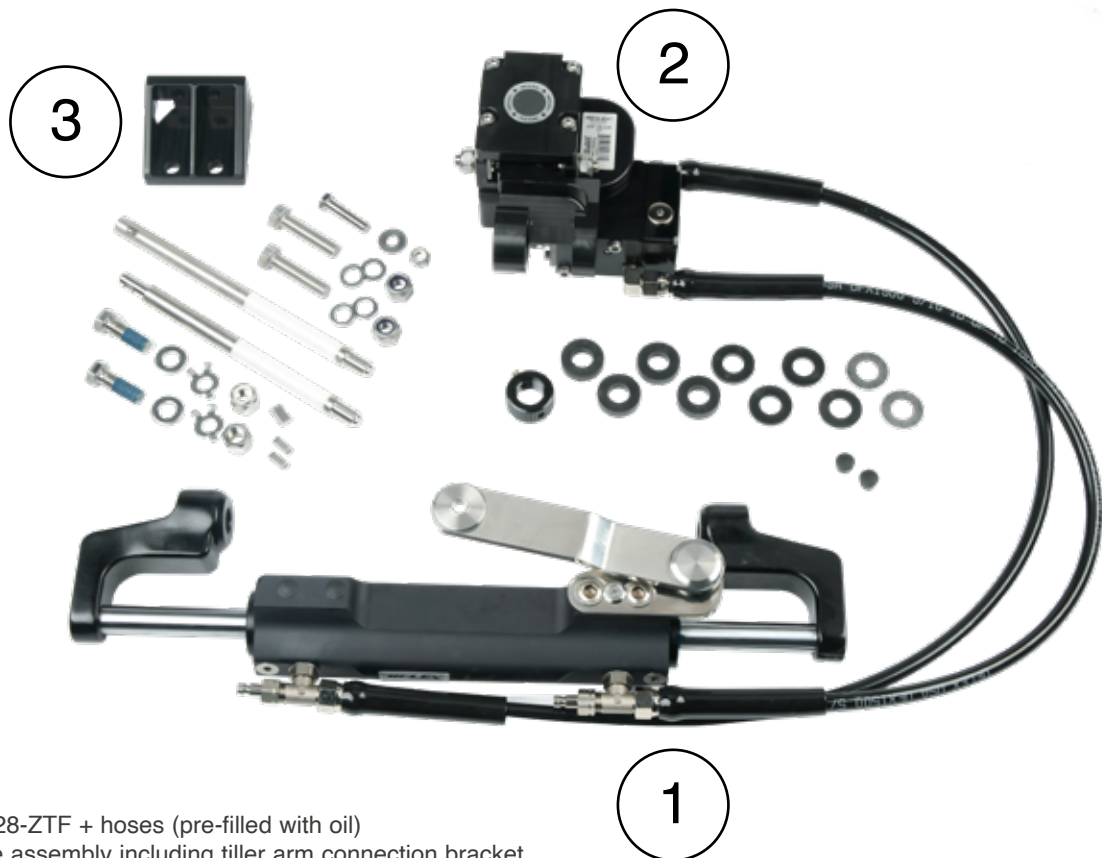
WARNING! This system is not intended to be used in place of the boat operator. Operator must maintain contact with the Tiller Handle during operation.



Zero Torque Feedback Tiller steering systems



Zero torque feedback tiller steering systems - components



- 1- UC128-ZTF + hoses (pre-filled with oil)
2- Valve assembly including tiller arm connection bracket
3 -Example of engine connection bracket
Other tools:
- 2 Ultraflex® push-pull cables for throttle and shift

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: Ultraflex does not supply Mercury® handle



ZTF Tiller M2 43880D	For use with 75 hp to 115 hp EFI 4 stroke, from 2014 to date
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Note: For use with 115 hp Big Tiller® please contact our Technical Service

YAMAHA® Zero Torque Feedback tiller steering system

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

Note: Ultraflex does not supply Yamaha® tiller handle



ZTF Tiller Y2 43878T	For use with Yamaha® 150 hp - 175 hp - 200 hp
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ZTF Tiller Y1 43877R	For use with Yamaha® 90 hp - 115 hp - 130 hp - 2015 to date
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SUZUKI® Zero Torque Feedback tiller steering system

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

Note: Ultraflex does not supply Suzuki® tiller handle

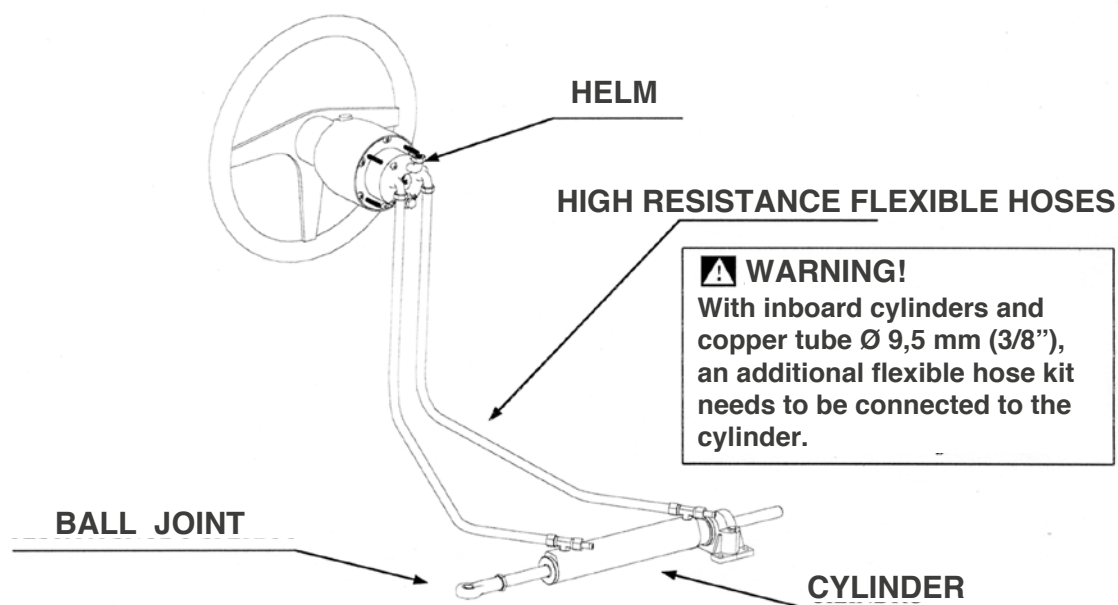


ZTF Tiller S2 43879V	For use with Suzuki® DF150A - DF175A - DF200A
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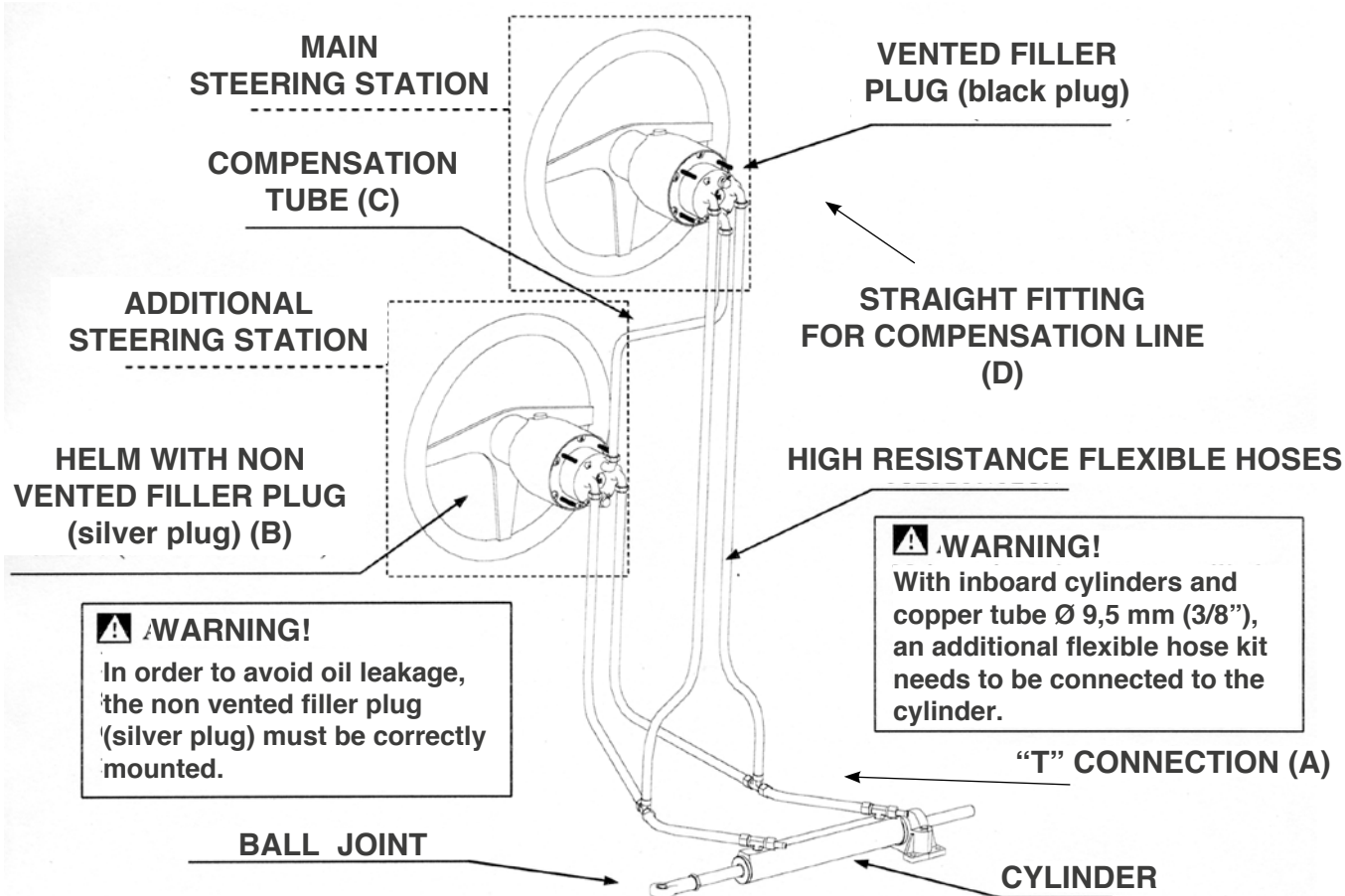


Inboard steering systems

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

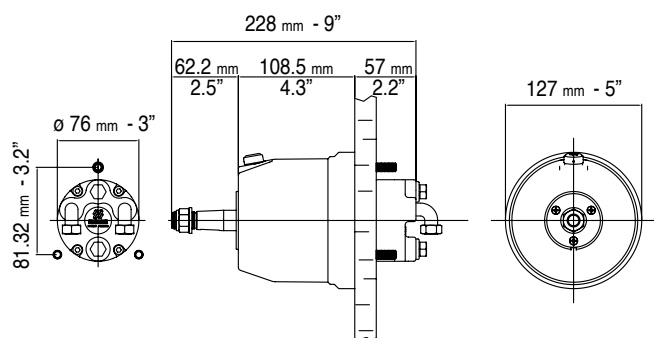


UP25F/28F/33F/39F/45F + X64

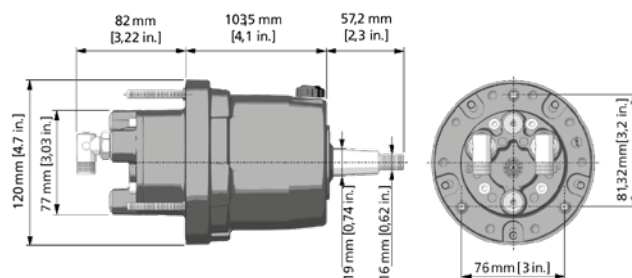


UP25F/28F/33F/39F/45F + X57

MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM 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

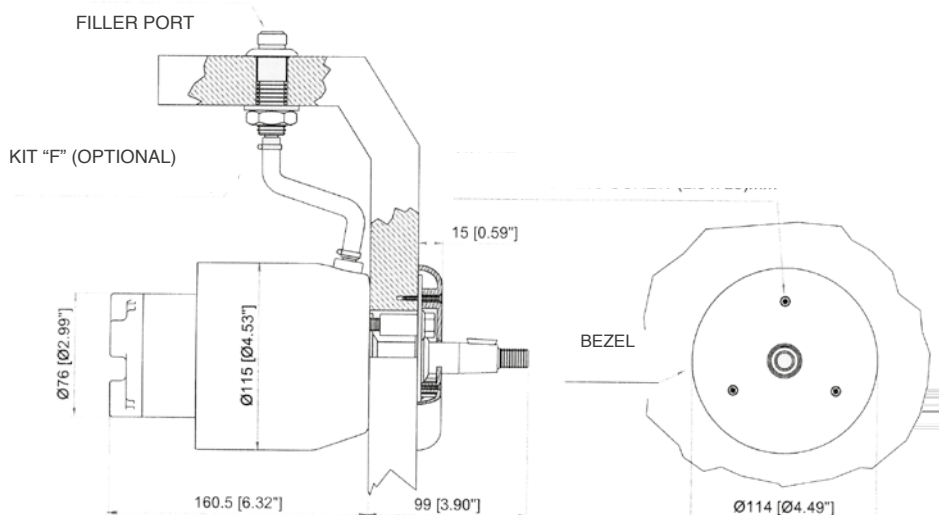


X68

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 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 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/ 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
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 helms



KIT F56



KR56

CE

- Rear or intermediate mounting configuration
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- 3/4" tapered shaft
- Easily accessible lock valve and 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

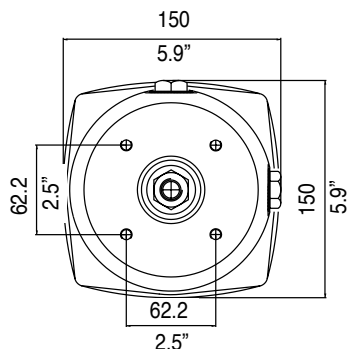
MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP56	40808D	Rear (KR56) - Intermediate (KIM56)	56 cc - 3.4 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	7,5 kg - 16,5 lbs
UP68	42561F	Rear (KR56) - Intermediate (KIM56)	68 cc - 4.15 cu.in	7	70 Bar -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

RV70 - 42560D - Relief valve 70 bar

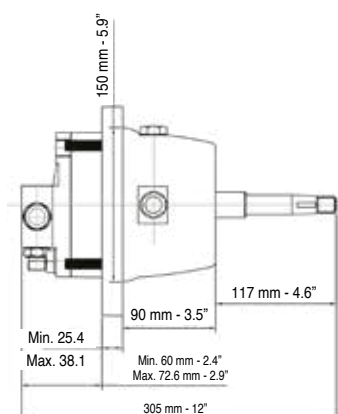
WARNING: Applications with UP56 or UP68 pumps require the RV70 relief valve added to the system for over-pressure protection.



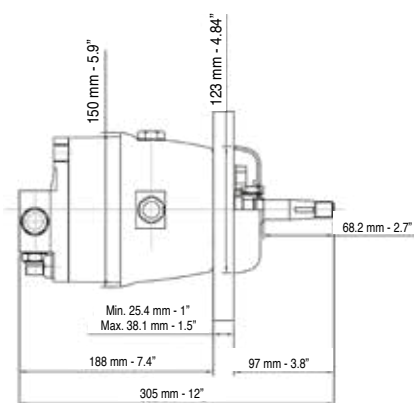
RV70



UP56, UP68



UP56, UP68 INTERMEDIATE MOUNT



UP56, UP68 REAR MOUNT

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



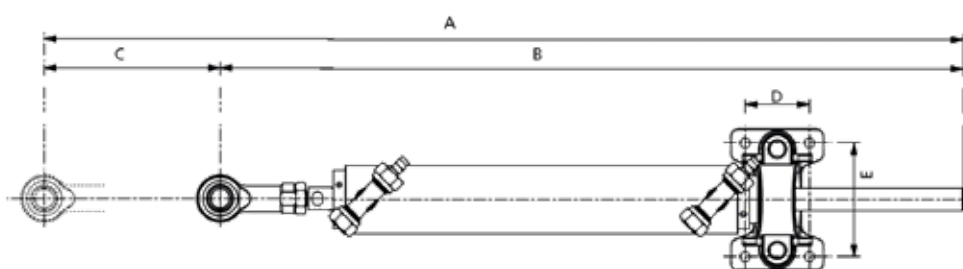
UC69-I - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



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 Alluminium	UC168-I - 39432A Alluminium	UC215-I - 39433C 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) Fittings	For high pressure flex hose	For high pressure flex hose	For high pressure flex hose	For high pressure flex hose



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

UC293-I - UC378-I

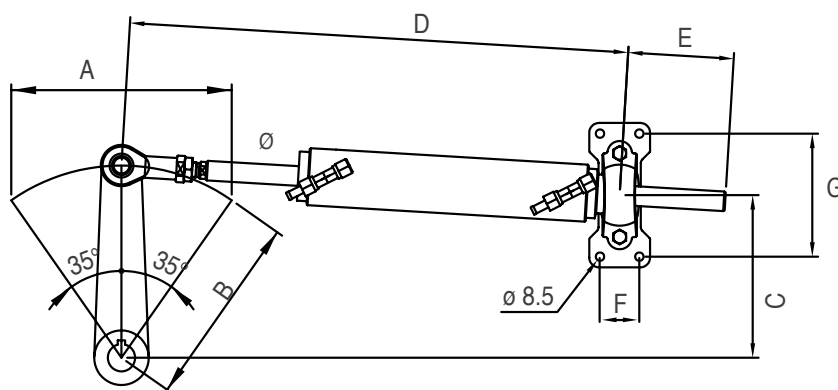
Inboard cylinders



UC293-I; UC378-I

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

SPECIFICATIONS	UC293-I - 40246L Brass	UC378-I - 40810P 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) for high pressure flex hose	for (12 mm) copper tube (flexible connection hoses not included) 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

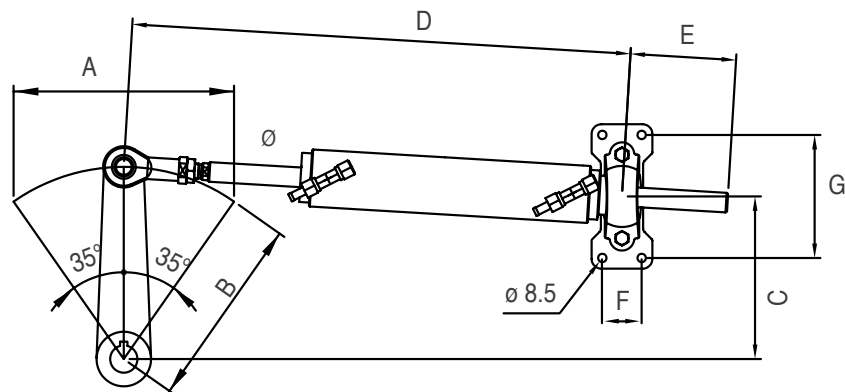
Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



UC530-I

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

SPECIFICATIONS	UC339-I 42562H	UC442-I 42563K	UC530-I 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 TUR7 high pressure flex hose	For 12 mm copper tube or TUR7 high pressure flex hose	For 12 mm copper tube or 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 - fittings

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

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 2780 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539V or Kit 95-2S 39518L
UP25 F	UC116-I	4,6	58 kgm 5043 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539V or Kit 95-2S 39518L
UP28 F or UP28 R	UC116-I	4,1	58 kgm 5043 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539V or Kit 95-2S 39518L
UP28 F or UP28 R	UC168-I	6,0	87 kgm 7565 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539V or Kit 95-2S 39518L
UP33 F or UP33 R	UC168-I	5,1	87 kgm 7565 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539V or Kit 95-2S 39518L
UP33 F or UP33 R	UC215-I	6,5	111 kgm 9642 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539V or Kit 95-2S 39518L
UP39 F or UP39 R	UC215-I	5,5	111 kgm 9642 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539V or Kit 95-2S 39518L
UP39 F or UP39 R	UC293-I	7,5	146,5 kgm 12816 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539V or Kit 95-2S 39518L
UP45 F or UP45 R	UC293-I	6,5	146,5 kgm 12816 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539V or Kit 95-2S 39518L
UP39-I R	UC339-I	8,6	172 kgm 14958 lbs.in	12mm copper tube or TUR7 flex hose	KIT120U-2S 41625A
UP56* with KR56 or KIM56	UC339-I	6,0	172 kgm 14958 lbs.in	12mm copper tube or TUR7 flex hose	KIT120-2S 40821V
UP45-I R	UC378-I	8,4	187,6 kgm 16347 lbs.in.	12mm copper tube or TUR7 flex hose	KIT120U-2S 41625A
UP56* with KR56 or KIM56	UC378-I	6,7	187,6 kgm 16347 lbs.in.	12mm copper tube or TUR7 flex hose	KIT120-2S 40821V
UP56* with KR56 or KIM56	UC442-I	7,9	223 kgm 19336 lbs.in	12mm copper tube or TUR7 flex hose	KIT120-2S 40821V
UP68* with KR56 or KIM56	UC442-I	6,5	223 kgm 19336 lbs.in	12mm copper tube or TUR7 flex hose	KIT120-2S 40821V
UP68* with KR56 or KIM56	UC530-I	7,8	270 kgm 23443 lbs.in	12mm copper tube or TUR7 flex hose	KIT120-2S 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 5043 lbs. in	2 kit OB-SVS (length selection)	1 steering wheel
MD32-F - 42098J	UC168 - 39432A	5,2	87 kgm 7565 lbs. in		
MD32-F - 42098J	UC215 - 39433C	6,7	111 kgm 9642 lbs. in		
MD40-F - 42102W	UC215 - 39433C	5,3	111 kgm 9642 lbs. in		
MD40-F - 42102W	UC293 - 40246L	7,3	146,5 kgm 12816 lbs. in		

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

GOTECH-I	42824M	Wheel turns 3,8
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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.

HYCO-I	40224A	Wheel turns 3,5
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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, 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, 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/CH/CH - Ø 350 mm (13.8")



V99 B/B/S - Ø 350 mm (13.8")



V99 B/S/S - Ø 350 mm (13.8")



V99 B/CB/CB - 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, 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/CH/CH	43016J	Thermoplastic antishock material grip and spokes with chrome plated inserts and cover
V99 B/B/S	43413V	Thermoplastic antishock material grip and spokes with silver inserts and black cover
V99 B/S/S	43404U	Thermoplastic antishock material grip and spokes with silver inserts and cover
V99 B/CB/CB	43405W	Thermoplastic antishock material grip and spokes with carbon 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")

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

Model	Part No.	Description
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
V61	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, 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 - 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")

Model	Vivara	Budelli	Santorini
Depth	88 mm (3.46")	94 mm (3.7)	91 mm (3.58)
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, 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

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, 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/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 anodized aluminum
Floating cap	n.a.	n.a.
Standard 3/4" hub	X63 - 40119D not included	
QDH hub	Available upon request	
Certifications & standards	CE, 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/S/CH	65277N	Black polyurethane grip, silver aluminum spokes, chrome plated cover

Pianosa

Polyurethane grip steering wheels



Pianosa B/SS - Ø 350 mm (13.8")



Pianosa B/SS - Ø 350 mm (13.8")



Pianosa B/B - Ø 350 mm (13.8")



Pianosa B/S - Ø 350 mm (13.8")

Model	Pianosa
Depth	88 mm (3.46")
Grip material	Leather look polyurethane
Grip color	Black
Spokes	Stainless steel or 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, NMMA; ISO 23411 & ABYC P22

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

Domino

Polyurethane grip steering wheels



Domino B/B/CH - Ø 350 mm (13.8")



Domino B/B/CH - Ø 350 mm (13.8")



Domino B/B - Ø 350 mm (13.8")



Domino B/S - 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, 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/B	23896G	Black polyurethane grip, black aluminum spokes and ring
Domino B/S	23895E	Black polyurethane grip, silver aluminum spokes and ring

Pantelleria - Mykonos - Giannutri

Polyurethane grip steering wheels



Pantelleria B/S - Ø 320 mm (12.6")



Mykonos B/S - Ø 320 mm (12.6")



Giannutri PU B/SS - Ø 280 mm (11")



Giannutri PU W/SS - Ø 280 mm (11")

Model	Pantelleria	Mykonos	Giannutri
Depth	90 mm (3.58")	83 mm (3.27")	69 mm (2.7")
Grip material	Leather look polyurethane	Leather look PUR with chrome plated inserts	Leather look polyurethane
Grip color	Black		Black, white
Spokes	Silver 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, NMMA; ISO 23411 & ABYC P22		

Model	Part No.	Description
Pantelleria B/S	22232X	Black polyurethane grip, silver aluminum spokes
Mykonos B/S	68365B	Black polyurethane grip with chrome plated inserts, silver 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 not included	
QDH hub	Available upon request	
Certifications & standards	CE, 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, 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 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")

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

Model	Part No.	Description
Asinara V B/SS/L	24732E	Black vinyl grip, SS spokes, SS cover
Asinara PU B/SS/B	24729S	Black polyurethane grip, SS spokes, SS cover
Asinara PU B/S/B	24730A	Black polyurethane grip, silver aluminum spokes, SS cover
Asinara PU 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, 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, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
V21B	42382Z	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, 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, 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, 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, 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")



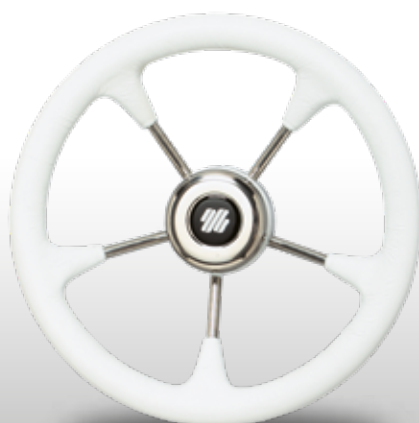
V31B - Ø 320 mm (12.6")

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, 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



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	73 mm (2.87")	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, 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

Traditional style equidistant spoke steering wheels - hub included



V56 B/CH - Ø 350 mm (13.8")



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, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
V56 B/CH	23351A	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

Traditional style equidistant spoke steering wheels - hub included



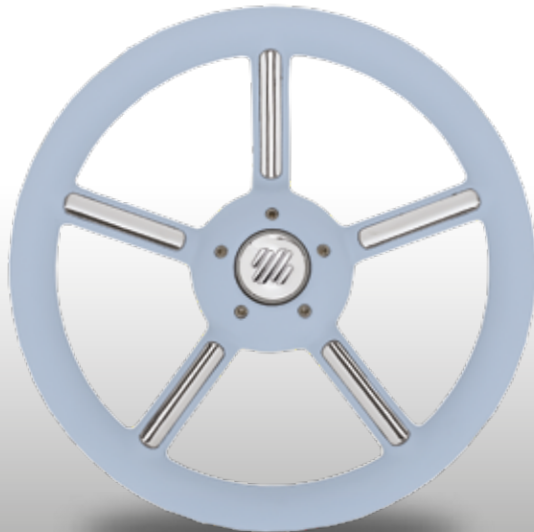
V56 B/R - Ø 350 mm (13.8")



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 V

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 V	23600F	Knob for V56 steering wheel

V70

Traditional style 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	76 mm (2.99")
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, 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	75 mm (2.95")
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, 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 (3.07")	88 mm (3.46")	100 mm (3.94")	110 mm (4.33")	73 mm (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, 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 (3.15")	108 mm (4.25")	104 mm (4.09")	70 mm (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, 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")

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, 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



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, NMMA; ISO 23411 & ABYC P22		

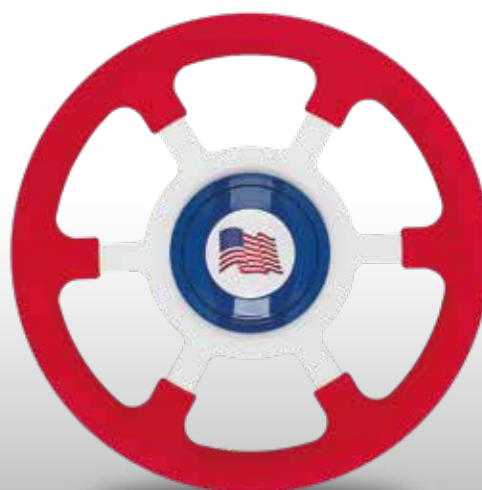
Model	Part No.	Description
V93	40695B	Wood grip and spokes
V90/42	43043S	Wood grip and spokes
V89	40721R	Stainless steel and wood grip, stainless steel spokes
KNOB93	40647F	Knob for V93 steering wheel

V15

Polyurethane grip equidistant spoke steering wheels - hub included



V15B/SS/F - Ø 350 mm (13.8")



V15R/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 anodized aluminum
Floating cap	n.a.
Standard 3/4" hub	Included
QDH hub	n.a.
Certifications & standards	CE, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
V15B/SS/F	22325E	Black polyurethane grip, SS spokes
V15R/W/F	22323A	Red polyurethane grip, white anodized aluminum spokes



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

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

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



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

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

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



VERO VOLANTE ITALIANO




CHRISTIANGRANDE
DesignWorks

Soranzo L B/L/L

3-spoke steering wheel.
Spokes are made of polished 316L stainless steel.
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, 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
DesignWorks

Fregoso LL AW/A/A

3-spoke steering wheel.
Spokes are made of polished 304 stainless steel.
Grip is available in 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 = 81 mm (3.2")



Fregoso LV BC/B/C



Fregoso VV LC/L/C



Fregoso LL AW/A/A

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

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

* To be specified when ordering the wheel



VERO VOLANTE ITALIANO



Guarco L B/SS/CH

3-spoke steering wheel.
Spokes are made of polished 316L stainless steel.
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

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

Model	Part No.	Description
Guarco L B/SS/CH	24737R	Black leather grip, grey stitches, SS spokes, chrome plated cover
Guarco L B/SS/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.
Spokes are made of 316L stainless steel, available in polished and in brushed version.

Grip is available in hand-stitching leather or vinyl.
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

Diameter	350 mm (13.8")
Grip material	Leather or vinyl
Grip color	Black
Spokes	Polished or brushed 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, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
Spinola L B/P	23902Y	Black leather grip, polished SS spokes, SS cover
Spinola V B/P	23901W	Black vinyl grip, polished SS spokes, SS cover
Spinola L B/BRU	23900U	Black leather grip, brushed SS spokes, SS cover
Spinola V B/BRU	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.
Spokes are made of polished 316L stainless steel.
Grip is available in hand-stitching leather or vinyl or leather look polyurethane.
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

Diameter	350 mm (13.8")
Grip material	Leather or vinyl or leather look polyurethane
Grip color	Black
Spokes	Polished 316L stainless steel
Center cap	Chrome plated
Floating cap	Available upon request
Standard 3/4" hub	Included
QDH hub	n.a.
Certifications & standards	CE, 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 are available in polished
or black painted or pewter brushed SS.
Hand-stitching leather or vinyl grip
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/SS/B - Dolfin V B/SS/B



Dolfin L B/B/Pw

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

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



VERO VOLANTE ITALIANO




CHRISTIANGRANDE
DesignWorks

Vivaldi L B/L/L

3-spoke steering wheel.

Spokes are made of polished 304 stainless steel

Grip is available in hand-stitching leather or vinyl or leather look polyurethane.

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



Vivaldi V W/W/SS

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

Model	Part No.	Description
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




CHRISTIANGRANDE
DesignWorks

Morosini L B/CH/L

3-spoke steering wheel.

Spokes are made of polished 304 stainless steel

Grip is available in:

- 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 L G/CH/L



Morosini V G/CH/L

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

Model	Part No.	Description
Morosini L B/CH/L	67297F	Black leather grip, SS spokes, chrome plated cover
Morosini V B/CH/L	68000H	Black vinyl grip, SS spokes, chrome plated cover
Morosini L G/CH/L	67300R	Grey leather grip, SS spokes, chrome plated cover
Morosini V G/CH/L	68830C	Grey vinyl grip, SS spokes, chrome plated cover

* To be specified when ordering the wheel

Morosini

Vero Volante Italiano



Morosini L W/P/P



Morosini V W/P/P



Morosini L C/P/P

Model	Part No.	Description
Morosini L W/P/P	67298H	White leather grip, SS spokes, white painted cover
Morosini V W/P/P	68831E	White vinyl grip, SS spokes, white painted cover
Morosini L C/P/P	67299K	Cream leather grip, SS spokes, cream painted cover



Morosini M/CH/BR



Morosini PU B/CH/V



Morosini M/CH/BR

Model	Part No.	Description
Morosini M/CH/BR	68378L	Mahogany grip, SS spokes, chrome plated cover
Morosini PU B/CH/V	24723D	Black polyurethane grip, SS spokes, chrome plated cover



VERO VOLANTE ITALIANO



Gritti Carbon LC B/SS/B

3-spoke steering wheel.
Spokes are made of polished 304 stainless steel.
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

new

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

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



VERO VOLANTE ITALIANO




CHRISTIANGRANDE
DesignWorks

Foscari V B/R

3-spoke steering wheel.
Spokes are made of polished 304 stainless steel
Grip is available in hand-stitching vinyl or leather look polyurethane.
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

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

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

Adorno

Vero Volante Italiano



VERO VOLANTE ITALIANO



Adorno L B/CH

3-spoke steering wheel.

Spokes are made of polished 304 stainless steel

Grip is available in hand-stitching leather or leather look polyurethane.

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

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

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

Imperiale Vero Volante Italiano



VERO VOLANTE ITALIANO



Imperiale V B/SS/P

3-spoke steering wheel.

Spokes are available made of:

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

Grip is available in hand-stitching vinyl or leather look polyurethane.

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

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

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



VERO VOLANTE ITALIANO



Contarini TPU/SS

3-spoke steering wheel.
Spokes are made of polished 316L stainless steel.
Grip is made of TPU and polished 316L stainless steel.
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



Knob SK

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

Model	Part No.	Description
Contarini TPU/SS	69199S	Black TPU and SS grip, SS spokes, SS cover
Knob SK	68832G	Speed knob for Contarini steering wheel



VERO VOLANTE ITALIANO



Siestakey/B

2-spoke steering wheel.

Spokes are made of polished 316L stainless steel and TPU.

Grip is made of polished 316L stainless steel and black TPU.

Black cover, black center cap.

Hub included - standard 3/4" taper

Ø = 368 mm (14.5")

Depth = 90 mm (3.54")



Siestakey/B



Knob SK

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

Model	Part No.	Description
Siestakey/B	68188F	SS and black TPU grip, SS spokes, black cover
Knob SK	68832G	Speed knob for Siestakey steering wheel

new



Captiva B

3-spoke steering wheel.
Spokes are made of polished 304 stainless steel and black TPU.
Grip is made of polished 304 stainless steel and black TPU.
Polished stainless steel center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 85 mm (3.34")



Captiva B



Diameter	350 mm (13.8")
Grip material	Polished 304 stainless steel and TPU
Grip color	Polished stainless steel and black TPU
Spokes	Polished 304 stainless steel and TPU
Center cap	Polished stainless steel
Floating cap	n.a.
Standard 3/4" hub	Included
QDH hub	n.a.
Certifications & standards	CE, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
Captiva B	24994M	SS grip, SS spokes, black TPU inserts

Manin Vero Volante Italiano



VERO VOLANTE ITALIANO



Manin PU B/S

3-spoke steering wheel.

Spokes are made of polished 304 stainless steel or silver or black anodized aluminum.

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

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

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



VERO VOLANTE ITALIANO



Grimani PU B/S/VE

3-spoke steering wheel.

Spokes are made of polished 304 stainless steel or silver or black anodized aluminum.

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

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

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



VERO VOLANTE ITALIANO



Grimani PU B/S/R

3-spoke steering wheel.
Spokes are made of silver anodized aluminum.
Leather look polyurethane grip with colored 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

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

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



VERO VOLANTE ITALIANO



Loredan PU B/SS/CH

3-spoke steering wheel.

Spokes are made of polished 304 stainless steel or silver or black anodized aluminum.

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

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

Model	Part No.	Description
Loredan PU B/SS/CH	69557S	Black polyurethane grip with chrome plated inserts, SS spokes, black painted and chrome plated cover
Loredan PU B/S/CH	69558U	Black polyurethane grip with chrome plated inserts, silver aluminum spokes, black painted and chrome plated cover
Loredan PU B/B/CH	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 colored 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

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

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



VERO VOLANTE ITALIANO



Falier V B/BRU/L

5-spoke steering wheel.
Spokes are made of brushed 316L stainless steel.
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

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

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

Vero Volante Italiano

The brand



“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 seat cleaners and cloths are the most indicated
- Always protect the steering wheel with its own canvas cover during non-use periods



KNOB UST



KNOB21



KNOB V



KNOB SK



KNOB67



KNOB93

Model	Part No.	Knob suitable for the following steering wheels:
KNOB UST	21721H	Giannutri, Domino, Ustica, Levanzo, Montecristo, Imperiale PU
KNOB21	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
KNOB V	23600F	V56, Morosini PU, Foscari PU, Adorno
KNOB SK	68832G	Contarini, Siestakey
KNOB67	40677R	V67, V63
KNOB93	40647F	V93

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 available **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
- KTR kit relay for loads exceeding 5 Amp	42860S	1	2



Steering wheel accessories

Application chart

X63	KNOB UST	KNOB21	KNOB67	KNOB93	KNOB V	KNOB SK	
<p>CORSICA, V15, MYKONOS, SANTORINI, NISIDA, PIANOSA, PALMARIA, CAPRAIA, PANTELLERIA, DOMINO, TAVOLARA, VIVARA, BUDELLI, USTICA, LEVANZO, MONTECRISTO, LAMPEDUSA, ALICUDI, CAPRI, ASINARA</p>	<p>GIANNUTRI, DOMINO, USTICA, LEVANZO, MONTECRISTO, IMPERIALE PU</p>	<p>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</p>	<p>V67, V63</p>	<p>V93</p>	<p>V56, MOROSINI PU, FOSCARI PU, ADORNO</p>	<p>CONTARINI, SIESTAKEY</p>	

Steering wheel accessories

Application chart

SELF CENTERING CUP	QDH - QUICK DISCONNECT HUB	PADDLE TRIM WITH TILT	PADDLE TRIM WITH FRONT MOUNT HELM	FABRIC COVER
V15, MONTECRISTO, ODERICO, TRON, SPINOLA, DOLFIN, CONTARINI, MANIN, GRIMANI, LOREDAN	CORSICA, V15, MYKONOS, SANTORINI, NISIDA, PIANOSA, PALMARIA, CAPRAIA, PANTELLERIA, GIANNUTRI, DOMINO, TAVOLARA, VIVARA, BUDELLI, USTICA, LEVANZO, MONTECRISTO, LAMPEDUSA, ALICUDI, CAPRI, MOROSINI, FOSCARI, ADORNO, MANIN, GRIMANI, LOREDAN	ASINARA, FREGOSO, GRITTI, FALIER, GUARCO, CAPTIVA, CORSICA, V21, V01, V10, V24, V56, V70, V57, V35, V29, V30, V66, V62, V15, SANTORINI, NISIDA, PIANOSA, PALMARIA, CAPRAIA, PANTELLERIA, DOMINO, TAVOLARA, VIVARA, BUDELLI, USTICA, LEVANZO, MONTECRISTO, ODERICO, IMPERIALE, DOLFIN, MOROSINI, FOSCARI, ADORNO, CONTARINI, SIESTAKEY, MANIN, GRIMANI, LOREDAN, DORIA	ASINARA, FREGOSO, GRITTI, SORANZO, GUARCO, VIVALDI, FALIER, CAPTIVA, V99, CORSICA, V21, V25, V20, V01, V10, V24, V56, V70, V57, V35, V29, V30, V66, V62, V82, V15, SANTORINI, NISIDA, PIANOSA, PALMARIA, CAPRAIA, PANTELLERIA, DOMINO, TAVOLARA, VIVARA, BUDELLI, USTICA, LEVANZO, MONTECRISTO, LAMPEDUSA, ALICUDI, ODERICO, IMPERIALE, DOLFIN, MOROSINI, FOSCARI, ADORNO, CONTARINI, SIESTAKEY, BALBI, MANIN, GRIMANI, LOREDAN, DORIA	ASINARA, FREGOSO, GRITTI, SORANZO, GUARCO, VIVALDI, FALIER, CAPTIVA, V38, V60, V99, CORSICA, V21, V25, V20, V01, V10, V24, V56, V70, V57, V35, V29, V30, V66, V62, V82, V15, SANTORINI, NISIDA, PIANOSA, CAPRAIA, PANTELLERIA, DOMINO, TAVOLARA, VIVARA, BUDELLI, MONTECRISTO, ALICUDI, BOCCANEGRA, ODERICO, TRON, SPINOLA, IMPERIALE, DOLFIN, MOROSINI, FOSCARI, ADORNO, CONTARINI, BALBI, GRIMANI, LOREDAN, DORIA

QDH- Quick disconnect Hub Steering wheels accessories

The QDH - Quick Disconnect hub allows to remove the steering wheel from the cockpit in a very quick and easy way.

QDH	23013D	Quick connect removable hub for standard 3/4" taper
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Suitable with Ultraflex®steering wheels: please refer to steering wheel application chart



QDH



X63 - Hub



X63	40119D	Hub
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Suitable with Ultraflex®steering wheels: please refer to steering wheel application chart

Protection cover



Protection cover	22824Z	Protection cover with Ultraflex logo
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Also available with customized logo (minimum quantity ordered: 20 pieces).



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.



FINISH 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 FINISH 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™ Electronic control system

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 4	42029N 42030X	None
FPT V-Throttle cable	FPT engines 0 – 5 V cable (J-INV connector)	2 4	42350S 42351U	FPT, all engines with J-INV connector
FPT V-Throttle cable	FPT engines 0 – 5 V cable (J-D connector)	2 4	42348F 42349H	FPT, all engines with J-D connector
VW V-Throttle cable (4-5-6 cylinder)	VW engines 0 – 5 V cable	2 4	42033D 42034F	VW, 4, 5 and 6 cylinder
Mercruiser 4.2 Black V-Throttle cable	Mercruiser engines 0 – 5 V cable	2 4	42035H 42036K	Mercruiser 4.2 black engines
Mercruiser QSD V-Throttle cable	Mercruiser engines 0 – 5 V cable	2 4	42037M 42038P	Mercruiser QSD engines
Lombardini V-Throttle cable	Lombardini engines 0 – 5 V cable	2 4	42039S 42040A	180 and 240 HP Lombardini engines.
Yanmar V-Throttle cable	Yanmar engines 0 – 5 V cable	2 4	42041C 42042E	Yanmar BY engines
Universal I/ PWM-Throttle cable	PWM throttle cable with no connector	2 4	42043G 42044J	Compatible with CAT electronic engines C30/C32
Universal SAEJ1939-Throttle cable	SAEJ1939 cable with no connector	2 4	42045L 42046N	None
NMEA2000 Throttle cable	NMEA2000 cable	1 3 7	42047R 42048T 42049V	DeviceNet cable Drop type for NMEA2000 connection
Hyundai V-Throttle cable	Hyundai engines 0 – 5 V cable	2 4	42288P 42289S	Hyundai engines
Perkins PWM-Throttle cable	Perkins engine PWM Throttle cable	2 4	42374G 42373E	Perkins engines

CHART C - Main system cables

DESCRIPTION	APPLICATION	LENGTH (m)	P. No.	CONNECTORS
Main power supply cable	Main power supply of the system	1 3 7 10	42052H 42053K 42054M 42055P	One each battery
Power cable extension	Power extension cable for modules connection	1 3 7 10	42056S 42057U 42058W 42059Y	One each mechanical actuator or shift unit
Shift cable	Solenoid connection cable	1 3 7 10	42060G 42061J 42062L 42063N	One each solenoid shift
3 solenoid Shift cable (neutral solenoid)	3 solenoid connection cable	1 3 7 10	42072P 42073S 42074U 42075W	One each 3 solenoid shift
CAN cable	Network connection cable	1 3 7 10 15 20	73639T 73680P 73681S 71021K 71031N 71032R	CAN cable

Note:

Should the engine inverter need the neutral solenoid, the proper shift cable must be used.
Custom cabling can be done, upon request

CHART D - Troll cables

DESCRIPTION	APPLICATION	LENGTH (m)	P. No.	CONNECTORS
Universal V-Troll cable	0-5 V cable with no redundancy	2 4	42068Z 42069B	None
Universal I-Troll cable	0.20 mA output cable, no connectors included	2 4	42070K 42071M	None

Spare parts

MODEL	DESCRIPTION	P. No.	Q.TY
Cable connection kit	Kit to connect the mechanical cable to the actuator	41898N	1 for each actuator
Conduit clamp kit	Conduit clamp kit for mechanical cable	41897L	1 for each actuator

ENGINE	NO. OF ENGINES	COMPONENTS	P. No.	Q.TY
PwA II-EE Electronic throttle Electric shift	Single Engine	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
	Two Engines	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
		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
PwA II-EM Electronic throttle Mechanical shift	Single Engine	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
		Two Engines	Power Unit (optional for second battery)	42026G
	Power cable extension (optional for second battery)		Chart C	1
	Power supply cable (optional for second battery)		Chart C	1
	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
	For each additional station add: Single Engine: Two Engines:	Single Engine	Power supply cable (general)	Chart C
Network terminators			42028L	1
Power Unit			42026G	1
Power extension cable			Chart C	2
Power supply cable (optional for second battery)			Chart C	1
Single lever control station with trim (or no trim)			Select control	1
CAN cable			Chart C	1
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
PwA II-ME Mechanical throttle Electronic shift	Single Engine	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
		Power supply cable (optional for second battery)	Chart C	1
	Two Engines	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
PwA II-MM Mechanical throttle Mechanical shift	Single Engine	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
	Two Engines	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
	Three Engines	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
	Four Engines	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	
For each additional station add:				
Single Engine:	Single lever control station with trim (or no trim)	Select control	1	
	CAN cable	Chart C	1	
Two Engines:	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
	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
	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	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:

- Engine communication system: Ultraflex control boxes can be mechanical (when both throttle and shift cable is present), electronic (when both throttle and shift cable are controlled by a position sensor) and hybrid (when using the throttle position sensor and inverter cable).
- Spaces onboard: 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 them as the rotation of the lever must not be impeded; moreover, in the case of mechanical control boxes, it is necessary to ensure the correct way for the control cables.
- Design: Ultraflex control boxes are designed with the idea of following as much as possible the style of the boat on which they are 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 the case of mechanical and hybrid control boxes, the cables and their smoothness inside the sleeves must be checked regularly. For a correct maintenance, please refer to the user and maintenance manuals supplied with Ultraflex products.

It is recommended to combine Ultraflex with a “Universal Kill Switch” a safety system used to ensure the engine switch off in case of accidental movement away 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 X41safety switch is installed
Control cables	C2, C8, MachZero

B400	42076Y	B400 Control Box - Fully mechanical version
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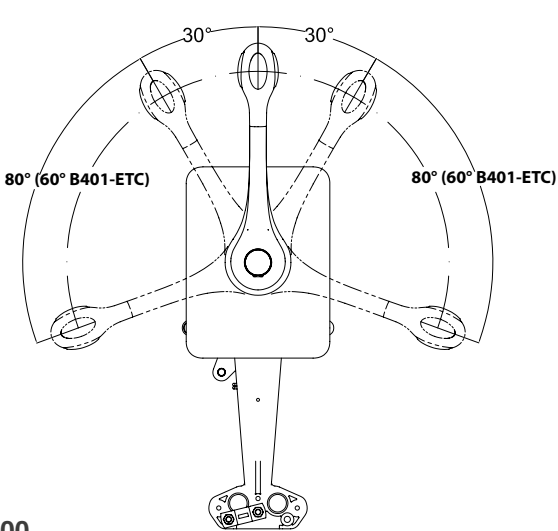
B400

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.

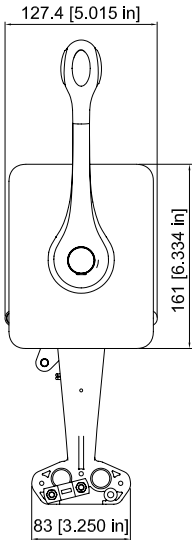
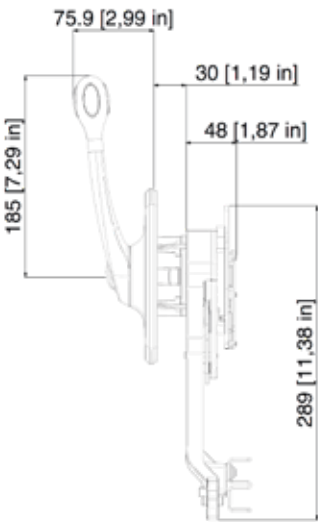
- 316 stainless steel lever and flange for a better resistance in the marine environment
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a throttle 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

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Installation	Horizontally or vertically
Applications	Sailing boats, inboard
Version	Hybrid mechanical shift electric throttle
Output voltage range	Chosen by the customer between 0 & 5V
Power supply	5V +/-10%, linearity +/-1%
Adjustable friction	Yes
Engine Warm up button	Yes
X41 Neutral safety switch	Included
EN ISO 11547	Yes, when X41 safety switch is installed
Control cables	C2, C8, MachZero
<div> <div>B401-ETC 42077A</div> <div> <div></div> <div>B401-ETC Control Box - Hybrid version (mechanical shift, electronic throttle)</div> </div> </div>	



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%.

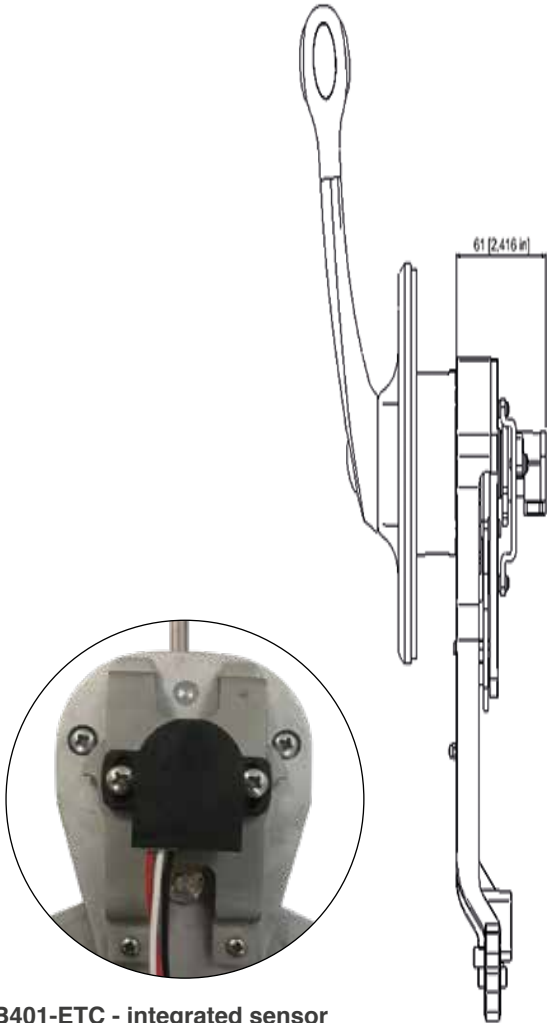
Featuring AISI 316 stainless steel lever and bezel, the B401-ETC has a sleek and modern design which is ideal for sailboats.

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 series

Single lever side mount controls



B310CH



B310BR

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Installation	Horizontally or vertically
Applications	Inboard, outboard, sterndrives
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, 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 **X12** – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 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 series Single lever side mount controls

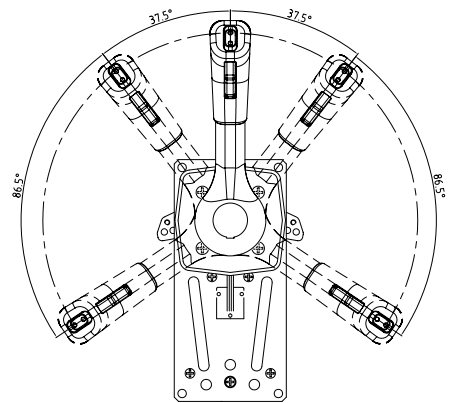


B310B

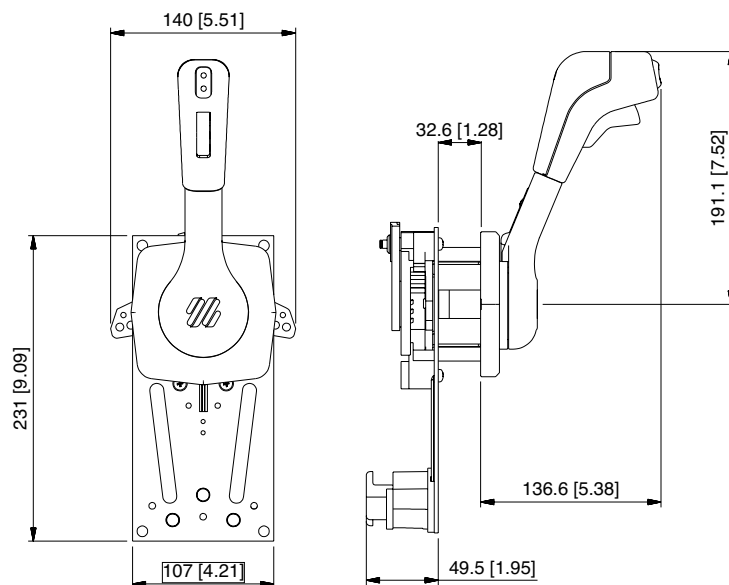


B310B-NT No Trim

B310CH	41789H	Chrome plated version, provided with a positive lock-in neutral and trim switch
B310BR	41788F	Burl version, provided with a positive lock-in neutral and trim switch
B310B	41790S	Black version, provided with a positive lock-in neutral and trim switch
B310B-NT	42628M	Black version, Provided with a positive lock-in neutral and without trim switch



B310CH - B310BR - B310B



B310CH - B310BR - B310B

B183 - B184 - B85

Single lever side mount controls



B183



B184 - with Trim

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 X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 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.

	B183	B184	B85
Lever	Single lever	Single lever	Single lever
Lever control	Dual action control	Dual action control	Dual action control
Assembly	Side mount	Side mount	Side mount
Installation	Horizontally or vertically	Horizontally or vertically	Horizontally or vertically
Applications	Inboard	Inboard, outboard, sterndrives	Inboard, sailboats
Version	Fully mechanical	Fully mechanical	Fully mechanical
Adjustable friction	Yes	Yes	Yes
Pull-out handle for warm-up	Yes	Yes	Yes
Positive lock-in neutral	Yes	Yes	Yes
Power trim switch	No	Yes	No
X12 Neutral Safety Switch	Not included - to be ordered separately	Not included - to be ordered separately	Not included - to be ordered separately
EN ISO 11547	Yes, when X12 safety switch is installed	Yes, when X12 safety switch is installed	Yes, when X12 safety switch is installed
Control cables	C2, C8, MachZero, Mach14	C2, C8, MachZero, Mach14	C2, C8, MachZero, Mach14
Control cables that require a connection kit	C5, C16, Mach5 (K35)	C5, C16, Mach5 (K35)	C5, C16, Mach5 (K35)

B183 - B184 - B85

Single lever side mount controls

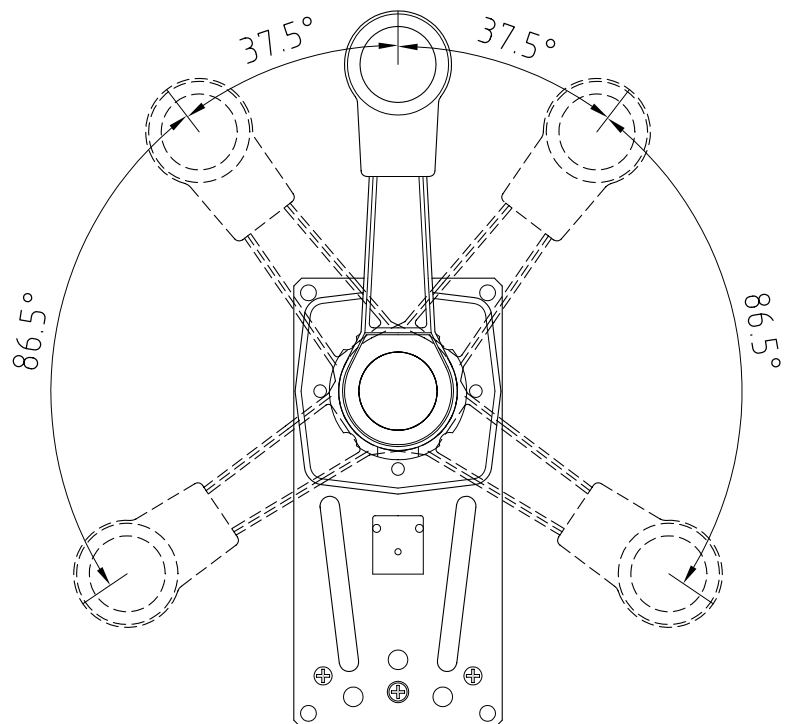
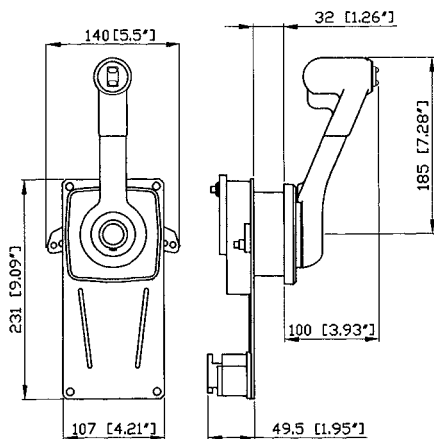
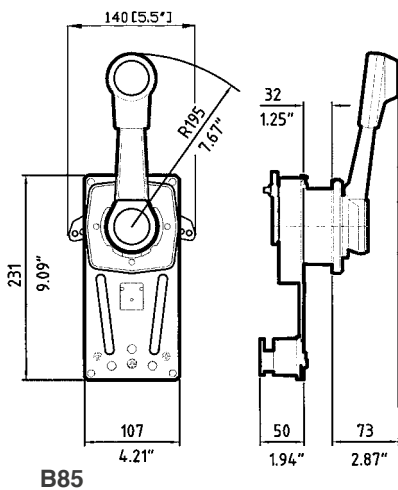


B85

B183	38945B	Provided with a positive lock-in neutral
B184	38946D	Provided with a positive lock-in neutral and trim switch
B85	35682I	Provided with a positive lock-in neutral

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



B110 - B110/KS

Single lever side 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

B110B	39367S	Black, with trim, with no kill switch
B110W	43521Y	White, with trim, with no kill switch
B110B/KS	43522A	Black, with trim, with kill switch
B110W/KS	43523C	White, with trim, with kill switch

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Applications	Inboard, outboard, sterndrives
Version	Fully mechanical
Adjustable friction	Yes
Engine warm up button	Yes
lock-in trigger	Yes
Power trim switch	Yes
Kill Switch	Provided on the KS version
Lever Stroke	+/- 95°
X41 Neutral Safety Switch - with IP67 Protection	Not included - to be ordered separately
X48 Neutral Safety Switch	Not included - to be ordered separately
EN ISO 11547	Yes, when X41 or X48 safety switch are installed
Control cables	C2, C8, MachZero
Control cables that require a connection kit	C5, Mach5 (K74); C36, Mach36 (K75); C14, Mach14 (K76);



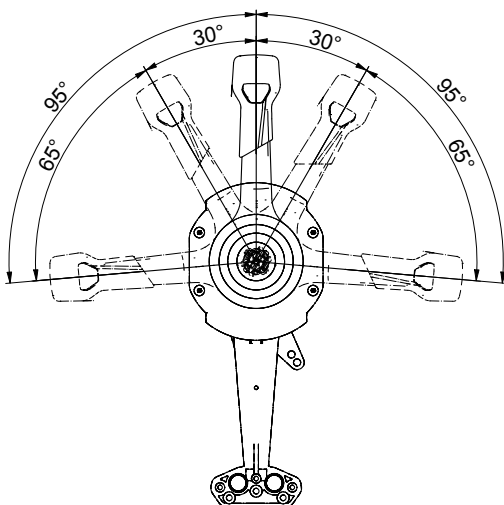
B110B/KS



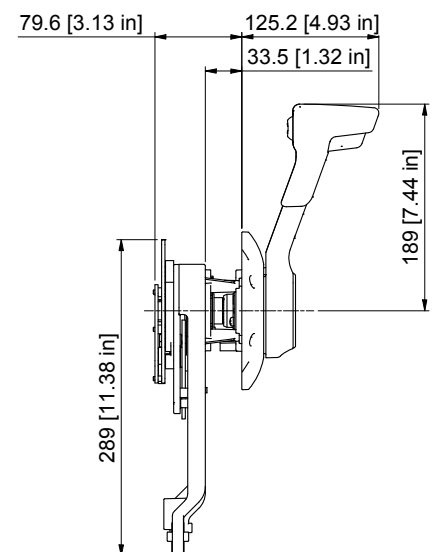
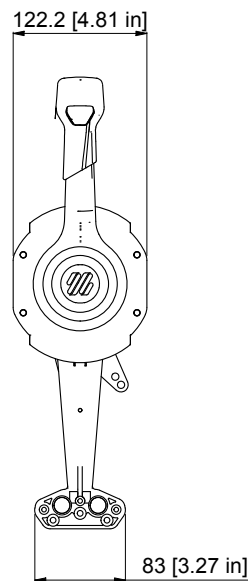
B110W/KS

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 side 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.

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Applications	Inboard, outboard, sterndrives
Version	Hybrid - mechanical shift, electric throttle
Electronic Throttle Control	Yes
Output voltage range	Chosen by the customer between 0 & 5V
Power supply	5V +/-10%, linearity +/-1%
Adjustable friction	Yes
Engine warm up button	Yes
lock-in trigger	Yes
Power trim switch	Yes
Kill Switch	Provided on the KS version
Lever Stroke	+/- 95°
X41 Neutral Safety Switch - with IP67 Protection	Not included - to be ordered separately
X48 Neutral Safety Switch	Not included - to be ordered separately
EN ISO 11547	Yes, when X41 or X48 safety switch are installed
Control cables	C2, C8, MachZero
Control cables that require a connection kit	C5, Mach5 (K74); C36, Mach36 (K75); C14, Mach14 (K76);)

B110B-ETC	43751S	Black, with trim, with no kill switch
B110W-ETC	43750P	White with trim, with no kill switch
B110B/KS-ETC	43749F	Black, with trim, with kill switch
B110W/KS-ETC	43748D	White, with trim, with kill switch



B110B/KS-ETC

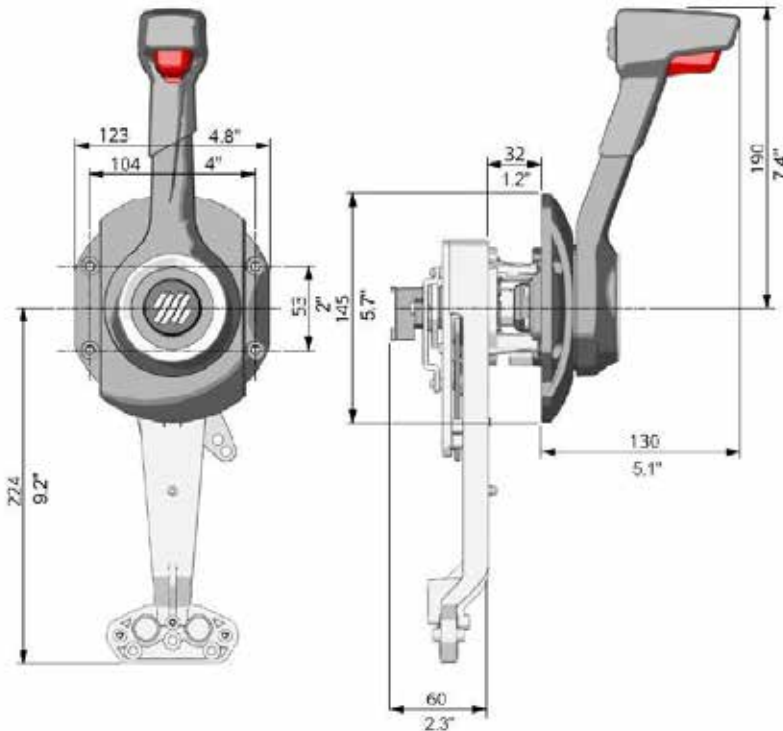


B110W/KS-ETC

B110 ETC (Electronic Throttle Control) Hybrid Single lever side mount controls



B110B-ETC B110W-ETC



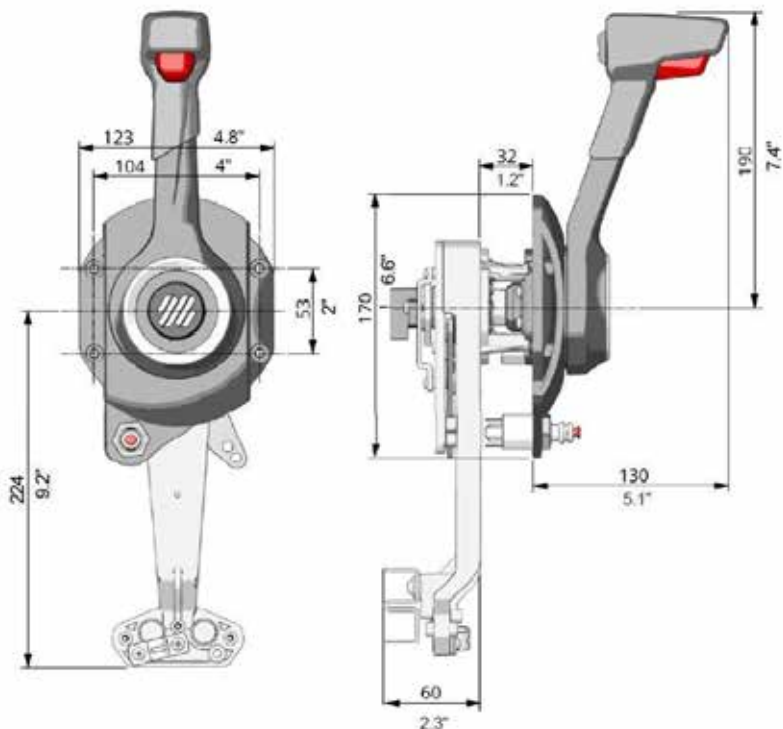
Suitable for any type of boat with outboard engine, inboard or sterndrive units.

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Provided with an easy adjustable brake tension release system
- Push-in button for throttle operation in neutral (engine warm-up)
- Lock in neutral trigger to prevent accidental engaging
- X41 and X48 optional safety switches available to prevent in-gear starting
- Exceeds EN ISO 11547 standards when X41 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

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.

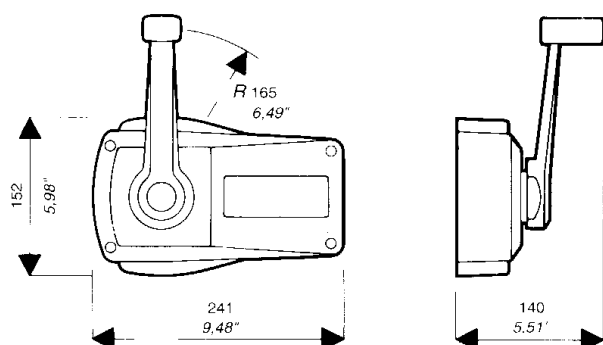
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Made of painted marine aluminum
- Pull-out handle disengages shift for warm-up
- Neutral safety switch X12 – 34543Q (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.

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Applications	Inboard
Material	Painted marine aluminum
Version	Fully mechanical
Adjustable friction	No
Pull-out handle for warm-up	Yes
Positive lock-in neutral	Yes
Power trim switch	No
Lever Stroke	+/- 95°
X12 Neutral 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	C5, C16, Mach5 (K35); C14, Mach14 (K51);

B89	36151G	Ivory finish with positive lock-in neutral.
B90	36152H	Black finish with positive lock-in neutral.



Lock-in neutral

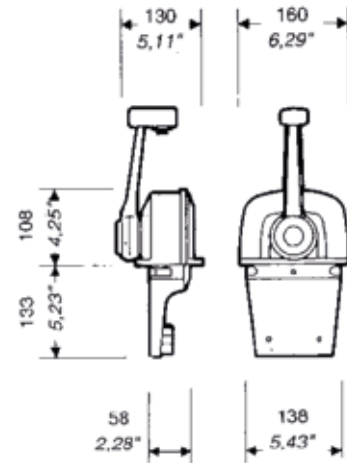
B65 - B76 - B73 - B77 Single lever top mount controls



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

Lever	Single lever
Lever control	Single lever
Assembly	Top mount
Applications	Inboard (B65, B73), outboard & sterndrive (B76, B77)
Version	Fully mechanical
Material	Marine aluminum
Adjustable friction	No
Pull-out handle for warm-up	Yes
Positive lock-in neutral	No
Power trim switch	Provided on the B76, B77 versions
X12 Neutral Safety Switch	Not included - to be ordered separately
EN ISO 11547	Yes, when X12 safety switch is installed
Control cables	C2, C8, MachZero, C14, Mach14
Control cables that require a connection kit	C5, C16, Mach5 (K35)

B65	34731V	Chromed Single lever control for one engine.
B76	35312E	Chromed Single lever control for one engine, with trim.
B73	35007U	Single lever control for one engine, Black Powder coat finish
B77	35313F	Single lever control for one engine, Black Powder coat finish, with trim



Handle with trim

B66 - B78 - B74 - B79

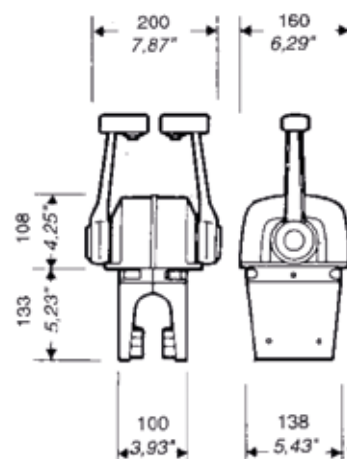
Twin lever top mount controls



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

Lever	Twin lever for 2 engines
Level control	Dual action control
Assembly	Top mount
Applications	Inboard (B66, B74), outboard & sterndrive (B78, B79)
Version	Fully mechanical
Materials	Marine aluminum
Adjustable friction	No
Pull-out handle for warm-up	Yes
Positive lock-in neutral	No
Power trim switch	Provided on the B78, B79 versions
X12 Neutral Safety Switch	Not included - to be ordered separately
EN ISO 11547	Yes, when X12 safety switch is installed
Control cables	C2, C8, MachZero, C14, Mach14
Control cables that require a connection kit	C5, C16, Mach5 (K35)

B66	34732W	Chromed twin lever control for two engines.
B78	35314G	Chromed twin lever control for two engines, with trim
B74	35008B	Twin lever control for two engines, Black Powder coat finish
B79	35315H	Twin lever control for two engines, Black Powder coat finish, with Trim



Handle with trim



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 be operated simultaneously on both engines or one can choose to regulate the trim on the 2 engines independently of each other .

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

B501CHT/L	43028S	Single engine, with lock and trim - Chrome plated
B502CHT/L	43258K	Double engine, with lock and trim - Chrome plated
B501BT/L	43036R	Single engine, with lock and trim - Gun metal
B502BT/L	43259M	Double engine, with lock and trim - Gun metal

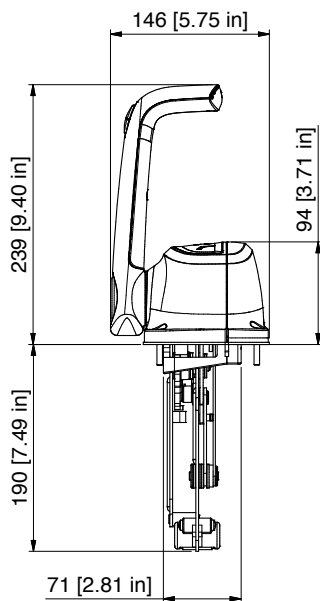


	B501-B502	B501-B502 with trim	B501-B502 with trim and lock in neutral
Lever	Single lever/Twin lever for 2 engines	Single lever/Twin lever for 2 engines	Single lever/Twin lever for 2 engines
Level control	Dual action control	Dual action control	Dual action control
Assembly	Top mount	Top mount	Top mount
Housing Material	High resistance ABS	High resistance ABS	High resistance ABS
Applications	Inboard	Inboard, outboard & sterndrive	Inboard, outboard & sterndrive
Version	Fully mechanical	Fully mechanical	Fully mechanical
Adjustable friction	Yes	Yes	Yes
Pull-out handle for warm-up	Yes	Yes	Yes
Positive lock-in neutral	No	No	Yes
Power trim switch	No	Yes	Yes
X12 Neutral Safety Switch	Not included - to be ordered separately	Not included - to be ordered separately	Not included - to be ordered separately
EN ISO 11547	Yes, when X12 safety switch is installed	Yes, when X12 safety switch is installed	Yes, when X12 safety switch is installed
Control cables	C14, Mach14	C14, Mach14	C14, Mach14
Control cables that require a connection kit	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)

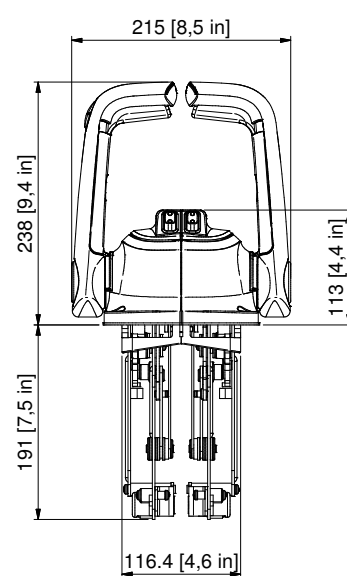
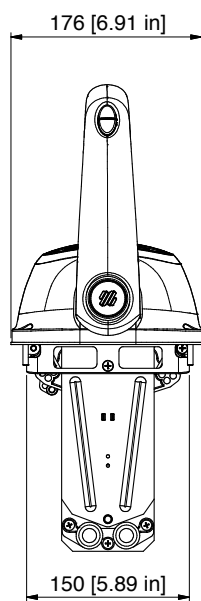
B501 - B502 series Top mount controls

B501CH	43023F	Single engine, no trim - Chrome plated
B501CHT	43024H	Single engine, with trim - Chrome plated
B502CH	43025K	Double engine, no trim - Chrome plated
B502CHT	43256F	Double engine, with trim - Chrome plated

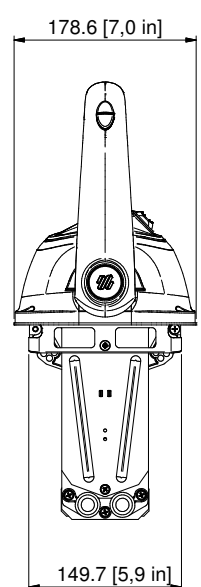
B501B	43031E	Single engine, no trim - Gun metal
B501BT	43032G	Single engine, with trim - Gun metal
B502B	43033J	Double engine, no trim - Gun metal
B502BT	43257H	Double engine, with trim - Gun metal



B501 - B502 Dimensions



B502CHT/L - B502BT/L Dimensions



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



B104+ 2 X55



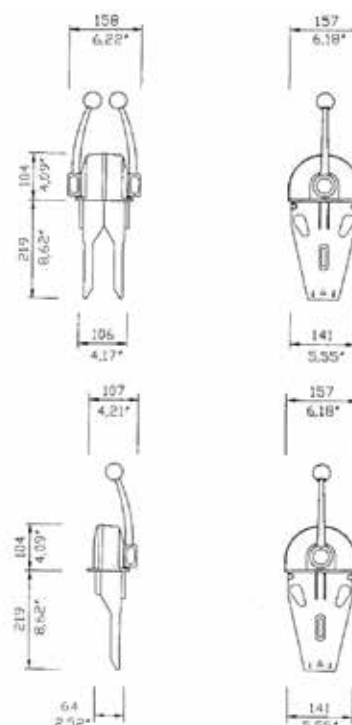
B103



B104

B103	37923K	Single lever control for one engine
B104	37924L	Twin lever control for two engines
X55	39421V	Silver knob Optional

Lever	Single lever
Lever control	Dual action control
Assembly	Top mount
Applications	Inboard
Version	Fully mechanical
Material	Marine aluminum
Pull-out handle for warm-up	Yes
Positive lock-in neutral	No
Power trim switch	No
X43 Neutral Safety Switch	Not included - to be ordered separately
EN ISO 11547	Yes, when X43 safety switch is installed
Control cables	C2, C8, MachZero
Control cables that require a connection kit	B103 - C22 (K33)





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



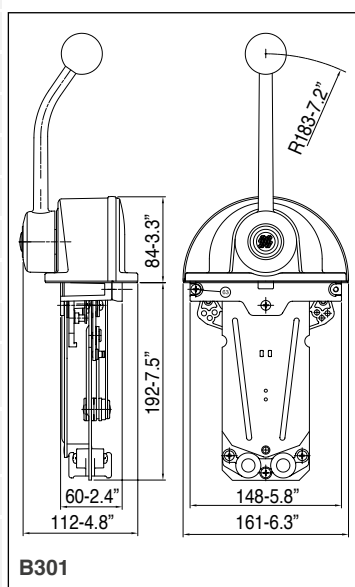
2 X75 Optional



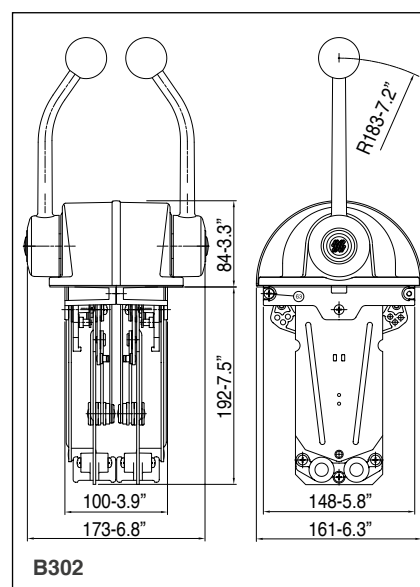
B302CR + 2 X75

B301CR	40140U	Single lever for one engine
B302CR	40141W	Twin lever for two engines
X75	40662B	Silver knob optional

Lever	Single lever
Lever control	Dual action control
Assembly	Top mount
Applications	Inboard
Version	Fully mechanical
Material	Chromed 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);



B301



B302

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



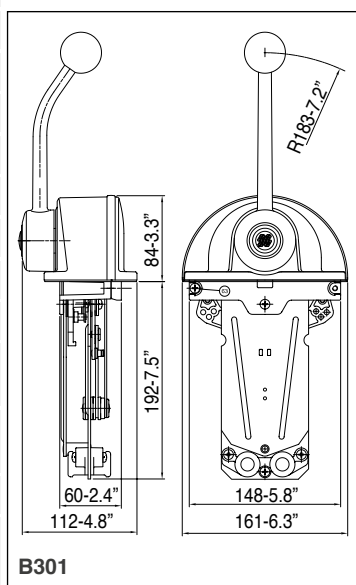
2 X75 Optional



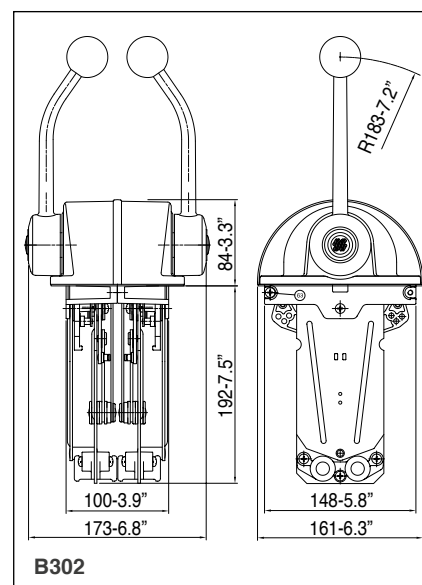
B302B + 2 X75

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 (warm-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);



B301



B302

B505-ESTC (Electronic Shift Throttle Control) Hybrid 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.

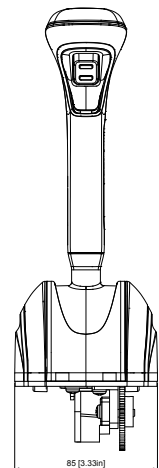
For the sensor configuration of B505-ESTC control, please contact our Technical Service Department.



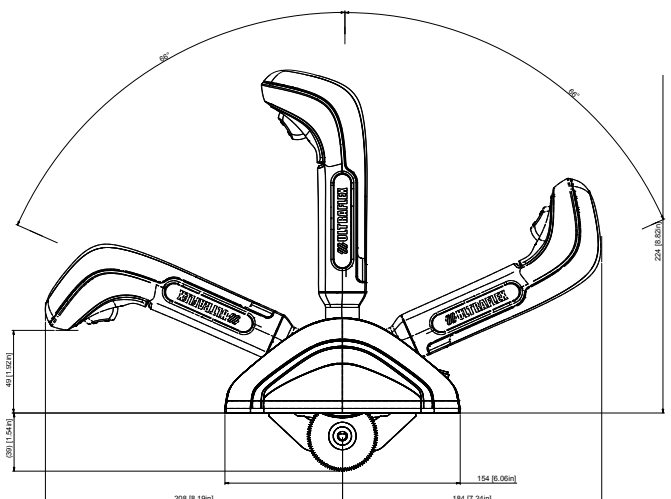
B505-ESTC



Customizable switches



Lever	Single lever
Lever control	Dual action control
Assembly	Front mount
Applications	Inboard, outboard, sterndrives
Version	Electronic
Electronic Throttle Control	Yes
Output voltage range	Chosen by the customer between 0 & 5V
Power supply	5V +/-10%, linearity +/-1%
Adjustable friction	Yes
Engine warm up button	No
lock-in trigger	Customizable
Power trim switch	Yes - standard version
Kill Switch	No
Lever Stroke	+/- 66°



B505-ESTC 43581T Black, with trim, with no kill switch

B46 - B58 - B50 - B59

Two 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)

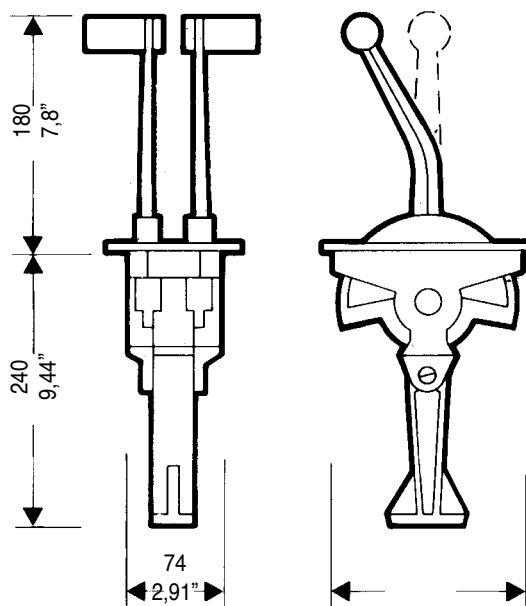
Bent levers

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



Bent levers
B46
B58 with interlock

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

- 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

B204R	37383C	Throttle and shift - Black
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Lever	Single lever
Lever control	Dual action control
Assembly	Top mount
Applications	Inboard, jet boats
Version	Fully mechanical
Adjustable friction	Yes
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)

B204 - B208 (ETC - ESC - ESTC)

Top mount control - mechanical version



Black finish

B204R-ETC	42832L	Throttle controlled by an electric signal, shift by a mechanical cable
B204R-ESC	42775B	Shift controlled by an electrical signal, throttle by a mechanical cable
B204R-ESTC	42776D	Throttle and shift controlled by an electrical signal

White finish

B208R-ETC	42835T	Throttle controlled by an electric signal, shift by a mechanical cable
B208R-ESC	42833N	Shift controlled by an electrical signal, throttle by a mechanical cable
B208R-ESTC	42834R	Throttle and shift controlled by an electrical signal

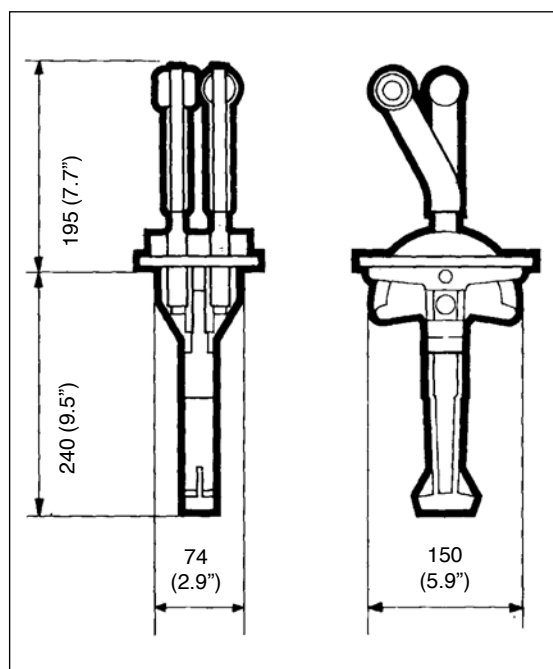
Lever	Two lever
Lever control	Single action control
Assembly	Top mount
Applications	Inboard, jet boats
Version	Hybrid
Adjustable friction	Yes
Output voltage range	Chosen by the customer between 0 & 5V
X12 safety switch	Not included - to be ordered separately
EN ISO 11547	Yes, when X12 safety switch is installed
Control cables	C2, C8, MachZero
Control cables that require a connection kit	C22 (K22)

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 (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





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

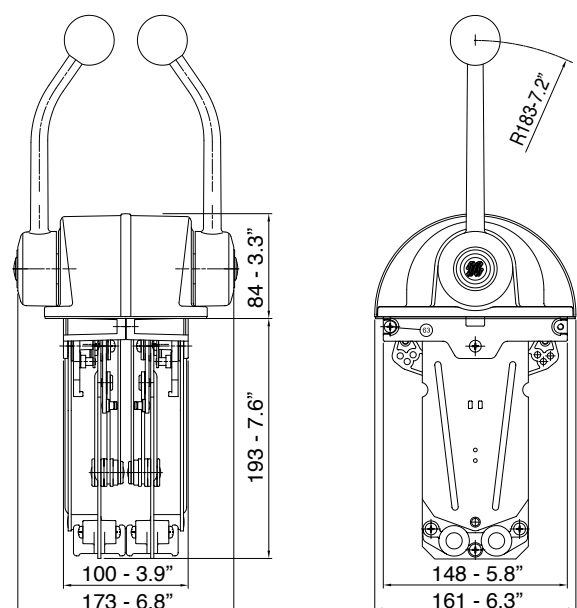
- Use with all Ultraflex control cables
 - C14 and MACH14 cables require no kit
 - For C2, C8 and MACHZero cables the connection kit K67 – 40705T is included
 - C5, C16 and MACH5 cables require K63 kit – 40757N
 - C22 cable requires K64 kit – 40758R
 - C36 and MACH36 cables require K65 kit – 40759T



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

Two lever top mount controls

CE

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



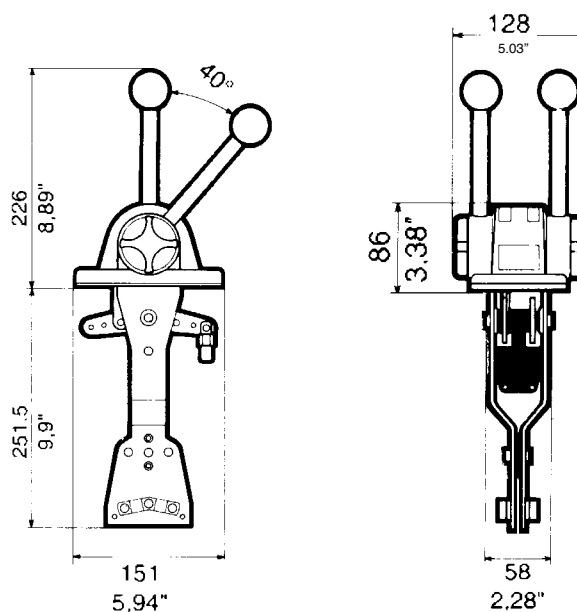
B102

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 Two lever side mount controls

Suitable for small outboard engines.

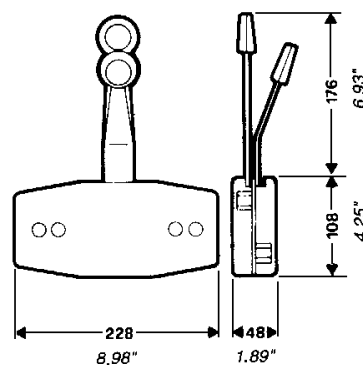
- Made of nylon fiberglass with anodized aluminum levers
- Left or right side mount installation

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



Lever	Two lever
Lever control	Single action control
Assembly	Side mount
Applications	Outboard
Version	Fully mechanical
X12 safety switch	Not included - to be ordered separately
EN ISO 11547	Yes, when X12 safety switch is installed
Control cables	C5, Mach5
Control cables that require a connection kit	C14, Mach14 (K23); C2, C8, MachZero (K25);



B47	32770A	Light grey
B49	33283S	Black

B35 Control box

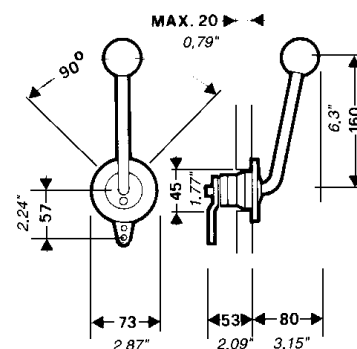
- Lever and flange all stainless steel
- Flush side mount installation
- Particular suitable for throttle control or hydraulic shift operation
- Provided with adjustable friction and detents

Control cables

- For use with Ultraflex C2, C8 and MACHZero engine control cables

Lever control	Single action control
Assembly	Side mount
Version	Fully mechanical
Control cables	C2, C8, MachZero

B35	32386A	Stainless steel
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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

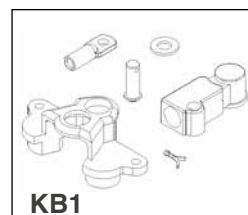
Kit to connect C5 and MACH5 cables to B110 controls

K75 - 43519M

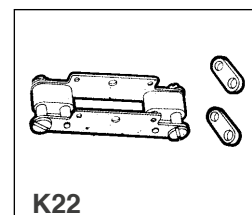
Kit to connect C36 and MACH36 cables to B110 controls

K76 - 43520W

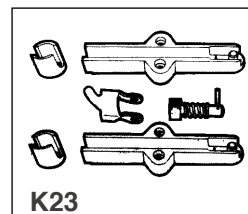
Kit to connect C14 and MACH14 cables to B110 controls



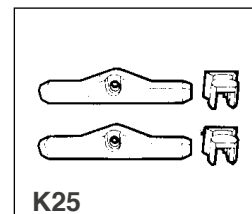
KB1



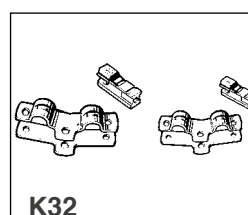
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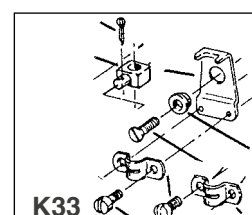
K23



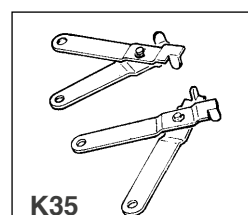
K25



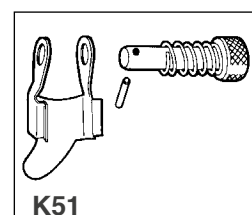
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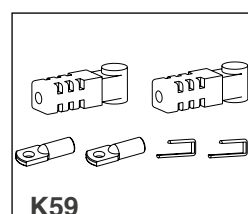
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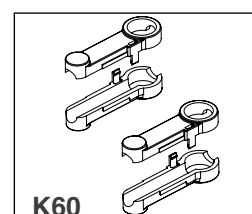
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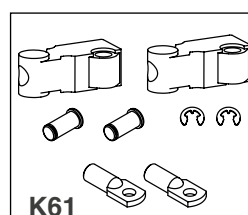
K51



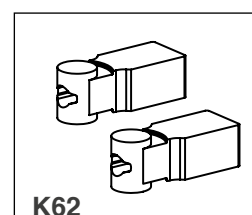
K59



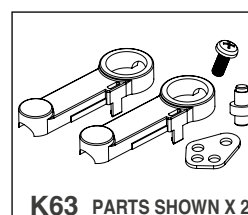
K60



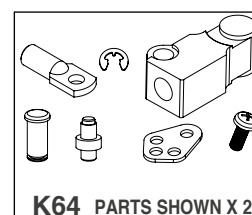
K61



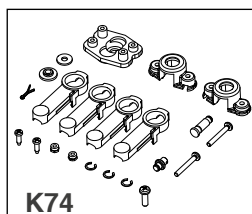
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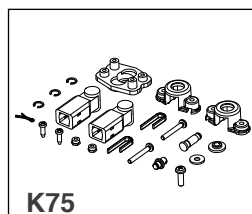
K63 PARTS SHOWN X 2



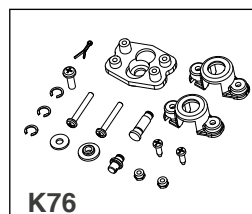
K64 PARTS SHOWN X 2



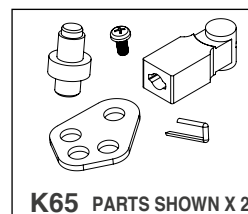
K74



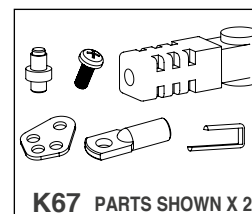
K75



K76



K65 PARTS SHOWN X 2



K67 PARTS SHOWN X 2

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.

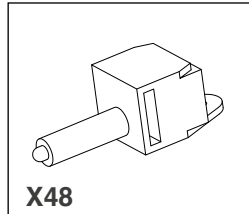
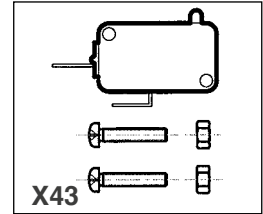
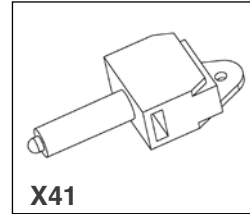
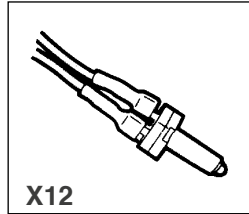
IP67 protection.

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



Control box - control cable application matrix

Single lever controls

MODEL	B400	B183 - B184 - B85 B310 Series	B110	B301 - B302 B501 Series	B103	B104	B73 - B74 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

Two lever controls

MODEL	B322 - B324	B46 - B50 - B58 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.

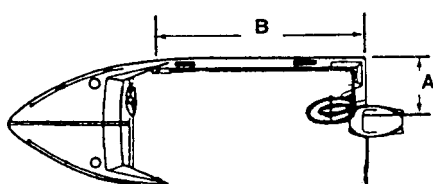
To determine the needed length of the REPLACEMENT CABLE, measure it from tip to tip.

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.

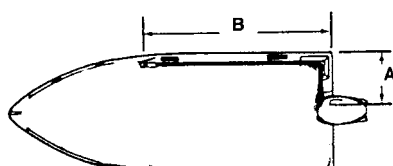
OUTBOARD

$$A + B + 3' (90 \text{ cm}) = L$$



INBOARD/STERNDRIVE

$$A + B = L$$



SELECTION OF ENGINE CONTROL CABLES

	ENGINE	ULTRAFLEX ENGINE CONTROL CABLES
OUTBOARD	Mercury [®] and Gen. II [™] Controls	C36 - MACH36
	Mercury [®] Mariner [®] over 50 hp (37kW)	C5 - MACH5
	Mariner [®] up to 50 hp (37kW)	C16
	Force [®] Selva [®] Yamaha [®] Suzuki [®] Tohatsu [®] Honda [®] Nissan [®]	C2 - C8 - MACHZero
	Johnson [®] - Evinrude [®] - BRP [®]	After 1979 C14-MACH14
	Weber [®]	C40 - C48
	Rotax [®]	C40RT - C42RS
JET		
STERNDRIVE	Mer cruiser [®] and Gen. II [™] Controls	C36 - MACH36
	Mer cruiser [®]	C5 - MACH5
	OMC [®] - BRP [®]	After 1979 C14-MACH14
	Volvo Penta [®] Yanmar [®] Volkswagen [®]	C2 - C8 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



MACHZero

MACH5

MACH14

MACH36

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



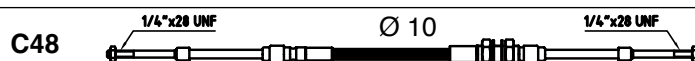
C40



C48



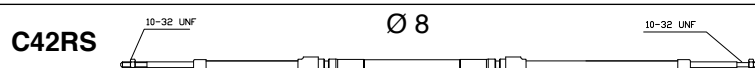
C40



C48



C40RT



C42RS

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

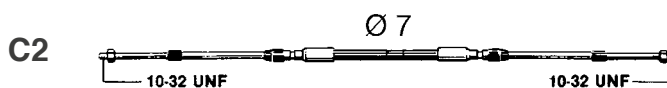
C16 Stroke: 80 mm (3.1"). For Mariner® engines up to 40 hp.

C22 Stroke: 80 mm (3.1")
Stainless steel clamp fittings. Recommended for heavy duty applications.

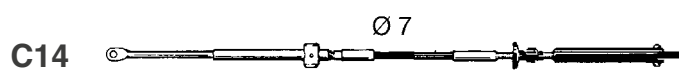
B14 Stroke: 70 mm (2.8")
Designed for throttle, fuel shut-off and other applications. Supplied with L13 and L14 clamp and shim.

C40 Stroke: 86 mm (3.4")
Throttle Cable for Weber® jet engines

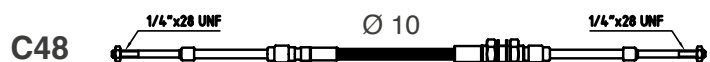
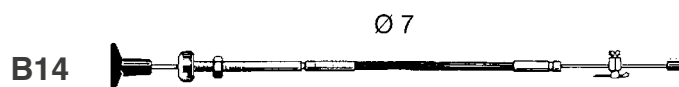
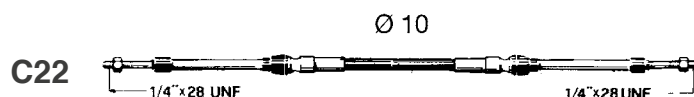
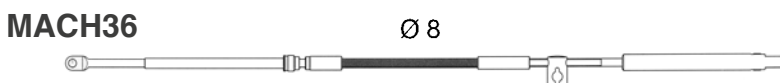
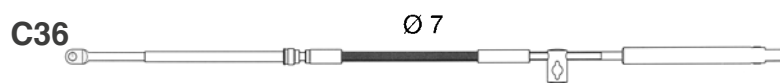
C48 Stroke: 84 mm (3.3")
Shift and throttle cable for jet boats 40 Class



BRP® - EVINRUDE® (OMC®) CABLES



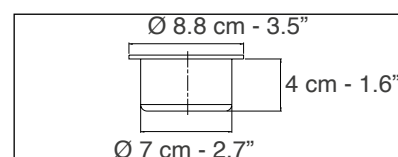
MERCURY® - MERCURUISER® - MARINER® CABLES



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.

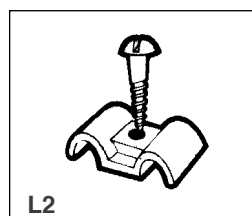
Fits C48 Jet boat cable.

K56 - 39237C

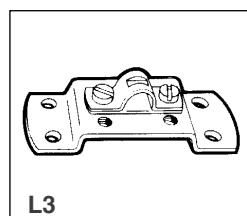
Adapts C2, C8 and MACHCZero cables for use with Mercury engines.

K57 - 39238E

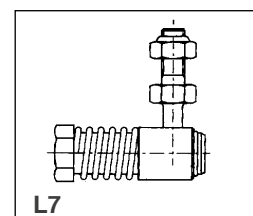
Adapts C2, C8 and MACHCZero cables for use with BRP® - Evinrude engines.



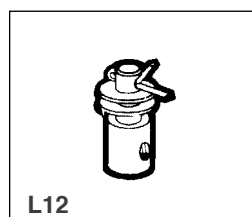
L2



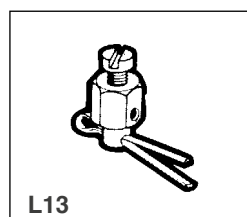
L3



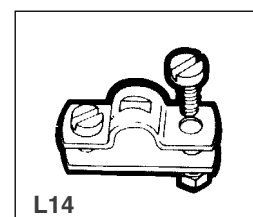
L7



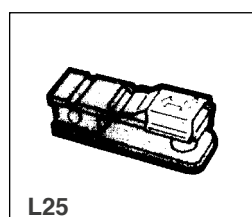
L12



L13



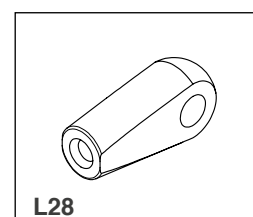
L14



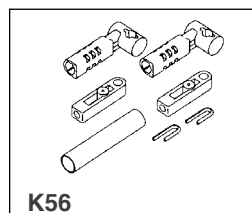
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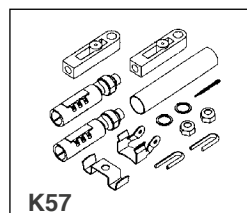
L26



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.

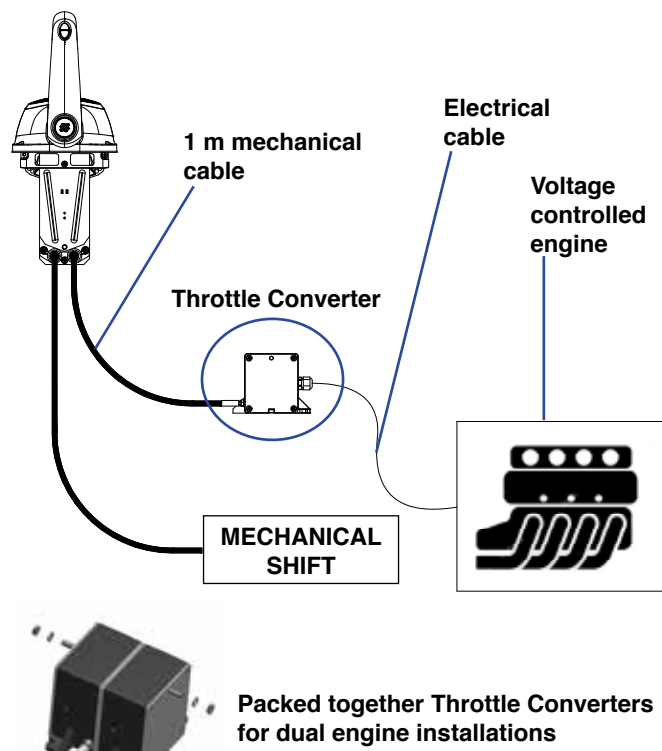
Suitable either for new installations and refitting, it allows to use an existing mechanical control and connect it to the electrical input of the new engine's throttle.

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



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 *

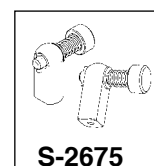
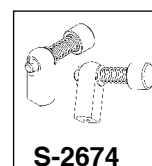
K8 - 30321A for 25 hp engines

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
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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 - T74NRFC

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 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

B400

Screw kit	43866K
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B301CR - B302CR - B301B - B302B - B322 - B324

Lever assembly with black knob	40897F
Lever assembly with red knob B322 - B324	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 - B324	71516P
Installation kit B301	40170D
Installation kit B302	40192P
Installation kit B322 - B324	40703N

Available spare parts

Mechanical products

B501 - B502	
B501 components kit	43128W
B502 components kit	43129Y
B103 - B104	
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
B65 - B665 - B66 - B666	
B73 - B74 - B76 - B77 - B78 - B79	
Lever assembly B66 – B65 – B73 – B74	57076R
Lever assembly B665	40915E
Lever assembly B666	40916G
Lever assembly with trim B76-B77-B78-B79	57459E
Chrome rear cover	55529Z
Black rear cover	55608X
Installation kit B65 - B665	35147J
Installation kit B66 - B666	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
B310CH - B310BR - B310B	
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
B183 - B184 - B85	
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
B89 - B90	
Black lever with lock	58245T
White lever with lock	57899L
Installation kit B89 - B90	36168R
B46 - B50 - B58 - B59	
Cover	57960T
Black knob	32394A
Red knob	32472Q
Installation kit	35365R
B99 - B101 - B102	
Red knob B99 – B101 – B102	58266Y
Black knob B99 – B101 – B102	53185V
Installation kit B99 – B101 – B102	35391A
B14 Engine Stop Cable	
B14 Kit	59976G

WARNING

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Available spare parts Mechanical products

B110

Switch with Logo	43644R
Lever assembly	43645T
Flange + seal kit	43646V
Screw kit	43647X
33C cables screw kit	43648Z

B505

Seal kit	43649B
Top and side cover kit	43650K

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/25NV F/28 F/33 F/33NV 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

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
Seal cartridge kit for UC128-OBF P. No:	
39423Z, 39966R, 39967T, 40106U, 40107W (order 2 per cylinder)	39493X
Seal cartridge 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

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Available spare parts

Hydraulic products

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
Seal cartridge kit for UC130-SVS P.No: 43225U, 43226W, 43227Y	43364J
Tool kit for UC130-SVS P.No: 43225U, 43226W, 43227Y	43386V

UC120 OUTBOARD CYLINDERS

Seal kit	43572S
Tool kit	43614F

UC68-OBS OUTBOARD CYLINDER

Stainless steel tilt tube extension	39495B
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UC132-OBS OUTBOARD CYLINDER

Stainless steel tilt tube extension	39495B
Extension rod connecting pin	40917J

ZTF

Kit OB	43643N
UC130-ZTF	43634M
Replaceable heads kit	43364J
Tilt tube stainless steel rod	42666W
Spacer kit	41812Z
Plastic cap kit	41810X
Engine rod bolt and screw kit	41809L
KIT Y (Yamaha®) mechanical cables	43640G
KIT S2 (Suzuki®) mechanical cables	43641J
KIT M2 (Mercury®) mechanical cables	43642L
KIT ND1-Y (Yamaha®)	43639Y
KIT QU1-Y (Yamaha®)	43638W
KIT QU1-S (Suzuki®)	43635P
KIT ND1-MM (Mercury®)	43636S
Nickel plate plug+ o-ring kit	43637U

INBOARD CYLINDERS

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

STERNDRIIVE CYLINDERS

Extension rod connecting pin	40917J
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NUT AND SLEEVE

Brass nut and sleeve	71004K
Nickel plated brass nut and sleeve	71013L

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