



Leader in Marine Product Innovation

2025

HIGHLIGHTS



NAUTECH-1/M/NO CYLINDER
NAUTECH-3/M/NO CYLINDER

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UJS-B
INTEGRA with bow thruster

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ULTRAFLEX GROUP
90 years
1935-2025



1935 - 2025

Ultraflex Group has 90 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 LEIVI

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.

GUARANTEE CONDITIONS AND EXCLUSIONS

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

ULTRAFLEX mechanical, hydraulic and electronic steering systems

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

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

Electronic system components and engine start-up protection devices

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

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

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

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



CERTIFICATIONS - GUARANTEE CONDITIONS AND EXCLUSIONS



MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
248429-2017-AQ-ITA-ACCREDIA

Initial certification date:
08 April 2002

Valid:
21 November 2023 – 20 November 2026

This is to certify that the management system of
ULTRAFLEX S.p.A.
Via Crose, 2 - 16015 Casella (GE) - Italy
and the sites as mentioned in the appendix accompanying this certificate

has 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), 17 October 2023



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

Claudia Baroncini
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV Business Assurance Italy S.r.l., Via Energy Park, 14 - 20871 Vimercate (MB) - Italy - TEL: +39 68 99 905, www.dnv.it



MANAGEMENT SYSTEM CERTIFICATE

Certificate no.:
249264-2017-AE-ITA-ACCREDIA

Initial certification date:
27 January 2006

Valid:
26 January 2024 – 25 January 2027

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Via Crose, 2 - 16015 Casella (GE) - Italy
and the sites as mentioned in the appendix accompanying this certificate

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

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

Place and date:
Vimercate (MB), 27 December 2023



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

Claudia Baroncini
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.
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Ultraflex products are guaranteed against defects in material or workmanship for a period of two years following the date of manufacture. If the Ultraflex products are installed and used on commercial boats the guarantee is limited to one year following the date of manufacture.

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

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

This guarantee does not cover labor.

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

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

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

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

For any further information please contact our Technical Service.

MANAGEMENT SYSTEM CERTIFICATE

ISO 9001:2015
This is to certify that the management system of

ULTRAFLEX S.p.A. - Sede Legale e Operativa
Via Crotta, 2 - 56023 Cascella (PI) - Italy
and the sites as mentioned in the appendix accompanying this certificate
have 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
(SAR 18, 19)

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Power A Mark II™

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MECHANICAL STEERING SYSTEMS

Suggestions and warnings

Selecting a mechanical steering system

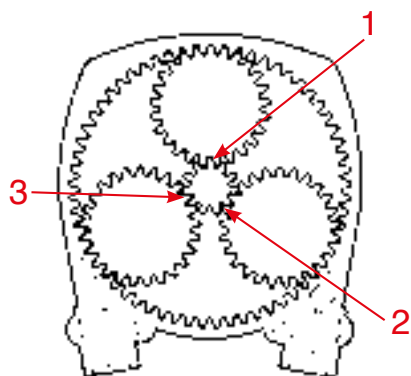
Selection of the appropriate mechanical steering system is an important factor for the safety and functionality of your boat.

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

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

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

Advantages of a Planetary Gear Design

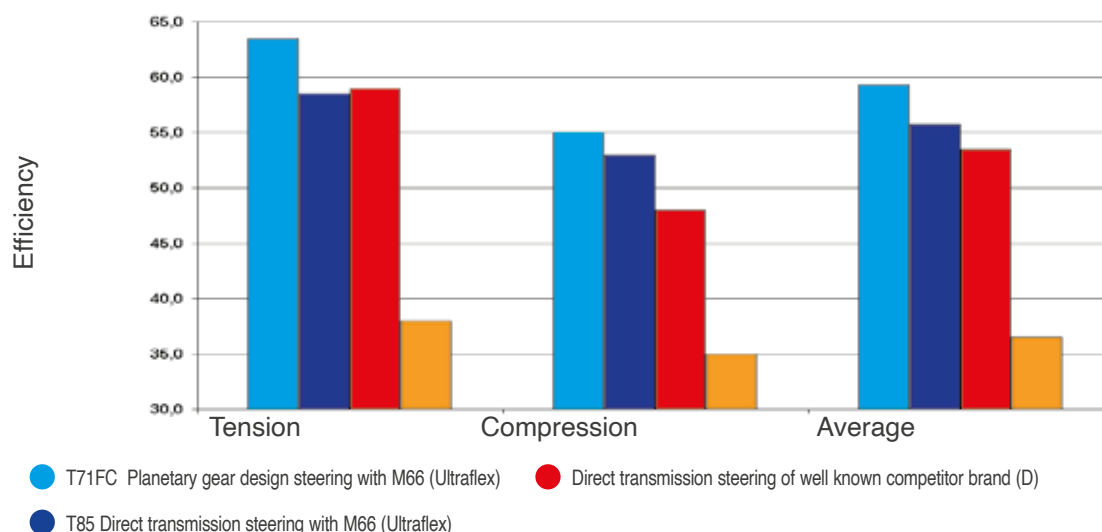


Ultraflex mechanical steering helms T71FC, T73NRFC, T91, T93ZT as well as dual cable versions and tilt wheel versions use a **Planetary Gear Design**.

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

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

Efficiency comparison tests



Test configuration 3 bends at 90°; 1000N load

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

MECHANICAL STEERING SYSTEMS

Suggestions and warnings

The importance of Zero torque steering system for increased safety



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

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

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

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

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

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

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

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

Use and Maintenance

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

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

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





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

Warning:

An **Emergency Safety 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 or SKI BOATS 		T85 T71FC - T81FC - TM87O - T91 - T101	
		Twin cable rotary steering systems	
		TM87J (jet boats) TM87SS (ski boats)	

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

How to measure for new steering cable installation



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



Fig. 1



Fig. 2



Fig. 3

TILT TUBE MOUNTING - Fig. 1

Example (dimensions in cm):

$$A (50) + B (250) + C (80) = 380 - 20 \text{ for two } 90^\circ \text{ bends} = 360 + 30,5$$

For a thru-tube installation 390,5 cm : 30,5 = 12,8 ft; round off to 13 ft


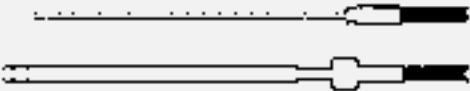
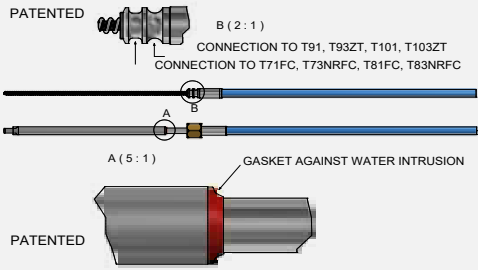

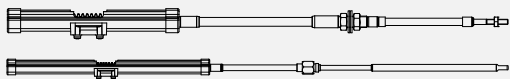
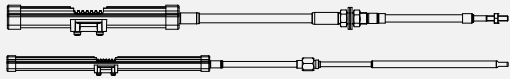
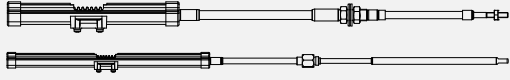
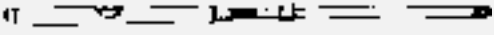
TRANSOM SUPPORT OR SPLASHWELL MOUNTING - Fig. 2-3

Example (dimensions in cm):

$$A (50) + B (250) + C (80) = 380 - 20 \text{ for two } 90^\circ \text{ bends} = 360 : 30,5$$

= 11,8 ft; round off to 12 ft

REPLACEMENT STEERING CABLES

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

Warnings:

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

How to measure for replacement steering cables

ORDER LENGTH: "D" dimension + 56 cm

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

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

D = Conduit length



T67

Rotary steering system

CE UK



T67



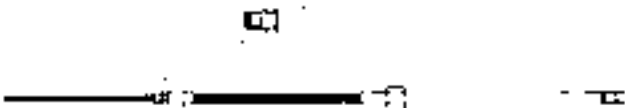
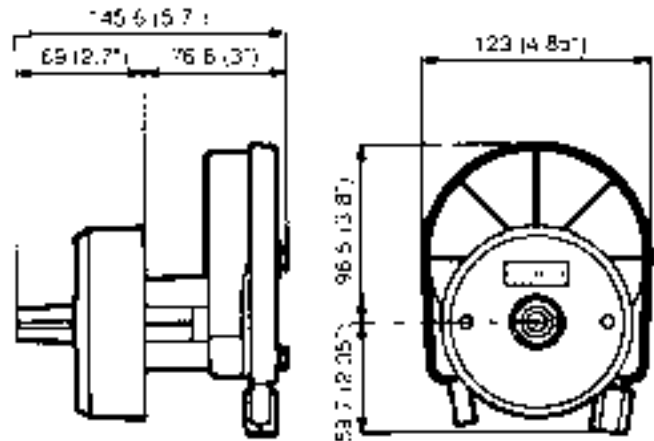
T67W

- All stainless steel output end of cable as per ABYC P17 safety standards
 - Made of corrosion resistant materials
 - Standard friction externally adjustable
 - Four optional helm positions to facilitate steering cable installation
 - Available in package with ROTECH-IV
 - Exceeds ISO 8848 safety standards
 - Exceeds ABYC P17 safety standards
- **APPLICATIONS:** for use with outboard engines up to 40 kW (55 hp) with the exception of EVINRUDE E-TEC™ 50 where the use of T85, T71FC or T91 is recommended

COMPONENTS - TO BE ORDERED SEPARATELY

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

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



M58

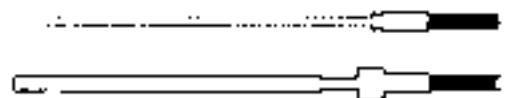


- All stainless steel cable output ends
- Made of corrosion resistant materials
- Particularly suitable where clearance is limited
- Minimal feedback
- T85 steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Exceeds ISO 8848 safety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

COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
T85	38439Z	Steering helm with black bezel
T85W	39213M	Steering helm with white bezel
M66 or M90 Mach	-	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



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

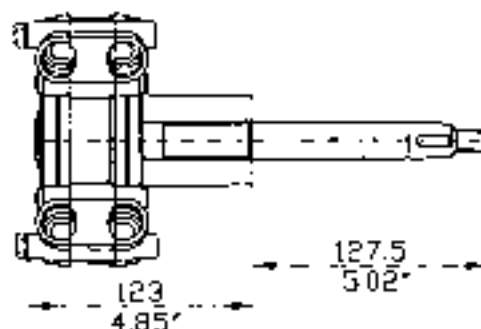
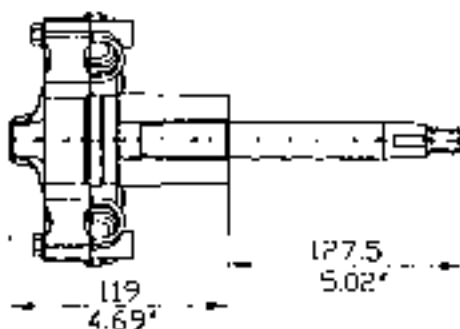
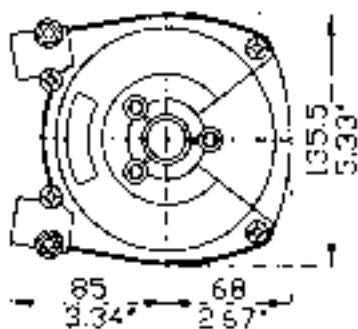
NOTE

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 or M90 Mach	-	Steering cable
Steering wheel	-	See steering wheels section
Accessories	-	See accessories section

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



T73NRFC

Zero torque rotary steering system



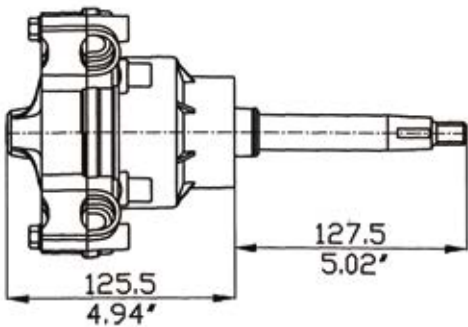
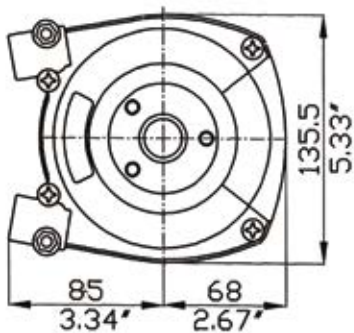
T73NRFC

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

COMPONENTS - TO BE ORDERED SEPARATELY

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

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



T81FC - T83NRFC (zero torque) Rotary tilt steering systems



Planetary
Gear Design



T81FC with X82

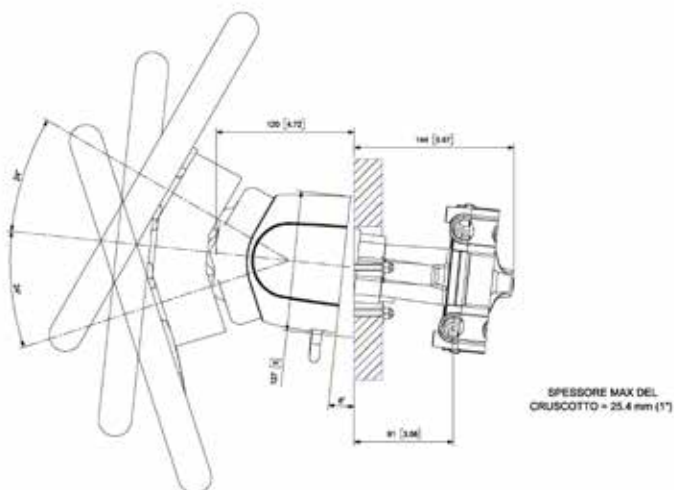
X82

- 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
- X82 tilt mechanism fits Ultraflex tilt mount rotary and rack and pinion steering helms as well as Ultraflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems
- For boats faster than 50 mph our hydraulic steering systems are recommended
- Exceeds ISO 8848 safety standards
- Exceeds ABYC P17 safety standards

COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
T81FC	38957J	Single cable steering helm
T83NRFC	38959N	Zero torque single cable steering Helm
X82	43187N	Tilt mechanism
M66 or M90 Mach	-	Steering cable
Steering wheel	-	See steering wheels section
Accessories	-	See accessories section

Installation	with Tilt X82
M66 - M90 Mach 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	150 mm (5.9")



T91 High Performance rotary steering system



T91 high performance



T91 with X91 bezel

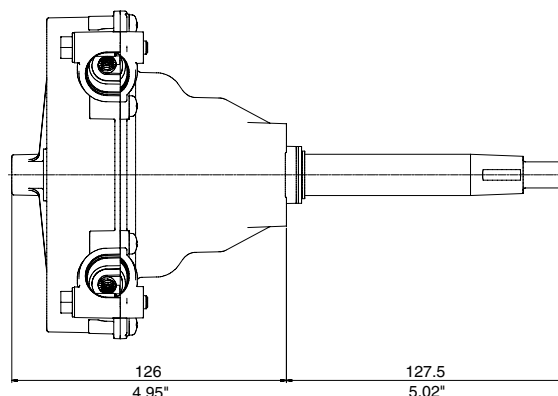
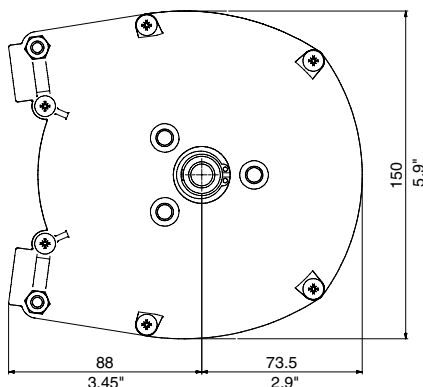


M90 Mach
(Patented)

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

COMPONENTS - TO BE ORDERED SEPARATELY

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



T93ZT (zero torque) High performance rotary steering systems



T93ZT high performance



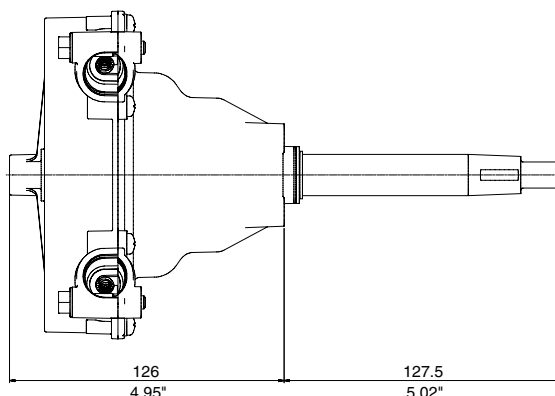
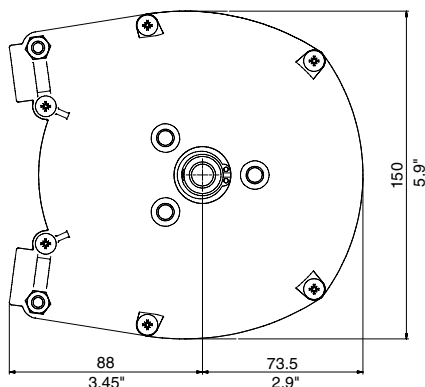
T93ZT with X91 bezel



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

COMPONENTS - TO BE ORDERED SEPARATELY

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



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



T101 high performance



T101 shown with X82 tilt mechanism



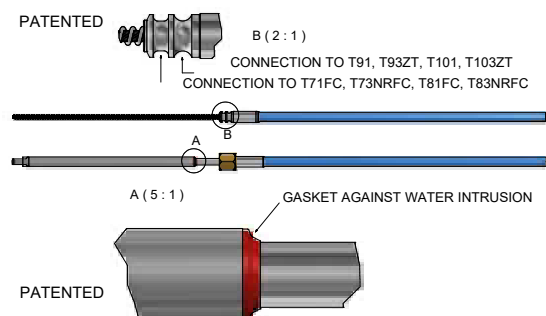
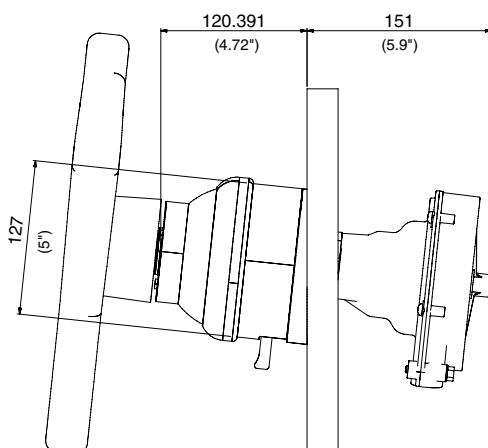
T103ZT high performance

- 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

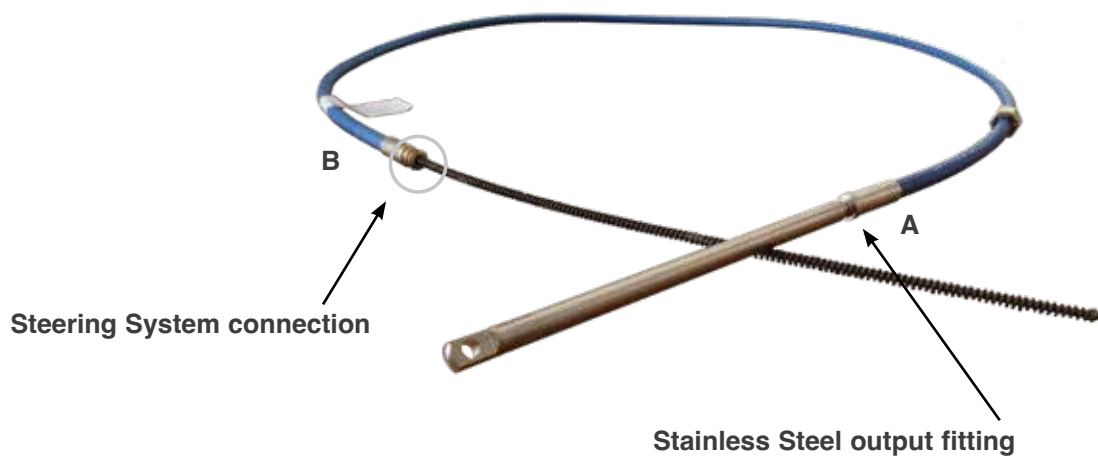
COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
T101	42839B	Single cable steering helm
T103ZT	42840K	Zero torque single cable steering helm
X82	43187N	Tilt mechanism
M90 Mach	-	Steering cable
Steering wheel	-	See steering wheels section
Accessories	-	See accessories section

Installation	with Tilt X82
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- X82	Not included - to be ordered separately
Suggested steering cable bend radius	200 mm (7.87")
Min. steering cable bend radius	150 mm (5.9")



M90 High efficiency and flexibility steering cable



PATENTED

Connection to:
T71FC, T73NRFC,
T81FC, T83NRFC



Connection to:
T91, T93ZT, T101, T103ZT

GASKET AGAINST WATER INTRUSION

PATENTED



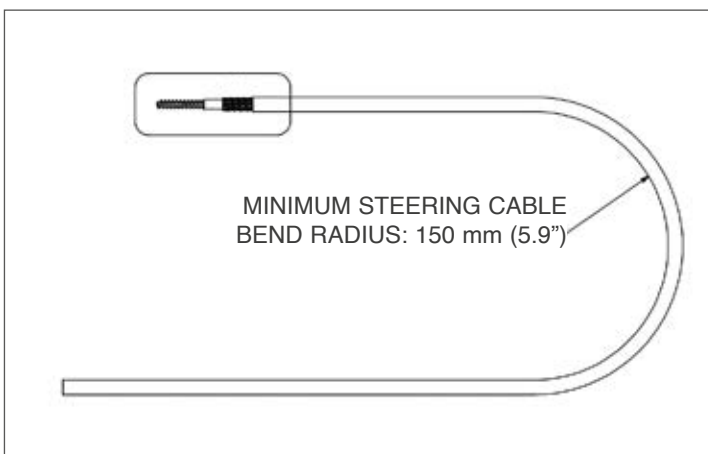
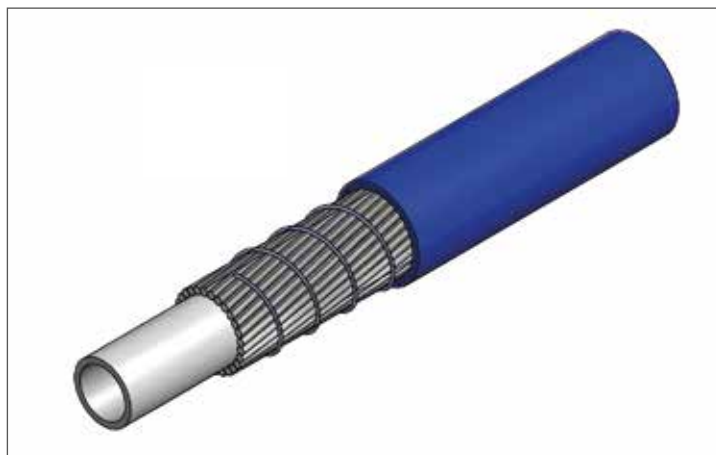
Specifically designed for high performance and high efficiency applications, M90 Mach cable (patented) offers increased flexibility and durability by top quality materials and construction.

- 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:

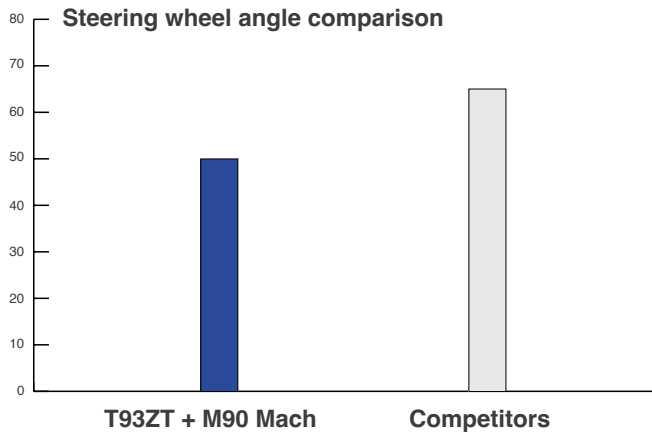
M66 cable will **not** fit the following steering systems: T91, T93ZT, T101, T103ZT

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.



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

Backlash on the steering system comparison

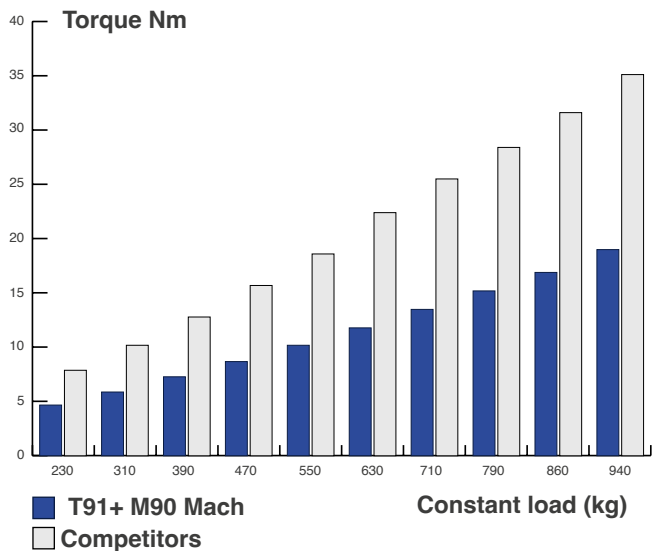


The quality of a mechanical steering system depends on its efficiency (less driving effort) in push & pull load and low backlash on the steering wheel.

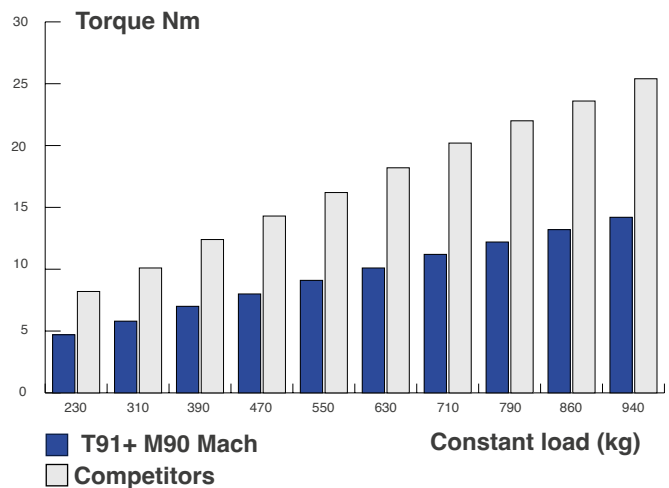
Ultraflex **T91** and **T93ZT** steering systems, fitted with the **M90 Mach** single-cable, are the best mechanical steering systems on the market today. They combine a minimal backlash with higher efficiency and they guarantee results with very narrow cable bends.

Torque comparison with Push & Pull load - radius 200m

Push load:

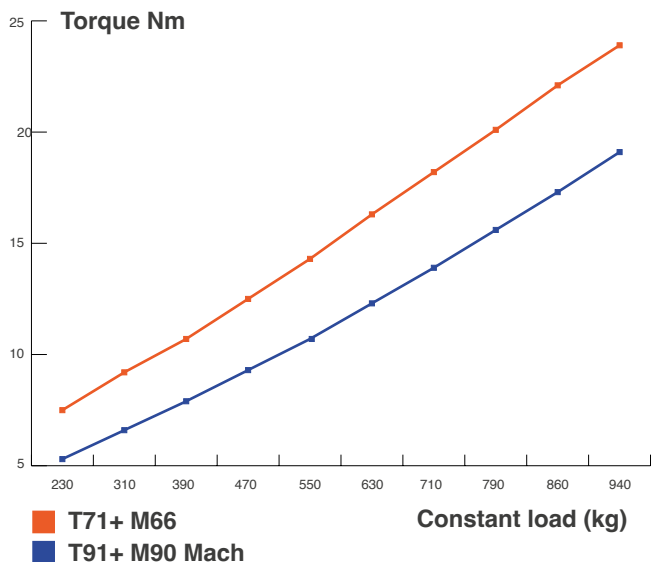


Pull load:

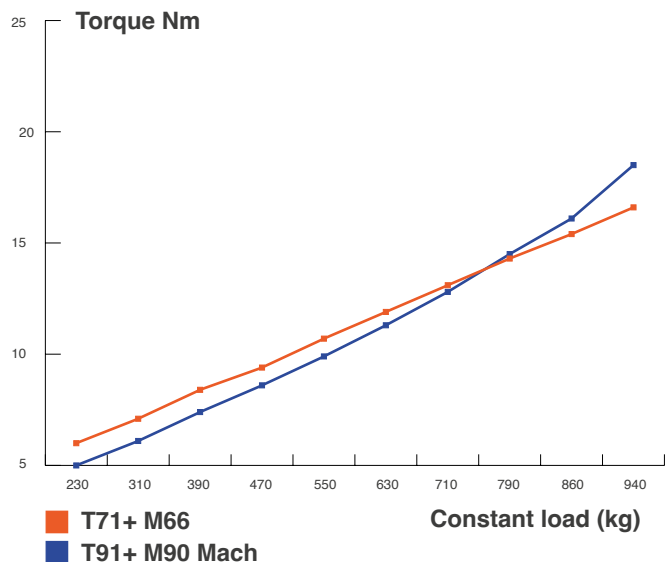


Torque comparison with Push & Pull load - radius 100m

Push load:



Pull load:



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



G87



G87ZT

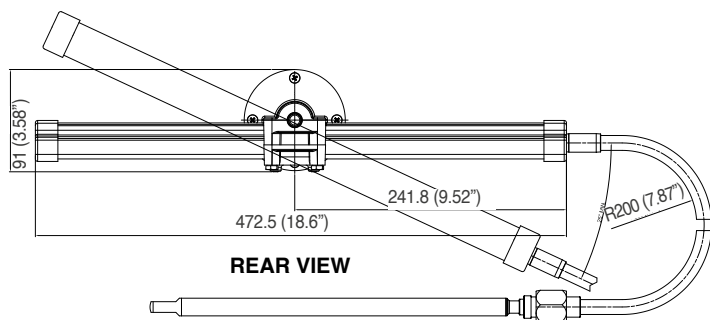


- All stainless steel cable output ends
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, equipped with a zero torque patented mechanism, eliminates the continuous load on the driver caused by the propeller torque
- TM87O steering systems are not to be used on boats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

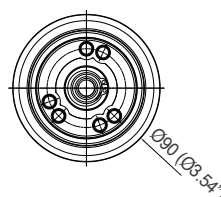
COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
TM87O	-	Preassembled helm with steering cable
G87	43838E	Standard shaft assembly
G87ZT	43837C	Zero torque shaft 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
Steering wheel	-	See steering wheels section
Accessories	-	See accessories section

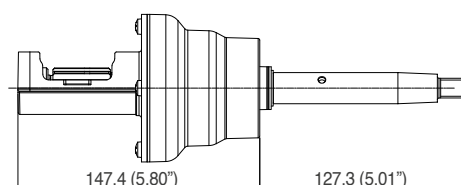
Installation	90° or 20°
TM87O stroke	200 mm (3.7")
Lock-to-lock steering wheel turns	approx 3,3
Max. steering wheel diameter	420 mm (16.5")
Min. steering cable bend radius	200 mm (7.9")



TM87O



G87 and G87ZT



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



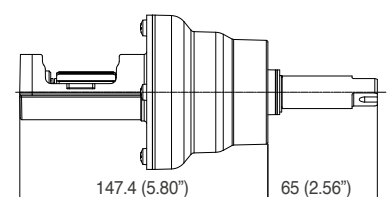
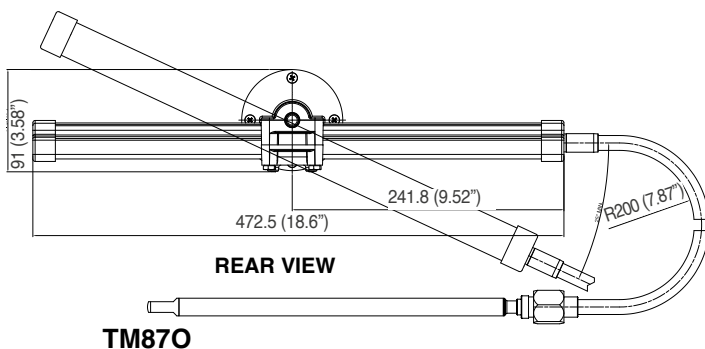
- All stainless steel cable output ends
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, equipped with a zero torque patented mechanism, eliminates the continuous load on the driver caused by the propeller torque
- TM87O steering systems are not to be used on boats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



COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
TM87O	-	Preassembled helm with steering cable
G89	43844Z	Standard helm suitable for X82 tilt mechanism
G89ZT	43845B	Zero torque helm suitable for X82 tilt mechanism
X82	43187N	Tilt mechanism
Steering wheel	-	See steering wheels section
Accessories	-	See accessories section

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



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



G87



G87ZT

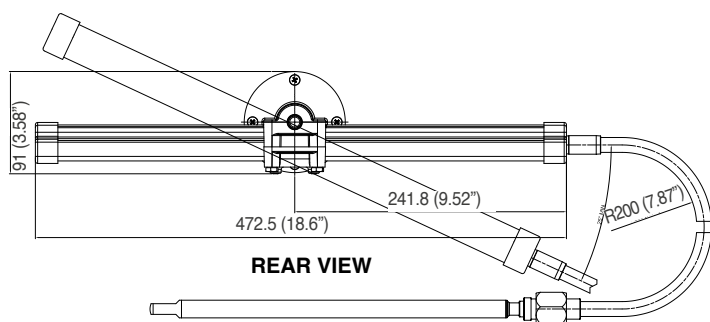


- Armoured stainless steel cable, armoured conduit
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- The ZT version, equipped with a zero torque patented mechanism, eliminates the continuous load on the driver caused by the propeller torque
- TM87SS steering systems are not to be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

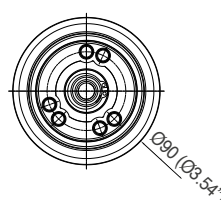
COMPONENTS - TO BE ORDERED SEPARATELY

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

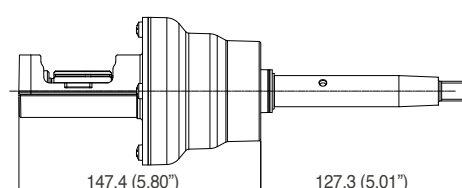
Installation	90° or 20°
TM87SS stroke	200 mm (3.7")
Lock-to-lock steering wheel turns	approx 3,3
Max. steering wheel diameter	420 mm (16.5")
Min. steering cable bend radius	200 mm (7.9")



TM87SS



G87 and G87ZT



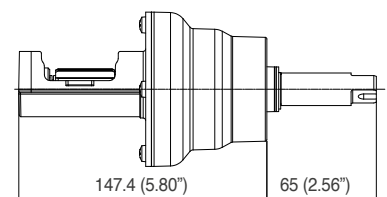
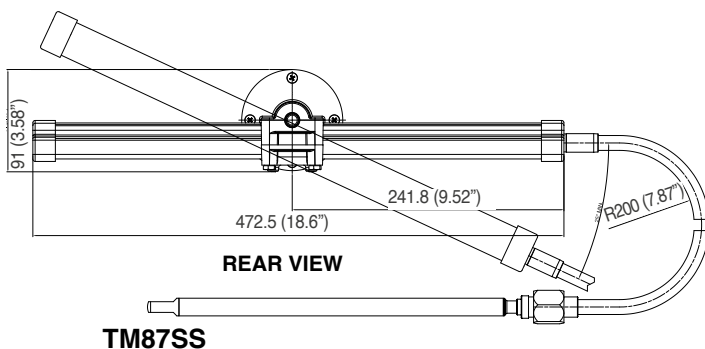
TM87SS - TM87SSZT (zero torque) Rack and pinion tilt steering systems for ski boats



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

COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
TM87SS	-	Preassembled helm with steering cable
G89	43844Z	Standard helm suitable for X82 tilt mechanism
G89ZT	43845B	Zero torque helm suitable for X82 tilt mechanism
X82	43187N	Tilt mechanism
Steering wheel	-	See steering wheels section
Accessories	-	See accessories section



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

TM87J

Rack and pinion steering systems for jet boats

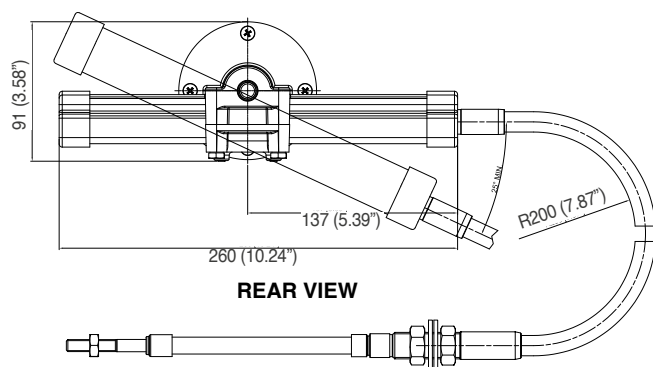


- Armoured stainless steel cable
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- TM87J steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Optional steering wheel
- Exceeds ISO 8848 safety standards
- Exceeds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

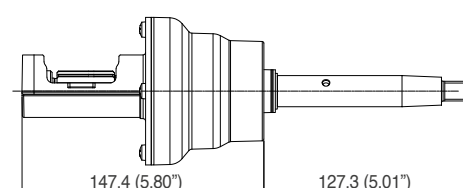
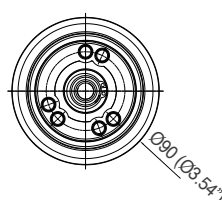
COMPONENTS - TO BE ORDERED SEPARATELY

Model	Part No.	Description
TM87J	-	Preassembled helm with steering cable
G87	43838E	Standard shaft 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
Steering wheel	-	See steering wheels section
Accessories	-	See accessories section

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



TM87J



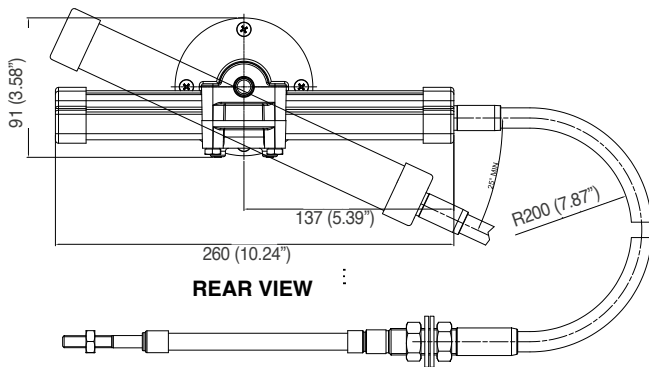
TM87J Rack and pinion tilt steering systems for jet boats



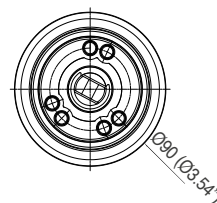
- Armoured stainless steel cable
- Made of corrosion resistant materials
- Standard 3/4" tapered shaft
- TM87J steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Optional steering wheel
- Exceeds ISO 8848 safety standards
- Exceeds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

COMPONENTS - TO BE ORDERED SEPARATELY

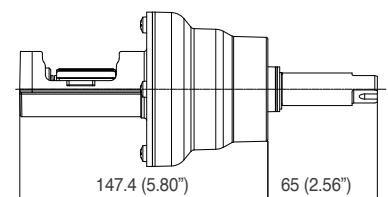
Model	Part No.	Description
TM87J	-	Preassembled helm with steering cable
G89	43844Z	Standard shaft assembly suitable for X82 tilt mechanism
X82	43187N	Tilt mechanism
Steering wheel	-	See steering wheels section
Accessories	-	See accessories section



TM87J



G89



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")

MECHANICAL 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
T91	-	X	X	X	X
T93ZT	-	X	X	X	X
TM87O	-	X	X	X	X
TM87SS	-	X	X	X	X
TM87J	-	X	X	X	X

PACKAGED MECHANICAL ROTARY STEERING SYSTEMS

ROTECH

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



ROTECH - I

Helm	T71FC
Bezel	X34 - 90° bezel
Steering cable	M66



ROTECH - III

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



ROTECH - IV

Helm	T67
Bezel	included in the steering system
Steering cable	M58

FOURTECH

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



FOURTECH - I

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

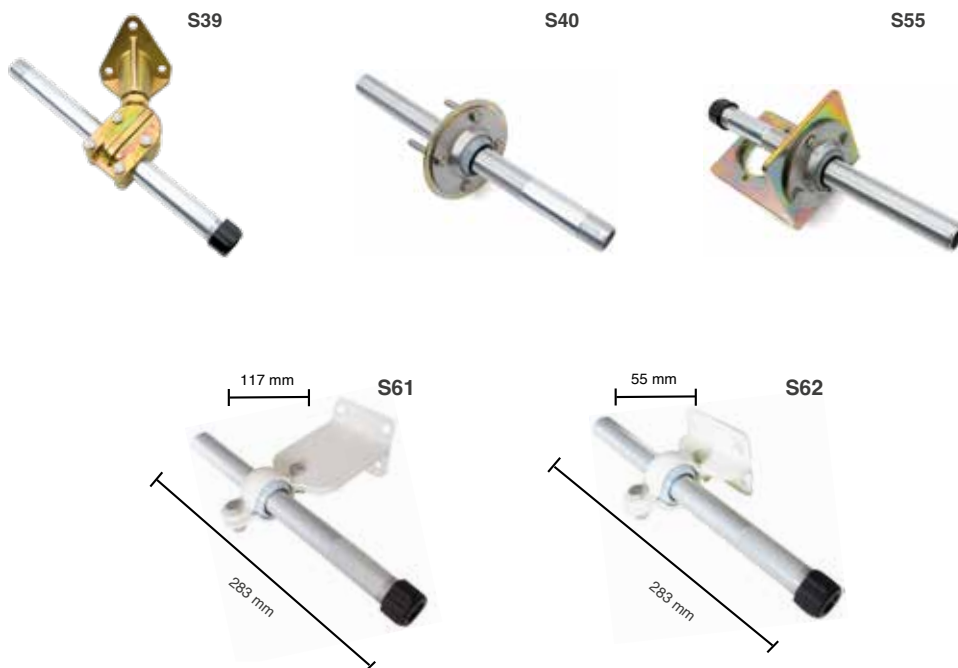


FOURTECH - II

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

ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

Steering cable supports



S39	31916F	Clamp block and aluminum anodized tube
S40	31917G	Splashwell mount flange, aluminum tube
S55	34744A	90° rudder support, SS flange, aluminum tube
S61	36191S	Clamp block, corrosion resistant painted steel
S62	38830H	Same design as S61, smaller dimensions
S39T	53930J	Tube only for S39
S40T	53935O	Tube only for S40
S39SS	41551X	Clamp block and stainless steel tube
S40SS	41552Z	Splashwell mount flange, stainless steel tube
S55SS	41553B	90° rudder support, SS flange, SS tube
S61SS	41554D	Clamp block, corrosion resistant stainless steel
S62SS	41555F	Same design as S61SS, smaller dimensions
S39TSS	72971W	Stainless steel tube for S39SS
S40TSS	72972Y	Stainless steel tube for S40SS

Engine connection kits



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

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

Steering cables adaptors



K46

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



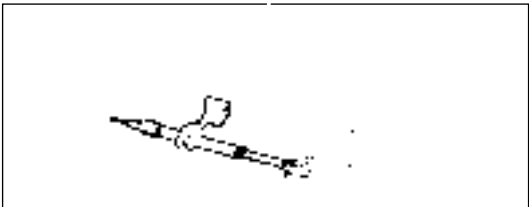
K66

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

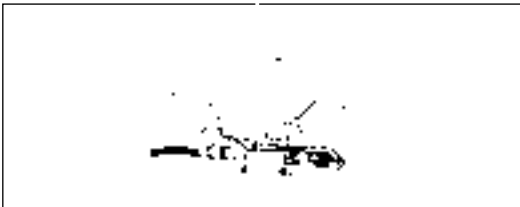
ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

Accessories Selection Guide

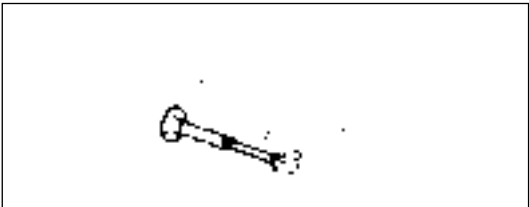
INSTALLATION	CABLE SUPPORT+ ENGINE CONNECTION KIT	INSTALLATION	CABLE SUPPORT+ ENGINE CONNECTION KIT
A	S39 o S61 o S62 + A75	C	A73SS o A74SS
B	S40 + A75	D	S55 + A75



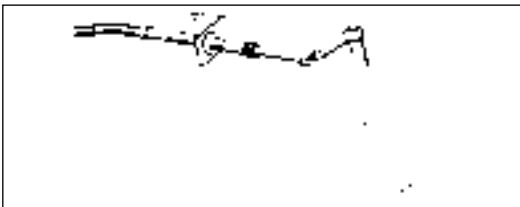
A = With clamp block



C = With tiller arm



B = With splashwell



D = With 90° rudder support

A88 - A92 Tie bars for Twin outboard engines

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

A88

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

- All stainless steel components
- Kit Includes all mounting hardware

Interasse motore Adjustable from 650 mm (25.6") to 950 mm (37.4")

A88 40128E Tie bar

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

A92

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

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

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

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

A92/700 40892V Tie bar

A92/950 40893X Tie bar



A 88



A 92

ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

Wire type Steering grommets and rings

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



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; h 52 mm
R4 W	38956G	Regolabile Ø 105 mm; h 68 mm



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; h 52 mm



Profilamentpolyester braided sleeveings for cables

- Temperature class: F
- Continuous working temperature rating: from -50°C to +155°C. with peaks at + 180°C
- Halogen Free
- Flammability: self extinguishing
- Good mechanical resistance
- Excellent abrasion resistance
- Good resistance to solvents
- Not watertight
- Very flexible
- Expansion ratio 1:2
- Use: hot cutting to avoid fraying
- Colour: black

Application:



Available in UFLEX

NOMINAL INTERNAL DIAMETER	PART NO. L: 1 m	PART NO. L: 10 m	PART NO. L: 20 m	ROLL PART NO. L: 100 m	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



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)



OUTBOARD AND STERNDRIVE HYDRAULIC STEERING SYSTEMS

Packaged hydraulic steering systems

MAX HORSEPOWER	KIT	HELM	CYLINDER (1)	FLEXIBLE HOSES (2)	OIL litres	WHEEL TURNS	OPTIONAL
115 hp	GOTECH-OBF	UP18	UC81-OBF	KIT OB-GT/M-60	2	4,5	Steering wheel 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
	HYTECH-OBF/M	UP20F	UC95-OBF	KIT OB/M-60 (90)	2	4,7	
200 hp	NAUTECH-1-M-60 NO CYLINDER*	UP28F		KIT OB/M-60 (90,150)	2	5	Thru hull R5; R5SS; R8; R9
	NAUTECH-3-M-60 NO CYLINDER*	UP25F		KIT OB/M-60 (90,150)	2	5,6	
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						

NOTA:

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

*For Yamaha engines with integrated cylinder.

150hp (F150LC, F150XC, LF150XC, F150XCB); 175hp (F175LB, F175XB, F175XB); 200hp (F200LC, F200XC, LF200XC, F200XCB)



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**

new



**NAUTECH-1/M/NO CYLINDER
NAUTECH-3/M/NO CYLINDER**

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

Packaged hydraulic steering systems



HORSEPOWER	KIT	HELM	CYLINDER (1)	FLEX HOSES (2)	OIL litres	WHEEL TURNS	OPTIONAL
> 300 hp (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) - X88 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



How to choose an outboard hydraulic steering system - Cross reference

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

How the system works

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

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

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

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

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

Suggestions and warnings when selecting an hydraulic steering system

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

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

Other factors that can influence steering effort are:

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

Cross reference

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

For any further information please contact our Technical Service

HELM PUMPS	
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	-	-	-

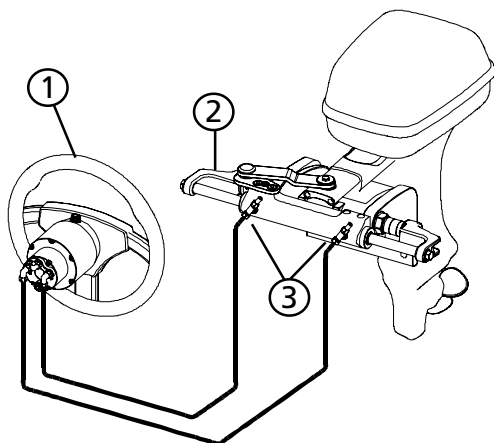
Recommended

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	-	-

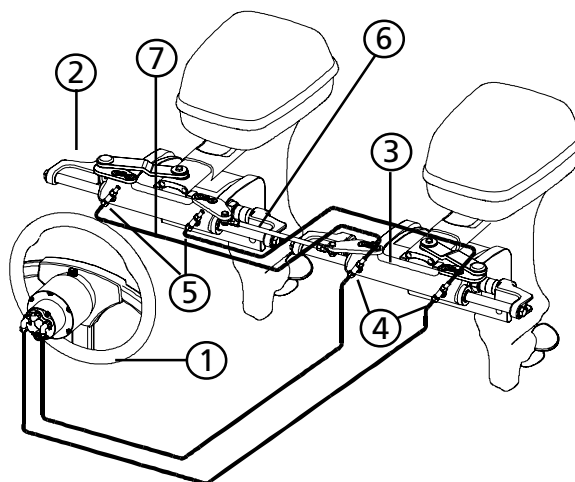
Recommended

SINGLE STATION / SINGLE ENGINE:



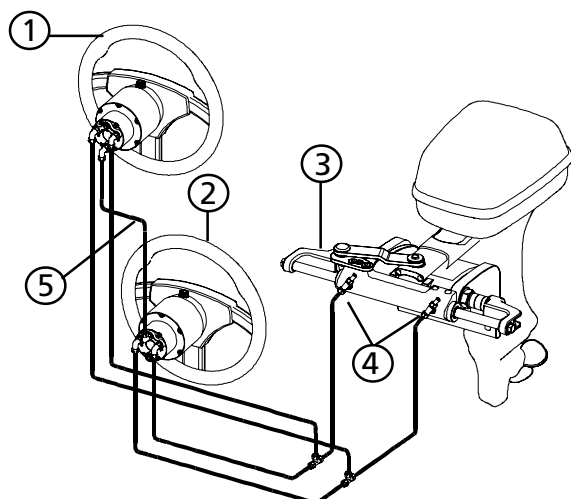
- 1. helm
- 2. starboard cylinder
- 3. bleed valves

SINGLE STATION / DUAL ENGINE:



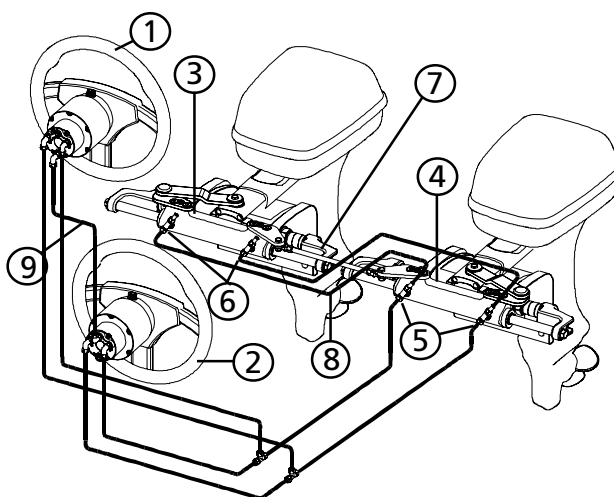
- 1. helm
- 2. starboard cylinder
- 3. port cylinder
- 4. "T" fittings
- 5. bleed valves
- 6. tie bar
- 7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

DUAL STATION / SINGLE ENGINE



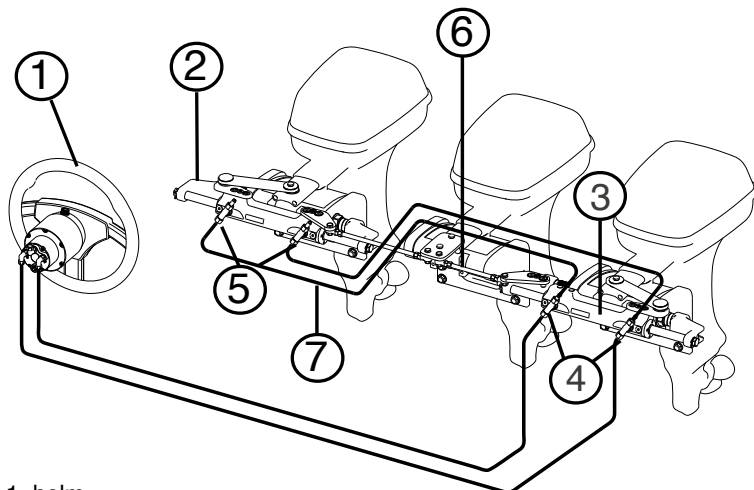
- 1. upper station helm
- 2. lower station helm
- 3. starboard cylinder
- 4. bleed valves
- 5. kit OB-2S

DUAL STATION / DUAL ENGINE



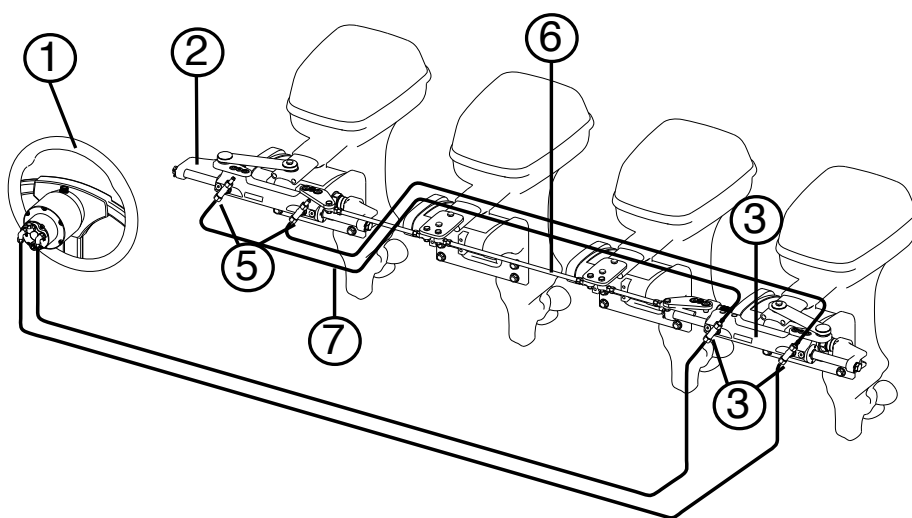
- 1. upper station helm
- 2. lower station helm
- 3. starboard cylinder
- 4. port cylinder
- 5. "T" fittings
- 6. bleed valves
- 7. tie bar
- 8. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)
- 9. kit OB-2S

SINGLE STATION / THREE ENGINES



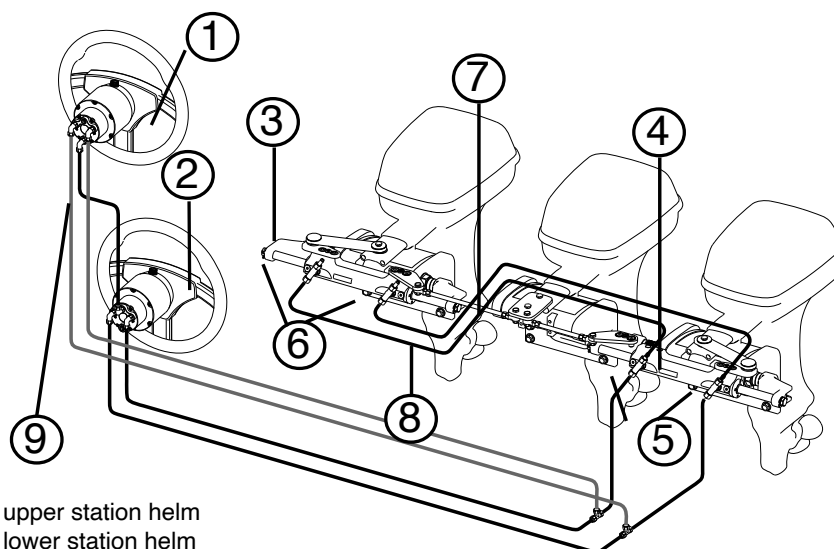
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

SINGLE STATION / FOUR ENGINES



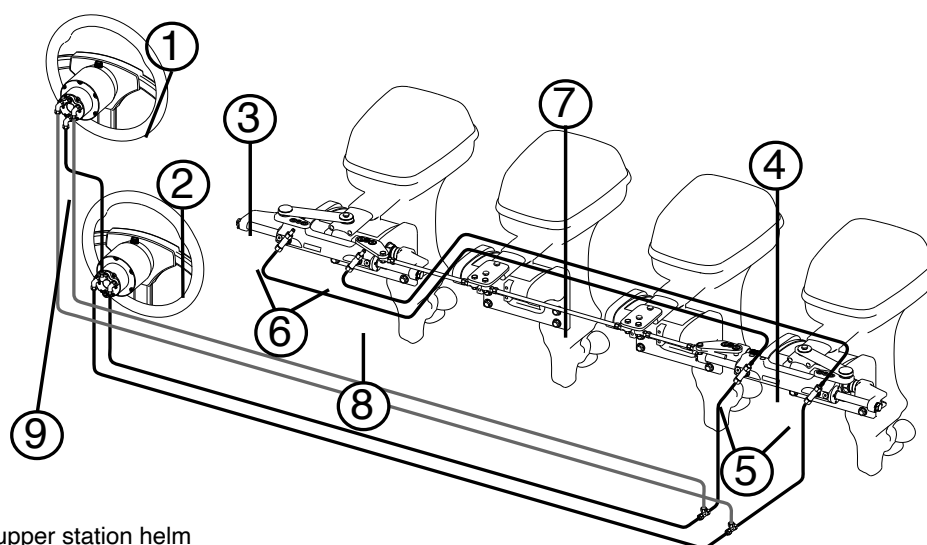
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

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 position mechanisms

Tilt mechanisms

Tilt mechanisms suitable for tilt mount helms



Tilt range of 48° and five locking positions

new



X82



X88

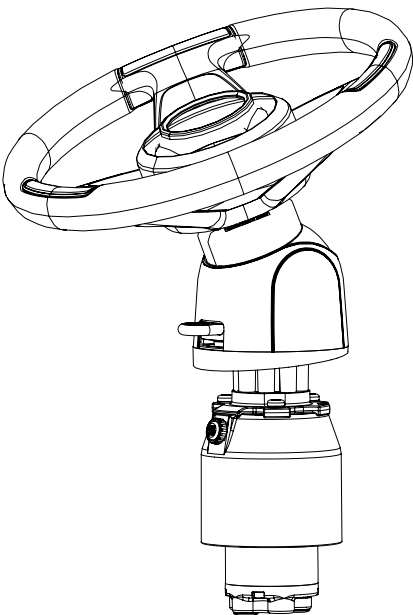


X83-SVS

Model	Part No.	Description
X82	43187N	Tilt mechanism for mechanical hydraulic and electronic steering systems
X88	44006L	Tilt mechanism for Masterdrive™ steering systems
X83-SVS	44005J	Tilt mechanism for Silversteer™ steering systems

X82	Compatible with all pumps suitable for X52 (39250U)	
X88	Compatible with all pumps suitable for X66 (40613M)	
X83-SVS	Compatible with all pumps suitable for X70-SVS (41880T)	

The new pumps fit old Tilt X52, X66 and X70 SVS using the new K84 bracket - 44024N



X82, X83-SVS, X88

Adjustable steering wheel position mechanisms

Tilt mechanisms

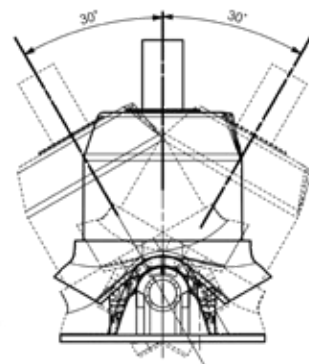
Tilt mechanism suitable for front mount helms



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



X72



X72	43140K	Tilt mechanism for hydraulic front mount steering systems
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Tilt mechanism application for mechanical steering systems

TILT MECHANISM	Part No.	T81, T83NRFC	T101, T103ZT	TM870, TM870ZT, TM87SS TM87SSZT, TM87J
X82	43187N	X	X	X

Tilt mechanism application for hydraulic and electronic steering systems

TILT MECHANISM	Part No.	UP18 UP20F	UP20T	FRONT MOUNT HELMS		TILT MOUNT HELMS		MASTERDRIVE	INTEGRA
				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	-

TILT MECHANISM	PART No.	UP18 UP20F	UP20T 44033P	FRONT MOUNT HELMS		TILT MOUNT HELMS		MASTERDRIVE	INTEGRA
				STANDARD UP25F, UP28F, UP33F, UP39F, UP45F	SILVERSTEER UP28F-SVS, UP33F-SVS, UP39F-SVS	STANDARD UP25T 44028X, UP28T 44027V, UP33T 44026T, UP39T 44025R, UP45T 44029Z	SILVERSTEER UP28T-SVS 44030H, UP33T-SVS 44031K, UP39T-SVS 44032M		
X82	43187N	-	X	-	-	X	-	-	X
X83-SVS	44005J	-	-	-	-	-	X	-	-
X88	44006L	-	-	-	-	-	-	X	-

UP18

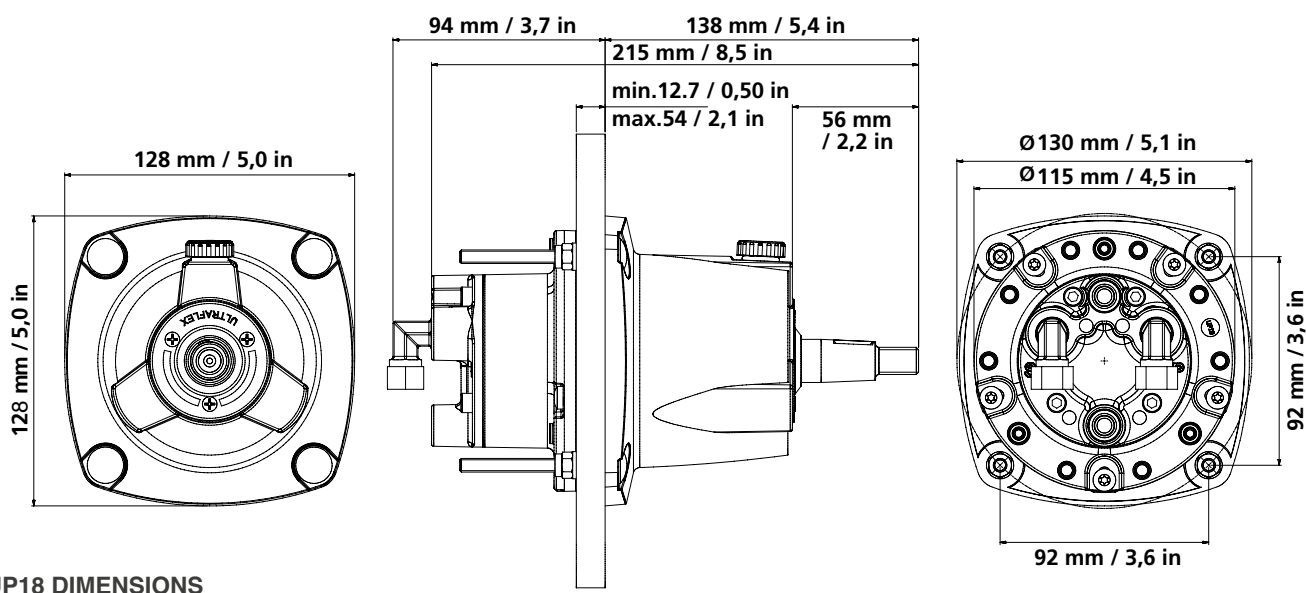
Intermediate mount position helm



UP18

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

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



UP20F - Front mount helm
UP20T - Tilt mount helm



UP20T + X82



UP20F



UP20F + X74

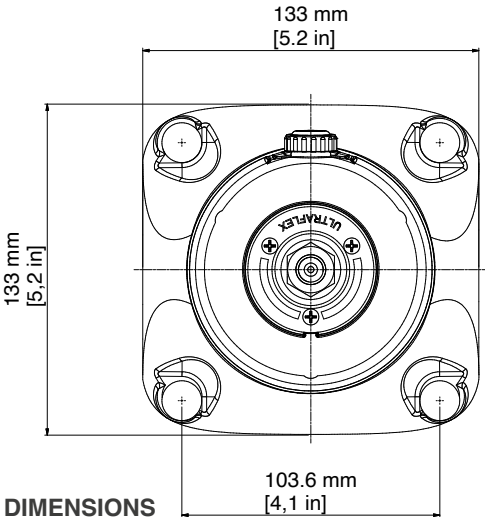
- Built-in lock valve for positive rudder lock
- Integrated relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Corrosion proof composite housing
- Easy accessible lock valve and shaft seal for replacement
- Includes 90° adjustable fittings for 3/8" hose
- **KIT F** - 39664Y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

For UP20F pump

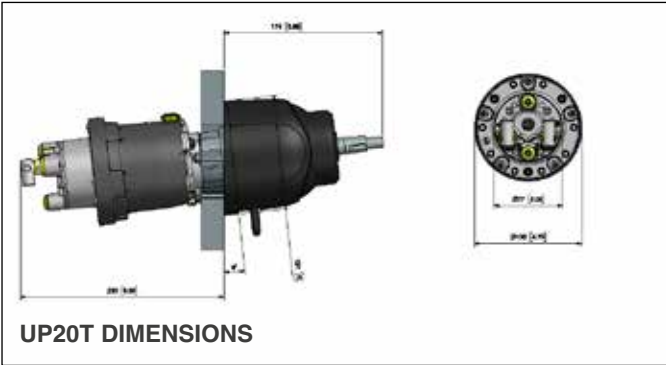
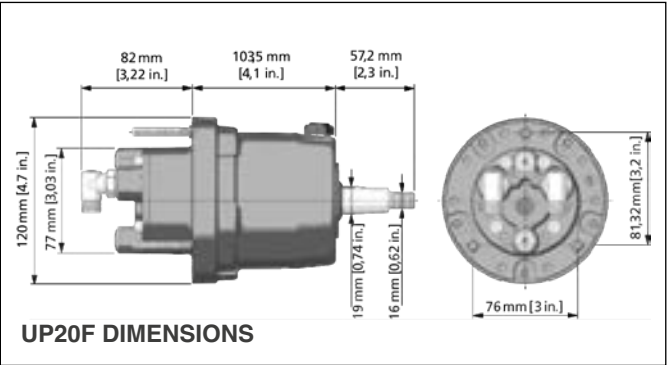
- **X74** - 43048Y square flange permits to install the UP20F pump in an intermediate dashboard position

For UP20T pump

- Tilt mechanism: **X82** - 43178N tilt range of 48° and five locking positions



MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP20F	43180Y	Front mount	20 cc - 1.2 cu. in	5	70 Bar - 1000 PSI	508 mm - 20"	3,6 kg - 8 lbs
UP20T	44033P	With X82 tilt	20 cc - 1.2 cu. in	5	70 Bar - 1000 PSI	406 mm - 16"	3,9 kg - 8.5 lbs



UP25F - UP28F - UP33F - UP39F - UP45F

Front mount helms

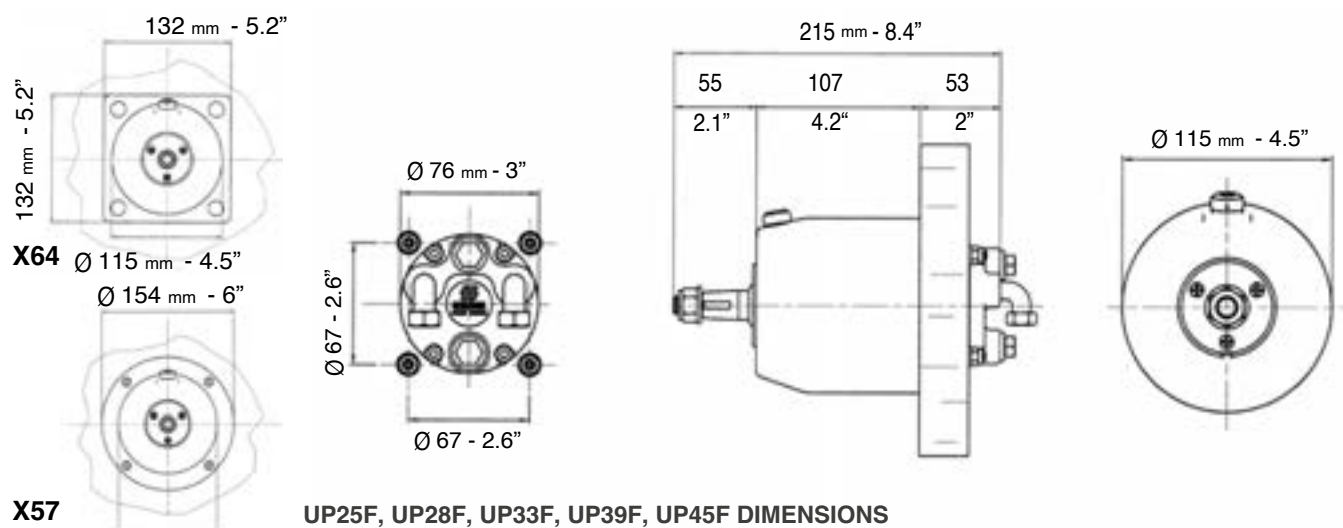


Front mount helm with X64

Front mount helm with X57

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

MODEL	P. No.	MOUNTING	DISPLACEMENT/ 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



UP25T - UP28T - UP33T - UP39T - UP45T

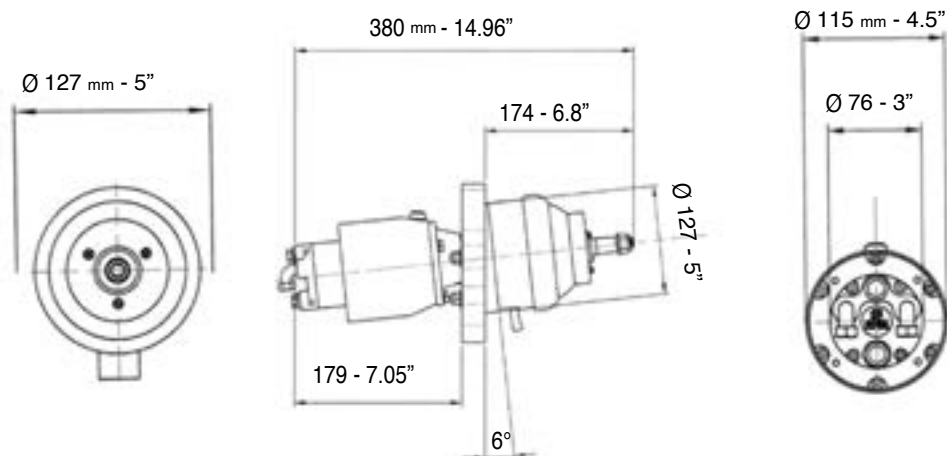
Tilt mount helms



X82

- 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: **X82**- 43187N – 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	44028X	With X82 tilt	25 cc - 1.5 cu.in	5	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP28T	44027V	With X82 tilt	28 cc - 1.7 cu.in	5	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP33T	44026T	With X82 tilt	33 cc - 2.0 cu.in	7	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP39T	44025R	With X82 tilt	39 cc - 2.4 cu.in	7	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP45T	44029Z	With X82 tilt	45 cc - 2.7 cu.in	7	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs



UP25T, UP28T, UP33T, UP39T, UP45T DIMENSIONS

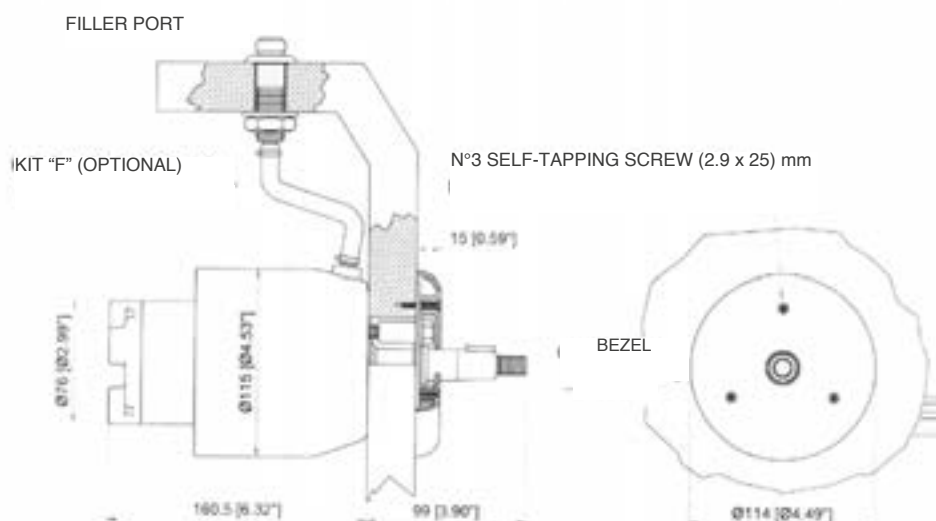
UP28R - UP33R - UP39R - UP45R

Rear mount helms



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

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



UP28R, UP33R, UP39R, UP45R DIMENSIONS

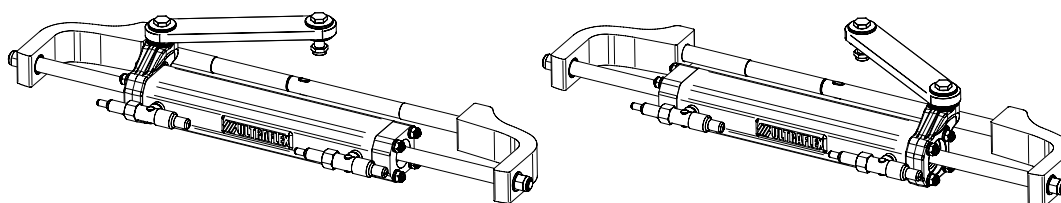
UC81-OBF

Front mount cylinder

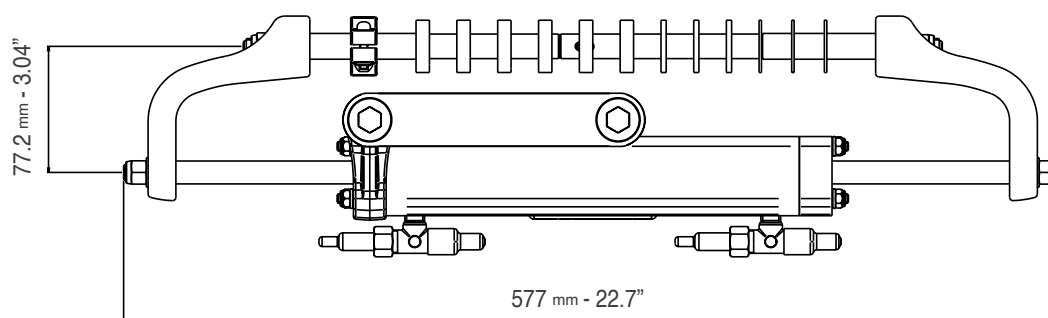


UC81-OBF - Balanced: the number of turns lock-to-lock is equal port to starboard and vice-versa.
Front mount cylinder for outboard engines up to 115 hp
Replaceable cylinder end caps

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



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



UC81-OBF DIMENSIONS

UC81-OBF Applications

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

Not intended for use in racing
applications

WARNING

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

NOTE:

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

ENGINE	POWER	YEAR
Mercury® 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
PureCraft®	50 HP	2020-to date
Torque- edo®	Deep Blue 25, 50	2022-to date
Neander Shark®	DTORQUE 111	2020-to date
Parsun®	F40-F50-F60	2007-to date



UC95-OBF/1



UC95-OBF/2



UC95-OBF/3

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

Innovative design (PATENTED):

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

• Applications:

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

- Not intended for use in racing applications

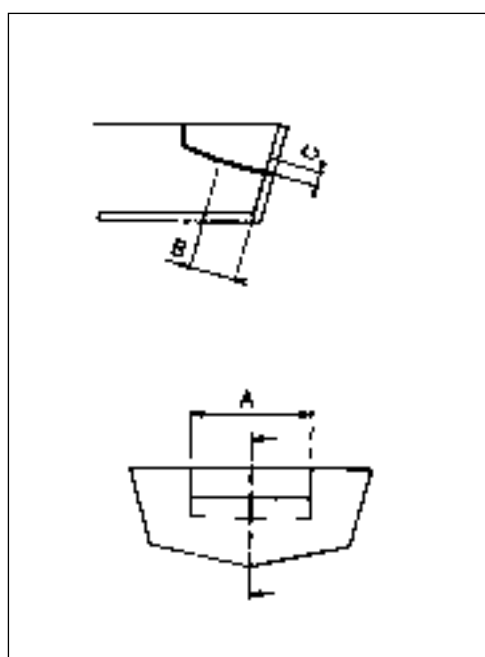
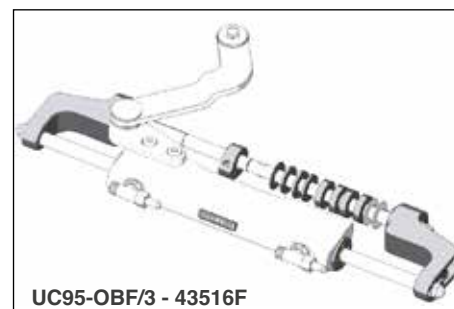
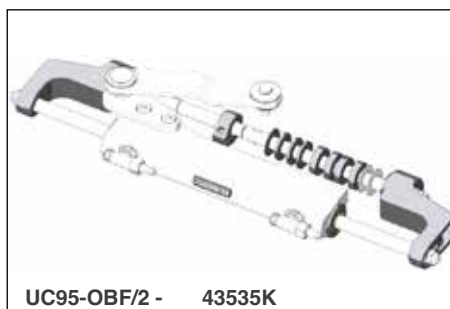
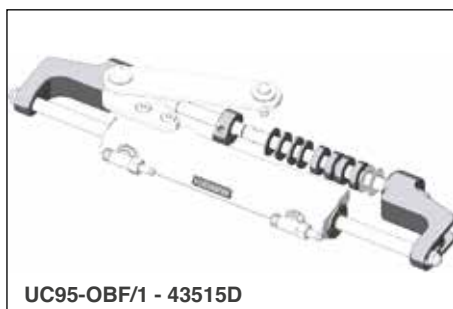
NOTE: non suitable with starboard link arms LA1, LA2, LA3 for UC128-OBF cylinder.

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

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

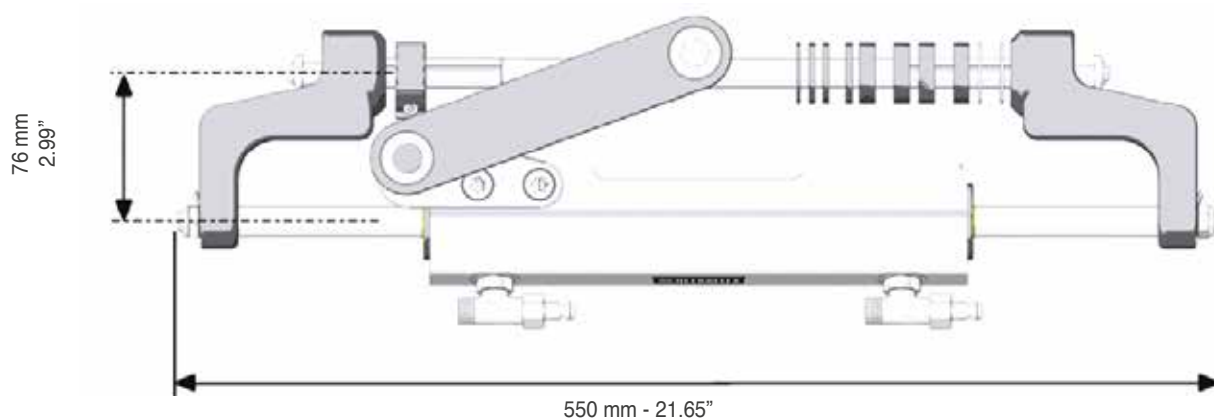
UC95-OBF

Front mount cylinder



Splashwell dimension requirements

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



UC95-OBF DIMENSIONS

UC95-OBF

Cylinder applications

ENGINE	MODEL	YEAR	CYLINDER	P. No.
Mercury® Mariner®	100-115-150 EFI 2S	1991-2007	UC95-OBF/1	43515D
	50-75-90 2S	1990-2008	UC95-OBF/1	43515D
	75-90-115 Optimax 2S	2004-2018	UC95-OBF/3	43516F
	125-135-150 -175 Optimax 2S	1999-2018	UC95-OBF/1	43515D
	40-50-60 EFI 4S	2004-to date	UC95-OBF/1	43515D
	75-80-90 EFI 4S / PRO XS / SEAPRO	2000-to date	UC95-OBF/1	43515D
	100-115-150 EFI 4S / PRO XS / SEAPRO	2007-to date	UC95-OBF/1	43515D
	175-V6 4S / SEAPRO	2018-to date	UC95-OBF/1	43515D
Evinrude®	E40-E50-E55-E60 2S	2004-2020	UC95-OBF/1*	43515D
	E75-E90 2 Stroke	2004-2020	UC95-OBF/1*	43515D
	E115-E130 -E135 2 Stroke V4	1995-2020	UC95-OBF/1*	43515D
	E150 -175 2 Stroke V6	1995-2020	UC95-OBF/1*	43515D
Yamaha®	60-70 2S	1984-2008	UC95-OBF/1	43515D
	75C-90 2S	1998-2008	UC95-OBF/1*	43515D
	115C-130B -150F 2S	1990-2008	UC95-OBF/1*	43515D
	150-175 HPDI VMAX 2S	2000-2007	UC95-OBF/1*	43515D
	F60-F75-F80 EFI 4S	1999-2007	UC95-OBF/1	43515D
	F90-F100-F115 F150 EFI 4S	1999-2007	UC95-OBF/1	43515D
	F115-F150-F175 L4 4S	2004-to date	UC95-OBF/1	43515D
Honda®	BF75-80-90-100 4S	1995-to date	UC95-OBF/1	43515D
	BF115D - BF130A	1998-2009	UC95-OBF/3	43516F
	BF115A 4S	2009-to date	UC95-OBF/1	43515D
	BF135-150 4S	2005-to date	UC95-OBF/1	43515D
	BF175-4S	2001-to date	UC95-OBF/1	43515D
Suzuki®	DF70-80-90 4S	1998-to date	UC95-OBF/1*	43515D
	DF100-115-140 4S	2008-to date	UC95-OBF/1	43515D
	DF150-175 4S	2006-to date	UC95-OBF/1	43515D
Tohatsu® Nissan®	115-120-140 2S	2004-to date	UC95-OBF/1*	43515D
	70-90-115 TLDI 4S	2004-to date	UC95-OBF/1	43515D
	BFT60-75-80-90-100 4S	2015-to date	UC95-OBF/1	43515D
	BFT115-150 4S	2015-to date	UC95-OBF/1	43515D
	MFS 50-60-75-90-100-115 4S	2018-to date	UC95-OBF/1	43515D
Selva®	80 Portofino/Tigershark 2S	1995-2008	UC95-OBF/1	43515D
	150 WHITE SHARK 2S	2001-2007	UC95-OBF/1*	43515D
	100EFI Marlin - 115 EFI Narwhal	2001-2007	UC95-OBF/1*	43515D
	100-150EFI Killer Whale 4S	2000-to date	UC95-OBF/1	43515D
Johnson®	BJ90-115-140 4S	2001-2007	UC95-OBF/1	43515D
	BJ70 4S	2001-2007	UC95-OBF/1*	43515D
	J90-115 V4 2S	1995-2007	UC95-OBF/1*	43515D
	J150 -175 V6 2S	1995-2007	UC95-OBF/1*	43515D
Neander Shark®	DTORQUE 111	2020-to date	UC95-OBF/1	43515D
Parsun®	F60-F85-F115	2007-to date	UC95-OBF/1	43515D

WARNING

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

Not intended for use in racing applications

WARNING

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

NOTE:

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

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

UC128-OBF

Front mount cylinder



- UC128-OBF – 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.

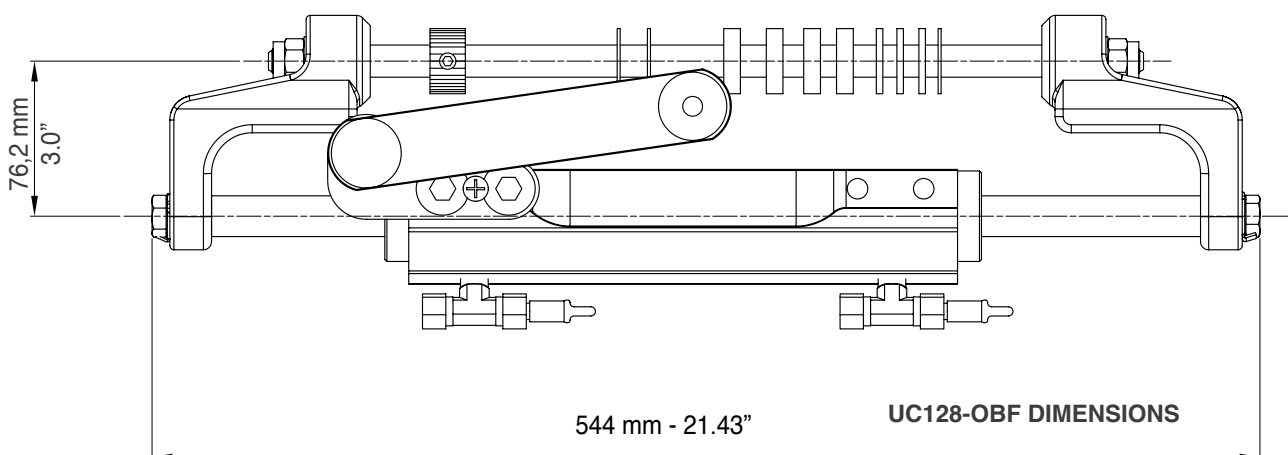
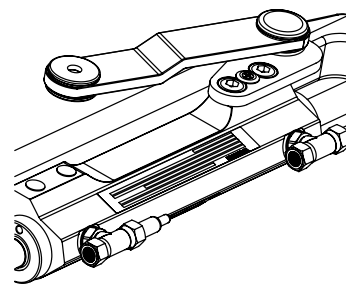
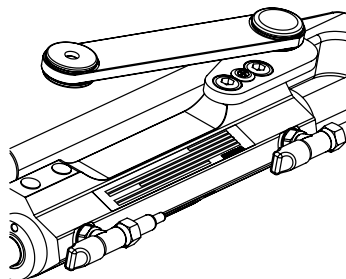
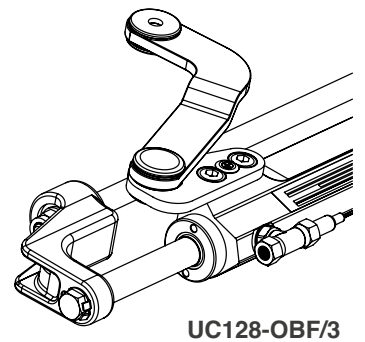
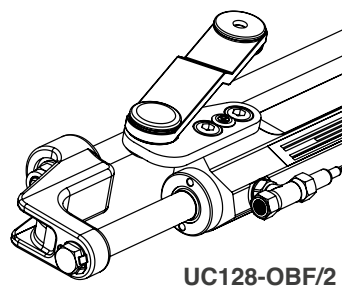
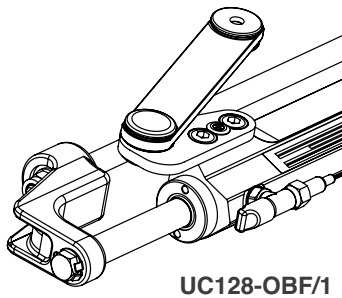
Applications: UC128-OBF front mount cylinder is not recommended for use in installations where the boat speed exceeds 55 mph (48 knots) / (65 mph (56 knots) in dual engine, dual cylinder and counter rotating engines application). Not intended for use in racing applications.

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

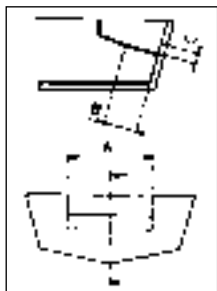
UC128-OBF

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 40045A
for UC128-OBF/1



LA2 40046C
for UC128-OBF/2



LA3 40073F
for UC128-OBF/3

"PORT" link arms



LA1P 40104P
for UC128P-OBF/1



LA2P 40105S
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 / PRO XS 175-200 V6	2018-to date	UC128-OBF/1	43231N
Evinrude®	E75-E90 2S	2004-to date	UC128-OBF/2	43232R
	E115-E130-E135 2S V4	1995-2020	UC128-OBF/2	43232R
	E150-E175-E200-E225-E250-E300 2S V6	1995-2020	UC128-OBF/2	43232R
Yamaha®	115C-130B 2S	1990-2008	UC128-OBF/2	43232R
	75C-90 2S	1998-2008	UC128-OBF/2	43232R
	F70 4S	2010-to date	UC128P-OBF/1	43234V
	150F-200F-250G 2S	1990-2008	UC128-OBF/2	43232R
	150 HPDI VMAX 2S	1996-2007	UC128-OBF/2	43232R
	175-200-225-250-300 HPDI VMAX 2S	2000-2008	UC128-OBF/2	43232R
	F115-F150 EFI 4S	2000-2008	UC128-OBF/2	43232R
	F200-F225-F250 4S	1999-2007	UC128-OBF/2	43232R
	F115-F130-F150D- F150F-F175A-F200F- F200G L4	2002-to date	UC128-OBF/1	43231N
	F200-F225-F250-F300 V6 4S	2004-to date	UC128-OBF/2	43232R
Honda®	BF75-BF90 4S	1995-to date	UC128-OBF/1	43231N
	BF115-BF130 4S	1998-to date	UC128-OBF/3	43233T
	BF135-BF150 4S	2005-to date	UC128-OBF/1	43231N
	BF150 V-TEC 4S	2008-to date	UC128-OBF/1	43231N
	BF175-BF200-BF225-BF250 4S	2001-to date	UC128-OBF/1	43231N
Suzuki®	DF70-80-90 4S	1998-to date	UC128-OBF/2	43232R
	DF100-115-140 4S	2008-to date	UC128-OBF/1	43231N
	DF150-175-DF200 L4 4S	2006-to date	UC128-OBF/1	43231N
	DF200-DF225-DF250-DF300-V6 4S	2004-to date	UC128-OBF/2	43232R
Tohatsu®	115-120-140 2S	2004-to date	UC128-OBF/2	43232R
	70-90-115 TLDI 4S	2004-to date	UC128-OBF/1	43231N
	MFS 50-60-75-90-100-115 4S	2018-to date	UC128-OBF/1	43231N
	BFT 115-150-200-225-250 4S	2014-to date	UC128-OBF/1	43231N
	BFT60-75-80-90-100 4S	2015-to date	UC128-OBF/1	43231N
Selva®	80 PORTOFINO/TIGERSHARK 2S	1995-2008	UC128-OBF/1	43231N
	150 WHITE SHARK 2S	2001-2007	UC128-OBF/2	43232R
	100EFI MARLIN-115 EFI NARWHAL	2000-to date	UC128-OBF/2	43232R
	225 BEAKED WHALE 4S	2019-to date	UC128-OBF/2	43232R
	100-150EFI KILLER WHALE 4S- 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
Parsun®	F300	2023-to date	UC128-OBF/2	43232R


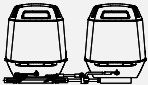

NOTE:

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)

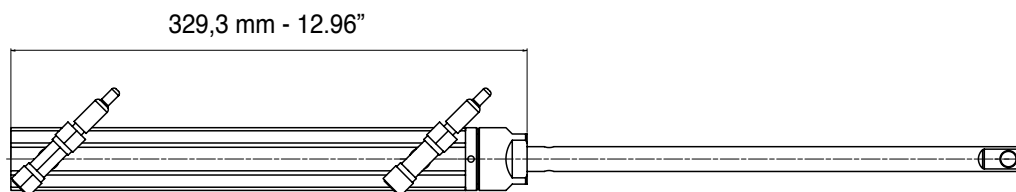
APPLICATIONS:

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



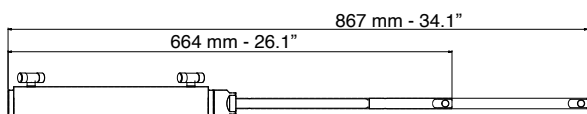
UC68-OBS

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

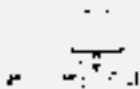
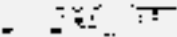

Not intended for use in racing applications

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

ORDER GUIDE

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	
		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
			Oil	OL 150	2
	Up to 300 hp max (counter rotating engine)	4,7/5,8 (UP28)	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
			Oil	OL 150	3
	Up to 300 hp max (counter rotating engines)	5,8/7,3 (UP45)	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

CE UK
CA

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

CE UK
CA

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

CE UK
CA

UP28F-SVS - UP33F-SVS - UP39F-SVS

High Performance front mount helms



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.

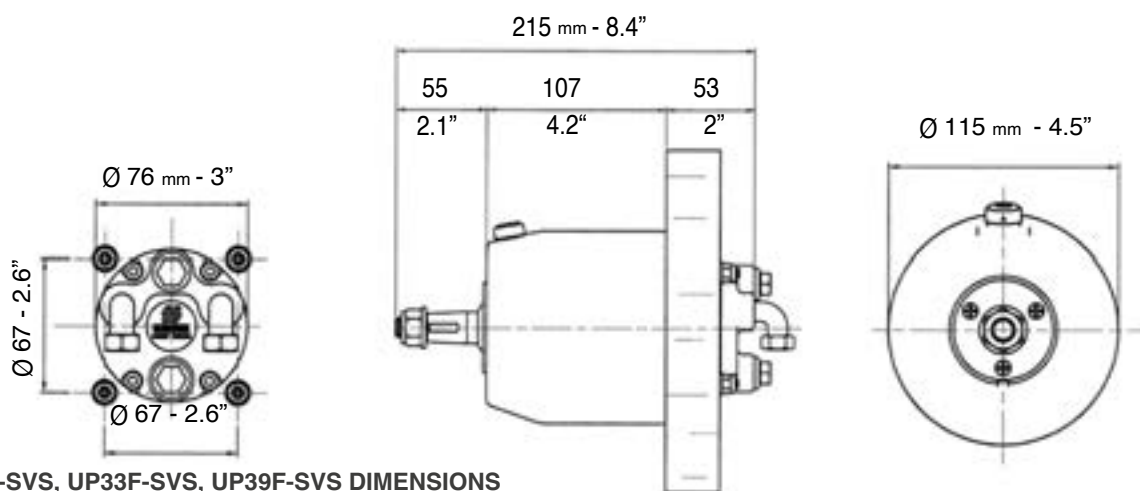
Featuring a 1500 psi (105 Bar) pressure valve, SilverSteer™ helms will deliver very precise steering at all torque loads.

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** – 43140K Tilt range of 60° and five locking positions.

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

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



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

UP28T-SVS - UP33T-SVS - UP39T-SVS

High Performance tilt mount helms



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

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

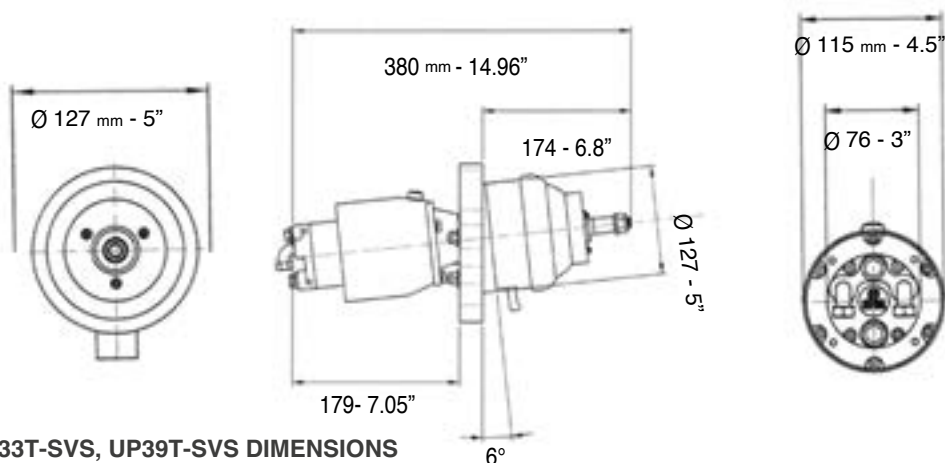
The SVS helms have to be coupled with the UC130-SVS cylinders and the Kit OB-SVS hoses, which are also specifically designed for high torque applications.

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

- Available in three different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock (patented)
- Integral relief valve for over-pressure protection 105 bar (1500 psi)
- Stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- Complete with 90° adjustable fittings for 3/8" hose
- Tilt mechanism for SilverSteer™ systems: **X83-SVS** – 44005J Tilt range of 48° and five locking positions
- **KIT F** - 39664Y (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	44030H	With X83-SVS	28 cc - 1.7 cu.in	5	105 Bar - 1500 PSI	406 mm - 16"	5 kg - 11 lbs
UP33T-SVS	44031K	With X83-SVS	33 cc - 2.0 cu.in	7	105 Bar - 1500 PSI	406 mm - 16"	5 kg - 11 lbs
UP39T-SVS	44032M	With X83-SVS	39 cc - 2.4 cu.in	7	105 Bar - 1500 PSI	406 mm - 16"	5 kg - 11 lbs



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

UC130-SVS

High Performance front mount cylinder



SILVERSTEER™

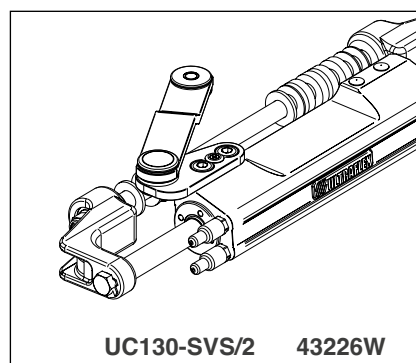
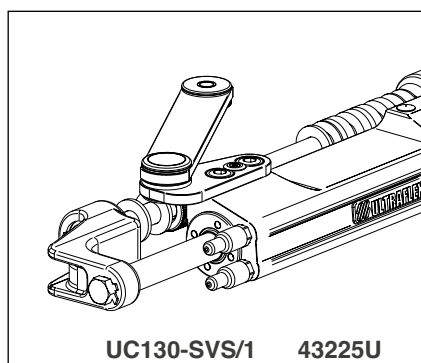


UC130-SVS

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

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

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



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

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

UC130-SVS

High Performance front mount cylinder

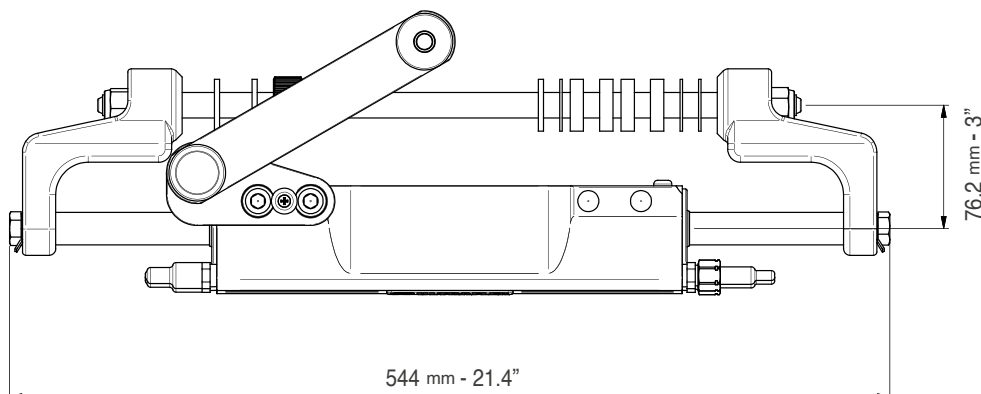
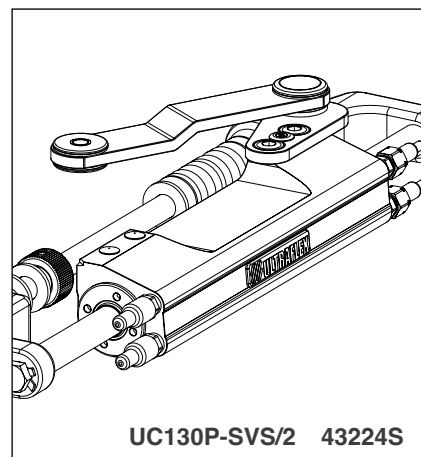
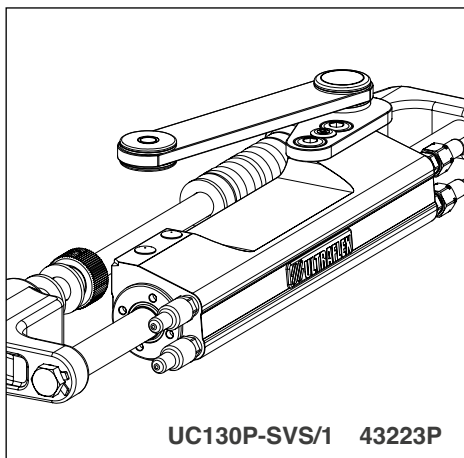


SILVERSTEER™



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
Parsun®	F 300	2022-to date	UC130-SVS/2	43226W




WARNING

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

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

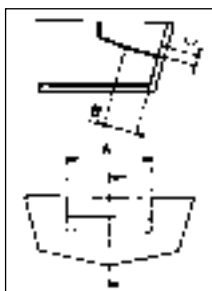
Suzuki® engines DF100-115-140 4S in with a twin engine configuration require UC128-OBF/2 - 43232R, UC128P-OBF/2 - 43235X cylinders and A90 - 40138H tie bar



SYSTEM	APPLICATION	WHEEL TURNS	COMPONENTS	MODEL	Q.TY		
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							
Dual engine Single cylinder 	Up to 350 hp max (non-counter rotating engine)	4,6 (UP28)	Cylinder	UC130-SVS	1		
			Helm pump	UP28 or UP33-SVS	1		
			Hose Kit	KIT OB-SVS	1		
	Up to 600 hp max (counter rotating engine)	3,9 (UP33)	Oil	OL 150	2		
			Tie bar	A96	1		
			Steering wheel	(Wheel selection)	1		
	For a second station add: 1 UP28-SVS or UP33-SVS helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB-SVS, 1 OL 150, 1 steering wheel						
Dual engine Dual cylinder 	Up to 600 hp max (non-counter rotating engines)	6,6 (UP39)	Cylinder	UC130-SVS	1		
			Cylinder Port	UC130P-SVS	1		
			Helm pump	UP39-SVS	1		
			Hose Kit	KIT OB-SVS	1		
	Up to 700 hp max (counter rotating engines)		Oil	OL 150	3		
			Tie bar	A95	1		
			Steering wheel	(Wheel selection)	1		
			Connection Kit	KIT OB-2C130-SVS	1		
	For a second station add: 1 UP39-SVS helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB-SVS, 2 T fittings 39502 V, 1 OL 150, 1 steering wheel						

WARNING

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



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

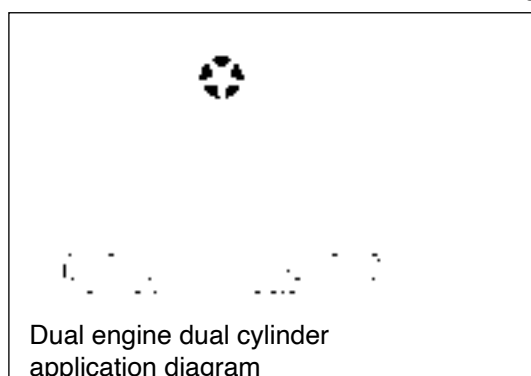
For twin engine applications minimum engine center distance is 650 mm (26")

WARNING:

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

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

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



Hose kits for SilverSteer™ systems



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



KIT OB-SVS

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

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

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



KIT OB/R5-SVS

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

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

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

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



KIT OB-2C130-SVS

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

Dual Engine Installation Kit:

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

Triple Engine Installation Kit:

KIT OB-2C130-SVS	ENGINE CENTERS	HOSE LENGTH	PART No.
KIT OB-2C130-SVS-110	660 mm (26")	1041 mm (41")	43738A
KIT OB-2C130-SVS-120	711 mm (28")	1143 mm (45")	43742R
KIT OB-2C130-SVS-130	762 mm (30")	1245 mm (49")	43788S
KIT OB-2C130-SVS-140	813 mm (32")	1347 mm (53")	43752U

NOTE: For **UC128-SVS** applications (previous SilverSteer cylinder model) and **four-engine/double cylinder** installations, please contact our Technical Service.

A88 - A92

Tie bars for twin outboard engine

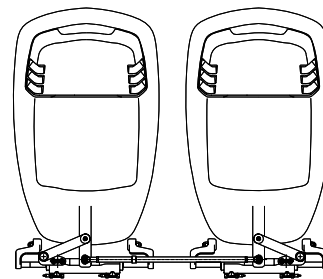
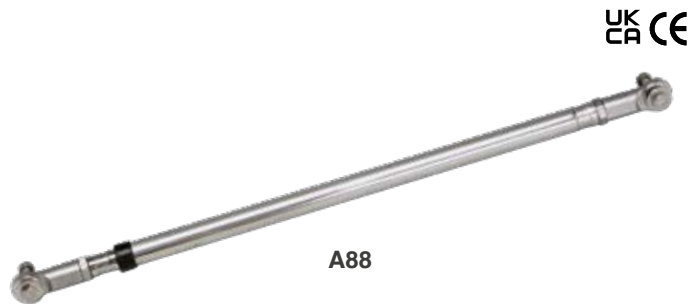
A88

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

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

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

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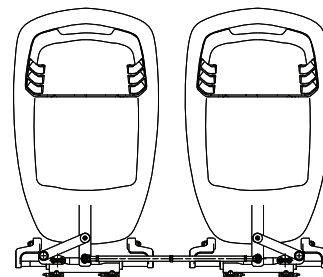


A88 application example

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

for twin outboard engine/single UC128-OBF or UC130-SVS cylinder

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

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



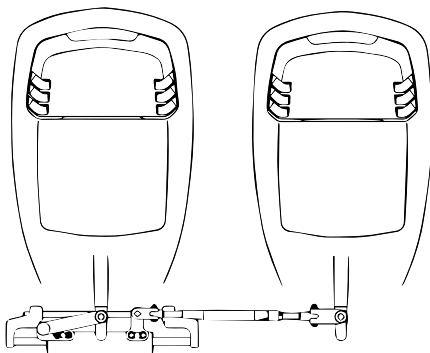
A96 M/Y-29	43496C	From 26" to 29" engine center - Mercury® and Yamaha® engines
A96 M/Y-34.5	43497E	From 29" to 34.5" engine center - Mercury® and Yamaha® engines
A96 S/H-29	43897X	From 26" to 29" engine center - Suzuki® and Honda® engines
A96 S/H-34.5	43898Z	From 29" to 34.5" engine center - Suzuki®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

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



A96 TIE BAR APPLICATIONS

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



A96 application example

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

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

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



A95 M/Y

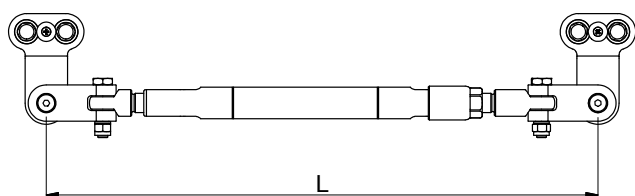


A95 S/H

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

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

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



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

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



UC128 + A95



UC130 + A95

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

UC128 starboard cylinders:

UC128-OBF/1 - 43231N

UC128-OBF/2 - 43232R

UC128-OBF/3 - 43233T

UC128P port cylinders:

UC128P-OBF/1 - 43234V

UC128P-OBF/2 - 43235X

UC130 starboard cylinders:

UC130-SVS/1 - 43225U

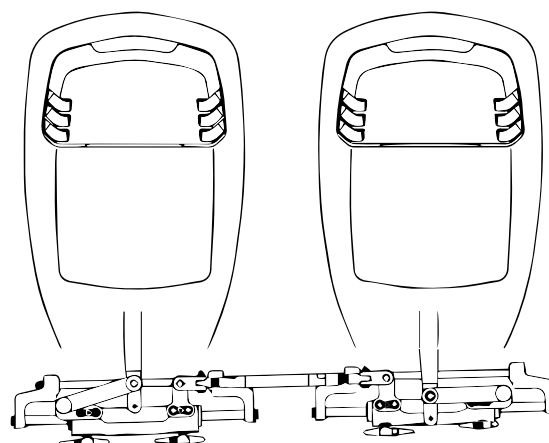
UC130-SVS/2 - 43226W

UC130-SVS/3 - 43227Y

UC130P port cylinders:

UC130P-SVS/1 - 43223P

UC130P-SVS/2 - 43224S



A95 - application example

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

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

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

A90 - Tie bar

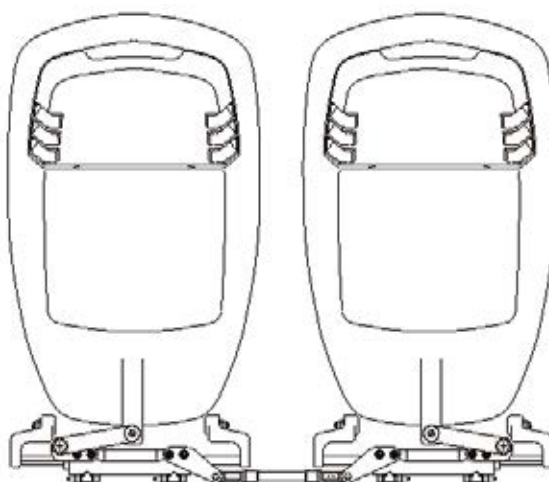
for twin outboard engine Suzuki® DF100-115-140 4S twin UC128-OBF cylinder

A90 - 40138H

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



UC128 + A90



A90 - application example



A90

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



Suitable for use in applications with Suzuki GEN3 engines with integrated cylinder and SILVERSTEER, MASTERDRIVE and INTEGRA systems.

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



A97 M/Y-30



A97 S/H-30



UC130 + A97

Suitable for applications with triple outboard engine and dual cylinder UC128-OBF or UC130-SVS

• Also available in semi-assembled bars and brackets

• 2 available different lengths:

From 26" to 30" engine center

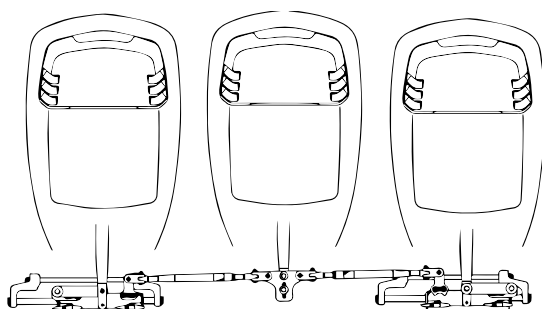
From 30" to 35.5" engine center

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



MERCURY® BRACKET KIT - 43911M

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



A97 - application example

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

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



A98 M/Y



A98 S/H

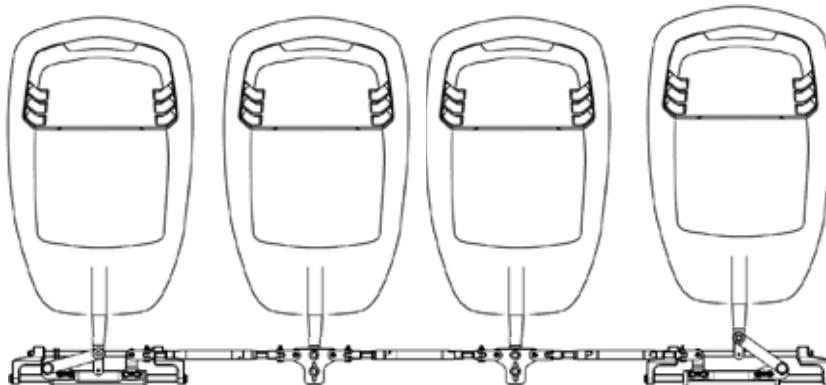


UC128 + A98

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

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

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



A98 - application example

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



MERCURY® BRACKET KIT - 43911M

Tie bars - Connecting bar assemblies without brackets

CONNECTING BAR ASSEMBLY - 43913C

Connecting bar assembly compatible with:

A96 M/Y-29

A95 M/Y-32

A96 S/H-29

A95 S/H-32



Bars include engine side bracket connectors.

CONNECTING BAR ASSEMBLY - 43919E

Connecting bar assembly compatible with:

A96 M/Y-34.5

A95 M/Y-37.5

A97 M/Y-35.5

A96 S/H-34.5

A95 S/H-37.5

A97 S/H-35.5



Bars include engine side bracket connectors.

CONNECTING BAR ASSEMBLY - 43921R

Connecting bar assembly compatible with:

A97 M/Y-30

A98 M/Y (external tie bar)

A97 S/H-30

A98 S/H (external tie bar)



Bars include engine side bracket connectors.

CONNECTING BAR ASSEMBLY - 43920N

Connecting bar assembly compatible with:

A98 M/Y (central tie bar)

A98 S/H (central tie bar)



Bars include engine side bracket connectors.

Brackets for tie bars

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

Cylinder side bracket compatible with:

A96 M/Y-29

A95 M/Y-32

A97 M/Y-30

A98 M/Y

A96 M/Y-34.5

A95 M/Y-37.5

A97 M/Y-35.5



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

Cylinder side bracket compatible with:

A96 S/H-29

A95 S/H-32

A97 S/H-30

A98 S/H

A96 S/H-34.5

A95 S/H-37.5

A97 S/H-35.5



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

Engine side bracket compatible with:

A96 M/Y-29

A96 M/Y-34.5



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

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

Engine side bracket compatible with:

A96 S/H-29

A97 M/Y-30

A98 M/Y

A96 S/H-34.5

A97 M/Y-35.5

A98 S/H

A97 S/H-30

A97 S/H-35.5



MERCURY® BRACKET KIT - 43911M

Mercury® bracket kit compatible with:

A97 M/Y-30

A98 M/Y

A97 M/Y-35.5



Tie Bars components selection chart

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

Liquid Tie Bars

LTB1 - 42085Z

LTB1N - 43525G

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

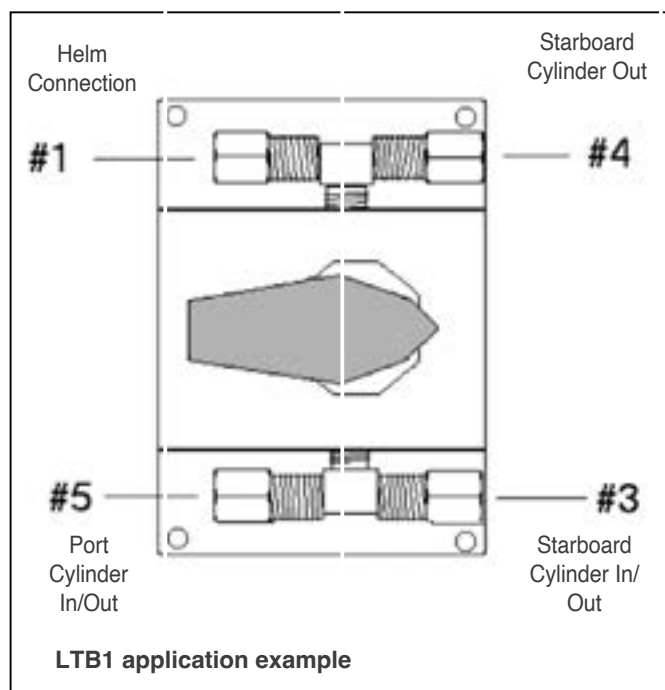
The Liquid Tie Bars should not be used on any applications with engine centers less than 36"



LTB1



LTB1N



Masterdrive™ Power Assisted Outboard Steering System



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

MasterDrive System features

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

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



Components

- 1 single packaged **KIT MD** for single station containing:
 - 1 **UH** Front or tilt mount Main Helm
 - 1 **UPMD** Power Unit, 15' (4,5 m) wiring harness included
 - 1 **UCMD** User Interface
 - 4 **OL 150** bottles of hydraulic oil
 - anti-vibration sleeves
- 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 **X88** – 40613 M suitable for Tilt Mount Helm. Tilt range of 48° and five locking positions.
- 1 Dual cylinder application Tie Bar: see tie bar section
- 1 Steering wheel: see steering wheel section
- 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

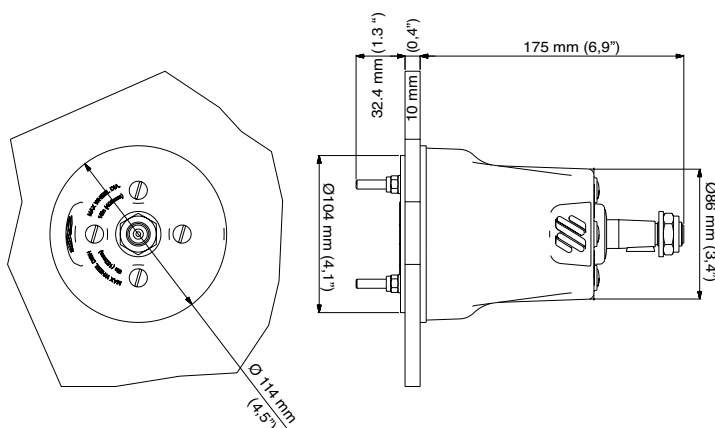


UH

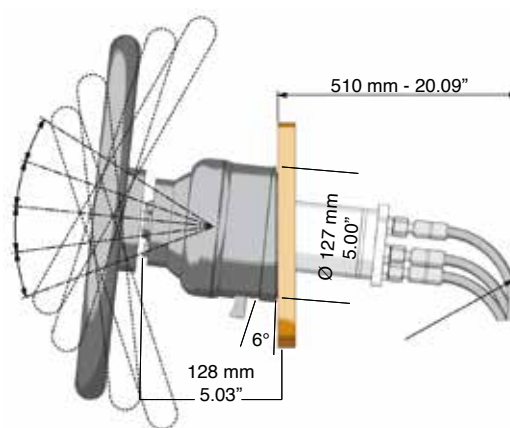
MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	APPLICATION	No. OF STATIONS	MAXIMUM WHEEL DIA.
UH32-F	42091U	front mount	32cc - 1.95 cu.in	single cylinder	1	406 mm - 16"
UH32-T	42092W	with X66 tilt	32cc - 1.95 cu.in	single cylinder	1	406 mm - 16"
UH40-F	42093Y	front mount	40cc - 2.44 cu.in	dual cylinder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

X88 - Tilt mechanism- 44006L

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



X88



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

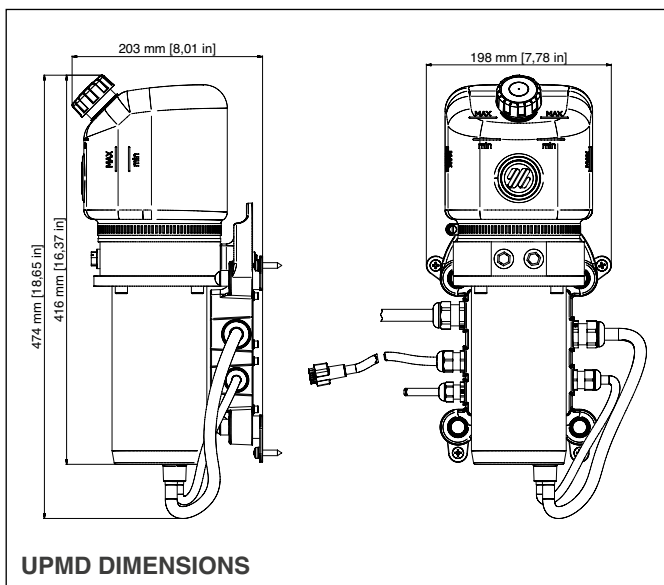


K81MM

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

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

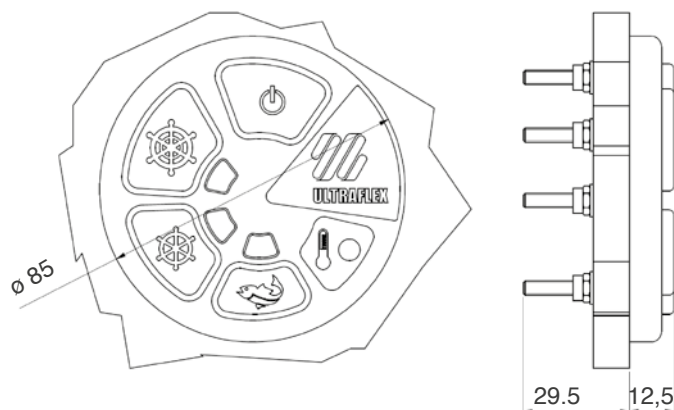
Masterdrive™ Power Assisted Outboard Steering System

UCMD - User interface - 42097G

- Safety switch ON/OFF (SMART BUTTON)
- Three different power levels with light indicator (PATENTED)
- Motor temperature visual indicator
- Twin engine key selection included
- Lighted panel for stand-by position
- Plug-in wiring harness
- Suitable for a second station installation
- **MD-EX7** – 42636L 7m (23 ft) panel extension cable also available



UCMD



UCMD DIMENSIONS

MD - packaged kit for single station



MasterDrive packaged kit contains:

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

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 **X88** - 44006L tilt mechanism, the tie bar and the wheel are to be ordered separately

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



MD KIT

NOTE: Single-station MasterDrive kits without a control panel are available on request.

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 ANTI-VIBRATION SLEEVES - 77970W

Kit OB-2C130-SVS - Dual cylinder / dual and triple 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) and **four-engine/double cylinder** installations, 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-110	660 mm (26")	1041 mm (41")	43738A
KIT OB-2C130-SVS-120	711 mm (28")	1143 mm (45")	43742R
KIT OB-2C130-SVS-130	762 mm (30")	1245 mm (49")	43788S
KIT OB-2C130-SVS-140	813 mm (32")	1347 mm (53")	43752U



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 **MD-EXT 7S** - 74162W - 23 ft (7 m) electric cable for the second station communications
- **OL 150** - 42398X1 liter of hydraulic oil
- 1x **MDSF38** - 70957S - 3/8" straight fitting
- 2x **MDTF38** - 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:

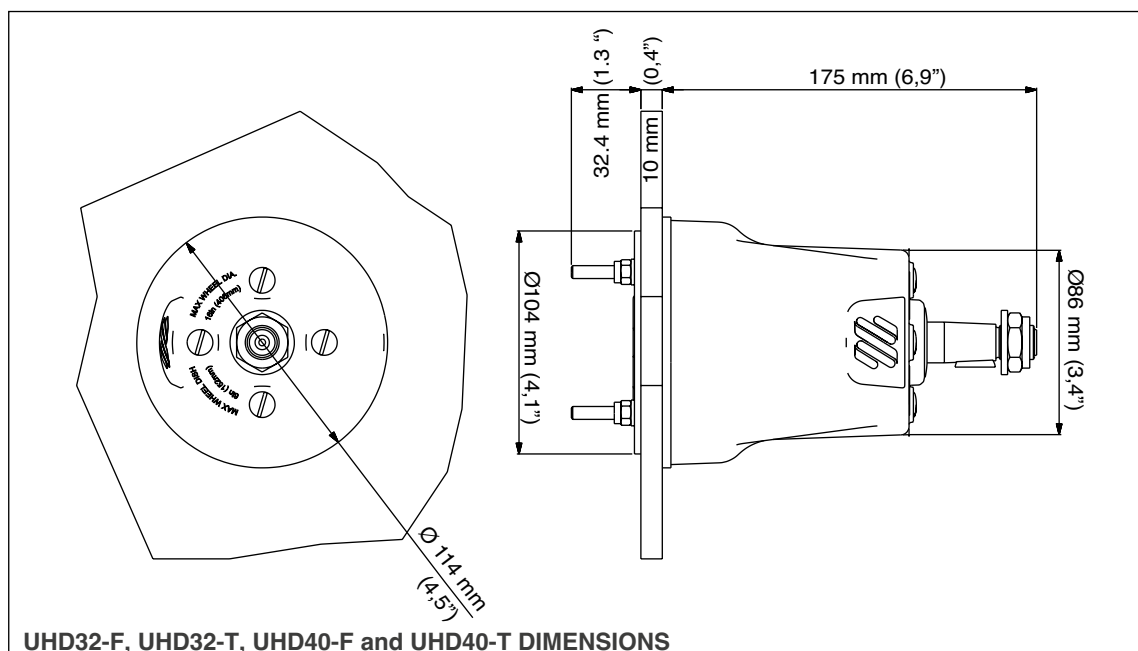
1x Kit OB-SVS with length equal to the distance between the main helm pump and the secondary helm pump

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 **X88** – 44006L and the wheel are to be ordered separately.



Single cylinder single station application

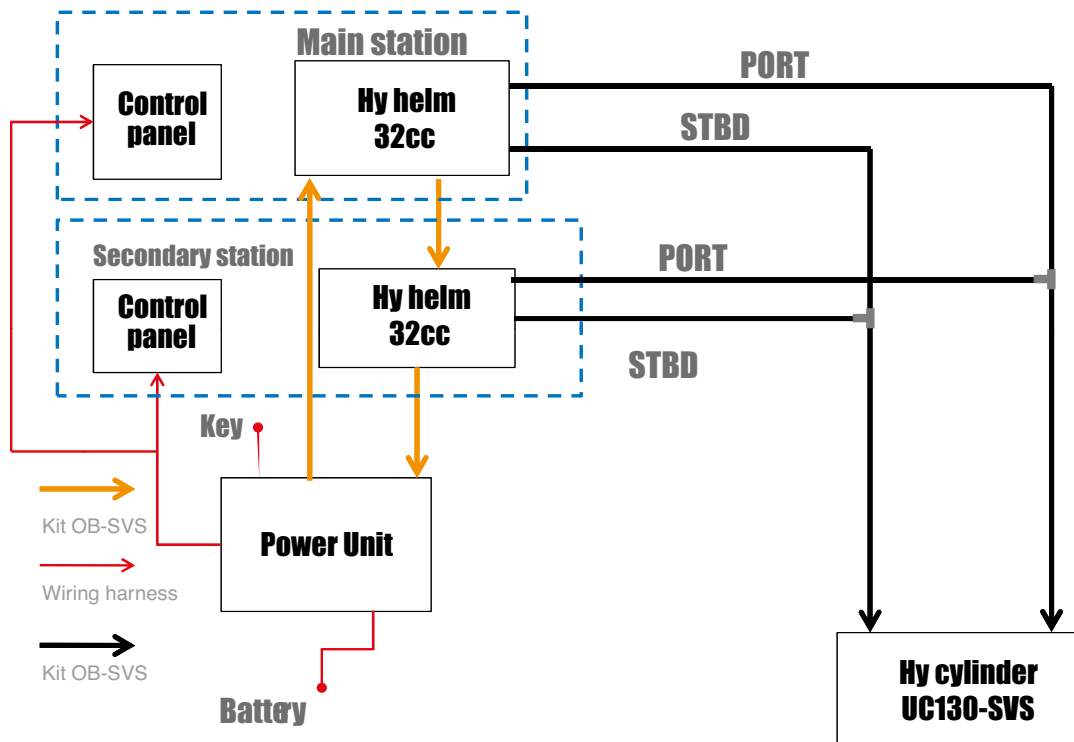


Dual cylinder single station application

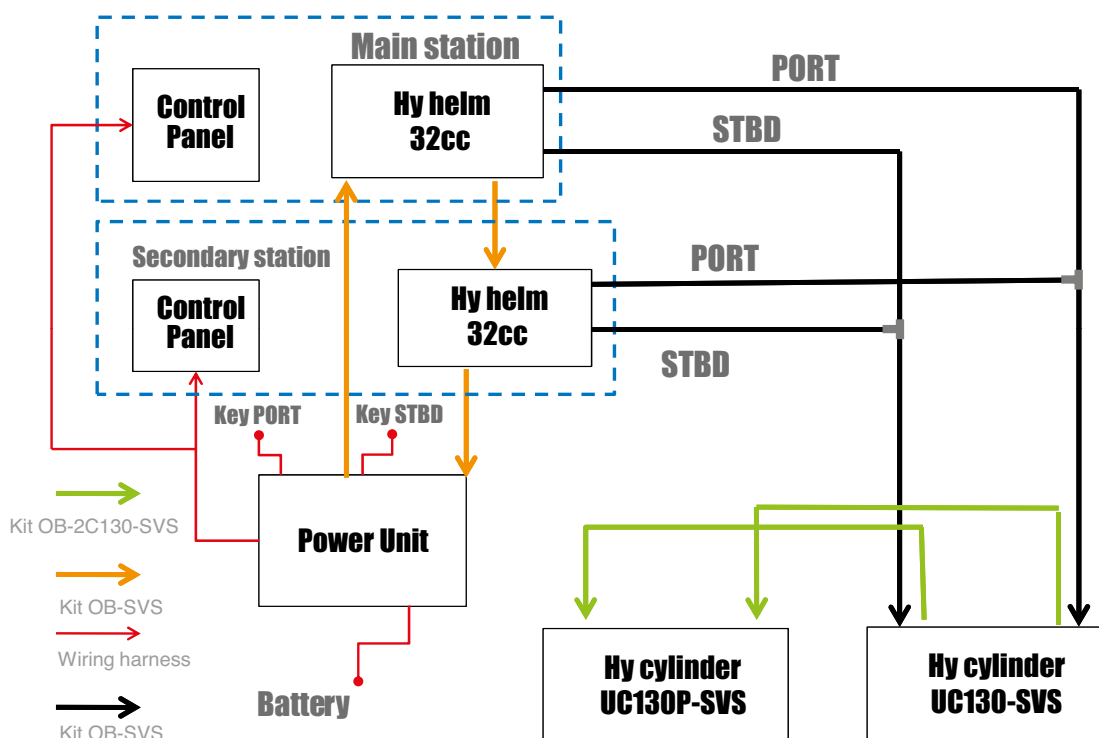


Masterdrive™ Power Assisted Outboard Steering System

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
MDEX7 - 42636L

UC133-IOB / UC132-OBS

Sterndrive cylinders

UC133-IOB - Sterndrive Cylinder



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



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

UC132-OBS - Side Mount Cylinder

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

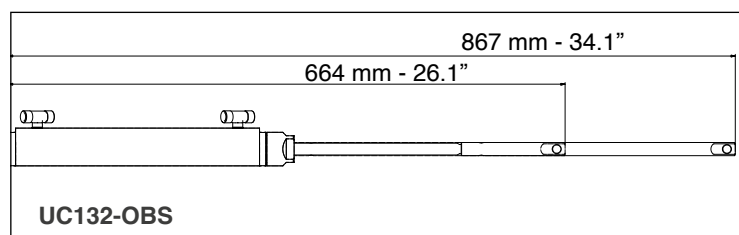
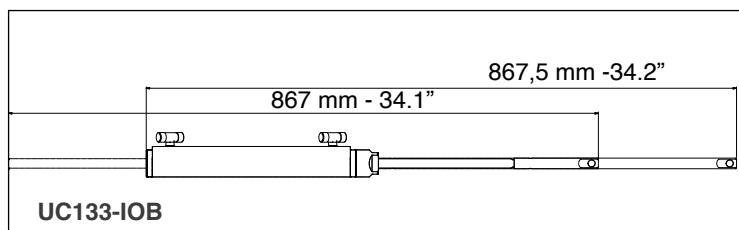
- This side mount cylinder features a turning nut for a fast and easy installation to the engine tube (PATENTED)
- Clearance required at the engine tube side: 375 mm (14.76")



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

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

SPECIFICATIONS	UC133-IOB - 39429 M 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

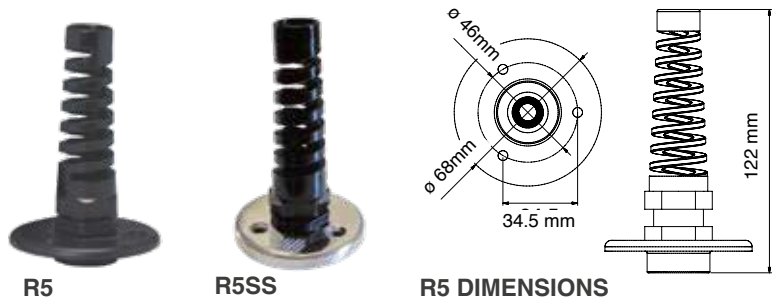
Components	Model	Qty	For additional station add: 1 UP33 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB hose Kit, extra OL 150, 1 steering wheel
Helm pump	UP33	1	
Cylinder	see application	1	
Hose kit	KIT OB	1	
Oil	OL 150	3	
Steering wheel	(Wheel selection)	1	

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.

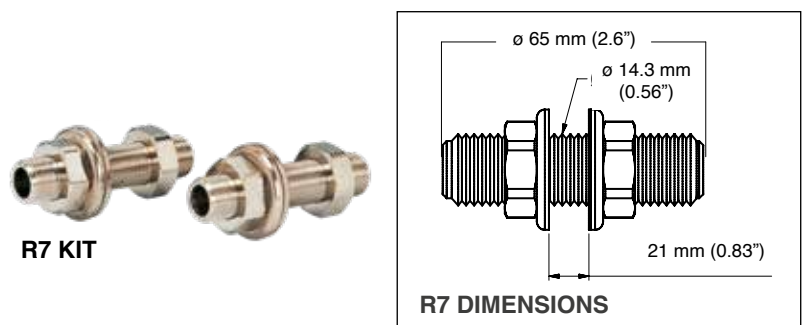
R5	39510U	Bulkhead hose kit
R5SS	42419C	Bulkhead hose kit with stainless steel flange



R7 - 3/4" Bulkhead fitting kit

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

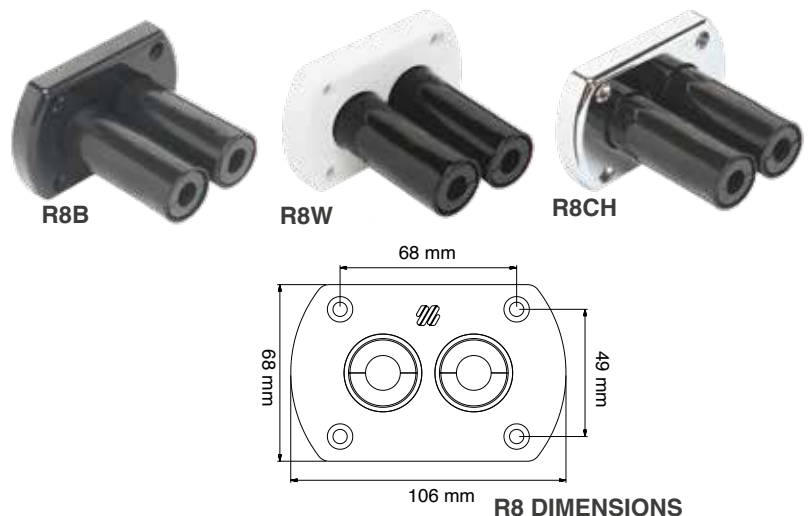
R7	40819J	3/4" bulkhead fitting kit
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R8 - Dual thru-hull hose kit

Connection flange available in three different colours

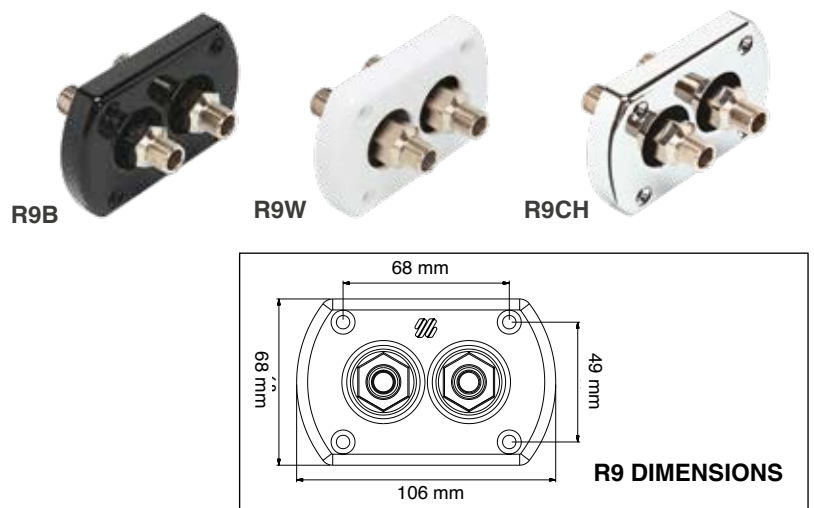
R8B	41299P	Connection flange - black
R8W	41300V	Connection flange - white
R8CH	41301X	Connection flange - chrome plated



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 installation 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

SF18 - 43179P

1/8" (3.18 mm) straight pump fitting

SF12 - 41306H

straight fitting, helm and tube Ø 12 mm

EF38 - 39472N

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

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

TF916 - 76828M

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

VF38 - 39503X

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

VFN38 - 39925A

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

VFNO38 - 40868Y

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

VFN916 - 43835Y

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

QCFN - 41307K

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

QCFN94 - 41308M

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

SF916 - 43155Z

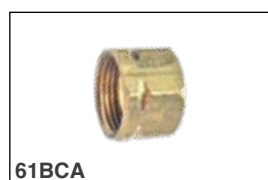
9/16" (14.3 mm) nickel plated brass straight fitting

EXT-F916 - 43156B

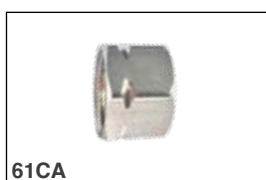
9/16" (14.3 mm) nickel plated brass male adapter to 9/16" (14.3 mm) female

SF916-14 - 43301H

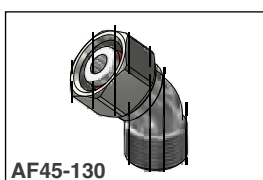
9/16" (14.3 mm) straight fitting to 1/4 NPT



61BCA



61CA



AF45-130



AF45



AF90



SF38



SF18



SF12



EF38



TF916



VF38 - VFN38



VFNO38



VFN916



QCFN



QCFN94



SF916



EXT-F916



SF916-14

BubbleBuster™

Portable device for automatic filling and purging of hydraulic systems

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

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

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

Zero Emulsion Effect



BubbleBuster™

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

Components included

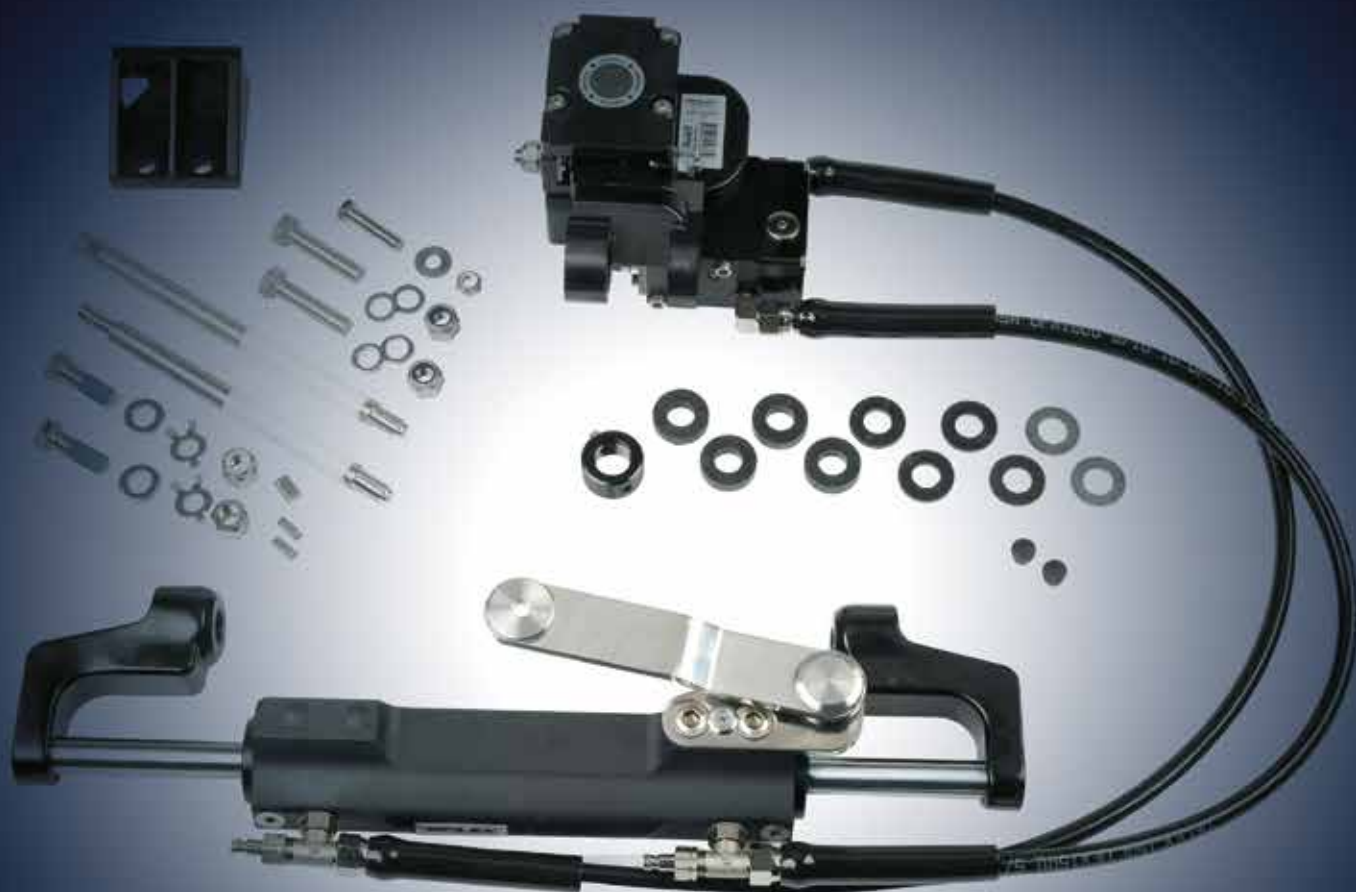
- No. 1 motor pump with safety valve , switch and 5 litres (1 gal) tank included, it allows the purging of 2 hydraulic steering systems before refilling.
- 12V electric motor with thermal protection. Current absorption 8 A
- No. 1 4m (13') electric harness with alligator clips for fast connection with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

Spare parts

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

Optional components

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



ZTF - Zero Torque Feedback - Tiller steering systems

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

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

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

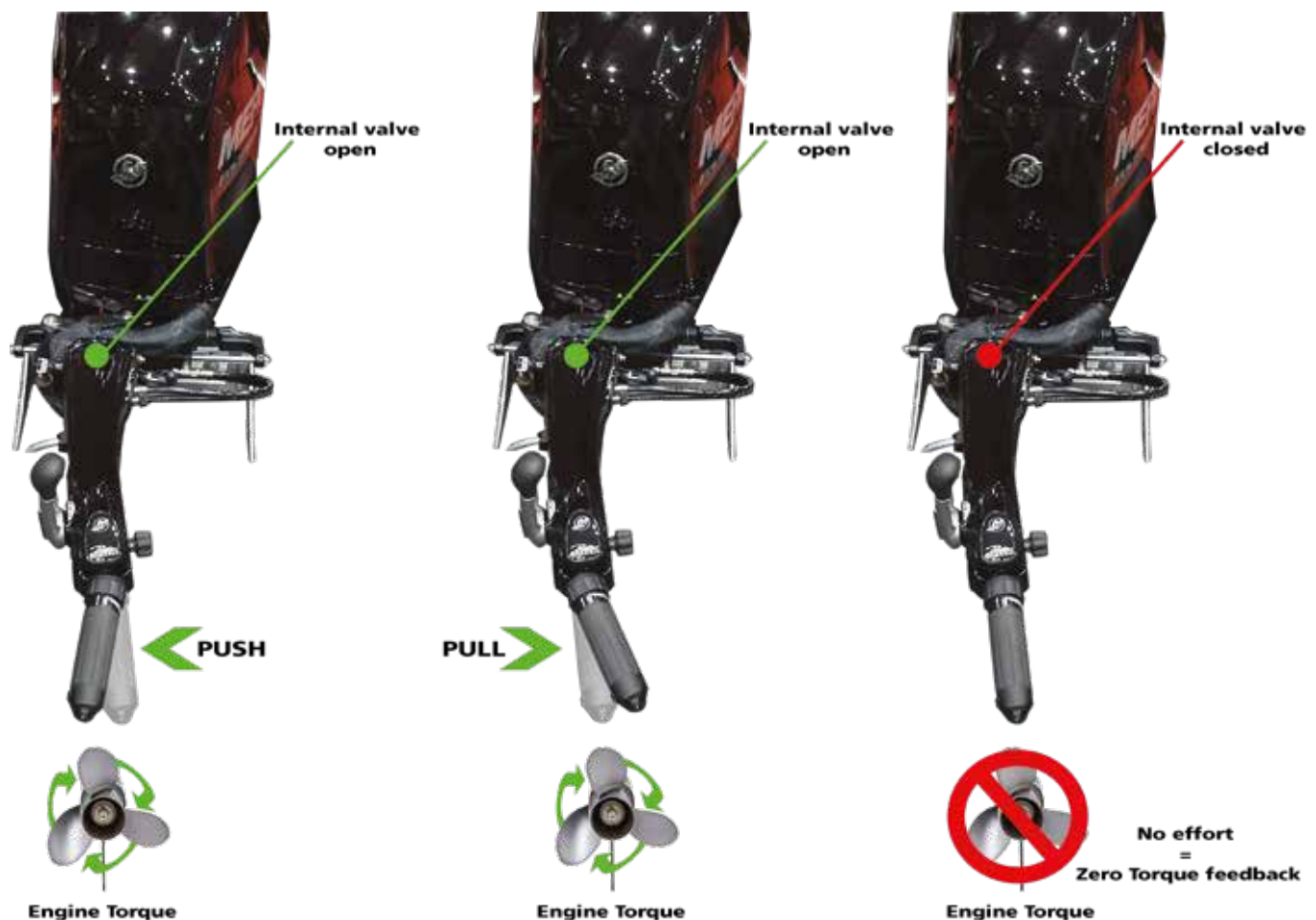
How the ZTF tiller system works

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

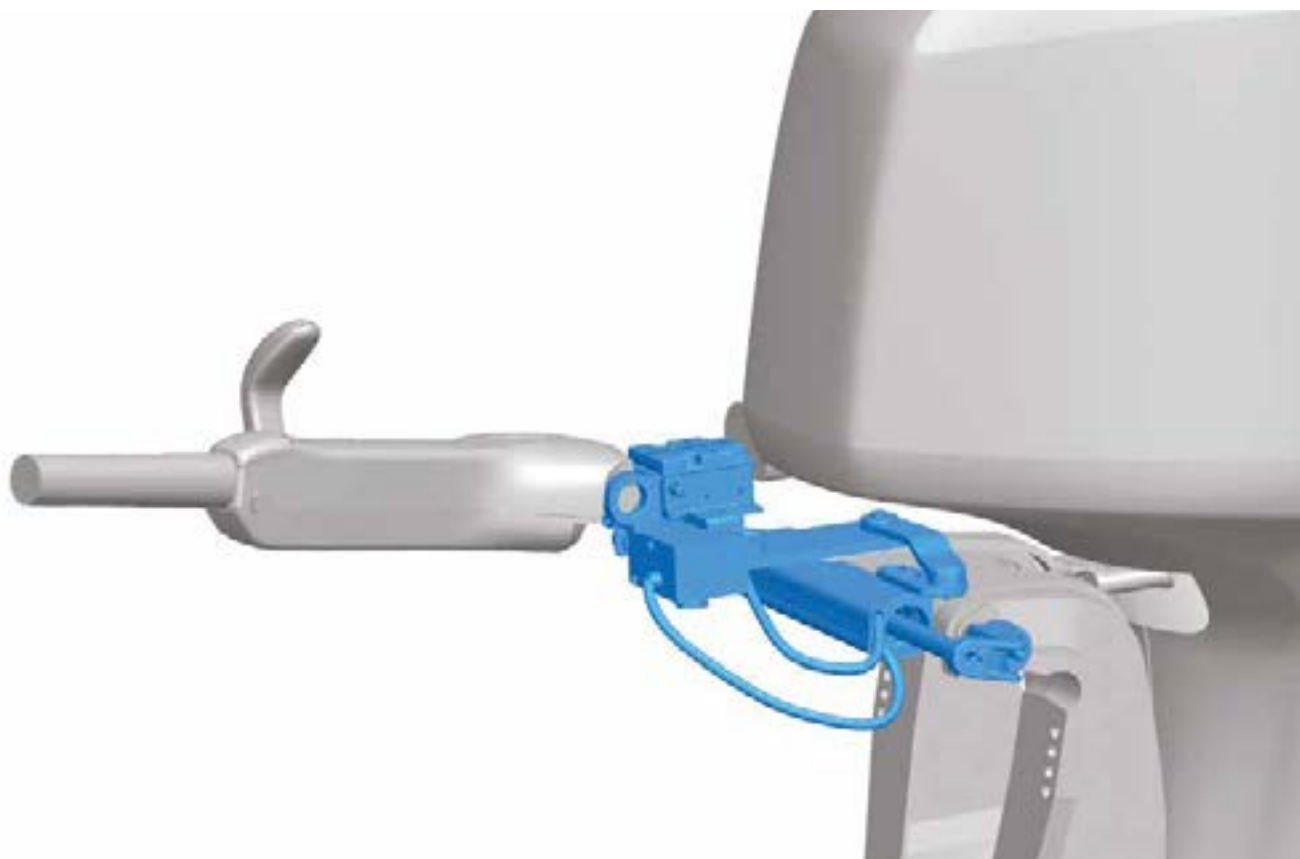
Pull on the end of the tiller handle and the valve opens allowing you to steer.

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

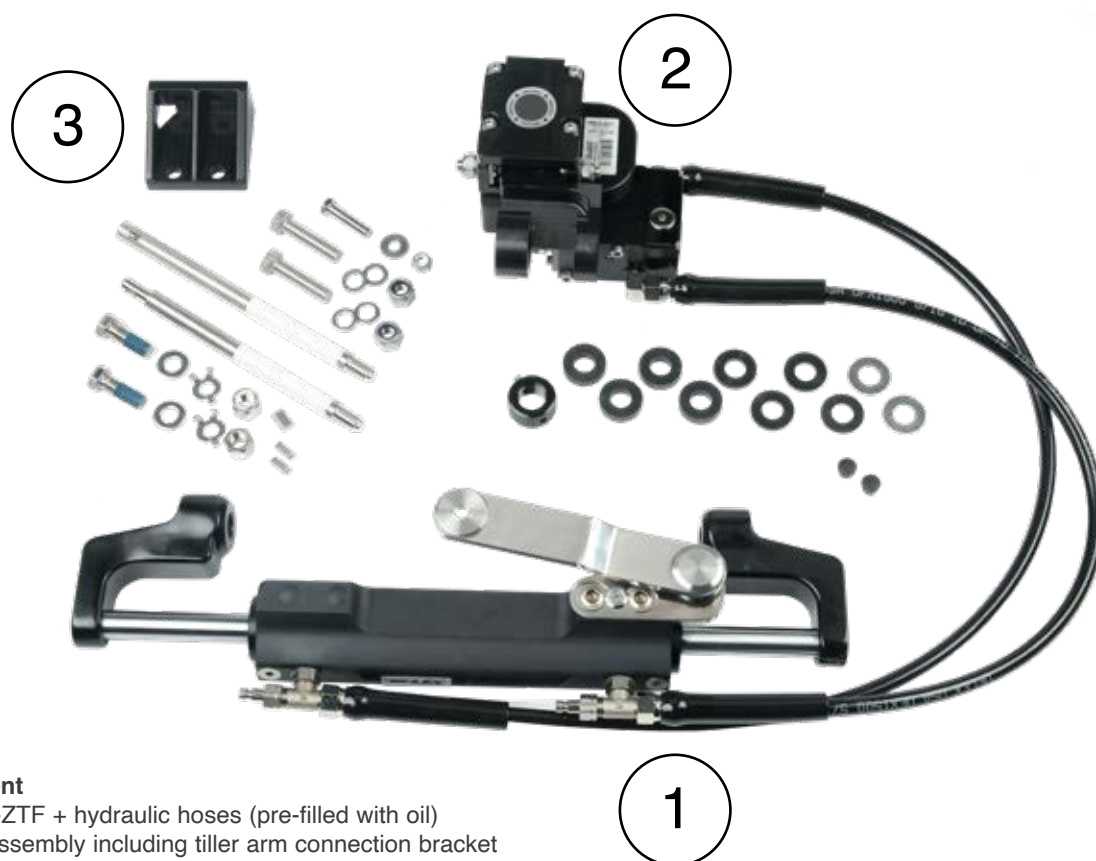
WARNING! This system is not intended to be used in place of the boat operator. Operator must maintain contact with the Tiller Handle during operation.



ZTF - Zero Torque Feedback - Tiller steering systems



ZTF - Zero torque feedback tiller steering systems



Component

- 1- UC128-ZTF + hydraulic hoses (pre-filled with oil)
- 2- Valve assembly including tiller arm connection bracket
- 3- Engine connection bracket

Other tools:

No. 2 Ultraflex® push-pull cables for throttle and shift

ZTF - Zero Torque Feedback - Tiller steering systems

MERCURY® Zero Torque Feedback tiller steering system

Tiller 40-115 Mercury®

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

Note: Mercury® Tiller Arm not included



ZTF Tiller M2	43880D	For use with 75 hp to 115 hp EFI 4 stroke, from 2014 to date
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YAMAHA® Zero Torque Feedback tiller steering system

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

Note: Yamaha® Tiller Arm not included



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

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

Note: Suzuki® Tiller Arm not included



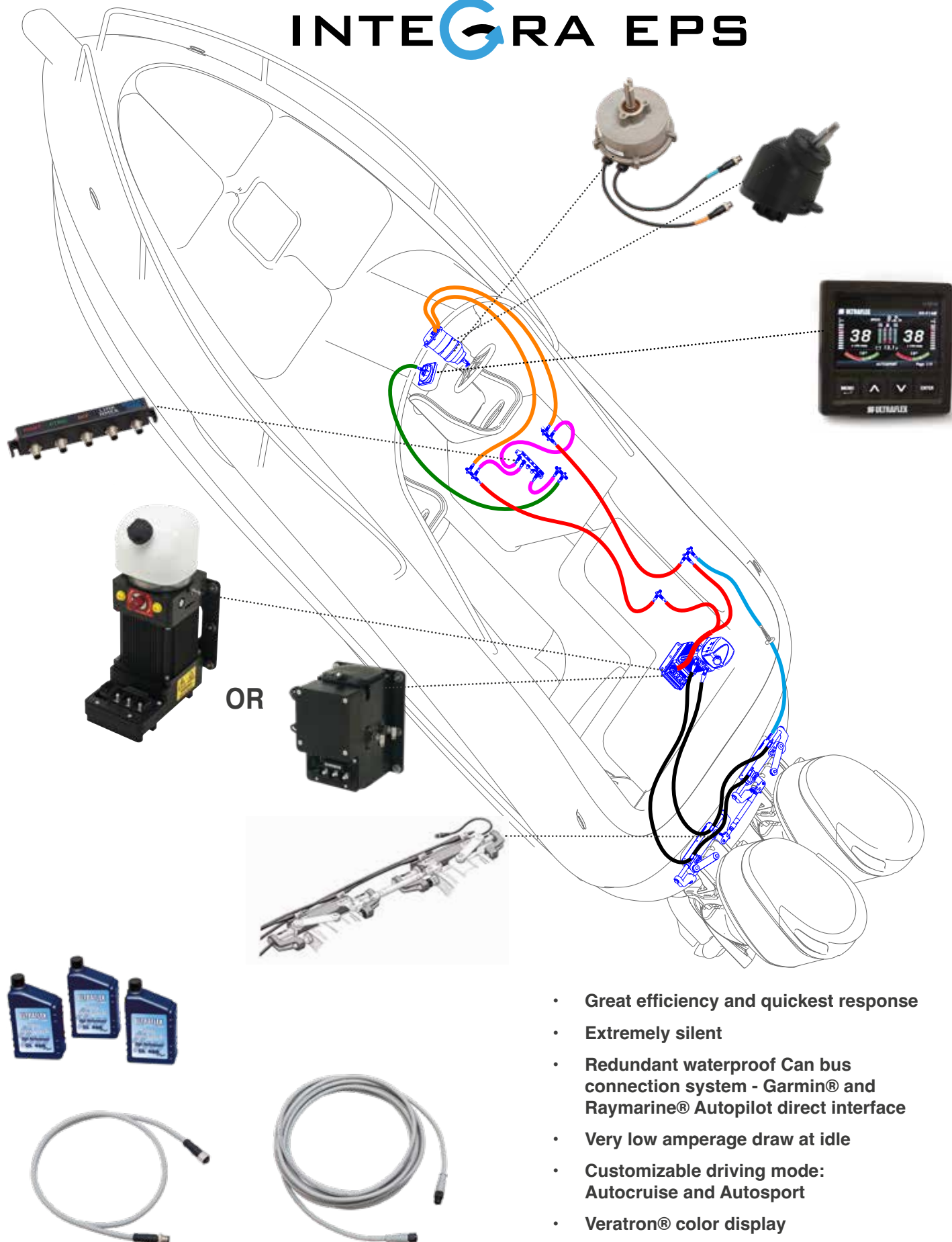
ZTF Tiller S2	43879V	For use with Suzuki® DF150A - DF175A - DF200A
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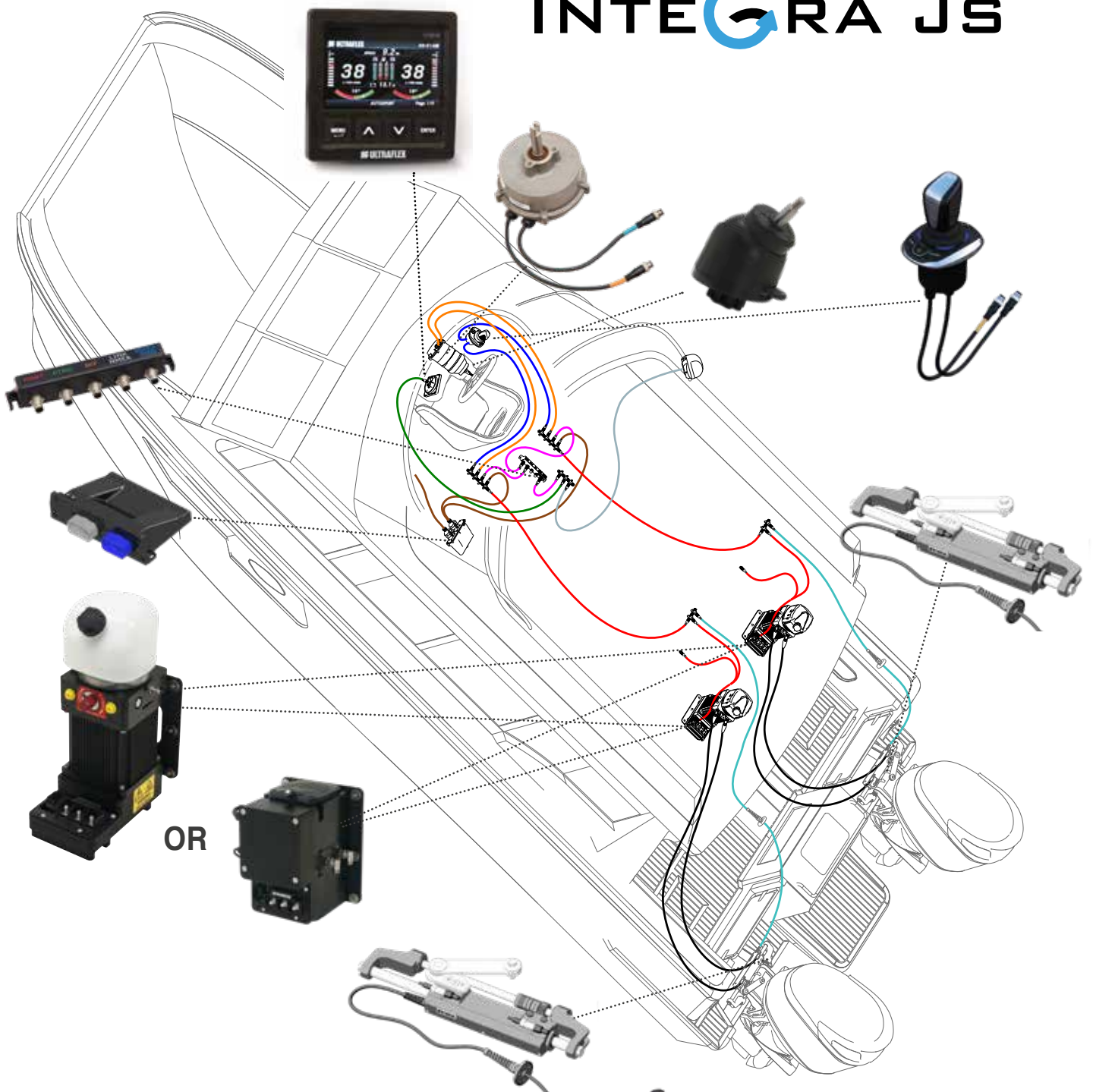
Integra™ EPS

Outboard electronic power steering systems

INTEGRA EPS



INTEGRA JS



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

Integra™

Outboard electronic power steering systems

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

System components	Integra EPS™	Integra JS™
UIH - Tilt mount electronic helm	✓	✓
UJS - Integra JS joystick	-	✓
UGW-D - Digital Integra JS Gateway	-	✓
UGW-A - Analogic Integra JS Gateway	-	✓
X82 - 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 starboard cylinder with integrated sensor	✓	✓
UC120EP - Heavy duty port cylinder with integrated sensor	✓	✓
UC120 - Heavy duty starboard hydraulic cylinder for multiple engine applications with tie bar	✓	✓
UC120P - Heavy duty port hydraulic cylinder for multiple engine applications with tie bar	✓	✓
Tie bar - Please refer to Integra tie bar section	✓	✓
KIT OB-SVS - High pressure Hydraulic hoses with pre crimped fittings	✓	✓
CAN Bus wires - Can Bus power wires	✓	✓
KBD3 - Purging kit with twin spiralled hoses and connectors (optional)	✓	✓
OL460 - 3 one litre hydraulic oil bottles (single bottle - 436467V)	✓	✓

Integra EPS and Integra JS key benefits

- **Redundant electronic steering system**, a reliable way to reduce steering effort, tuning your driving and enhancing steering experience.
- **Powerful output, great efficiency and quickest response** in any situation, thanks to the brushless motor of the pump unit and to the electronic management
- **Extremely silent**
- **Low amperage system**
- **Veratron® colour display**
- **Customizable driving mode**: the user can choose between Autocruise and Autosport driving mode
- **Autopilot direct interface**: **Garmin®** Reactor™ 40 Steer-by-wire, **Raymarine®** EV-2 SBW, **Furuno®** Navipilot 300, **Simrad®** AP44 e Ap48 con NAC-D
- **Easy installation**, thanks to the simplified configuration and the CAN bus connection system.
- **Customizable wheel effort**.
 - Wheel effort is programmed to change with engine RPM.
- **Tilt range of 48° and 5 locking positions**, thanks to the **X82** 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, **Trim** function for adjusting motor feet, **Heading** function, that gives the ability to maintain the set course, **Anchor** function, to maintain boat position via GPS connection and **MainStay** the combination of the previous functions (**Heading** and **Anchor**). **Anchor, Heading and MainStay** functions needs the presence of **Veratron® Nav Sensor - 20201Z**



Integra™

Outboard electronic power steering systems

UIH1 - Electronic helm

- Electronic steering helm tilt mount **X82** -43817N
- 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

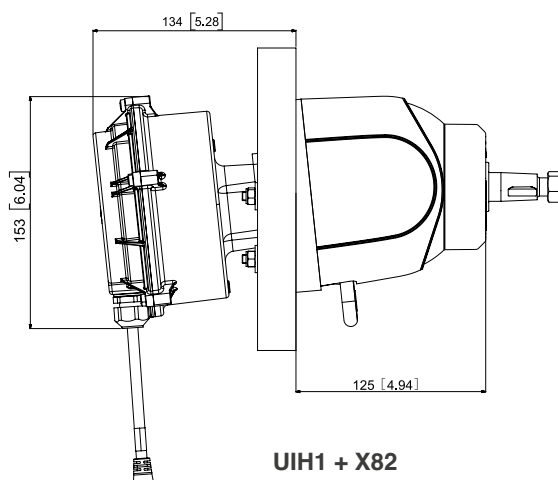
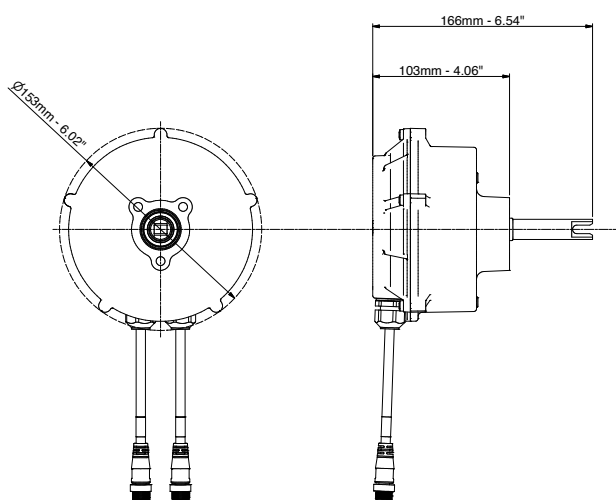
- Resistant to harsh marine conditions
- Steering wheel turns can be set by the user.
- Variable steering wheel resistance according to boat speed
- Instant responsiveness
- Redundant architecture with 2 CAN bus channels



X82



UIH1



UIH1 + X82

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 or the set direction
- **Heading**: ability to maintain the set course
- UP and Down trim keys: to be connected to the boat's trims
- **Anchor** function allows boat position to be maintained via GPS connection
- **MainStay** function is activated by pressing the **Heading** and **Anchor** keys
- Anchor, Heading and MainStay function requires Veratron® Nav Sensor - part number 20201Z
- CAN Bus communication via 2 DeviceNet® connectors.



UJS1	43922T	Integra JS joystick first station
UJS2	44078N	Integra JS joystick second station

UJS - B Integra JS joystick with Bow Thruster

- 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 or the set direction
- **Thruster only**: operate bow thruster only
- **Heading**: ability to maintain the set course
- UP and Down trim keys: to be connected to the boat's trims
- **Anchor** function allows boat position to be maintained via GPS connection
- **MainStay** function is activated by pressing the **Heading** and **Anchor** keys
- Anchor, Heading and MainStay function requires Veratron® Nav Sensor - part number 20201Z
- CAN Bus communication via 2 DeviceNet® connectors.

new



UJS-B1	44162B	Integra JS joystick first station with Bow Thruster
UJS-B2	44163D	Integra JS joystick second station with Bow Thruster

BCM (Body Control Module) - Can Bus Network Module

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



BCM	43540C	Can Bus network module
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BCM

Integra™

Outboard electronic power steering systems

UGW- Gateway

Device to control throttle and inverter in Honda, Suzuki and Selva outboard engines. It allows management of the trims directly from the joystick.

UGW- D Digital Gateway

UGW-D	43934A	Digital Gateway
UGWD-S1	43991N	Harness for UGW-D digital gateway and Suzuki engines equippe with SPC1
UGWD-S2	43990L	Harness for UGW-D digital gateway and Suzuki engines equippe with SPC2
UGWD-H1	43990L	Harness for UGW-D digital gateway and Honda engines

UGW- A Analogic Gateway

UGW-A	43985U	Analog Gateway
UGWA-H2	44083F	Harness for UGW-A analog gateway and Honda engines



UGW

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
- Electronic anchor response level setting

UID - B	43539U	UID Veratron® display - black
UID - W	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
- Percentage operation bow thruster



UIP and UIPC - Power units

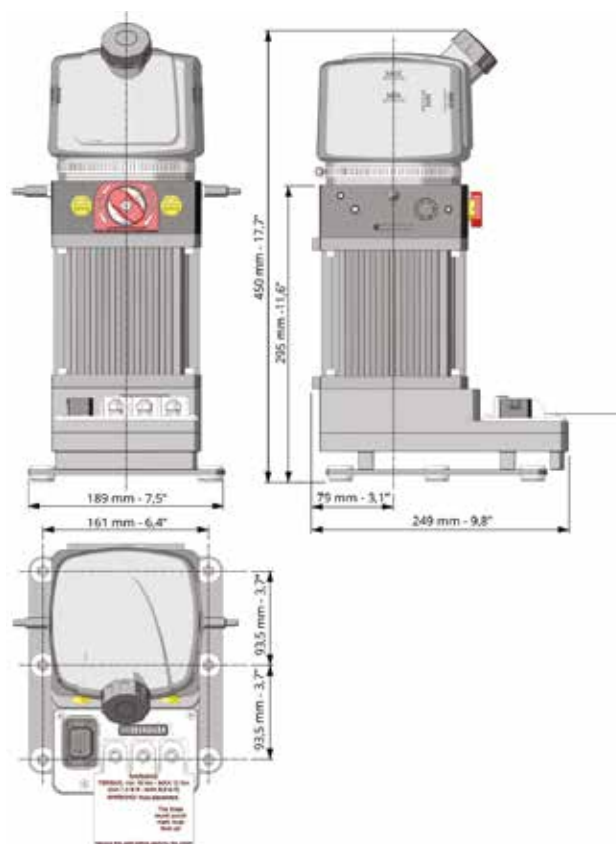
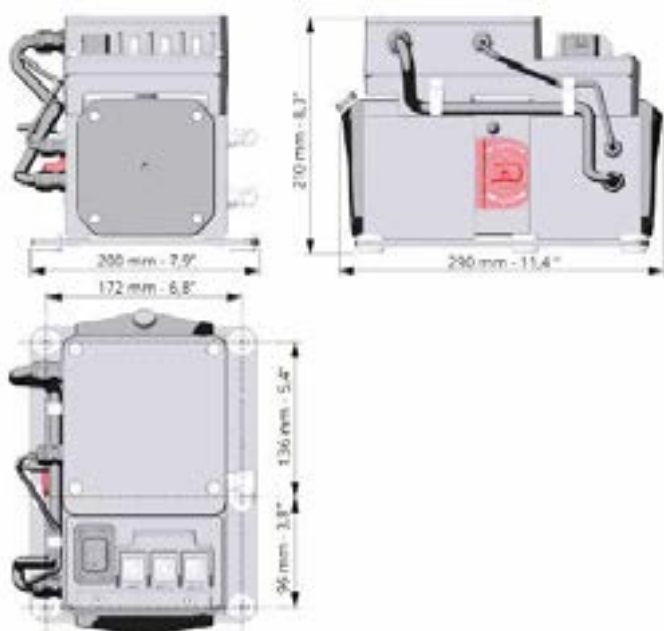
- 12 VDC brushless motor
- High power: very short lead times for maximum reactivity
- Embedded automatic power selector to manage the power supply from 2 batteries
- Can be installed anywhere on the boat
- 90° swiveling fittings for easy hose connection
- Tank: 1 litre (0.26 gal) UIP power unit; 0,3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



UIPC



UIP



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

Integra™

Outboard electronic power steering systems

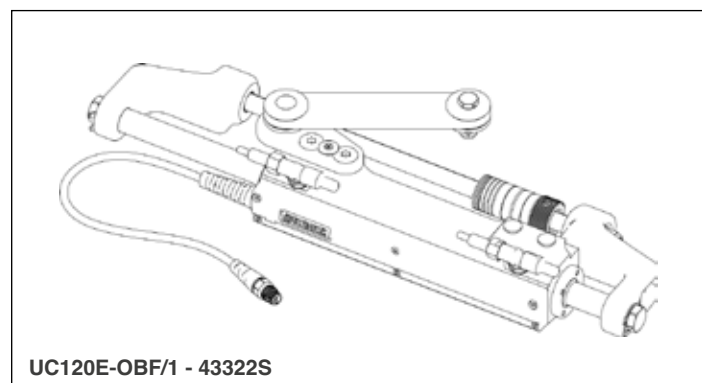
UC120E and UC120EP Cylinders



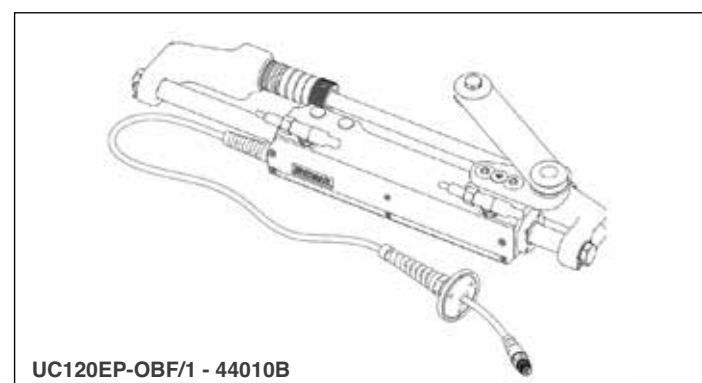
UC120E



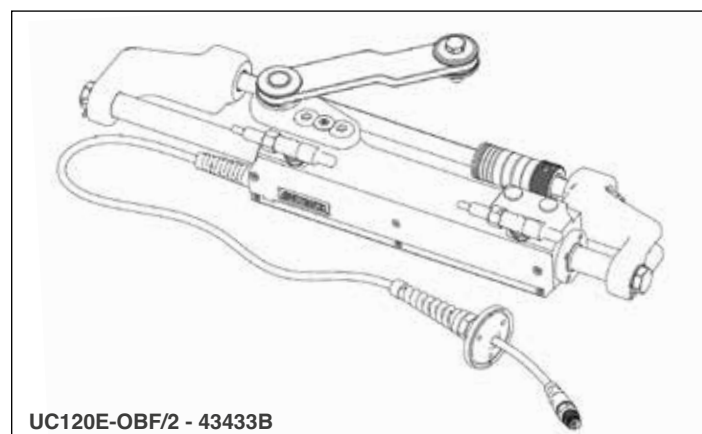
UC120EP



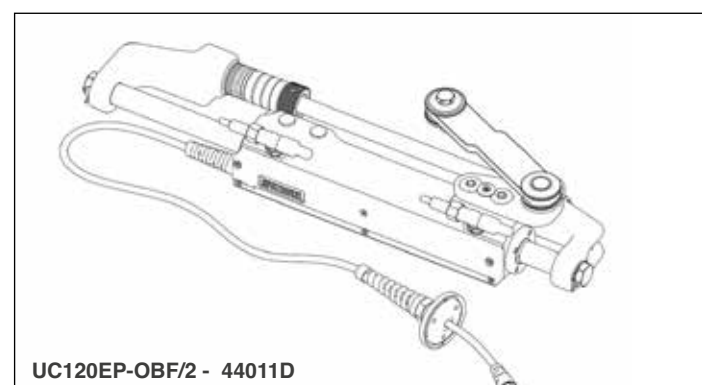
UC120E-OBF/1 - 43322S



UC120EP-OBF/1 - 44010B



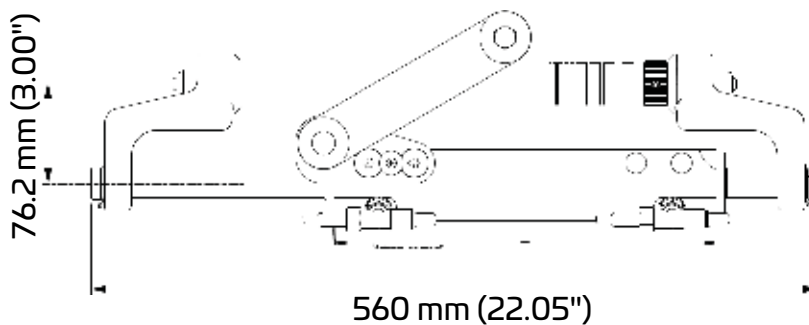
UC120E-OBF/2 - 43433B



UC120EP-OBF/2 - 44011D

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

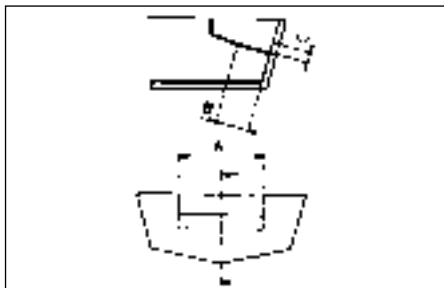
Volume	120 cc - 7.5 cu. in
Output force	800 kg - 1764 lbs
Internal diameter	36.5 mm - 1.44"
Stroke	184 mm - 7.24"
Oil	OL460



UC120 DIMENSIONS

Integra™

Outboard electronic power steering systems



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

UC120E and UC120EP Cylinder application

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

Integra™

Outboard electronic power steering systems

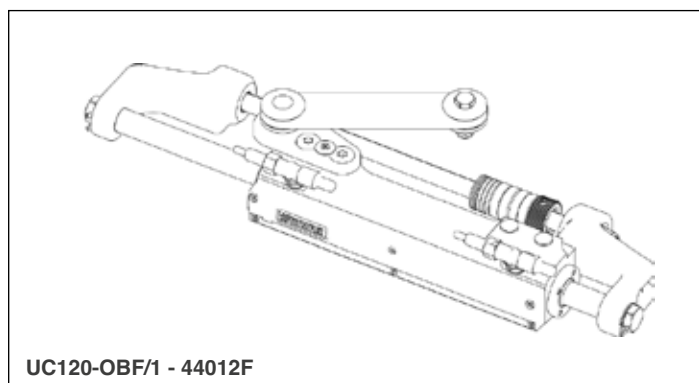
UC120 and UC120P Hydraulic cylinders



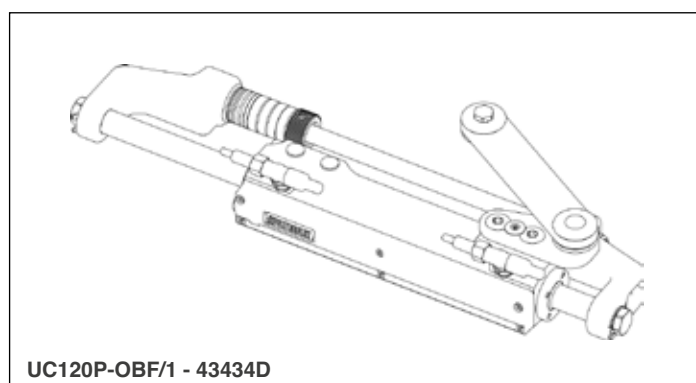
UC120



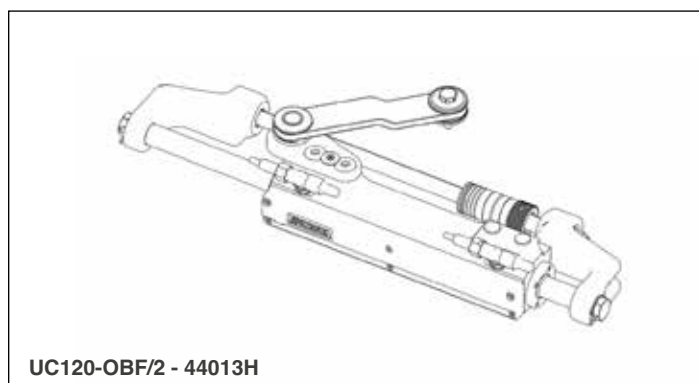
UC120P



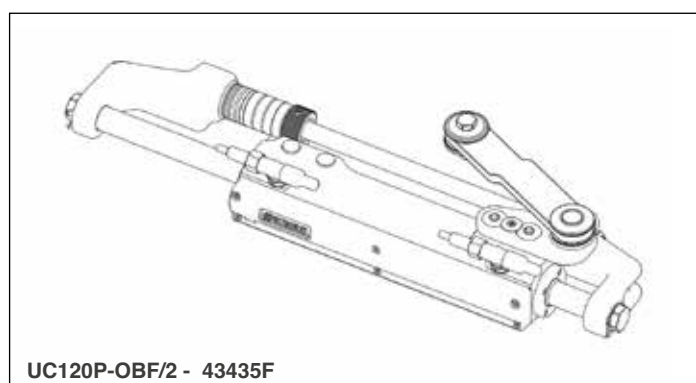
UC120-OBF/1 - 44012F



UC120P-OBF/1 - 43434D



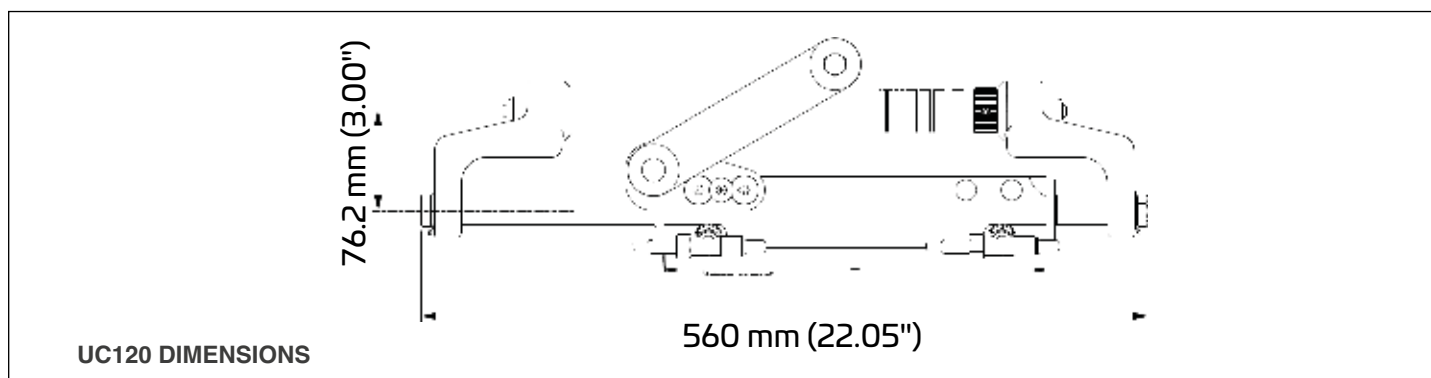
UC120-OBF/2 - 44013H



UC120P-OBF/2 - 43435F

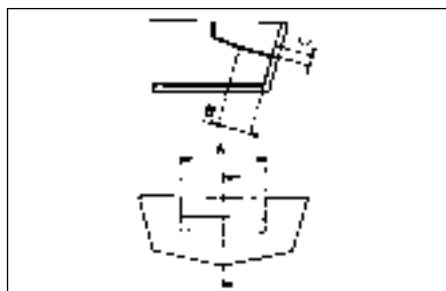
- **UC120:** heavy-duty starboard cylinder for two, three or four outboard engine applications with tie bar
- **UC120P:** heavy-duty port cylinder for two, three or four outboard engine applications with tie bar

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



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	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	225-250 EFI 2S	2000-2007	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	135-150-175 OPTIMAX	1999-2018	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	200-225-250 OPTIMAX	1999-2018	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	RACING 300 OPTIMAX	1999-2011	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	250 SALTWATER EFI 4S	2007-2011	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	135-150-175-200 VERADO L4	2004-2012	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	FOURSTROKE 175-200 V6	2018-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	FOURSTROKE 225-300 V8	2018-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
Evinrude®	E115-E130-E135 2S V4	1995-to date	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	E150-E175-E200-E225-E250-E300 2S V6	1995-to date	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
Yamaha®	150F-200F-250G 2S	1990-2008	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	150 HPDI VMAX 2S	1996-2007	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	175-200-225-250-300 HPDI VMAX 2S	2000-2008	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	F115-F150 EFI 4S	2000-2008	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	F200-F225-F250 4S	1999-2007	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	F115-F150-F175-F200 L4	2002-2007	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	F200-F225-F250-F300 V6 4S	2004-to date	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	F350 4S V8	2006-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
Honda®	BF135-BF150 4S	2005-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	BF150 V-TEC 4S	2008-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	BF175-BF200-BF225- BF250 4S	2001-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
Suzuki®	DF100-115-140 4S	2008-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	DF150-175-DF200 L4 4S	2006-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	DF200-DF225-DF250-DF300-DF350 V6 4S	2004-to date	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
Tohatsu®	115-120-140 2S	2004-to date	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	70-90-115 TLDI 4S	2004-to date	UC120-OBF/1	43322S	UC120P-OBF/1	43434D
	BFT 115-150-200-225-250 4S	2014-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	BFT60-75-90	2015-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
Selva®	80 PORTOFINO/TIGERSHARK 2S	1995-2008	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	150 WHITE SHARK 2S	2001-2007	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	100EFI MARLIN -115 EFI NARWHAL	2000-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	225 BEAKED WHALE 4S	2019-to date	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	150EFI KILLER WHALE 4S - 200 SEI WHALE 4S	2000-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
Johnson®	BJ90-115-140 4S	2001-2007	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	J90-115 V4 2S	1995-2007	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	J150-175 V6 2S	1995-2007	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
	J200-225 V6 4S	2004-2007	UC120-OBF/2	44013H	UC120P-OBF/2	43435F
OXE®	125-150-175-200HP DIESEL	2018-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
	300 HP DIESEL	2020-to date	UC120-OBF/1	44012F	UC120P-OBF/1	43434D
COX®	300 HP	2020-to date	UC120-OBF/2	44013H	UC120P-OBF/2	43435F

Integra™ Tie bars

Tie bars suitable with INTEGRA electronic power steering systems only

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

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



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

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

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



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

Tie bars suitable with INTEGRA electronic power steering systems only

AS-GEN3 - 43918C - Tie bar for Suzuki AMD and BMD engines



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

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

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



A97 S/H-120



A97 M/Y-120

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

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

From 26" to 32" engine center



A98 S/H-120



A98 M/Y-120

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

Remote bypass valve for UIP and UIPC power units

LTB6 - 44042R - Remote bypass valve



LTB6

OB-2C-SVS KIT : DUAL CYLINDER/DOUBLE ENGINE CONNECTION KIT FOR INTEGRA SYSTEMS WITH COUPLING BARS

Two high pressure Kevlar stranded flexible hoses with pre-crimped fittings and bend restrictors. Recommended for use with all UC120 Series cylinders.

Three lengths available: 70 cm (2.3'), 90 cm (2.95') and 120 cm (3.95').

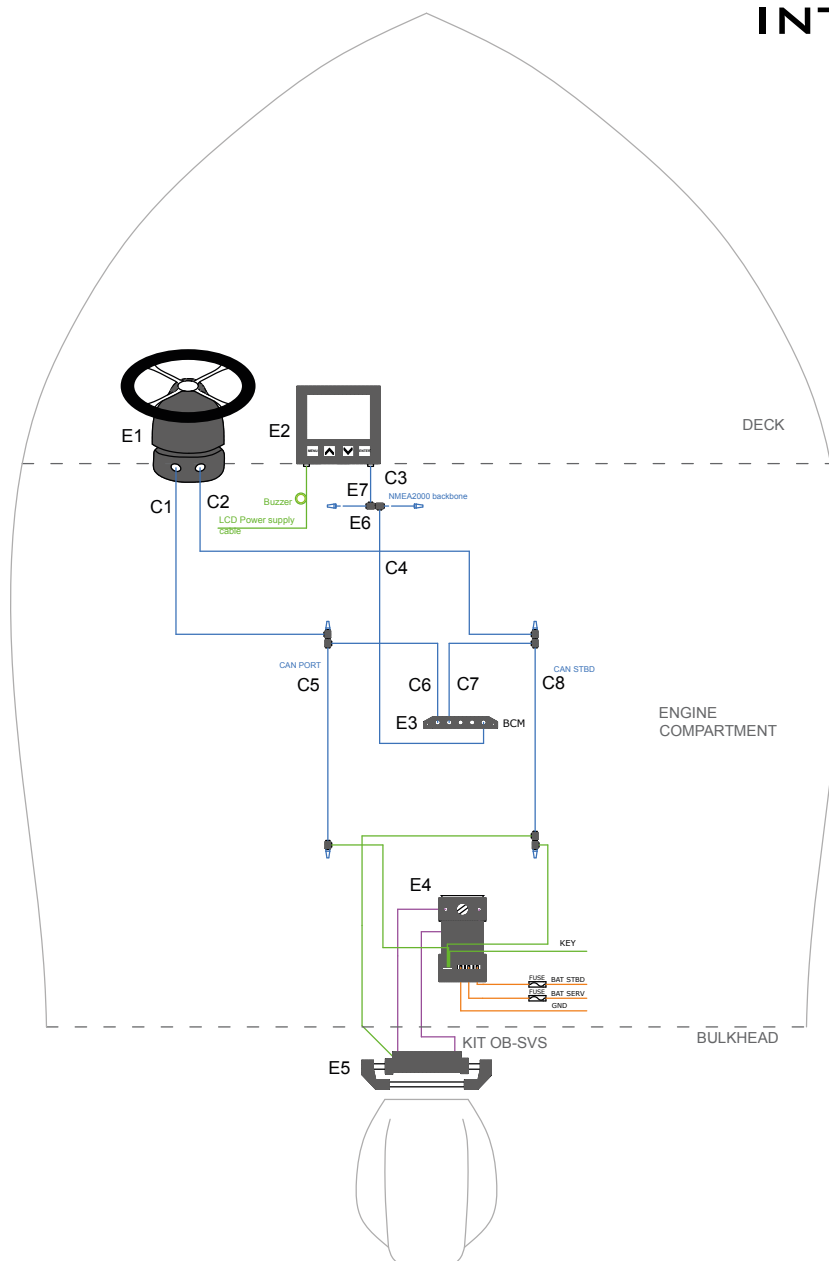
KIT OB-2C-SVS	LENGTH	P. No.
KIT OB-2C-SVS-07	0,7 m - 2.30 ft	41705 Y
KIT OB-2C-SVS-09	0,9 m - 2.95 ft	41706 A
KIT OB-2C-SVS-12	1,20 m - 3.95 ft	41707 C



KIT OB-2C-SVS

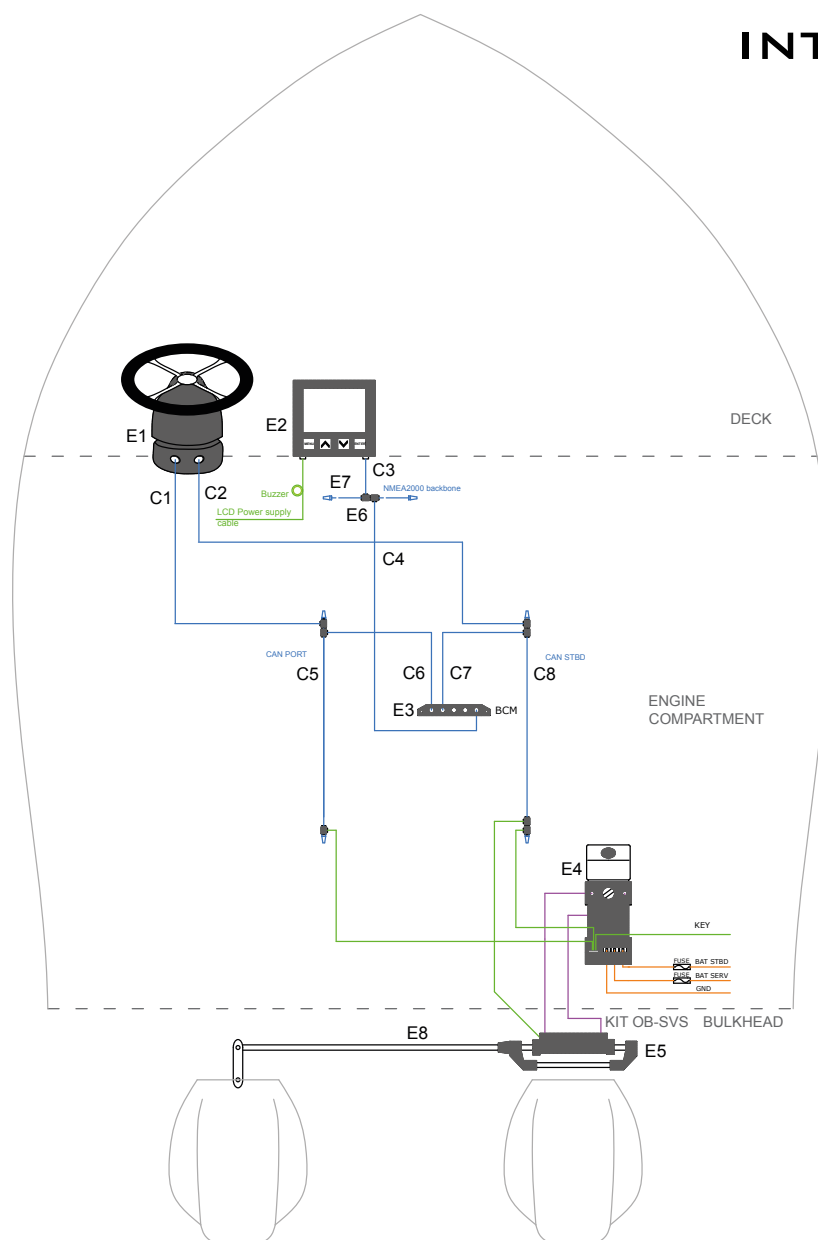
Single engine, single cylinder

INTEGRA EPS



Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	BCM - Body control module - 43540C	1
E4	UIPC compact power unit - 43859N	1
E5	UC120E (or UC120EP) Cylinder with sensor included	1
E6	CAN bus - Tee connection - 43578E	9
E7	CAN bus - Terminator pair - 43576A	3
C1-C8	CAN-bus cables - length on request	8
KIT OB-SVS	Hydraulic hoses kit - length on request	1

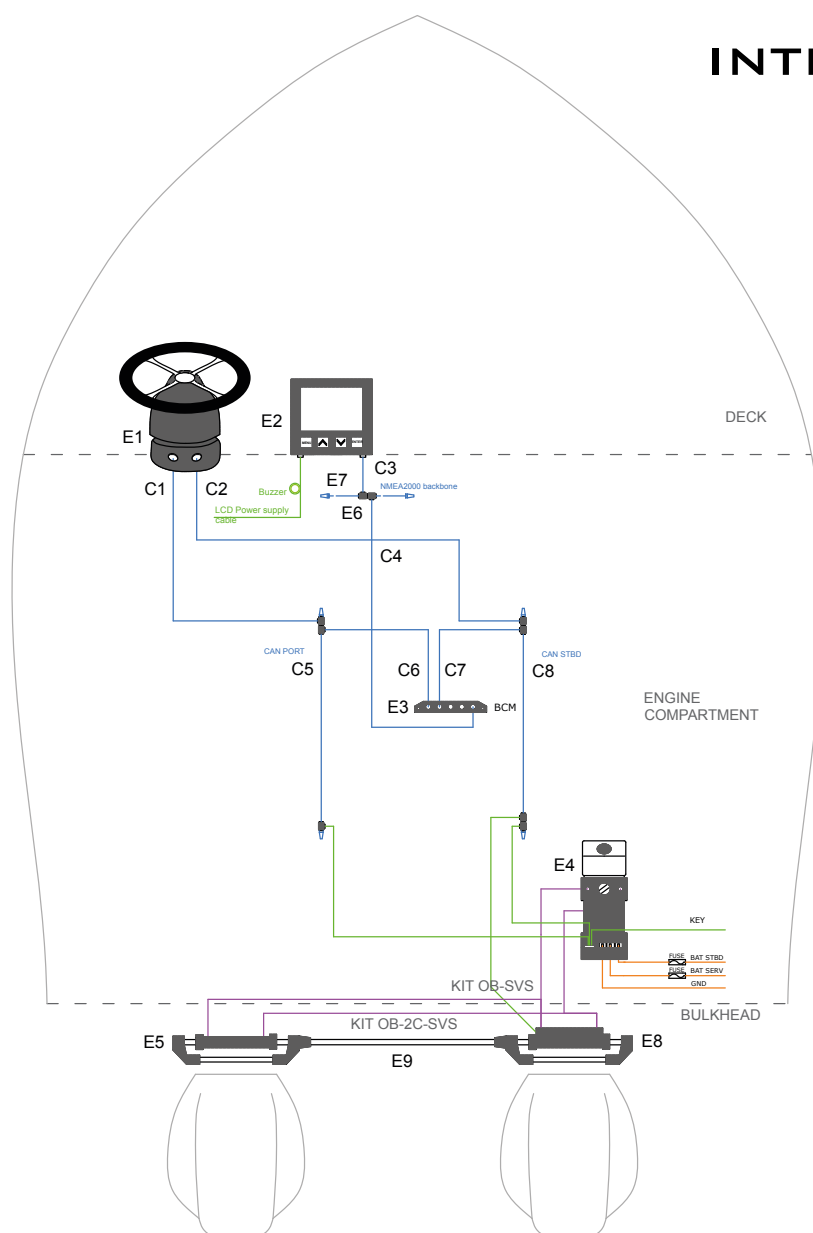


Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	BCM - Body control module - 43540C	1
E4	UIP Power Unit - 43541E or UIPC compact power unit - 43859N	1 or 1
E5	UC120E (or UC120EP) Cylinder with integrated sensor	1
E6	CAN bus - Tee connection - 43578E	9
E7	CAN bus - Terminator pair - 43576A	3
E8	A96-120 tie bar	1
C1-C8	CAN-bus cables - length on request	8
KIT OB-SVS	Hydraulic hoses kit - length on request	1

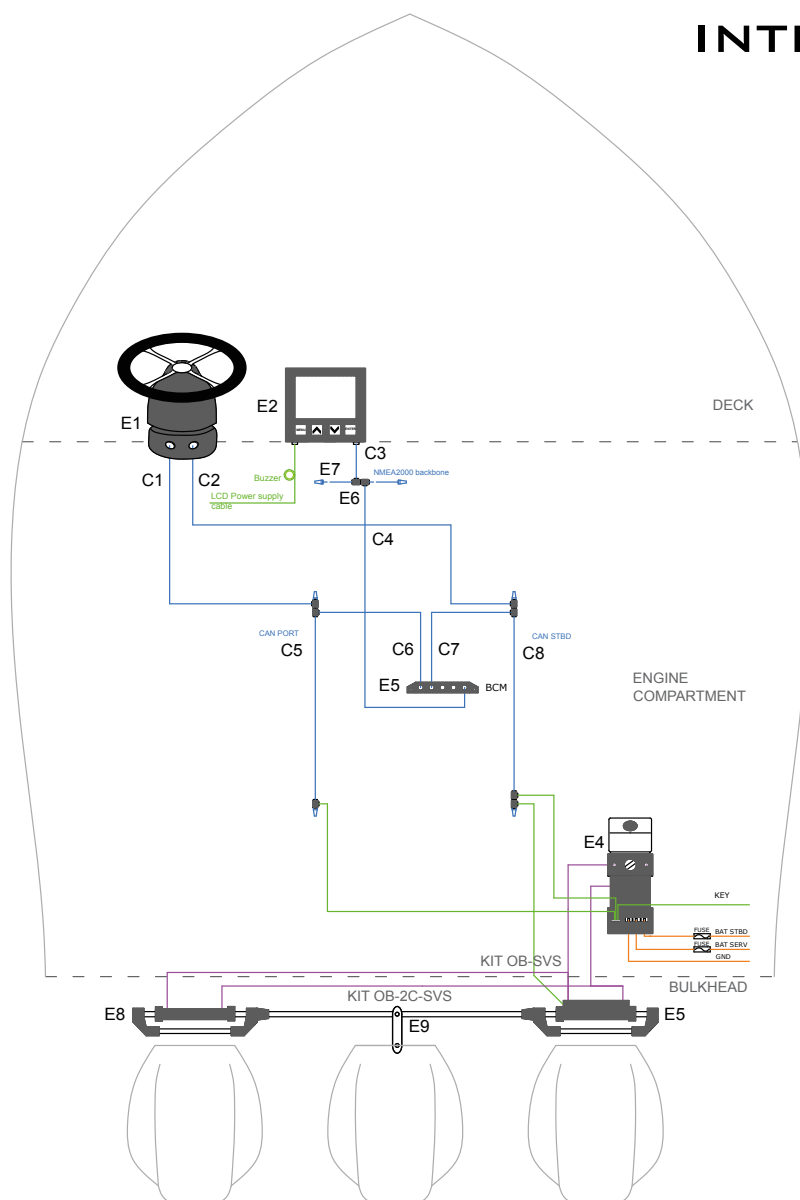
Dual engine, dual cylinder

INTEGRA EPS



Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	BCM - Body control module - 43540C	1
E4	UIP Power Unit - 43541E	1
E5	UC120P (or UC120) Hydraulic cylinder	1
E6	CAN bus - Tee connection - 43578E	9
E7	CAN bus - Terminator pair - 43576A	3
E8	UC120E (or UC120EP) cylinder with integrated sensor	1
E9	A95-120 tie bar- Port cylinder to starboard cylinder connection	1
C1-C8	CAN-bus cables - length on request	8
KIT OB-SVS	Hydraulic hoses kit - length on request	1
KIT OB-2C-SVS	Hydraulic hoses kit - length on request	1

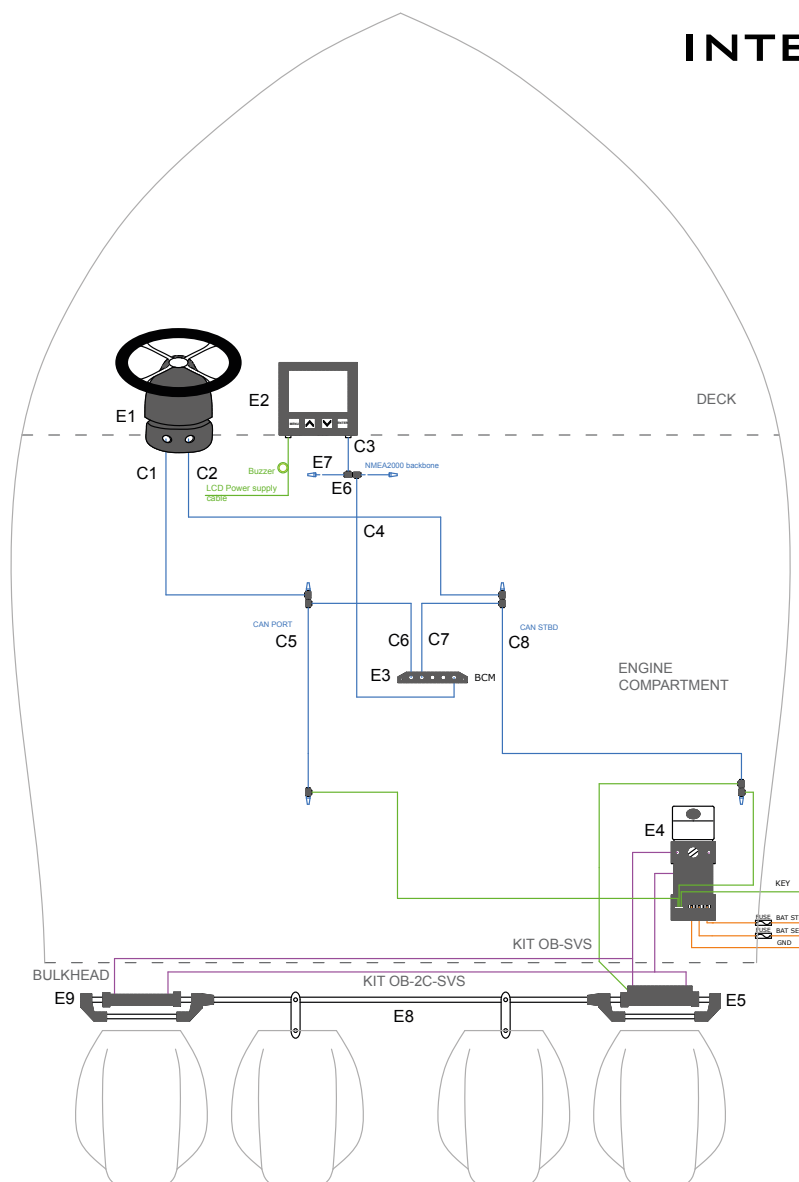


Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	BCM - Body control module - 43540C	1
E4	UIP Power Unit - 43541E	1
E5	UC120E (or UC120EP) Cylinder with integrated sensor	1
E6	CAN bus - Tee connection - 43578E	9
E7	CAN bus - Terminator pair - 43576A	3
E8	UC120P (or UC120) Hydraulic cylinder	1
E9	A97-120 tie bar	1
C1-C8	CAN-bus cables - length on request	8
KIT OB-SVS	Hydraulic hoses kit - length on request	1
KIT OB-2C-SVS	Hydraulic hoses kit - length on request	1

Quad engine, dual cylinder

INTEGRA EPS



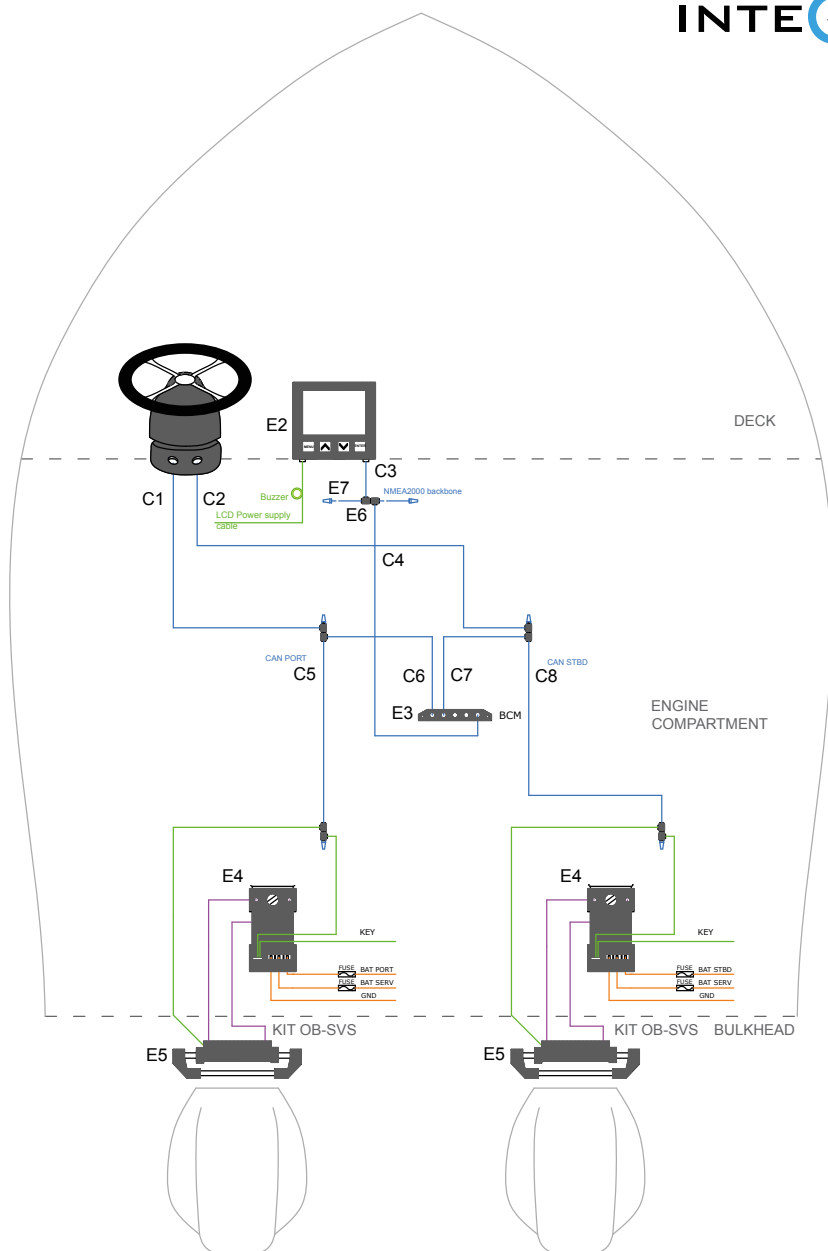
Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	BCM - Body control module - 43540C	1
E4	UIP Power Unit - 43541E	1
E5	UC120E (or UC120EP) Cylinder with integrated sensor	1
E6	CAN bus - Tee connection - 43578E	9
E7	CAN bus - Terminator pair - 43576A	3
E8	UC120P (or UC120) Hydraulic cylinder	1
E9	A98-120 tie bar	1
C1-C8	CAN-bus cables - length on request	8
KIT OB-SVS	Hydraulic hoses kit - length on request	1
KIT OB-2C-SVS	Hydraulic hoses kit - length on request	1

Integra™ CEPS Applications

Dual engine, dual cylinder, dual power unit

INTEGRA CEPS

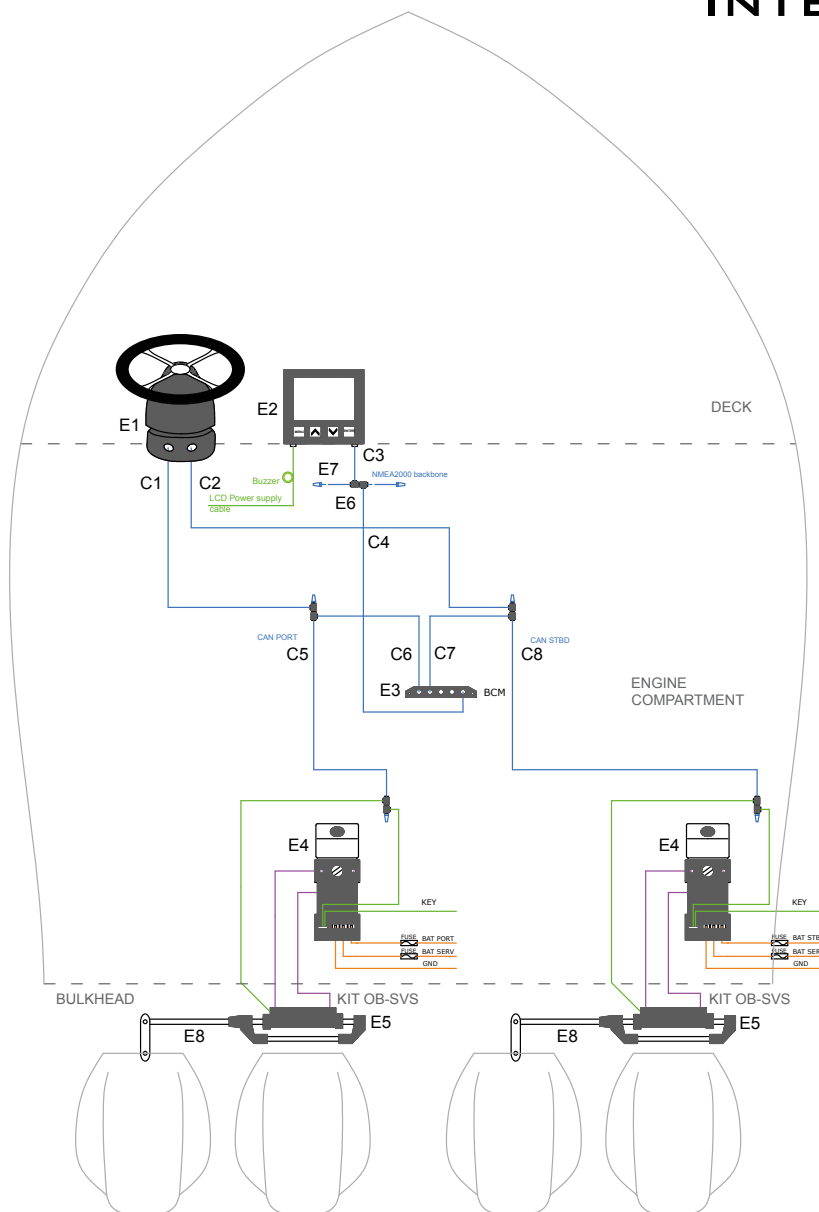


Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	BCM - Body control module - 43540C	1
E4	UIPC compact power unit - 43859N	2
E5	UC120E (or UC120EP) Cylinder with integrated sensor	2
E6	CAN bus - Tee connection - 43578E	10
E7	CAN bus - Terminator pair - 43576A	3
C1-C8	CAN-bus cables - length on request	8
KIT OB-SVS	Hydraulic hoses kit - length on request	2

Quad engine, dual cylinder, dual power unit

INTEGRA CEPS



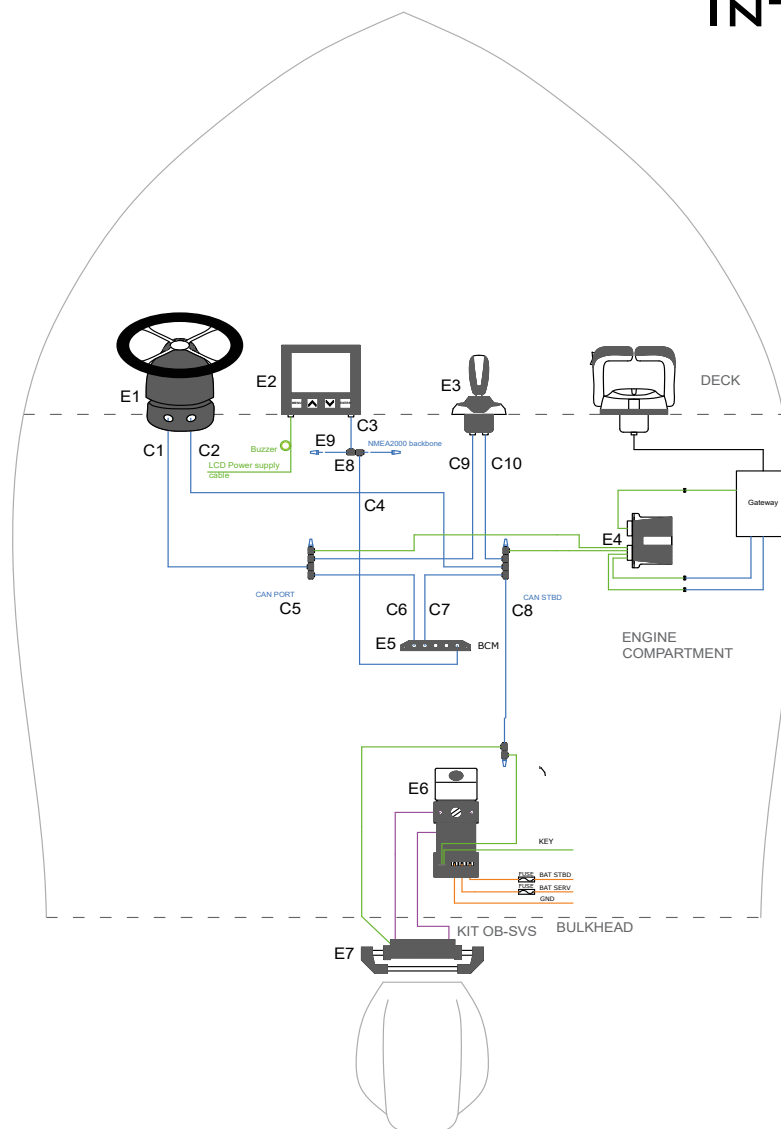
Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	BCM - Body control module - 43540C	1
E4	UIP Power Unit - 43541E or UIPC compact power unit - 43859N	2
E5	UC120E (or UC120EP) Cylinder with integrated sensor	2
E6	CAN bus - Tee connection - 43578E	10
E7	CAN bus - Terminator pair - 43576A	3
E8	A96-120 tie bar	2
C1-C8	CAN-bus cables - length on request	8
KIT OB-SVS	Hydraulic hoses kit - length on request	2

Integra™ CEPS Applications

Single engine, single cylinder, single power unit

INTEGRA JS



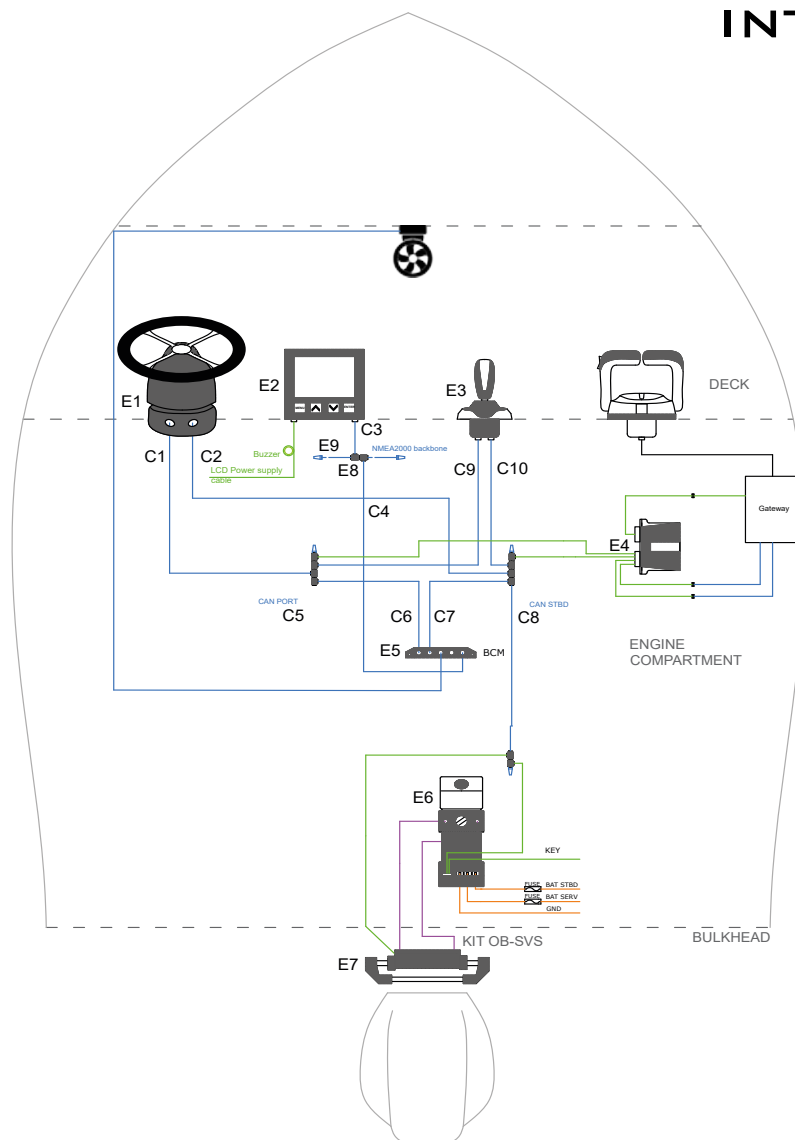
Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS joystick	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UIPC compact power unit - 43859N	2
E7	UC120E (or UC120EP) Cylinder with integrated sensor	2
E8	CAN bus - Tee connection - 43578E	14
E9	CAN bus - Terminator pair - 43576A	3
C1-C10	CAN-bus cables - length on request	10
KIT OB-SVS	Hydraulic hoses kit - length on request	2

Single engine, single cylinder, single power unit with bow thruster

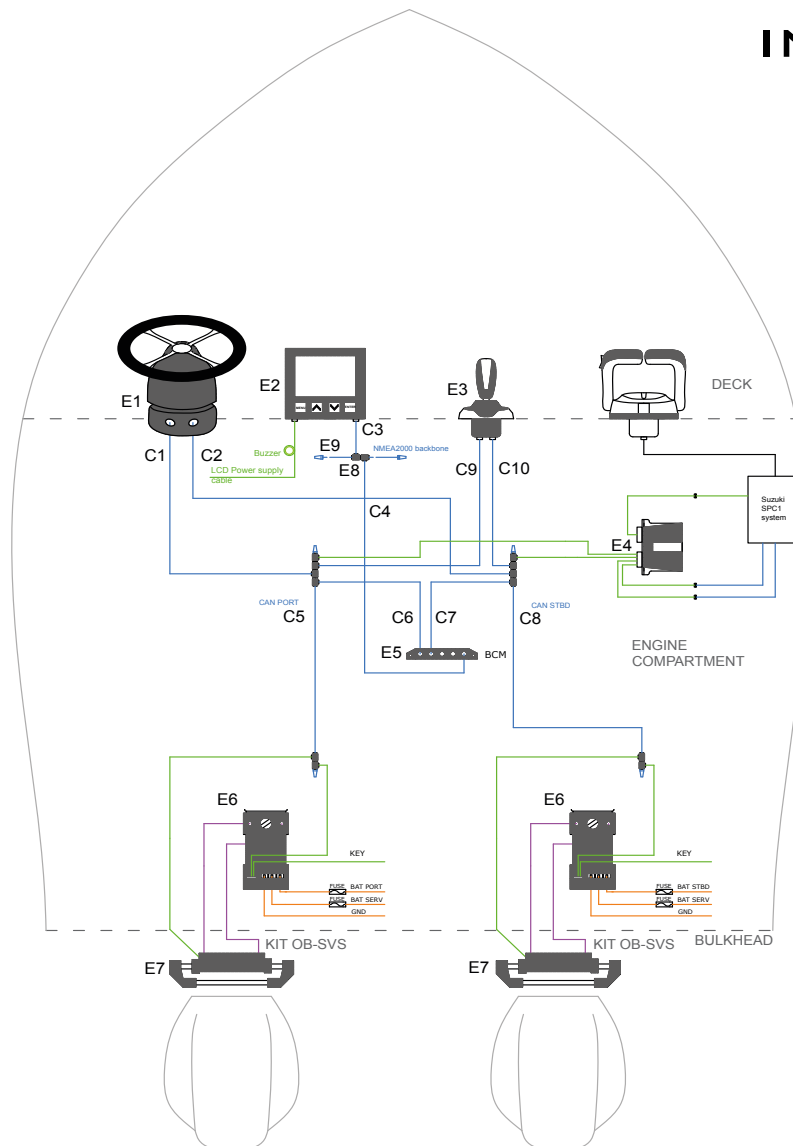
INTEGRA JS

new



Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS-B joystick	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UIPC compact power unit - 43859N	2
E7	UC120E (or UC120EP) Cylinder with integrated sensor	2
E8	CAN bus - Tee connection - 43578E	14
E9	CAN bus - Terminator pair - 43576A	3
C1-C10	CAN-bus cables - length on request	10
KIT OB-SVS	Hydraulic hoses kit - length on request	2



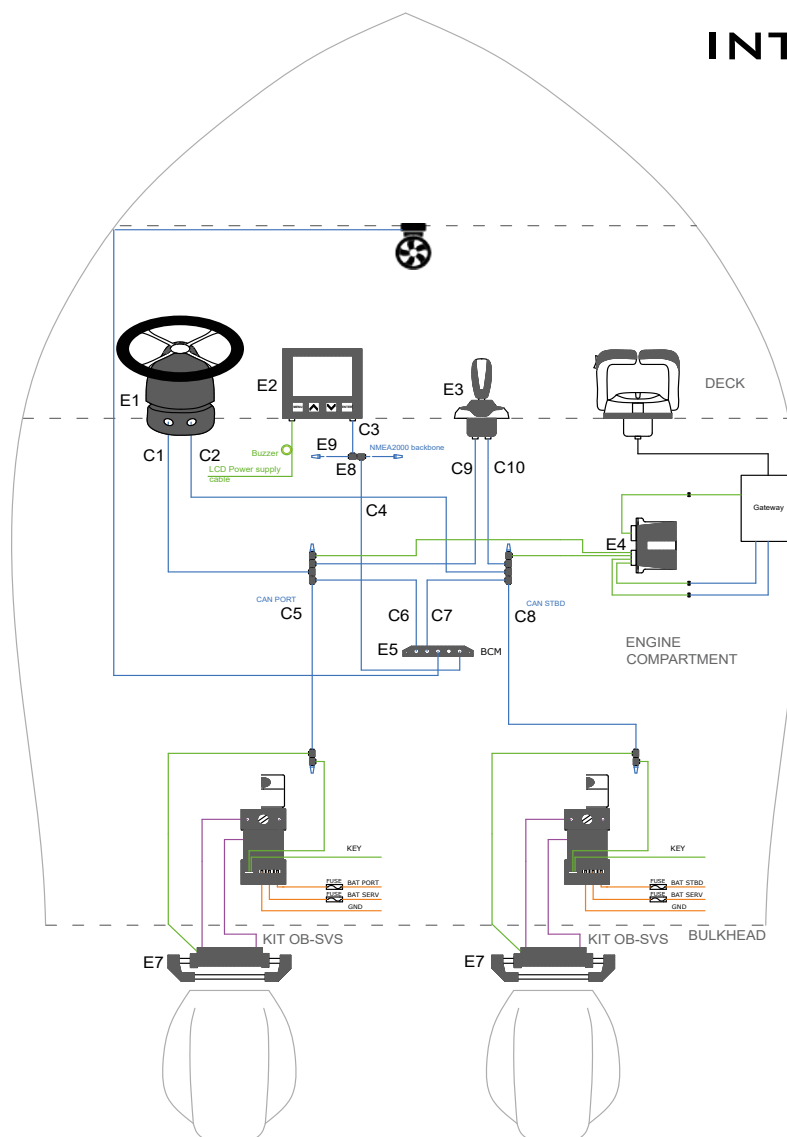
Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS joystick	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UIP Power Unit 43541E or UIPC compact power unit - 43859N	2
E7	UC120E (or UC120EP) Cylinder with integrated sensor	2
E8	CAN bus - Tee connection - 43578E	14
E9	CAN bus - Terminator pair - 43576A	3
E10	A96-120 tie bar	1
C1-C10	CAN-bus cables - length on request	10
KIT OB-SVS	Hydraulic hoses kit - length on request	2

Dual engine, dual cylinder, dual power unit with bow thruster

INTEGRA JS

new



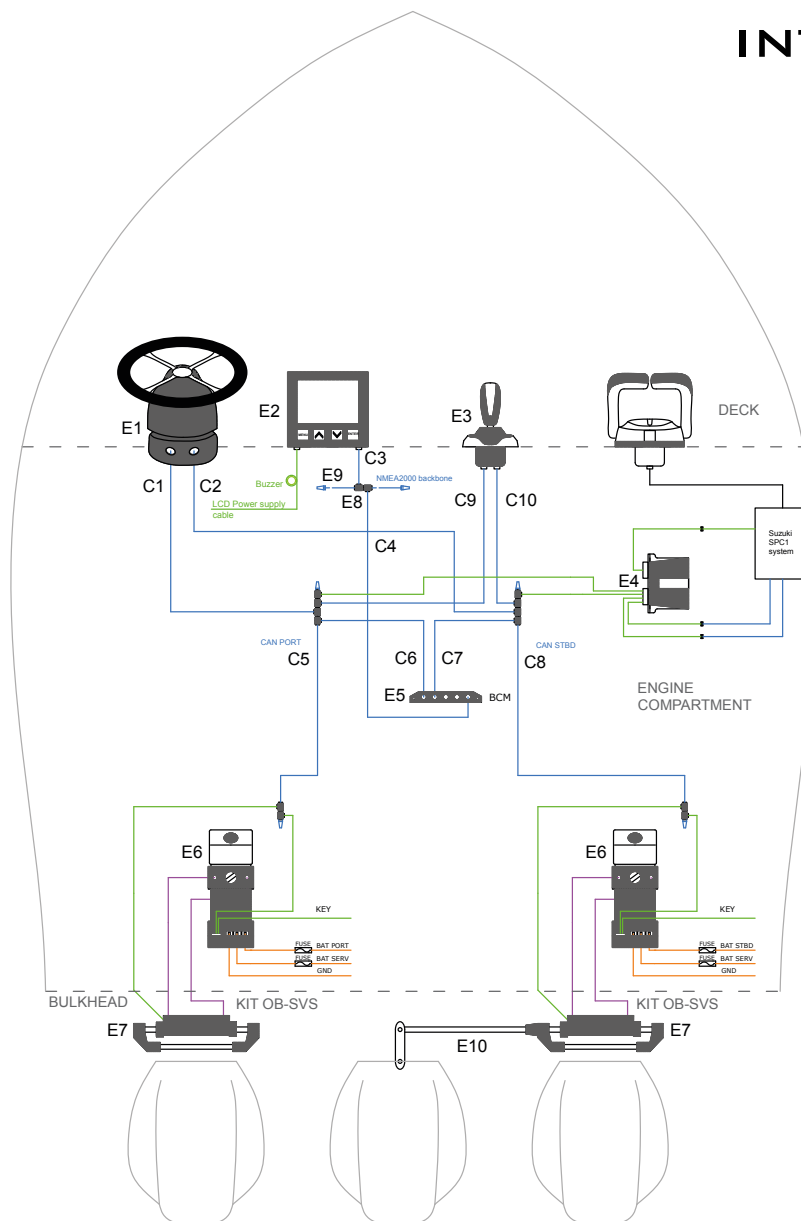
Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS-B joystick	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UIPC compact power unit - 43859N	2
E7	UC120E (or UC120EP) Cylinder with integrated sensor	2
E8	CAN bus - Tee connection - 43578E	14
E9	CAN bus - Terminator pair - 43576A	3
C1-C10	CAN-bus cables - length on request	10
KIT OB-SVS	Hydraulic hoses kit - length on request	2

Integra™ JS Applications

Triple engine, dual cylinder, dual power unit

INTEGRA JS

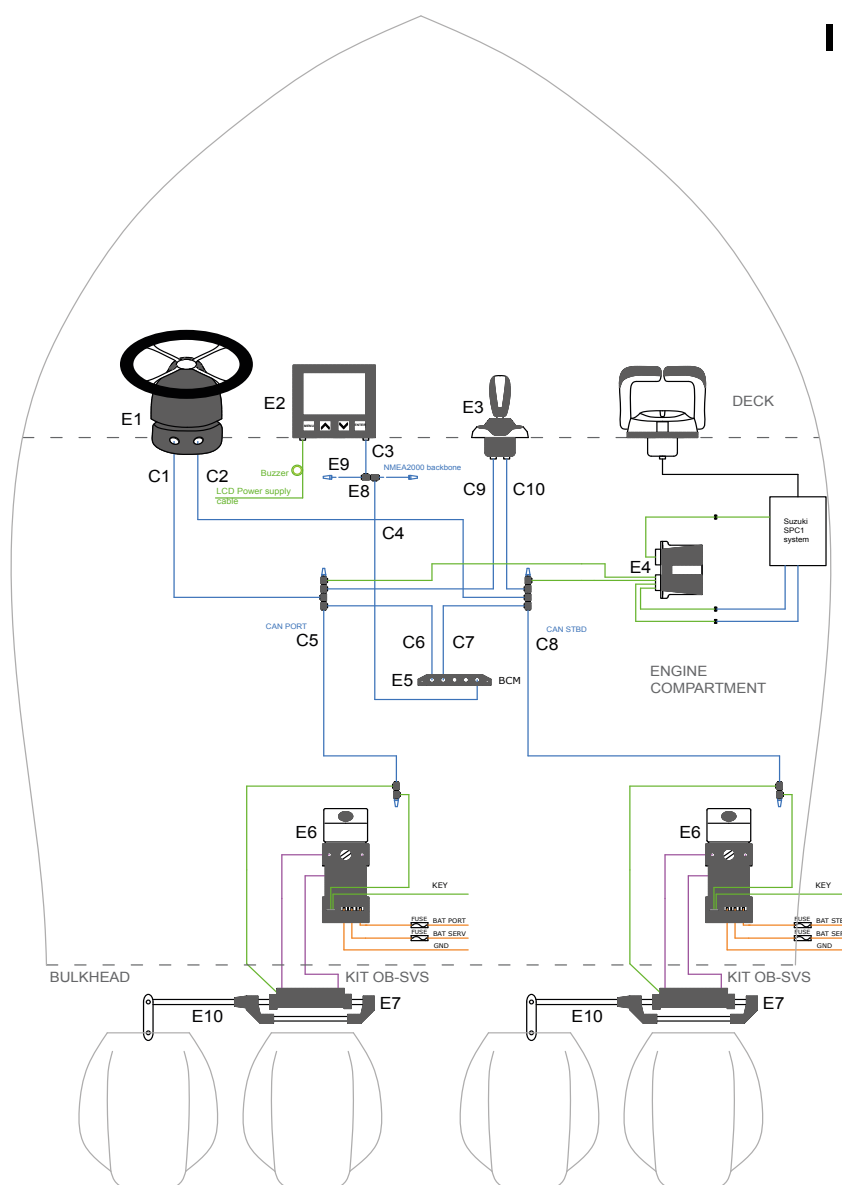


Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS joystick - 43922T	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UIP Power Unit 43541E or UIPC compact power unit - 43859N	2
E7	UC120E (or UC120EP) Cylinder with integrated sensor	2
E8	CAN bus - Tee connection - 43578E	14
E9	CAN bus - Terminator pair - 43576A	3
E10	A96-120 tie bar	1
C1-C10	CAN-bus cables - length on request	10
KIT OB-SVS	Hydraulic hoses kit - length on request	2

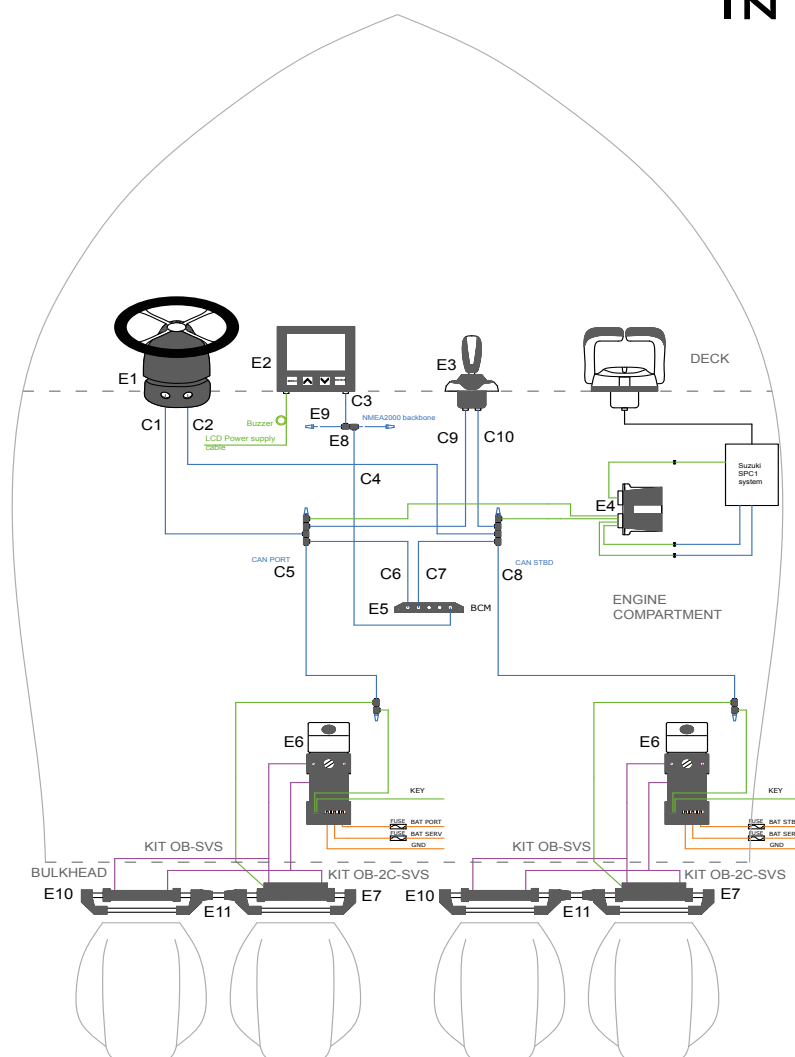
Quad engine, dual cylinder, dual power unit

INTEGRA JS



Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS joystick - 43922T	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UIP Power Unit - 43541E or UIPC compact power unit - 43859N	2
E7	UC120E Starboard cylinder with integrated sensor	1
E8	CAN bus - Tee connection - 43578E	14
E9	CAN bus - Terminator pair - 43576A	3
E10	A96-120 tie bar	2
E11	UC120EP Port cylinder with integrated sensor	1
C1-C10	CAN-bus cables - length on request	10
KIT OB-SVS	Hydraulic hoses kit - length on request	2

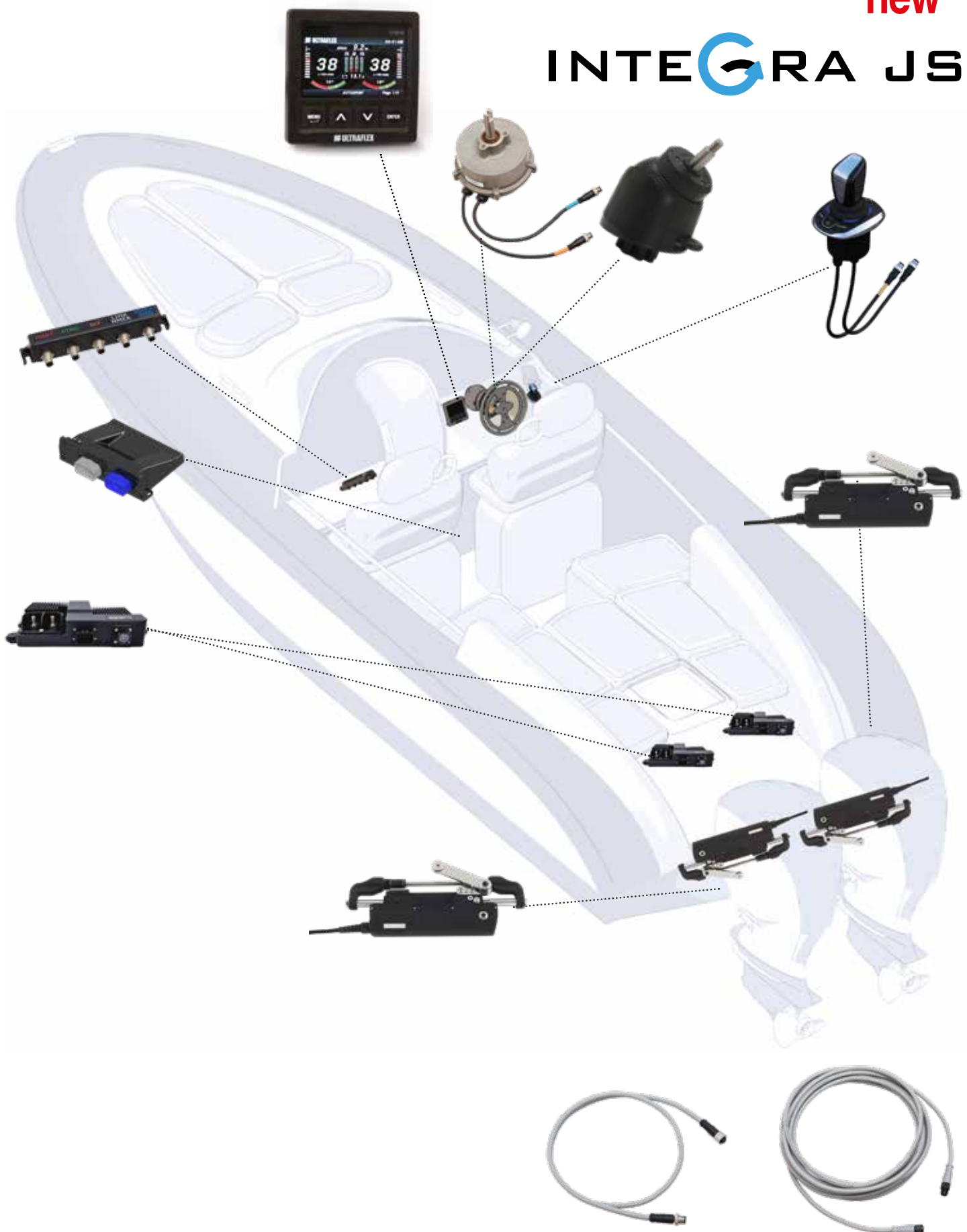


Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS joystick - 43922T	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UIP Power Unit - 43541E	2
E7	UC120E Starboard cylinder with integrated sensor	1
E8	CAN bus - Tee connection - 43578E	14
E9	CAN bus - Terminator pair - 43576A	3
E10	UC120 Starboard hydraulic cylinder	1
E11	A95-120 tie bar - Port cylinder to starboard cylinder connection	2
E12	UC120P Port hydraulic cylinder	1
E13	UC120EP Port cylinder with integrated sensor	1
C1-C10	CAN-bus cables - length on request	10
KIT OB-SVS / KIT OB-2C-SVS	Hydraulic hoses kit - length on request	2

new

INTEGRA JS



Integra™ equipped with UPA123 Outboard electronic power steering system

System components

UIH	Tilt mount electronic helm
UJS	Integra JS joystick
UGW	Integra JS Gateway
X82	Adjustable steering wheel tilt mechanism
UID	Veratron® / VDO® colour display
BCM	Body Control Module -Can Bus network module
UPA123	Electronic power Starboard actuator
UPA123P	Electronic power port actuator
DC/DC Converter	Voltage converter for UP123 actuator
A96UPA	Tie bar for Integra with UPA123 steering systems
CANbus wires	Can bus power wires

Technical specifications

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



Integra™ equipped with UPA123 Outboard electronic power steering systems

Integra EPS and Integra JS with UPA123 key benefits

- **Redundant electronic steering system**, a reliable way to reduce steering effort, tuning your driving and enhancing steering experience.
- **Plug & play system**
- **Absence of hydraulic hoses onboard** . - **no purging operations required**
- **Virtually maintenance free**
- **Integra JS with UPA123 is ready for use**, once installed
- **Reduced size wire**: can be easily connected and disconnected to/from the actuator, thanks its the specific connector
- **Integra JS** adds to Integra EPS functionalities a new level of manoeuvrability, thanks to the **Joystick technology**
- **Integra JS** is a more **intuitive way of driving**. Designed for **low speed manoeuvring**, the Joystick grants precision and driving comfort and **facilitates docking and trailer procedures** as the boat can move sideways, diagonally or spin on its own axis
- **Integra JS Joystick** includes several functions: **Boost** function used to momentarily increase engine rpm if you need instant thrust, **Heading** function, which gives the possibility to keep the direction of the bow set, **Anchor** function, to maintain boat position via GPS connection, **MainStay** the combination of the previous functions (**Heading** and **Anchor**). The **Heading** , **Anchor** and **MainStay** functions require the **Veratron® Nav Sensor** - 20201Z
- **Powerful output, great efficiency and quickest response** in any situation, thanks to the brushless motor of the pump unit and to the electronic management
- **Extremely silent**
- **Low amperage system**
- **Veratron® colour display**
- **Customizable driving mode**: the user can choose between Autocruise and Autosport driving mode
- **Autopilot direct interface**: **Garmin®** Reactor™ 40 Steer-by-wire, **Raymarine®** EV-2 SBW, **Furuno®** Navipilot 300, **Simrad®** Ap44 and Ap48 with NAC-D
- **Easy installation**, thanks to the simplified configuration and the CAN bus connection system.
- **Customizable wheel effort**.
- Wheel effort is programmed to change with engine RPM.
- **Tilt range of 48° and 5 locking positions**, thanks to the **X82** tilt mechanisms
- **Easy boat handling**: adjustable speed sensitive turns lock to lock
- Designed for single, dual, triple or quad outboard engines
- Available for multiple steering stations applications



Integra™ equipped with UPA123

Outboard electronic power steering systems

UPA123 - Electronic power actuator

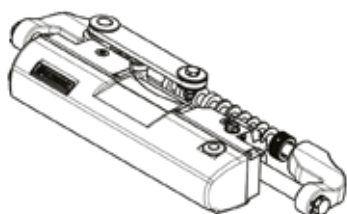


new

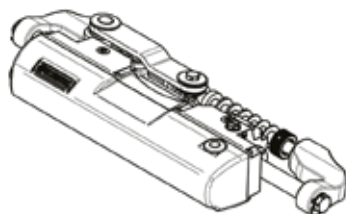


UPA123P

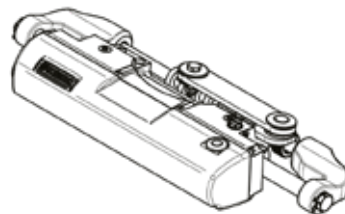
- Plug & play system
- Absence of hydraulic hoses onboard . - no purging operations required
- Virtually maintenance free
- Integra JS with UPA123 is ready for use, once installed
- **Reduced size wire:** it can be easily connected and disconnected to/from the actuator, thanks to its specific connector



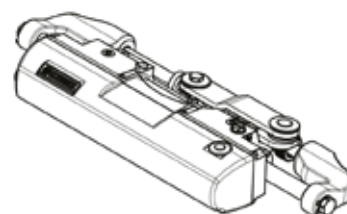
UPA123-OBF/1



UPA123-OBF/2



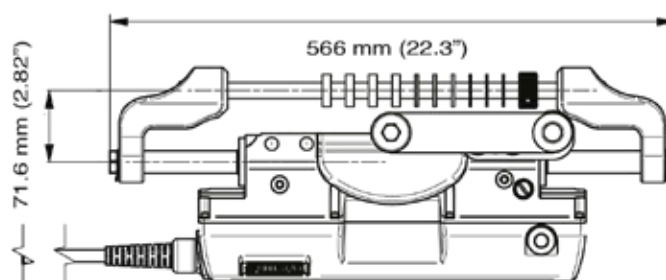
UPA123P-OBF/1



UPA123P-OBF/2

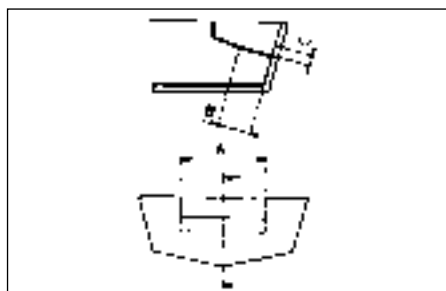
Modello	Codice	Descrizione
UPA123-OBF/1	44007N	Front mount electronic actuator, starboard version
UPA123-OBF/2	44009T	Front mount electronic actuator, starboard version
UPA123P-OBF/1	43851W	Front mount electronic actuator, port version
UPA123P-OBF/2	44008R	Front mount electronic actuator, port version

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



UPA123 - DIMENSIONS

Integra™ equipped with UPA123 Outboard electronic power steering systems



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

UPA123 electronic actuator applications

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

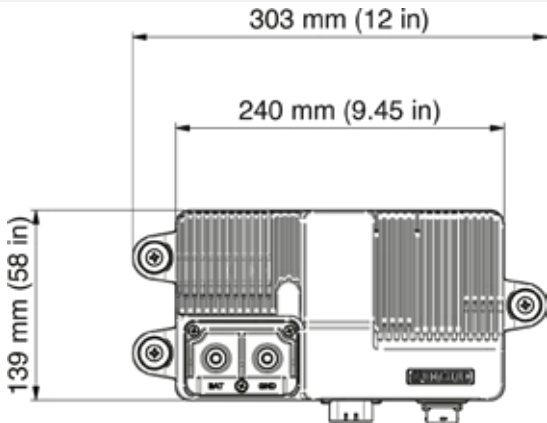
Integra™ equipped with UPA123 Outboard electronic power steering systems

DCDC converter

new



DCDC converter



DCDC converter dimensions



DCDC converter - 43993T

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

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

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



A96-UPA M/Y



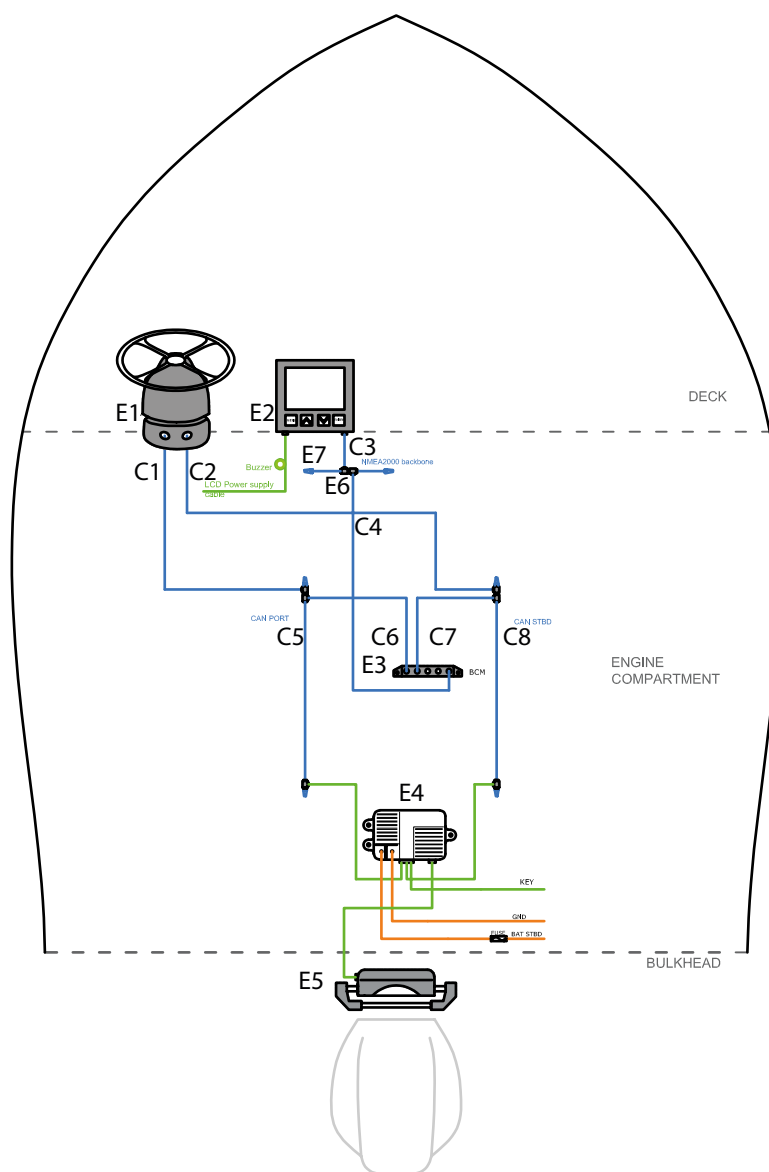
A96-UPA S/H

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

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

Single engine, single actuator

INTEGRA EPS



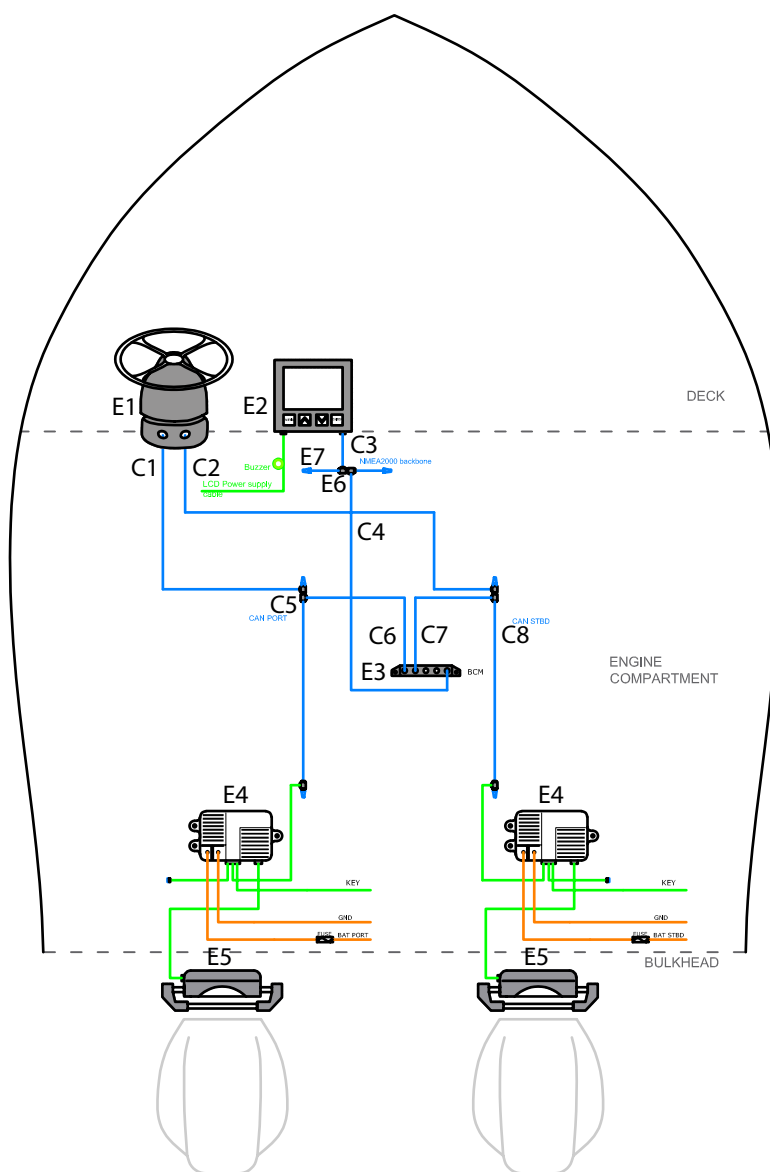
Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	BCM - Body control module - 43540C	1
E4	UPA Driver - DC/DC Converter - 43993T	1
E5	UPA123 (or UPA123P) - Electronic actuator	1
E6	CAN bus - Tee connection - 43578E	8
E7	CAN bus - Terminator pair - 43576A	3
C1-C8	CAN-bus cables - length on request	8

Integra™ CEPS equipped with UPA123 Applications

Dual engine, dual actuator

INTEGRA CEPS

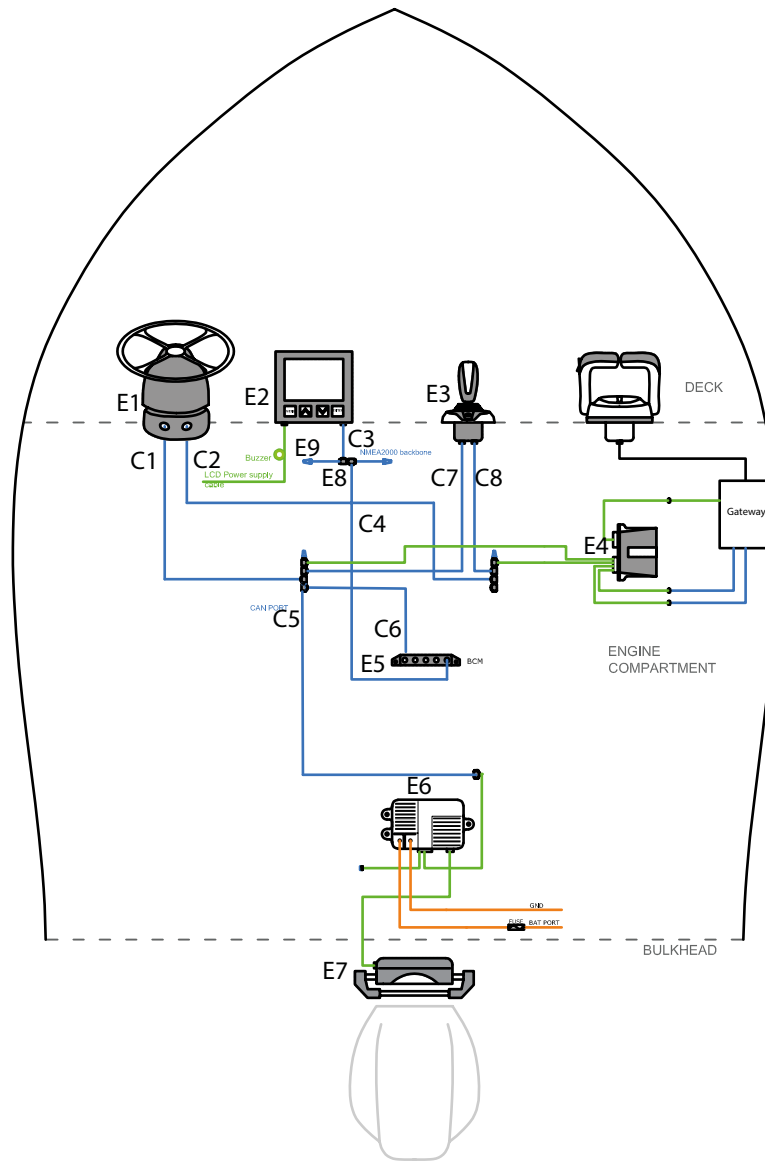


Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	BCM - Body control module - 43540C	1
E4	UPA Driver - DC/DC Converter - 43993T	2
E5	UPA123 (or UPA123P) Electronic actuator	2
E6	CAN bus - Tee connection - 43578E	8
E7	CAN bus - Terminator pair - 43576A	3
C1-C8	CAN-bus cables - length on request	8

Single engine, single actuator

INTEGRA JS



Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS joystick - 43922T	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UPA Driver - DC/DC Converter - 43993T	2
E7	UPA123 (or UPA123P) - Electronic actuator	2
E8	CAN bus - Tee connection - 43578E	8
C1-C8	CAN-bus cables - length on request	10

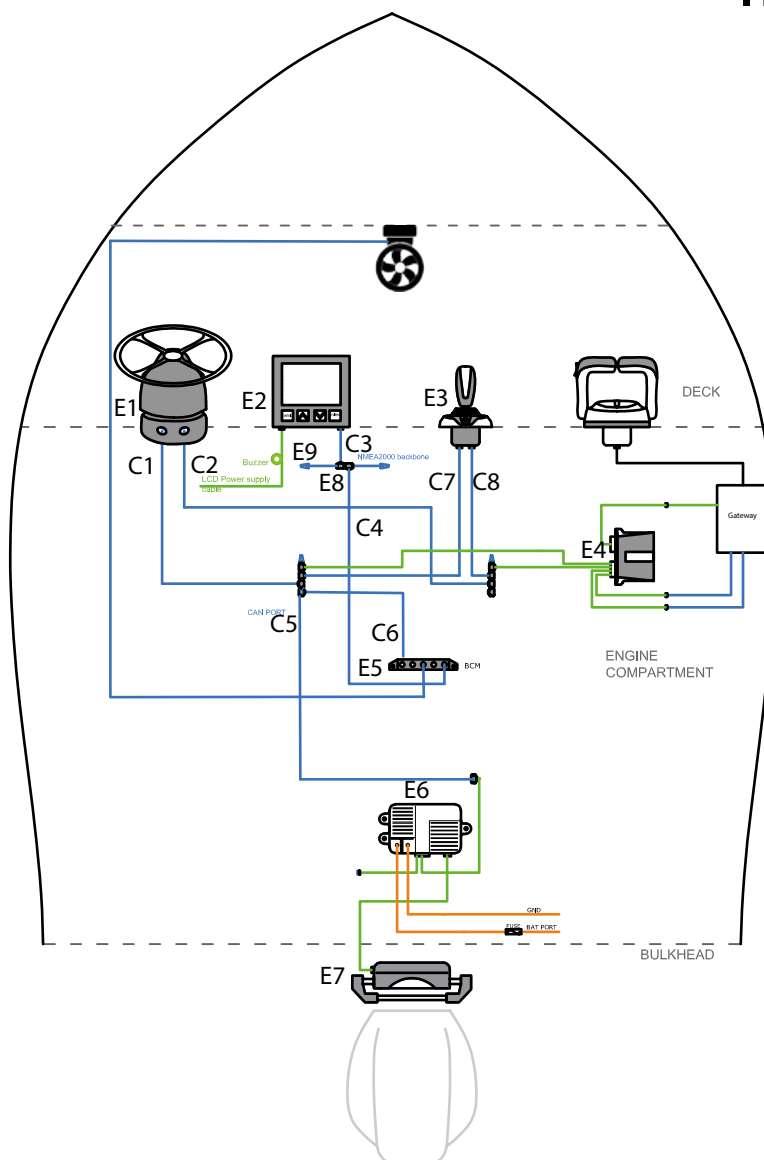
Integra™ JS equipped with UPA123

Applications

Single engine, single actuator with bow thruster

new

INTEGRA JS

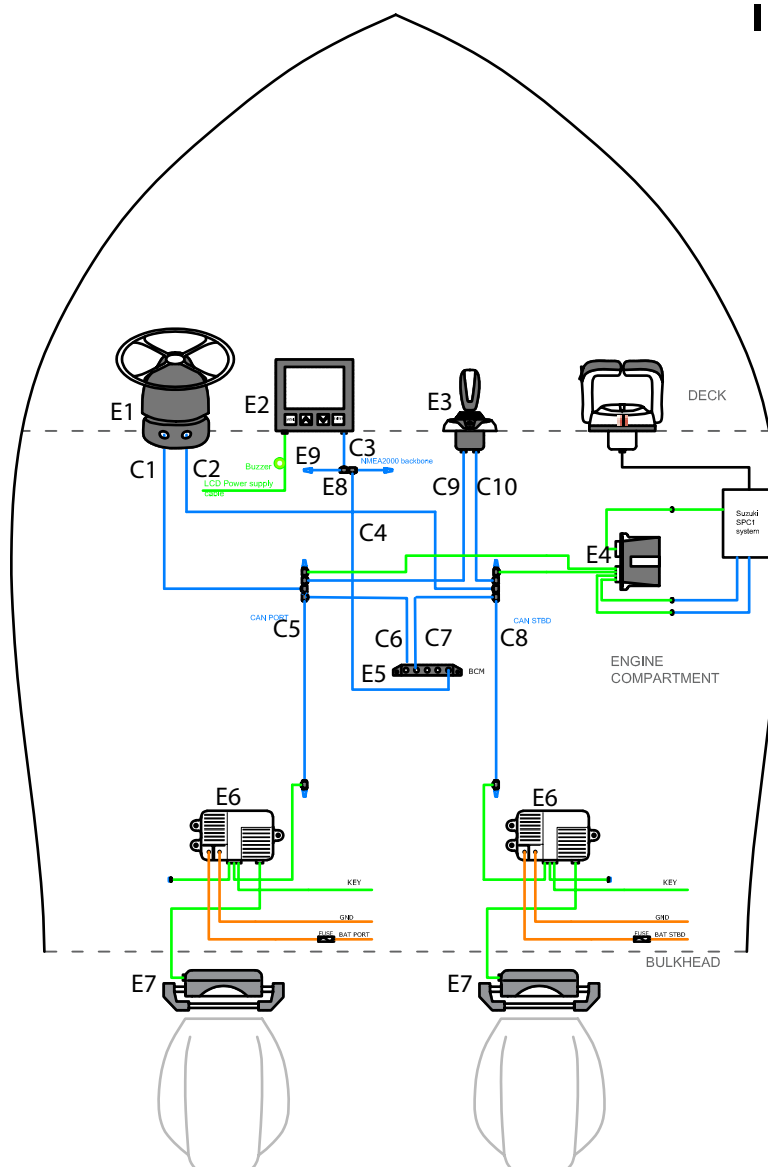


Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS-B joystick - 44162B	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UPA Driver - DC/DC Converter - 43993T	2
E7	UPA123 (or UPA123P) - Electronic actuator	2
E8	CAN bus - Tee connection - 43578E	8
E9	CAN bus - Terminator pair - 43576A	3
C1-C8	CAN-bus cables - length on request	10

Dual engine, dual actuator

INTEGRA JS



Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS joystick - 43922T	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UPA Driver - DC/DC Converter - 43993T	2
E7	UPA123 (or UPA123P) - Electronic actuator	2
E8	CAN bus - Tee connection - 43578E	12
E9	CAN bus - Terminator pair - 43576A	3
C1-C10	CAN-bus cables - length on request	10

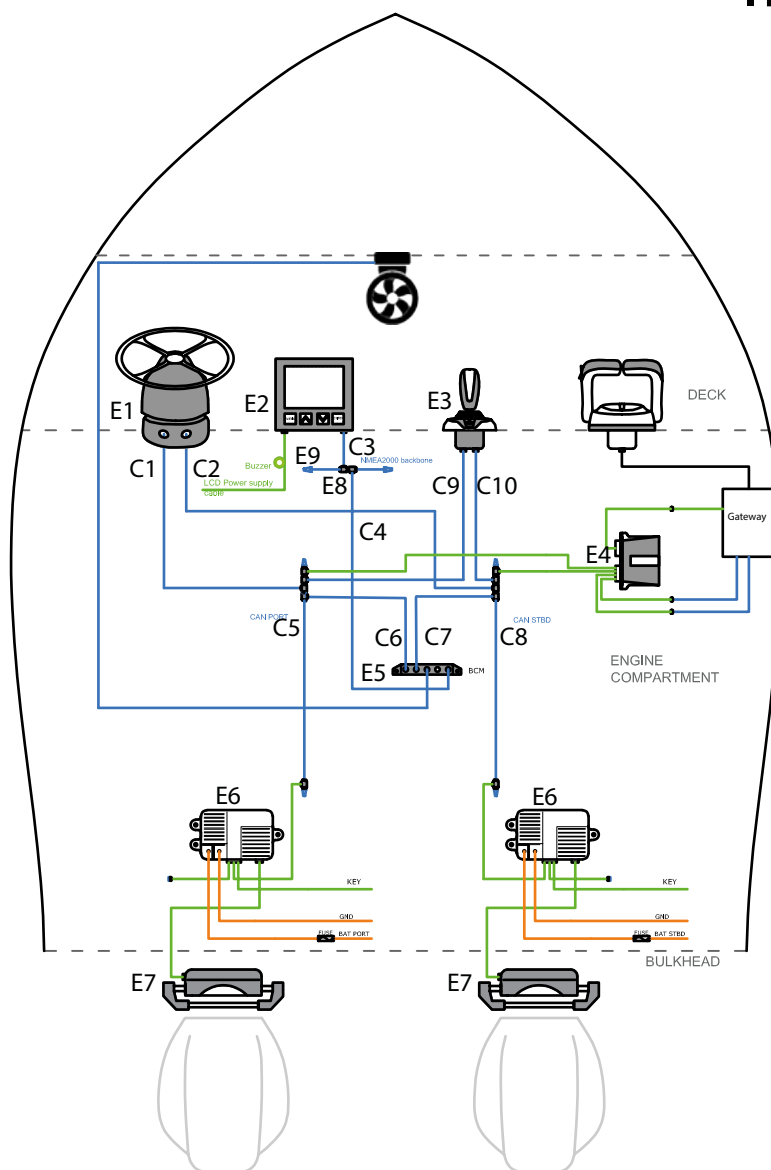
Integra™ JS equipped with UPA123

Applications

Dual engine, dual actuator with bow thruster

INTEGRA JS

new

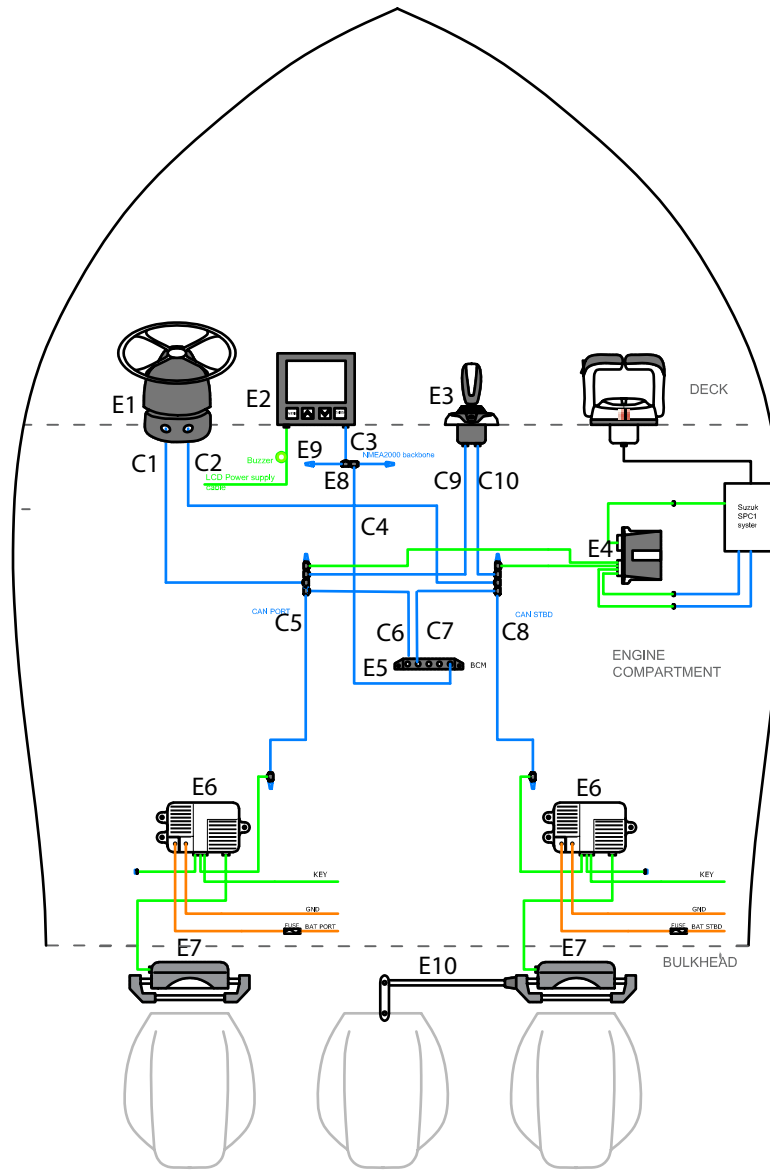


Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS-B joystick - 44162B	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UPA Driver - DC/DC Converter - 43993T	2
E7	UPA123 (or UPA123P) - Electronic actuator	2
E8	CAN bus - Tee connection - 43578E	12
E9	CAN bus - Terminator pair - 43576A	3
C1-C10	CAN-bus cables - length on request	10

Triple engine, dual actuator

INTEGRA JS



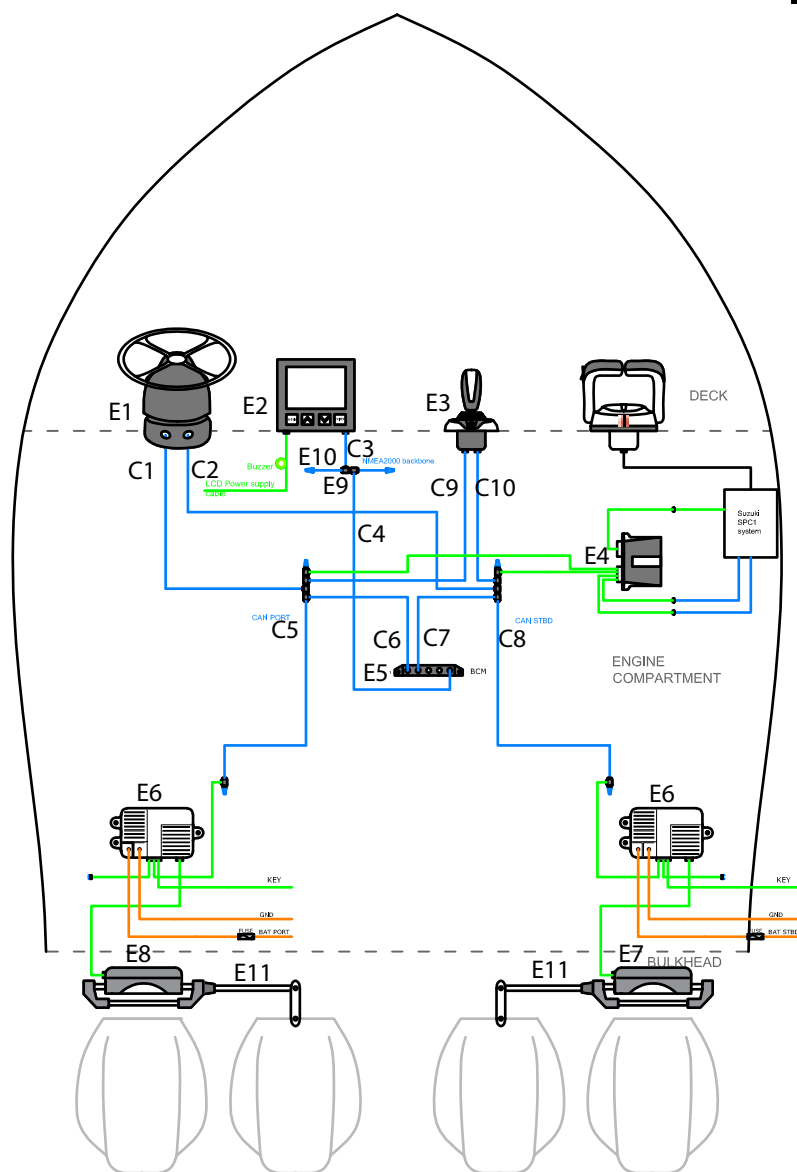
Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS joystick - 43922T	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UPA Driver - DC/DC Converter - 43993T	2
E7	UPA123 (or UPA123P) - Electronic actuator	2
E8	CAN bus - Tee connection - 43578E	12
E9	CAN bus - Terminator pair - 43576A	3
E10	A96-120 tie bar	1
C1-C10	CAN-bus cables - length on request	10

Integra™ JS equipped with UPA123 Applications

Quad engine, dual actuator

INTEGRA JS



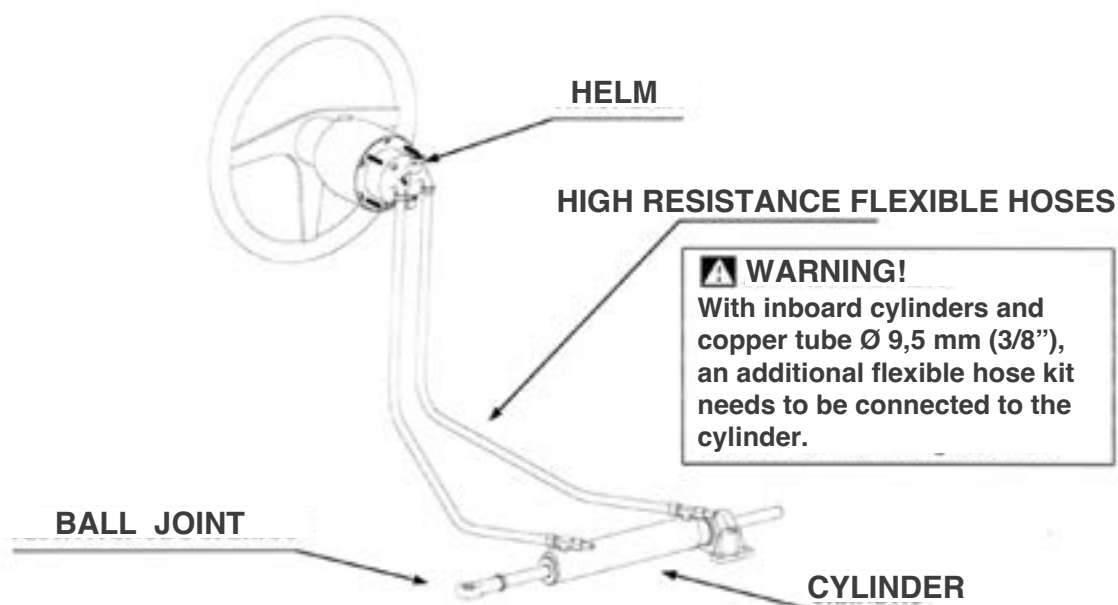
Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	UJS joystick - 43922T	1
E4	Gateway	1
E5	BCM - Body control module - 43540C	1
E6	UPA Driver - DC/DC Converter - 43993T	2
E7	UPA123 Electronic starboard actuator	1
E8	UPA123P Electronic port actuator	1
E9	CAN bus - Tee connection - 43578E	12
E10	CAN bus - Terminator pair - 43576A	3
E11	A96-120 tie bar	2

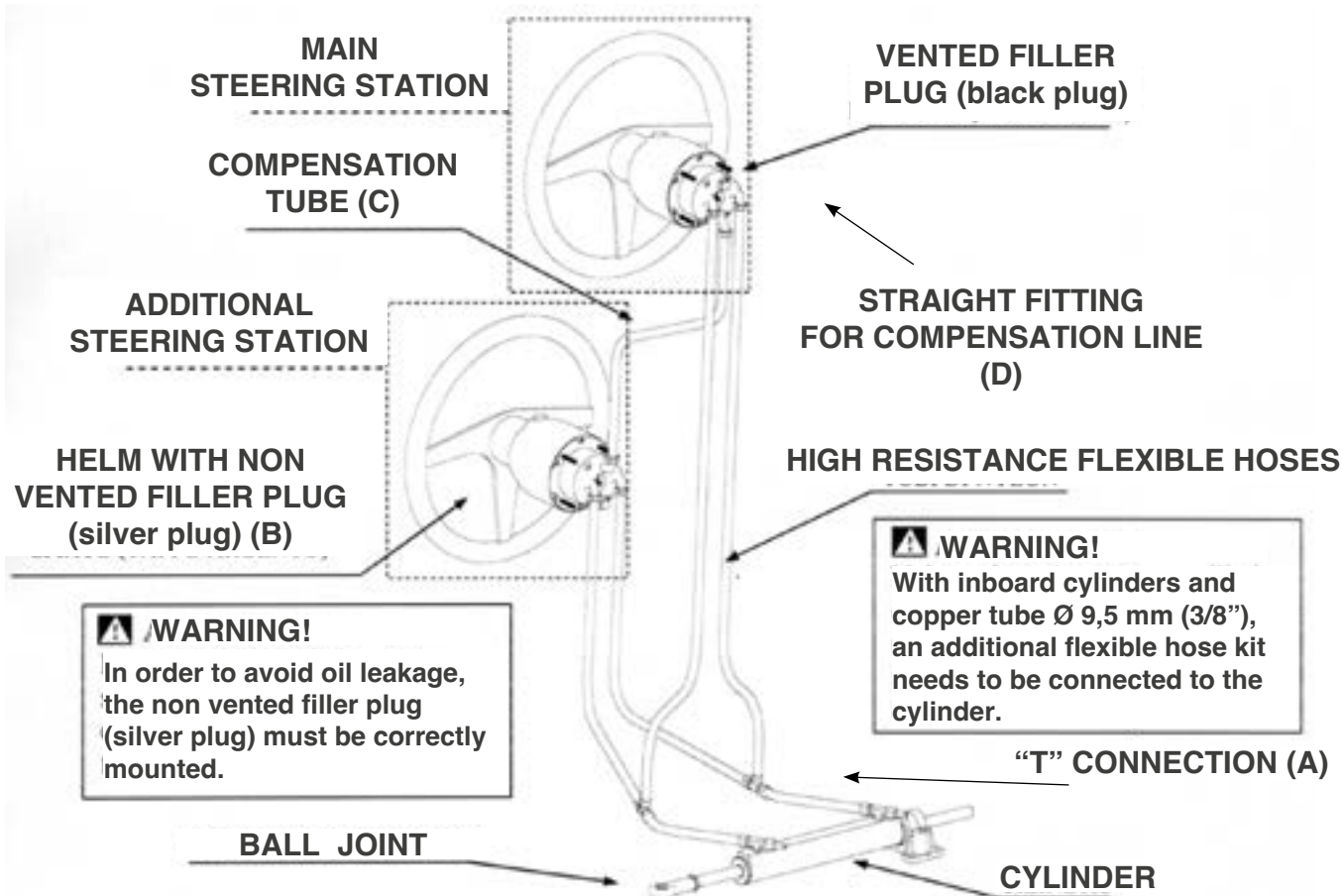


Inboard steering systems

Single steering station installation diagram



Dual steering station installation diagram



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

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

Inboard steering systems

Application guide

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

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



Photo courtesy of Fluid Motion

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

UP20F - UP25F - UP28F - UP33F - UP39F - UP45F

Front mount helms



UP20F



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

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



UP20F + X74

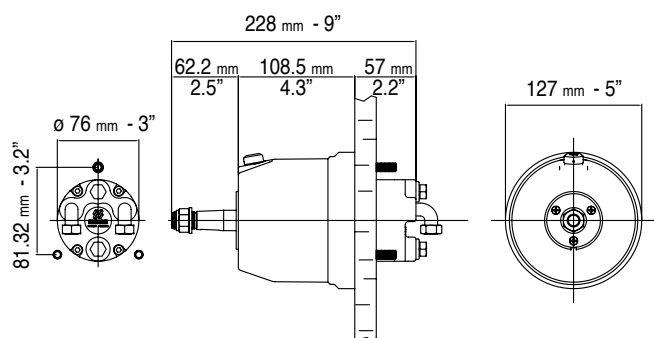


UP25F/28F/33F/39F/45F + X64

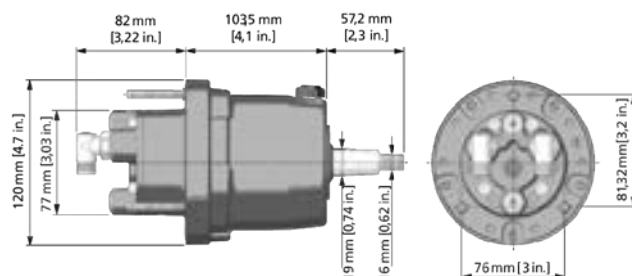


UP25F/28F/33F/39F/45F + X57

MODEL	P. No.	MOUNTING	DISPLACEMENT/ 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

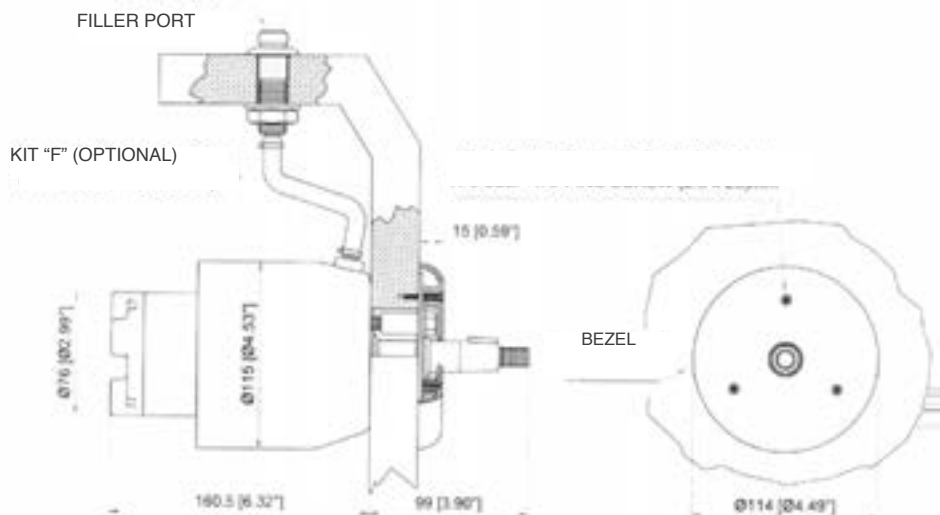


X68

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 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

Rear or intermediate mount helms



KIT F56



KR56



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

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

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

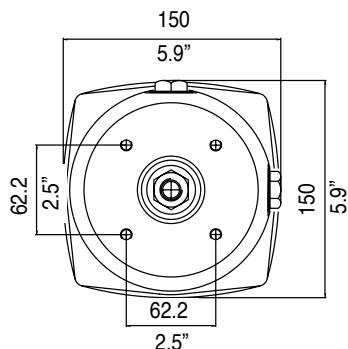
MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP56	40808D	Rear (KR56) - Intermediate (KIM56)	56 cc - 3.4 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	7,5 kg - 16,5 lbs
UP68	42561F	Rear (KR56) - Intermediate (KIM56)	68 cc - 4.15 cu.in	7	70 Bar -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

RV70 - 42560D - Relief valve 70 bar

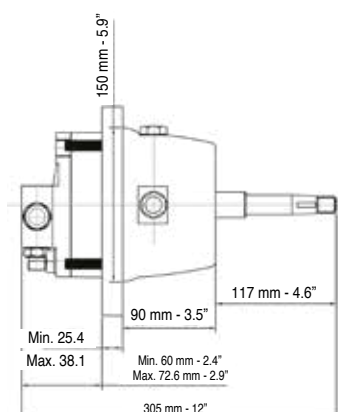
WARNING: Applications with UP56 or UP68 pumps require the RV70 relief valve added to the system for over-pressure protection.



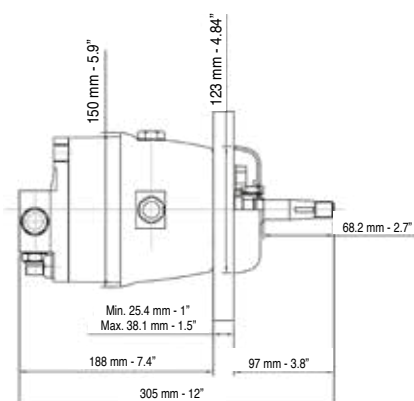
RV70



UP56, UP68



UP56, UP68 INTERMEDIATE MOUNT



UP56, UP68 REAR MOUNT

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



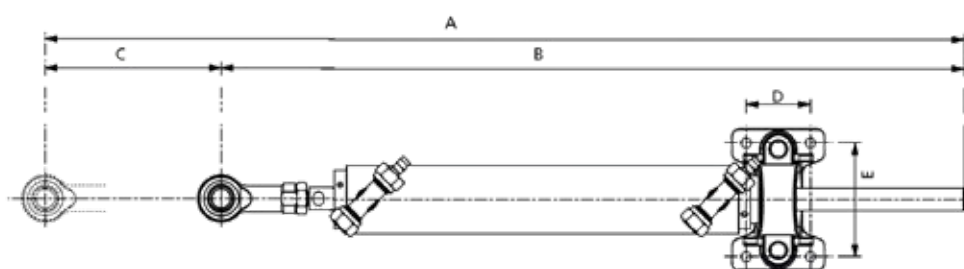
UC69-I - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



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

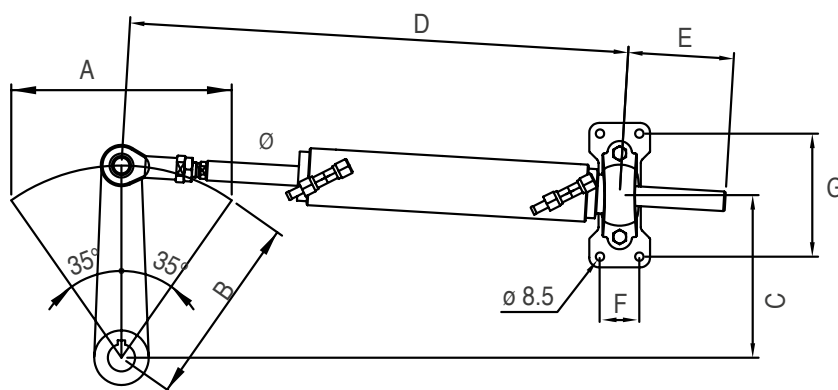
Inboard cylinders



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 - UC530-I

Inboard cylinders



UC339-I; UC442-I

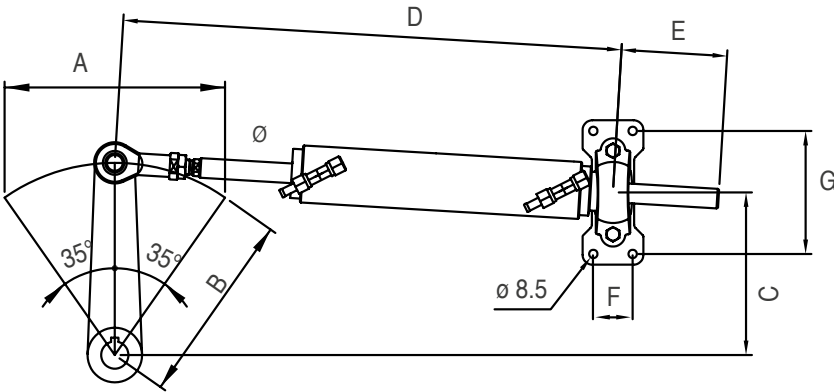
Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



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 for inboard steering systems

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

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

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

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



KIT OB/M



OB-F5/16



FR7



RV70



KIT OB-2S



KIT 95 - KIT120-I



BP 95



BP 56



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

Hoses - accessories for inboard steering systems

OL 150 - 42398X:

Hydraulic oil sold in 1 litre (0.26 gallons) bottle

- Hydraulic oil: 150 VG 15

- Solidification point: < -30°C

- Contamination according to NAS1638 ≤ 8

KIT F - 39664Y:

remote fill adapter for rear mount UP28, UP33,

UP39, UP45 pumps.

KIT F56 - 40813W:

remote fill adapter for rear mount UP56 and

UP68 pumps.



OL 150



KIT F - KIT F56 (adapter included)

Order guide

PUMP model	CYLINDER model	Wheel turns Lock-to-lock	Max rudder torque	Flex hose or copper tube	Kit for a dual station installation
UP20 F	UC69	3,5	32 kgm 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 (single bottle part no. 42398X)
- 1 inboard cylinder (suggested model: see "order guide" next page)
- 1 **KIT MD2** for dual station
- Flexible hydraulic hoses.
- 1 Tilt mechanism **X88** - 44006L 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



61BCA



AF45



AF90



SF38



SF12



VF38



QCFN



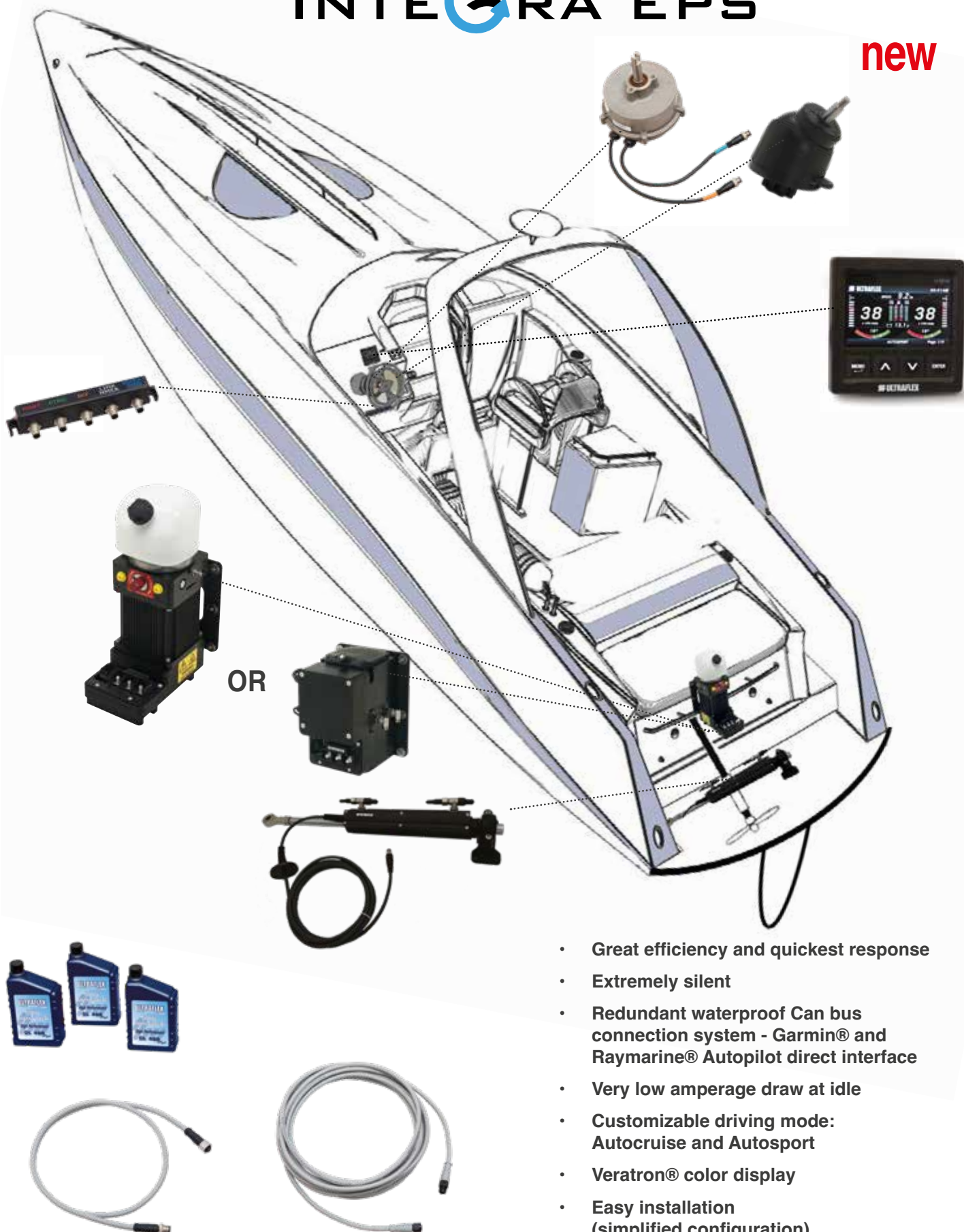
VFN916



Inboard electronic power steering systems

INTEGR A EPS

new



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

INTEGRA JS

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, Anchor, Mainstay and Trim function



Integra™

Inboard electronic power steering systems

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

System components	Integra EPS™	Integra JS™
UIH - Tilt mount electronic helm	✓	✓
UJS-B Integra JS joystick	-	✓
UGW-D - Digital Integra JS Gateway	-	✓
UGW-A - Analogic Integra JS Gateway	-	✓
X82 - 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 starboard cylinder with integrated sensor	✓	✓
UC120EP - Heavy duty port cylinder with integrated sensor		
Tie bar - Please refer to Integra tie bar section	✓	✓
KIT OB-SVS - High pressure Hydraulic hoses with pre crimped fittings	✓	✓
CAN Bus wires - Can Bus power wires	✓	✓
KBD3 - Purging kit with twin spiralled hoses and connectors (optional)	✓	✓
OL460 - 3 one litre hydraulic oil bottles (single bottle - 436467V)	✓	✓

Integra EPS and Integra JS key benefits

- **Redundant electronic steering system**, a reliable way to reduce steering effort, tuning your driving and enhancing steering experience.
- **Powerful output, great efficiency and quickest response** in any situation, thanks to the brushless motor of the pump unit and to the electronic management
- **Extremely silent**
- **Low amperage system**
- **Veratron® colour display**
- **Customizable driving mode**: the user can choose between Autocruise and Autosport driving mode
- **Autopilot direct interface**: **Garmin®** Reactor™ 40 Steer-by-wire, **Raymarine®** EV-2 SBW, **Furuno®** Navipilot 300, **Simrad®** AP44 e Ap48 con NAC-D
- **Easy installation**, thanks to the simplified configuration and the CAN bus connection system.
- **Customizable wheel effort**.
- Wheel effort is programmed to change with engine RPM.
- **Tilt range of 48° and 5 locking positions**, thanks to the **X82** 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 maneuvering**, the Joystick guarantees precision and driving comfort.
- **Integra JS Joystick** includes several functions: **Boost** function used to momentarily increase engine rpm if you need instant thrust, **Heading** function, that gives the ability to maintain the set course, **Anchor** function, to maintain boat position via GPS connection and **MainStay** the combination of the previous functions (**Heading** and **Anchor**). **Anchor, Heading and MainStay** functions needs the presence of **Veratron® Nav Sensor - 20201Z**

Integra™

Inboard electronic power steering systems

UIH1 - Electronic helm

- Electronic steering helm tilt mount **X82** -43817N
- 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

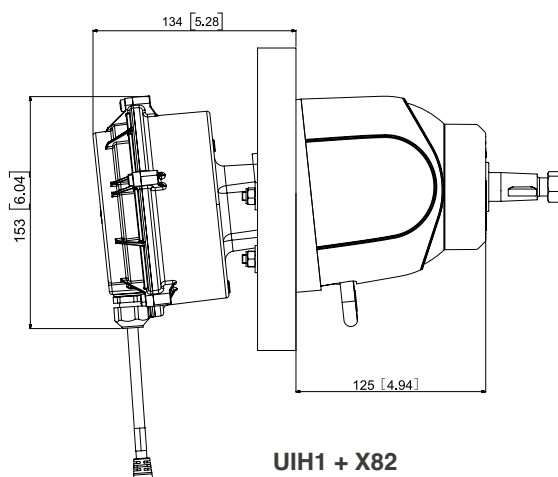
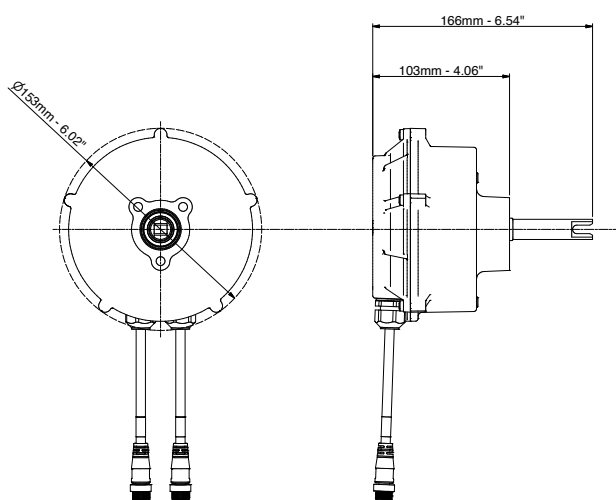
- Resistant to harsh marine conditions
- Steering wheel turns can be set by the user.
- Variable steering wheel resistance according to boat speed
- Instant responsiveness
- Redundant architecture with 2 CAN bus channels



X82



UIH1



UIH1 + X82

UJS - B Integra JS joystick with Bow Thruster

- 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 or the set direction
- **Thruster only**: operate bow thruster only
- **Heading**: ability to maintain the set course
- UP and Down trim keys: to be connected to the boat's trims
- **Anchor** function allows boat position to be maintained via GPS connection
- **MainStay** function is activated by pressing the **Heading** and **Anchor** keys
Anchor, Heading and MainStay function requires Veratron® Nav Sensor - part number 20201Z
- CAN Bus communication via 2 DeviceNet® connectors.

UJS-B1	44162B	Integra JS joystick first station with Bow Thruster
UJS-B2	44163D	Integra JS joystick second station with Bow Thruster

new



UJS-B

BCM (Body Control Module) - Can Bus Network Module

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

BCM	43540C	Can Bus network module
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BCM

Integra™

Inboard electronic power steering systems

UGW- Gateway

Device to control throttle and inverter in Honda, Suzuki and Selva outboard engines. It allows management of the trims directly from the joystick.

UGW- D Digital Gateway

UGW-D	43934A	Digital Gateway
UGWD-S1	43991N	Harness for UGW-D digital gateway and Suzuki engines equippe with SPC1
UGWD-S2	43990L	Harness for UGW-D digital gateway and Suzuki engines equippe with SPC2
UGWD-H1	43990L	Harness for UGW-D digital gateway and Honda engines

UGW- A Analogic Gateway

UGW-A	43985U	Analog Gateway
UGWA-H2	44083F	Harness for UGW-A analog gateway and Honda engines



UGW

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
- Electronic anchor response level setting

UID - B	43539U	UID Veratron® display - black
UID - W	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
Percentage operation bow thruster



UIP and UIPC - Power units

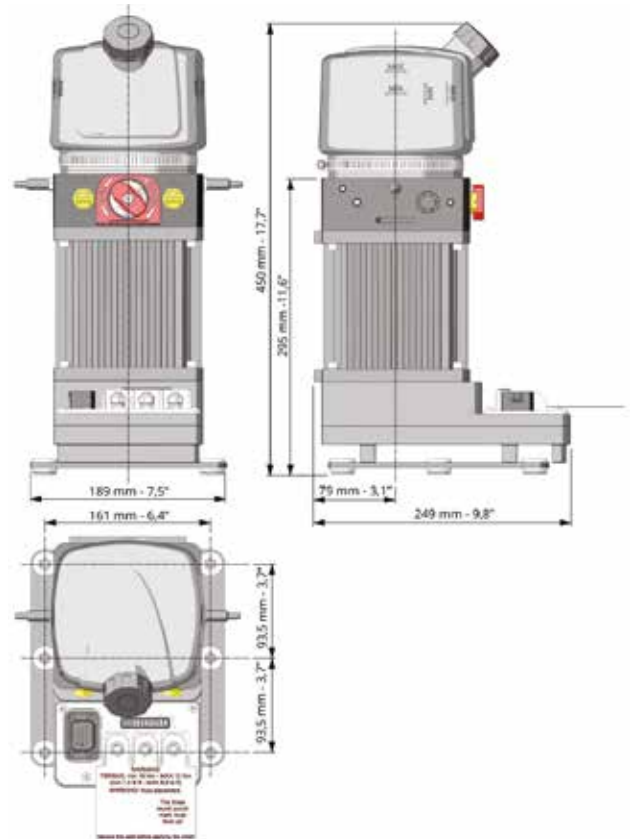
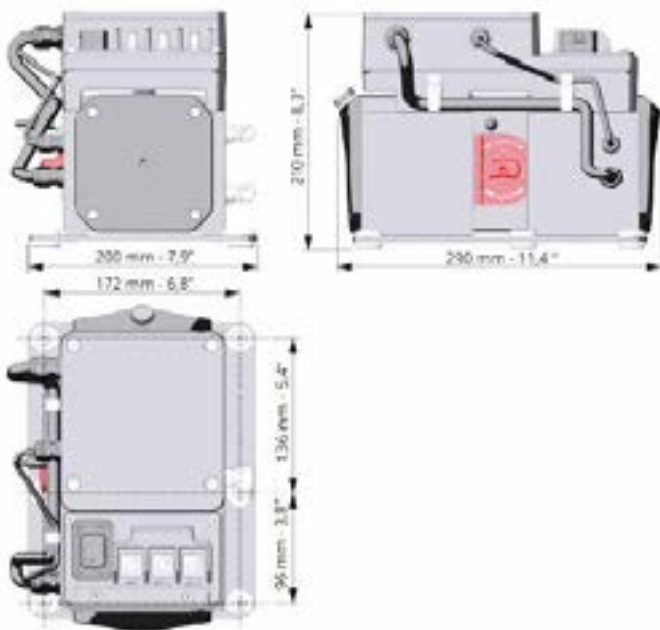
- 12 VDC brushless motor
- High power: very short lead times for maximum reactivity
- Embedded automatic power selector to manage the power supply from 2 batteries
- Can be installed anywhere on the boat
- 90° swiveling fittings for easy hose connection
- Tank: 1 litre (0.26 gal) UIP power unit; 0,3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



UIPC



UIP



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

Integra™

Inboard electronic power steering systems

UC120E-I



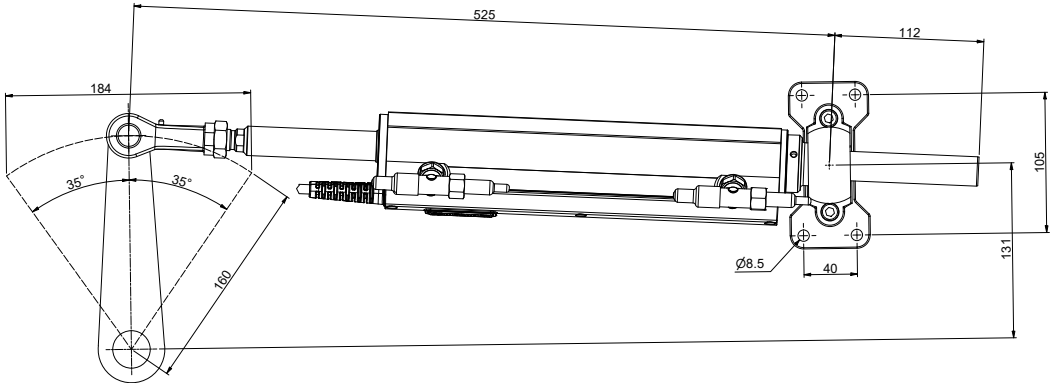
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UC120E-I

• **UC120E-I:** heavy-duty cylinder with integrated sensor
Part number - 44034S

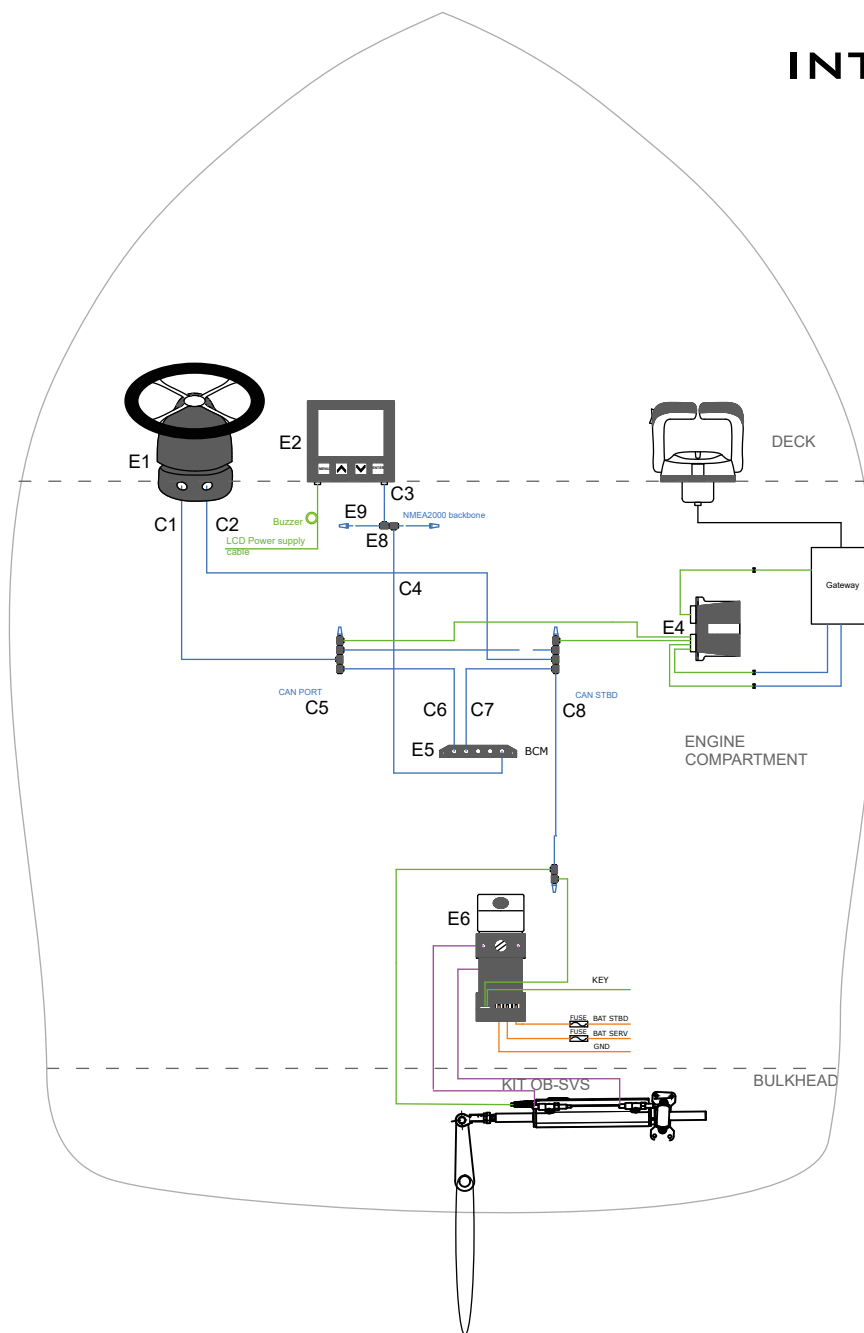
Volume	120 cc - 7.5 cu. in
Output force	800 kg - 1764 lbs
Internal diameter	36.5 mm - 1.44"
Stroke	184 mm - 7.24"
Oil	OL460



UC120E-I DIMENSIONS

Single engine, single cylinder

INTEGRA EPS



Main components

Name	Description	Quantity
E1	UIH1 Electronic helm - 43536M	1
E1	X82 Tilt mechanism - 43187N	1
E2	Veratron display - 43539U	1
E3	BCM - Body control module - 43540C	1
E4	UIPC compact power unit - 43859N	1
E5	UC120E-I Cylinder with sensor included - 44034S	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



V32 - V33

Composite steering wheels



V32B - Ø 335 mm (13.2")



V32W - Ø 335 mm (13.2")



V33B - Ø 342 mm (13.4")



V33W - Ø 342 mm (13.4")

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

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

V38 - V45 Composite steering wheels



V38B - Ø 350 mm (13.8")



V38G- Ø 350 mm (13.8")



V45B - Ø 280 mm (11")



V45W - Ø 280 mm (11")



V45G - Ø 280 mm (11")

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

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

V60 - V61 Antigua

Soft touch grip steering wheels



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, UKCA, 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
V61BR	39191E	Burl wood thermoplastic antishock material grip and spokes

V99 - Portofino

Soft touch grip steering wheels



V99 B/B/CH - Ø 350 mm (13.8")



V99 B/CB/CB - Ø 350 mm (13.8")



V99 B/S/S - Ø 350 mm (13.8")



V99 B/CH/CH - Ø 350 mm (13.8")

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

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

V19

Soft touch grip steering wheels

new



V19 B/PB - Ø 350 mm (13.8")



V19 B/MB - Ø 350 mm (13.8")



V19 B/MT - Ø 350 mm (13.8")



V19 B/VE - Ø 350 mm (13.8")

Model	V19
Depth	93 mm (3.66")
Grip material	Plastic
Grip color	Black, white, grey
Spokes	Thermoplastic anti-shock material with inserts
Floating cap	n.a.
Standard 3/4" hub	Included
QDH hub	Available upon request
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
V19 B/PB	44115S	Thermoplastic anti-shock material grip and spokes, polished black spokes inserts and ring
V19 B/MB	44156G	Thermoplastic anti-shock material grip and spokes, spokes and ring inserts painted matt black
V19 B/MT	44157J	Thermoplastic anti-shock material grip and spokes, spokes and ring inserts painted matt titanium
V19 B/VE	44158L	Thermoplastic anti-shock material grip and spokes, spokes and ring inserts painted matt chrome



Corsica B/S - Ø 350 mm (13.8")



Corsica B/B - Ø 350 mm (13.8")



Corsica W/S - Ø 350 mm (13.8")



Corsica G/S - Ø 350 mm (13.8")

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

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

Vivara - Budelli - Mykonos - Santorini

Polyurethane grip steering wheels



Vivara CH/P - Ø 350 mm (13.8")



Budelli B/P/CH - Ø 350 mm (13.8")



Santorini B/S - Ø 350 mm (13.8")



Mykonos B/S - Ø 320 mm (12.6")

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

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

Nisida - Palmaria - Manna 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")



Manna B/B/B - Ø 350 mm (13.8")

Model	Nisida	Palmaria	Manna
Depth	85 mm (3.35")	88 mm (3.46")	85 mm (3.35")
Grip material	Leather look polyurethane		Soft touch
Grip color	Black		
Spokes	Silver or black anodized aluminum	Black anodized aluminum	
Floating cap	n.a.		
Standard 3/4" hub	X63 - 40119D not included		Included
QDH hub	Available upon request		
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22		

Model	Part No.	Description
Nisida B/S	61813P	Black polyurethane grip, silver aluminum spokes
Nisida B/B	61812M	Black polyurethane grip, black aluminum spokes
Palmaria B/B	63727H	Black polyurethane grip, black aluminum spokes
Manna B/B/B	25896T	Black polyurethane grip, black aluminum spokes

Capraia - Tavolara

Polyurethane grip steering wheels



Capraia B/S - Ø 350 mm (13.8")



Capraia B/B - Ø 350 mm (13.8")



Tavolara B/B/CH - Ø 350 mm (13.8")



Tavolara B/S/CH - Ø 350 mm (13.8")

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

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

Domino - Pianosa

Polyurethane grip steering wheels



Domino B/B/CH - Ø 350 mm (13.8")



Domino B/S - Ø 350 mm (13.8")



Pianosa B/S - Ø 350 mm (13.8")



Pianosa B/B - Ø 350 mm (13.8")

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

Model	Part No.	Description
Domino B/B/CH	23897J	Black polyurethane grip, black aluminum spokes, chrome plated cover
Domino B/S	23895E	Black polyurethane grip, silver aluminum spokes and ring
Pianosa B/S	22322Y	Black polyurethane grip, silver aluminum spokes, polished ring
Pianosa B/B	22960H	Black polyurethane grip, black aluminum spokes, black painted ring

Giannutri - Pantelleria

Polyurethane grip steering wheels



Giannutri PU B/SS - Ø 280 mm (11")



Giannutri PU W/SS - Ø 280 mm (11")



Pantelleria B/S - Ø 320 mm (12.6")



Pantelleria B/B - Ø 320 mm (12.6")

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

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

new



Gallinara PU B/SS - Ø 320 mm (12.6")



Gallinara V B/SS - Ø 320 mm (12.6")



Gallinara V W/SS - Ø 320 mm (12.6")

Model	Gallinara
Depth	88 mm (3.46")
Grip material	Leather look polyurethane
Grip color	Black
Spokes	Chrome aluminum
Floating cap	n.a.
Standard 3/4" hub	Included
QDH hub	Available upon request
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
Gallinara PU B/SS	25881D	Black polyurethane grip, chrome aluminum spokes, black and chrome cover
Gallinara V B/SS	25899Z	Black vinyl polyurethane grip, chrome aluminum spokes, black and chrome cover
Gallinara V W/SS	25922R	White vinyl grip, chrome aluminum spokes, white and chrome cover

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, UKCA, NMMA; ISO 23411 & ABYC P22	

Model	Part No.	Description
Ustica B/S/B	20926X	Black polyurethane grip, silver aluminum spokes, black painted cover
Ustica B/B/B	21622F	Black polyurethane grip, black aluminum spokes, black painted cover
Levanzo B/S/CH	20927Z	Black polyurethane 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 96 mm (3.78") aluminum spokes 98 mm (3.86")
Grip material	Leather look polyurethane
Grip color	Black
Spokes	Polished 304 stainless steel or silver or black anodized aluminum
Center cap	Chrome plated, or silver, or black painted
Floating cap	Available upon request
Standard 3/4" hub	X63 - 40119D - not included
QDH hub	Available upon request
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22

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

Asinara

Vinyl and polyurethane grip steering wheels



Asinara V B/SS/L - Ø 350 mm (13.8")



Asinara PU B/SS/B - Ø 350 mm (13.8")



Asinara PU B/S/B - Ø 350 mm (13.8")



Asinara PU B/B/B - Ø 350 mm (13.8")

Model	Asinara	Asinara PU
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	Pad-printed logo on PU center cap
Floating cap	Available upon request	
Standard 3/4" hub	X63 - 40119D - not included	
QDH hub	Available upon request	
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22	

Model	Part No.	Description
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

new



Giglio B/S/PB - Ø 350 mm (13.8")



Giglio B/SS/PB - Ø 350 mm (13.8")



Giglio B/B/VE - Ø 350 mm (13.8")



Giglio B/B/PB - Ø 350 mm (13.8")

Model	Giglio
Depth	88 mm (3.46")
Grip material	Leather look polyurethane
Grip color	Black
Spokes	Chrome or black aluminum or stainless steel
Floating cap	n.a.
Standard 3/4" hub	Included
QDH hub	Available upon request
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
Giglio B/S/PB	25897V	Black PU grip with polished black inserts, silver anodized aluminum spokes, black and polished black painted cover
Giglio B/SS/PB	25898X	Black PU grip with polished black inserts, stainless steel spokes, black and polished black painted cover
Giglio B/B/VE	25911K	Black PU grip with silver painted inserts, black anodized aluminum spokes, silver painted cover
Giglio B/B/PB	25943Z	Black PU grip with black painted inserts, black anodized aluminum spokes, black painted cover

Razzoli - Capri

Mahogany grip steering wheels



Razzoli M/SS/BR - Ø 350 mm (13.8")



Razzoli M/SS/SS - Ø 350 mm (13.8")



Capri - Ø 320 mm (12.6")

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

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

new



V76 B/VE - Ø 320 mm (12.6")



V76 B/PB - Ø 320 mm (12.6")



V76 W/CH - Ø 320 mm (12.6")

Model	V76
Depth	92 mm (3.62")
Grip material	Leather look polyurethane
Grip color	Black or White
Spokes	Silver painted or black
Floating cap	n.a.
Standard 3/4" hub	Included
QDH hub	n.a.
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22

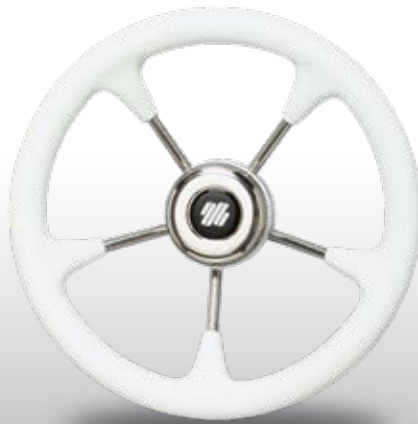
Model	Part No.	Description
V76 B/VE	25915U	Black PU grip, silver painted spokes, black cover
V76 B/PB	25916W	Black PU grip, polished black spokes, black cover
V76 W/VE	22322Y	White PU grip, silver painted spokes, white cover

V52 - V28

Polyurethane grip equidistant spoke steering wheels - hub included



V52B - Ø 320 mm (12.6")



V52W - Ø 320 mm (12.6")



V52G - Ø 320 mm (12.6")



V28B - Ø 280 mm (11")



V28W - Ø 280 mm (11")

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

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

Polyurethane grip equidistant spoke steering wheels - hub included



V57B - Ø 350 mm (13.8")



V57W - Ø 350 mm (13.8")



V57G - Ø 350 mm (13.8")



V31B - Ø 320 mm (12.6")

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

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

V75

Polyurethane grip steering wheels

new



V75 B/VE - Ø 350 mm (12.6")



V75 B/PB - Ø 350 mm (12.6")



V75 W/VE - Ø 350 mm (12.6")

Model	V75
Depth	98 mm (3.85")
Grip material	Leather look polyurethane
Grip color	Black or White
Spokes	Silver painted or black
Floating cap	n.a.
Standard 3/4" hub	Included
QDH hub	n.a.
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
V75 B/VE	25917Y	Black PU grip, silver painted spokes, black cover
V75 B/PB	25918B	Black PU grip, polished black spokes, black cover
V75 W/VE	22322Y	White PU grip, silver painted spokes, white cover

Polyurethane grip, equidistant spoke steering wheels - hub included



V70B - Ø 350 mm (13.8")



V70W - Ø 350 mm (13.8")



V70G - Ø 350 mm (13.8")

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

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

V56

Polyurethane grip, equidistant spoke steering wheels - hub included



V56 B/CH - Ø 350 mm (13.8")



V56 W/CH - Ø 350 mm (13.8")



V56 G/CH - Ø 350 mm (13.8")

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

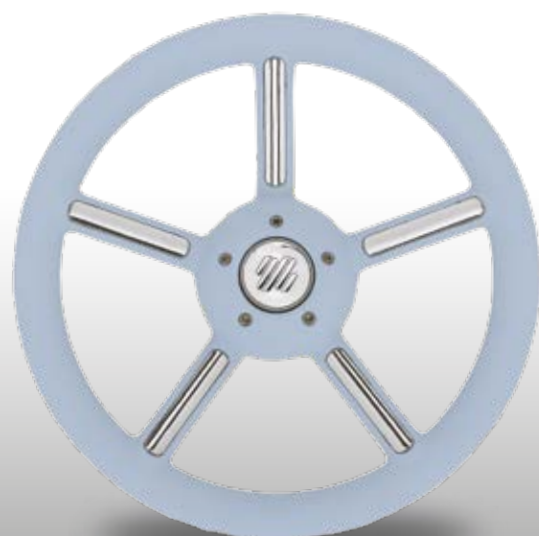
Model	Part No.	Description
V56 B/CH	21351A	Black polyurethane grip and spokes with chrome plated inserts
V56 W/CH	21406Z	White polyurethane grip and spokes with chrome plated inserts
V56 G/CH	21407B	Grey polyurethane grip and spokes with chrome plated inserts



V56 B/R - Ø 350 mm (13.8")



V56 W/W - Ø 350 mm (13.8")



V56 SB/CH - Ø 350 mm (13.8")



KNOB V56

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

V21 - 20

Polyurethane or teak grip equidistant spoke steering wheels



V21B - Ø 350 mm (13.8")



V21W - Ø 350 mm (13.8")



V21TK - Ø 350 mm (13.8")



V20B - Ø 350 mm (13.8")

Model	V21	V20
Depth	64 mm (2.52")	67 mm (2.64")
Grip material	Polyurethane, teak	Polyurethane
Grip color	Black, white, teak	Black
Spokes	Stainless steel	
Floating cap	n.a.	
Standard 3/4" hub	Included	
QDH hub	n.a.	
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22	

Model	Part No.	Description
V21B	42328Z	Black polyurethane grip, SS spokes
V21W	42324R	White polyurethane grip, SS spokes
V21TK	42325T	Teak grip, SS spokes
V20B	42843S	Black polyurethane grip, SS spokes

Polyurethane, mahogany or SS grip equidistant spoke steering wheels



V25B - Ø 350 mm (13.8")



V25W - Ø 350 mm (13.8")



V25G - Ø 350 mm (13.8")



V25SS - Ø 350 mm (13.8")



V25M - Ø 350 mm (13.8")

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

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

V01 - V29

Polyurethane or SS grip equidistant spoke steering wheels - hub included



V01B - Ø 350 mm (13.8")



V01W - Ø 350 mm (13.8")



V01SS - Ø 350 mm (13.8")



V29B - Ø 350 mm (13.8")

Model	V01	V29
Depth	67 mm (2.64")	107 mm (4.21)
Grip material	Polyurethane, stainless steel	
Grip color	Black, white, grey, stainless steel	
Spokes	Stainless steel	
Floating cap	n.a.	
Standard 3/4" hub	Included	
QDH hub	n.a.	
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22	

Model	Part No.	Description
V01B	41687Z	Black polyurethane grip, SS spokes
V01W	41688B	White polyurethane grip, SS spokes
V01SS	41692S	Stainless steel grip and spokes
V29B	42846Y	Black polyurethane grip, SS spokes



V10B - Ø 350 mm (13.8")



V10W - Ø 350 mm (13.8")



V10SS - Ø 350 mm (13.8")



V10TK - Ø 350 mm (13.8")

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

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

V24

Polyurethane grip, equidistant spoke steering wheels - hub included



V24B - Ø 350 mm (13.8")



V24W - Ø 350 mm (13.8")



V24G - Ø 350 mm (13.8")



V24 COMMANDO - Ø 350 mm (13.8")

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

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

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, UKCA, NMMA; ISO 23411 & ABYC P22				

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

V66 - V63 - V62 - V67

Wood grip equidistant spoke steering wheels



V66 - Ø 350 mm (13.8")



V63 - Ø 450 mm (17.7")



V62 - Ø 350 mm (13.8")



V67 - Ø 400 mm (15.7")

Model	V66	V63	V62	V67
Depth	80 mm (3.15")	108 mm (4.25")	104 mm (4.09")	100 mm (3.94")
Grip material	Mahogany	Mahogany	Mahogany	Mahogany
Grip color	Mahogany	Mahogany	Mahogany	Mahogany
Spokes	Stainless steel			
Floating cap	n.a.			
Standard 3/4" hub	Included			
QDH hub	n.a.			
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22			

Model	Part No.	Description
V66	39424B	Mahogany grip, SS spokes
V63	39264F	Mahogany grip, SS spokes
V62	39263D	Mahogany grip, SS spokes
V67	39425D	Mahogany grip, SS spokes

V74 - V77 - V85 - V90

Wood grip equidistant spoke steering wheels



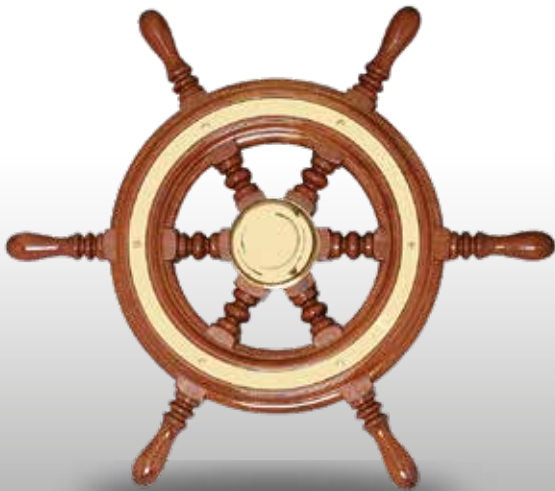
V74/40- Ø 400 mm (15.7")



V85 - Ø 500 mm (19.7")



KNOB67



V90/42 - Ø 420 mm (16.5")



KNOB93

Model	V74	V85	V90/42
Depth	63 mm (2.48")	69 mm (2.72")	
Grip material	Mahogany	Teak	Wood
Grip color	Mahogany	Teak	Wood
Spokes	Stainless steel		Wood
Floating cap	n.a.		
Standard 3/4" hub	Included		
QDH hub	n.a.		
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22		

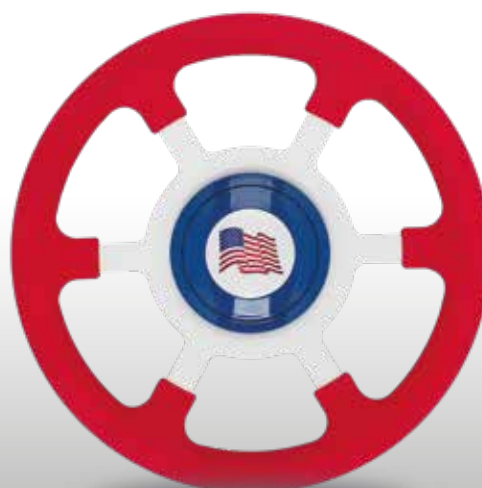
Model	Part No.	Description
V74/40	41115A	Mahogany grip, SS spokes
V85	42416W	Teak grip, SS spokes
V90/42	43043S	Wood grip and spokes
KNOB93	40647F	Knob for V93 steering wheel
KNOB67	40677R	Knob for V67 steering wheel

V15

Polyurethane grip equidistant spoke steering wheels - hub included



V15 B/SS/F - Ø 350 mm (13.8")



V15 R/W/F - Ø 350 mm (13.8")

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

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



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Boccanegra Vero Volante Italiano



VERO VOLANTE ITALIANO




CHRISTIANGRANDE
DesignWorks

Boccanegra L B/L

3-spoke steering wheel.
316L stainless steel polished spokes.
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 B/CH



Boccanegra V B/P

Diameter	350 mm (13.8")
Grip material	Leather and Vynil
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, UKCA, 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 B/CH	20944Z	Black leather grip, stainless steel spokes, chrome plated cover
Boccanegra V B/P	68714A	Black leather grip, stainless steel spokes, black painted cover



VERO VOLANTE ITALIANO



Oderico L B/SS/CH

3-Spoke steering wheel
316L stainless steel spokes with a double treatment: polished and black sandblasted.
Grip is available in black hand-stitching leather or vinyl
Hub included - standard 3/4" taper.

Ø = 350 mm (13.8")

Depth = 75 mm (2.95")



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, UKCA, 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

new



Vendramin L B/SS/RG

3 spokes 316L polished stainless steel wheel with metachrilate inserts.

Grip available in:

- Hand-stitched leather
- Hand-stitched vinyl
- Leather look polyurethane

Stainless steel cover, leather or vinyl or pad-printed center cap

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 97 mm (3.8")



Vendramin L B/SS/RG



Vendramin V B/SS/B



Vendramin PU B/SS/RG



Vendramin PU B/SS/B

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

Model	Part No.	Description
Vendramin L B/SS/RG	25894N	Black leather grip, stainless steel spokes, stainless steel cover, rose gold painted inserts
Vendramin V B/SS/B	25913P	Black vinyl grip, stainless steel spokes, stainless steel cover, polished black inserts
Vendramin PU B/SS/RG	25893L	Black PU grip, stainless steel spokes, stainless steel cover, rose gold painted inserts
Vendramin PU B/SS/B	25912M	Black PU grip, stainless steel spokes, stainless steel cover, polished black inserts



VERO VOLANTE ITALIANO




CHRISTIANGRANDE
DesignWorks

Soranzo L B/L/L

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 97 mm (3.8")



Soranzo L B/L/L



Soranzo L L/L/L



Soranzo L BL/L/L



Soranzo V B/B/L

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

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

new



VERO VOLANTE ITALIANO



Barbarigo L B/SS/B

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 97 mm (3.8")



Barbarigo L B/SS/B



Barbarigo V B/SS/B



Barbarigo V C/SS/C

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

Model	Part No.	Description
Barbarigo L B/SS/B	25895R	Black leather grip, SS spokes, SS cover
Barbarigo V B/SS/B	25932U	Black vinyl grip, SS spokes, SS cover
Barbarigo V C/SS/C	24726K	Cream vinyl grip, SS spokes, SS cover



VERO VOLANTE ITALIANO




CHRISTIANGRANDE
DesignWorks

Fregoso LL AW/A/A

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 81 mm (3.2")

new



Fregoso LV BC/B/C



Fregoso LL BG/B/G



Fregoso LL AW/A/A

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

* To be specified when ordering the wheel

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 LL BG/B/G	25929F	Black leather external grip, gray leather internal grip, stainless steel spokes, black-colored painted cover
Fregoso LL AW/A/A	24741F	Amaranth color leather external grip, white leather internal grip, SS spokes, reddish purple painted cover



VERO VOLANTE ITALIANO



Guarco L B/SS/CH

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 96 mm (3.8")



Guarco L B/SS/CH



Guarco L B/SS/B



Guarco L B/SS/B

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, UKCA, 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 L B/P
Spinola V B/P

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

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 82 mm (3.22")



Spinola L B/P



Spinola V B/P



Spinola L B/BRU



Spinola V B/BRU

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, UKCA, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
Spinola L B/P	23902Y	Black leather grip, polished stainless steel spokes and cover
Spinola V B/P	23901W	Black vinyl grip, polished stainless steel spokes and cover
Spinola L B/BRU	23900U	Black leather grip, brushed stainless steel spokes and cover
Spinola V B/BRU	23899N	Black vinyl grip, brushed stainless steel spokes and cover

Tron

Vero Volante Italiano



VERO VOLANTE ITALIANO



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

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 98 mm (3.85")



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, UKCA, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
Tron L B/SS/PU	22125W	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

Dolfin

Vero Volante Italiano



VERO VOLANTE ITALIANO



Dolfin L B/B/Pw

316L stainless steel 3-spoke steering wheel with inserts.

Spokes available in:

- Matt black painted stainless steel and polished black inserts
- Matt black painted stainless steel and pewter effect inserts
- Polished stainless steel and polished black inserts

Hand-stitched leather or vinyl grip.

Black painted cover, polished black or pewter effect ring, matte black lens.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 93 mm (3.66")



Dolfin L B/B/B



Dolfin L B/B/Pw



Dolfin L B/SS/B



Dolfin V B/SS/B

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, UKCA, 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/B/Pw	23591H	Black leather grip, SS black spokes with pewter look painted 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



VERO VOLANTE ITALIANO




CHRISTIANGRANDE
DesignWorks

Vivaldi L B/L/L

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 95 mm (3.74")



Vivaldi L B/L/L



Vivaldi V B/B/L



Vivaldi PU B/B/L



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, UKCA, 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/B/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.

Polished 304 stainless steel spokes.

Available grip:

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

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 81 mm (3.19")



Morosini L B/CH/L



Morosini V B/CH/V



Morosini PU B/CH/V



Morosini L C/P/P

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 vinyl or painted or burl wood
Floating cap	n.a.
Standard 3/4" hub	Included
QDH hub	Available upon request*
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22

* To be specified when ordering the wheel

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



VERO VOLANTE ITALIANO




CHRISTIANGRANDE
DesignWorks

Morosini M/CH/BR

3-spoke steering wheel.

Polished 304 stainless steel spokes.

Available grip:

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

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 81 mm (3.19")



Morosini M/CH/BR



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



Morosini L G/CH/L



Morosini V G/CH/V

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

* To be specified when ordering the wheel

Model	Part No.	Description
Morosini M/CH/BR	68378L	Mahogany grip, SS spokes, chrome plated cover
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 G/CH/L	67300R	Grey leather grip, SS spokes, chrome plated cover
Morosini V G/CH/V	68830C	Grey vinyl grip, SS spokes, chrome plated cover



VERO VOLANTE ITALIANO



Gritti Carbon LC B/SS/B

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 86 mm (3.4")



Gritti Alutec LA B/SS/B



Gritti Carbon LC B/SS/B



Gritti Carbon LC B/SS/R

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 81 mm (3.19")



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, UKCA, NMMA; ISO 23411 & ABYC P22

* To be specified when ordering the wheel

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.
Polished 304 stainless steel spokes.
Hand-stitching leather or leather look polyurethane grip.
Stainless steel cover, chromed 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 SS
Floating cap	Available upon request
Standard 3/4" hub	Included
QDH hub	Available upon request*
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22

* To be specified when ordering the wheel

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.

Available spokes:

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

Hand-stitching vinyl or leather look polyurethane grip.

Black painted cover, chrome plated center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 68 mm (2.68")



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, UKCA, 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

Manin Vero Volante Italiano



VERO VOLANTE ITALIANO



Manin PU B/S

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 90 mm (3.54")



Manin PU B/SS



Manin PU B/S



Manin PU B/B/VE



Manin PU B/SS/VE

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 or black and silver painted
Floating cap	Available upon request
Standard 3/4" hub	Included
QDH hub	Available upon request*
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22

* To be specified when ordering the wheel

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/VE	25934Y	Black polyurethane grip, black aluminum spokes, chrome plated cover
Manin PU B/SS/VE	25933W	Black polyurethane grip, SS polished spokes, black and silver painted cover



VERO VOLANTE ITALIANO



Grimani PU B/S/VE

3-spoke steering wheel.

Polished 304 stainless steel or silver or black anodized aluminum spokes.
Leather look polyurethane grip with silver, chrome plated or matte black inserts.

Black painted and chrome plated, silver and chrome plated or black and matte black cover and black painted center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth: 90 mm (3.54")



Grimani PU B/SS/CH



Grimani PU B/S/VE



Grimani PU B/B/CH



Grimani PU B/B/PB

Diameter	350 mm (13.8")
Grip material	Leather look polyurethane with inserts
Grip color	Black with silver or chrome plated or matte black 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, UKCA, 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
Grimani PU B/B/PB	25936C	Black polyurethane grip with matte black inserts, black aluminum spokes, black painted and black cover



VERO VOLANTE ITALIANO



Grimani PU B/S/R

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 91,5 mm (3.6")



Grimani PU B/S/BL



Grimani PU B/S/R



Grimani PU B/S/KG



Grimani PU B/S/Y

Diameter	350 mm (13.8")
Grip material	Leather look polyurethane with inserts
Grip color	Black with color painted 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, UKCA, 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.
Polished 304 stainless steel or silver or black anodized aluminum spokes.
Leather look polyurethane grip with chrome plated inserts.
Black painted and chrome plated cover and black painted center cap.

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 92,5 mm (3.64")



Loredan PU B/SS/CH



Loredan PU B/S/CH



Loredan PU B/B/CH



Loredan PU B/B/PB

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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, UKCA, 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
Loredan PU B/B/PB	25937E	Black polyurethane grip with polished inserts, black aluminum spokes, black painted and black cover

Doria

Vero Volante Italiano



VERO VOLANTE ITALIANO



Doria PU B/S/R

3-spoke steering wheel.

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 74 mm (2.91")



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 color painted 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, UKCA, 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.
Brushed 316L stainless steel spokes.
Vinyl or leather look polyurethane grip
polished stainless steel cover, leather or painted 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, UKCA, 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 polished cover
FALIER PU B/BRU/B	24734J	Black polyurethane grip, SS brushed spokes, SS polished cover
FALIER PU G/BRU/G	24735L	Grey polyurethane grip, SS brushed spokes, SS polished cover

Captiva HU/B - Heated steering wheel

Vero Volante Italiano



VERO VOLANTE ITALIANO



Captiva HU/B

- Power switch embedded in the spoke
- Two available heating modes: COMFORT and HIGH
- Sliding contacts power supply
- LED dimmer (day/night)
- Low voltage monitoring and disconnection
- 12V DC and 24V DC power supply (50 W draw)
- Fits all front mount Ultraflex and Seastar™ hydraulic helms.
- Fits Ultraflex electronic tilt helms
- Fits all Ultraflex tilt mechanisms, featuring internal routing of the wire
- IP65 rated.
- Compatible with knob SK-25458S
- Patented

Hub included - standard 3/4" taper
Center nut available as spare part

Ø = 350 mm (13.8")

Depth = 85 mm (3.34")

Captiva HU/B - Heated steering wheel

Vero Volante Italiano



Captiva HU/B



Diameter	350 mm (13.8")
Frame	Front: polished 316L stainless steel; Rear: black TPU
Spokes	Polished 316L stainless steel and TPU with black methacrylate inserts
Center Nut	Polished stainless steel
Standard 3/4" hub	Included
QDH hub	n.a.
Certifications & standards	CE, UKCA, NMMA; ISO 23411 & ABYC P22

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

Captiva BK - Captiva B

Vero Volante Italiano



Captiva BK

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 85 mm (3.34")



Captiva B



Captiva BK



Captiva B + Knob SK



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

Model	Part No.	Description
Captiva BK	25883H	SS and TPU grip, stainless steel and TPU spokes with black methacrylate inserts, incorporated knob
Captiva B	24884K	SS and TPU grip, stainless steel and TPU spokes with black methacrylate inserts
Knob SK	25458S	Speed knob for Captiva B steering wheel



Captiva G

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 85 mm (3.34")

Captiva GK - Captiva G - Captiva SFK - Captiva SF

Vero Volante Italiano



Captiva G



Captiva GK



Captiva SF



Captiva SFK

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

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



VERO VOLANTE ITALIANO



Contarini TPU/SS

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

Hub included - standard 3/4" taper

Ø = 350 mm (13.8")

Depth = 79,5 mm (3.13")



Contarini TPU/SS



Contarini TPU/SS with KNOB SK



Diameter	350 mm (13.8")
Grip material	Black TPU and polished 316L 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, UKCA, NMMA; ISO 23411 & ABYC P22

Model	Part No.	Description
Contarini TPU/SS	69199S	Black TPU and SS grip, SS spokes, SS cover
Knob SK	25458S	Speed knob for Contarini steering wheel (available as spare part)



VERO VOLANTE ITALIANO



Siestakey B

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

Hub included - standard 3/4" taper

Ø = 368 mm (14.5")

Depth = 90 mm (3.54")



Siestakey B



Siestakey B with KNOB SK



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

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



VERO VOLANTE ITALIANO



Keywest BLCK

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

Hub included - standard da 3/4" taper.

Ø = 350 mm (13.8")

Depth = 96 mm (3.77")



Keywest BLCK



Keywest PCK



Keywest BLC



Keywest PC

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

Model	Part No.	Description
Keywest BLCK	25481L	Polished blue carbon fiber and TPU grip and spokes. Knob included
Keywest PCK	25479A	Polished carbon fiber and TPU grip and spokes. Knob included
Keywest BLC	25484T	Polished blue carbon fiber and TPU grip and spokes.
Keywest PC	25482N	Polished carbon fiber and TPU grip and spokes.

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VERO VOLANTE ITALIANO



Keywest BLACK

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

Hub included - standard da 3/4" taper.

Ø = 350 mm (13.8")

Depth = 96 mm (3.77")



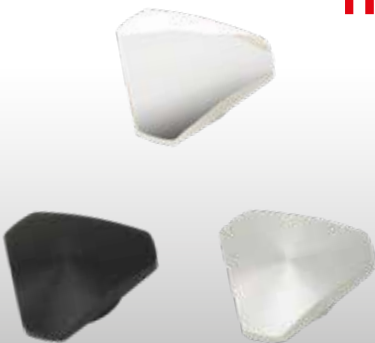
Keywest GRCK



Keywest PCBCK



Keywest MCK



new

Keywest nut

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

Model	Part No.	Description
Keywest GRCK	25887S	Polished green carbon fiber and TPU grip and spokes. Knob included
Keywest PCBCK	25888U	Polished forged carbon fiber and TPU grip and spokes. Knob included
Keywest MCK	25480J	Matt carbon fiber and TPU grip and spokes. Knob included
Center Nut Black	25945D	Available as optional
Center Nut Silver	25944B	Available as optional
Center Nut Polished	25946F	Available as optional

QDH - Quick Disconnect Hub Steering wheels accessories

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

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



QDH



X63 - Standard Hub



X63	40119D	Standard Hub
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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 order quantity: 20 pieces)



KNOB UST



KNOB21



KNOB V56



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	V25SS, V01SS, V10SS, V35, V23, V65
KNOB V56	23600F	V56, Morosini PU, Foscari PU, Adorno
KNOB SK	25458S	Captiva, Contarini, Siestakey
KNOB67	40677R	V67, V63, V66, V62, V74/40, V85

Steering wheel accessories

Application chart

X63	KNOB UST	KNOB21	KNOB67	KNOB V56	KNOB SK	
CORSICA, V15, MYKONOS, SANTORINI, NISIDA, PIANOSA, PALMARIA, CAPRAIA, PANTELLERIA, DOMINO, TAVOLARA, VIVARA, BUDELLI, USTICA, LEVANZO, MONTECRISTO, RAZZOLI, CAPRI, ASINARA GIANNUTRI GALLINARA GIGLIO	GIANNUTRI, DOMINO, USTICA, LEVANZO, MONTECRISTO, IMPERIALE PU	V25SS, V01SS, V10SS, V35, V23, V65	V67, V63, V66, V62, V74/40, V85	V56, MOROSINI PU, FOSCARI PU, ADORNO	CAPTIVA, CONTARINI, SIESTAKEY	

Steering wheel accessories

Application chart

FLOATING CAP	QDH - QUICK DISCONNECT HUB	PADDLE TRIM WITH TILT	PADDLE TRIM WITH FRONT MOUNT HELM	FABRIC COVER
V15, RAZZOLI, MONTECRISTO, ODERICO, TRON, SPINOLA, DOLFIN, MANIN, GRIMANI, LOREDAN SORANZO, GUARCO, VIVALDI, GRITTI, FALIER, ASINARA, V19, VENDRAMIN, BARBARIGO	ASINARA, CORSICA, V15, MYKONOS, SANTORINI, NISIDA, PIANOSA, PALMARIA, CAPRAIA, PANTELLERIA, GIANNUTRI, DOMINO, TAVOLARA, VIVARA, BUDELLI, USTICA, LEVANZO, MONTECRISTO, RAZZOLI, CAPRI, MOROSINI, FOSCARI, ADORNO, MANIN, GRIMANI, LOREDAN, FREGOSO, GIGLIO	ASINARA, FREGOSO, GRITTI, FALIER, GUARCO, CAPTIVA CORSICA, V21, V01, V10, V24, V56, V70, V57, V35, V29, 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, CAPTIVA, VIVALDI, FALIER V38, V60, V99, CORSICA, V21, V25, V20, V01, V10, V24, V56, V70, V57, V35, V29, V66, V62, V15, SANTORINI, NISIDA, PIANOSA, CAPRAIA, DOMINO, TAVOLARA, VIVARA, BUDELLI, DOMINO, TAVOLARA, VIVARA, BUDELLI, USTICA, LEVANZO, MONTECRISTO, RAZZOLI, BOCCANEGR, ODERICO, TRON, SPINOLA, IMPERIALE, DOLFIN, MOROSINI, FOSCARI, ADORNO, CONTARINI, BALBI, GRIMANI, LOREDAN, DORIA KEYWEST V19, GIGLIO, BARBARIGO, MANNA, VENDRAMIN, V75	ASINARA, FREGOSO, GRITTI, SORANZO, GUARCO, CAPTIVA, VIVALDI, FALIER V38, V60, V99, CORSICA, V21, V25, V20, V01, V10, V24, V56, V70, V57, V29, V66, V62, V15, SANTORINI, NISIDA, PIANOSA, CAPRAIA, DOMINO, TAVOLARA, VIVARA, BUDELLI, MONTECRISTO, RAZZOLI, BOCCANEGR, ODERICO, TRON, SPINOLA, IMPERIALE, DOLFIN, MOROSINI, FOSCARI, ADORNO, CONTARINI, BALBI, GRIMANI, LOREDAN, DORIA KEYWEST V19, GIGLIO, BARBARIGO, MANNA, VENDRAMIN, V75

Paddle Trim



For complete control of engine trim and tilt, trim tabs, jackplates, PowerPole(R) and other on board systems, the innovative Paddle Trim system is the answer.

Adaptable to existing front mount hydraulic and tilt helms, the Paddle Trim is ergonomically designed to allow the driver to make precise adjustments to the attitude of the boat or other systems without removing his hand from the steering wheel.

PTS-1 - 43051L - Single paddle kit including one paddle and the brackets to attach to a tilt or to a front mount helm

PTS-2 - 43052N - Two paddles and the brackets to attach it to a tilt or to a front mount helm



Single or dual



Adjustable positioning



Tilt or front mount

Features

- Available both in single and dual versions (for either two equal or two different outputs).
- Both single or dual paddle can be positioned at various angles for the most comfortable choice.
- Equipped with one water proof "MOM.ON-OFF-MOM.ON" switch (2 switches on dual version).
- Max load 2 Amp @ 12VDC.
- Suitable for any kind of steering wheel dish. Max wheel dia. 400 mm (15.7").
- Easy to install on the following Ultraflex® steering systems:
 - front and tilt mount hydraulic helms
 - tilt mount mechanical helms
- Wiring harness, labels and mounting hardware kit are included. The mounting plate, which differs between front and tilt mount installation, is to be ordered separately.









KTR kit

- Kit relay **KTR** - 42860S:
 - It allows a Paddle Trim pair to control electrical loads up to 10 Amp (e.g. Trim Tabs Uflex®).
 - Easy to use and to install, through connectors with pre-crimped contacts.



KTR kit

Paddle Trim labels

	ENGINE TRIM & TILT	JACKPLATE	TRIM TABS	HORN
UP				
DOWN				

Order guide

DESCRIPTION	P. No	SINGLE QTY	DUAL QTY
- Single function control device	42857D	1	2
- Mounting plate for tilt mount helms (mech or hydraulic)	42858F	1	1
or:			
- Mounting plate for front mount hydraulic helms	42859H	1	1
- KTR kit relay for loads exceeding 5 Amp	42860S	1	2



HANDLES

new

Handles with a comfortable grip made of stainless steel, stainless steel with inserts, polished carbon or matte carbon and PU.

Total length 500 mm (different sizes available)

H01	25940T	Stainless steel and PU handle
H02	25949M	Stainless steel handle and PU with insert
H03	25941V	Polished carbon handle
H04	25942X	Matte carbon handle



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

Vero Volante Italiano Maintenance

- Periodically clean the steering wheel to remove any salt deposit: rinse with fresh water and dry with a clean cloth
- Do not use any aggressive soap or alcohol based cleaner or solvent that may damage the steering wheel
- Use specific cleaning products on leather finished steering wheels; automotive leather equipment cleaners and cloths are the most indicated
- Always protect the steering wheel with its own canvas cover during non-use periods



Power A Mark II™

Electronic control system



- Private protocol CAN-bus for data transmission
 - Suitable for mechanical shift and throttle as well as electronic Throttle and 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.

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.

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.

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.

Power A Mark II™ electronic system actuators cannot be installed in those rooms where ignition-proof devices are required.

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

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

Power A Mark II™

CE UK
CA

STANDARD CONTROL STATIONS:

Control without trim:

- Single engine - 42009G chrome
- Single engine - 42426Z black
- Twin engines - 42011T chrome
- Twin engines - 42425X black

IP protection: IP66



STANDARD CONTROL STATIONS:

Control with trim:

- Single engine - 42010R chrome
- Single engine - 42427B black
- Twin engines - 42012V chrome
- Twin engines - 42428D black

IP protection: IP66



COMPACT CONTROL STATIONS:

Control without trim:

Single engine - 43923V chrome

Twin engines - 43924X chrome

IP protection: IP66



SAIL COMPACT CONTROL STATIONS

Including **SAIL** function in order to stop the rotation of the shafting making the use of folding blade propellers more effective when sailing by reducing dragging and shaft sealing overstress"

The **SAIL** function can be activated only when the panel is turned off, commanding the actuator to shift into reverse.

Control without trim:

Single engine - 43923V chrome

Twin engines - 43924X chrome

IP protection: IP66



new

Power A Mark II™ Modular components

Control Unit



PA2-CU - 42017F

PA2-CU 4 engines Control Unit - 43157 D

Control Unit: user interface for the configuration, settings and diagnostic of all the modules in a system.

IP protection: IP65

Dim.: 215 x 120 mm (8.5" x 4.7")

V-Throttle
I-Throttle



PA2-VT - 42018H - for 0-5V interfaces (voltage)

PA2-IT - 42019K - for 4-20 mA interfaces (current)

They supply the throttle electronic signal. Required for use with direct connection to electronic throttle on the engine.

IP protection: IP65

Dim.: 205 x 110 mm (8" x 4.3")

SAEJ-Throttle



PA2-SAEJT - Customized

It supplies the digital signals to CAN SAEJ 1939 or NMEA 2000 interfaces

IP protection: IP65

Dim.: 205 x 110 mm (8" x 4.3")

PWM-Throttle



PA2-PWMT - 42020U

It supplies the electrical signals to PWM interfaces

IP protection: IP65

Dim.: 205 x 110 mm (8" x 4.3")

Shift Unit



PA2-SU - 42023A

It controls up to 2 shifts with solenoids. Required for use with direct connection to the electrical shift unit on the transmission.

IP protection: IP65

Dim.: 210 x 120 mm (8.3" x 4.7")

E-Troll

Electronic or electric



Control Unit for Trolling Valve both electronic (0-5V; 4-20mA) and electric (PWM) interface, designed according to customer's specifications. For controls with Trolling Valve please contact our Technical Service for custom configuration.

Power Unit



PA2-PU - 42026G

Provides power for up to 4 modules with the input combination of up to 2 batteries, 12 and 24V. Required for all PowerA Mark II installations.

IP protection: IP65

Dim.: 205 x 110 mm (8" x 4.3")

M-Actuator



PA2-MA - 44134W

The electromechanical actuators can control any mechanical interface (throttle shift or custom made trolling valve) through MACHZero and C8 mechanical cables.

Compatible with the new Sail compact control units

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 wiring 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	
		Two Engines	Dual control with trim (or no trim)	Select control	1
			Control Unit	42017F	1
			E-Throttle unit	Chart A	1
			E-Shift unit	42023A	1
			Throttle cable	Chart B	2
			Shift cable	Chart C	2
	Power supply cable (general)		Chart C	1	
	CAN cable		Chart C	3	
	Network terminators		42028L	1	
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		
	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	1
		Power cable extension (optional for second battery)	Chart C	1	
		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	Chart A	1
			Mechanical actuator	42027J	2
			Throttle cable	Chart B	2
			CAN cable	Chart C	4
Power supply cable (general)			Chart C	1	
Network terminators			42028L	1	
Power Unit			42026G	1	
Power extension cable		Chart C	2		
Two Engines	Power supply cable (optional for second battery)	Chart C	1		
	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	

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:

- **Communication with engine:** Ultraflex control boxes can be mechanical (when both throttle and shift cable is in use), electronic (when both throttle and shift cable are controlled by a position sensor) and hybrid (when using the throttle position sensor and the inverter cable).
- **Spaces on board:** the control boxes are usually “Top Mount” and “Side Mount”. The “Top Mount” models are installed on the dashboard, the “Side Mount” models on one side of the boat. Attention must be paid to the space around the controls as the rotation of the lever must not be prevented; moreover, in case of mechanical control boxes, it is necessary to ensure the correct routing of the control cables.
- **Design:** Ultraflex control boxes are designed with the aim to follow as much as possible the style of the boat on which they will be installed.

Warnings

All the control boxes, as they are steering elements, must be kept in perfect condition at all times to ensure their operation. Furthermore, in case of installation with mechanical and hybrid control boxes, the cables and their smoothness inside the conduit must be regularly checked. For a correct maintenance, please refer to the user and maintenance manuals supplied with Ultraflex products.

It is recommended to use in combine with Ultraflex controls a “Emergency Safety Switch”: a safety device to switch the engine off in case of accidental step away of the driver from the driving position.

Universal Emergency Safety Switch



Emergency Safety Switch - 76691L

- Suitable with most outboard, inboard and sterndrive engines.
- Swivel carabiner eliminates lanyard tangling
- Corrosion resistant
- IP67

B400

Single lever side mount controls

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Installation	Horizontally or vertically
Applications	Sailing boats, inboard
Version	Fully mechanical
Adjustable friction	Yes
Engine Warm up button	Yes
X41 Neutral safety switch	Not included - to be ordered separately
EN ISO 11547	Yes, when X41 safety switch is installed
Control cables	C2, C8, MachZero

B400	42076Y	B400 Control Box - Fully mechanical version
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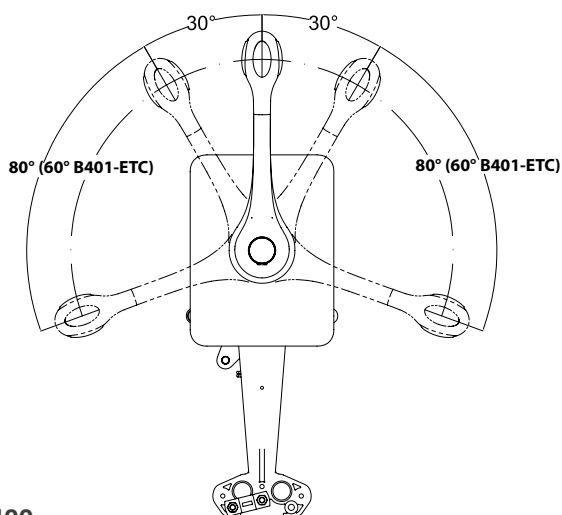
B400

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.

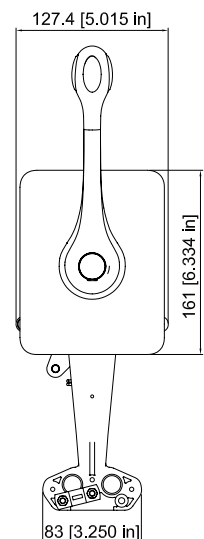
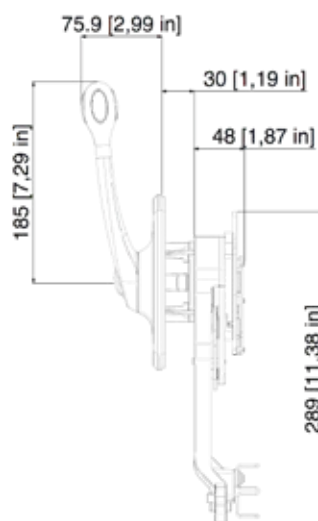
- 316 stainless steel lever and flange for a better resistance in the marine environment
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a throttle 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
B401-ETC 42077A	Control Box - Hybrid version (mechanical shift, electronic throttle)



B401-ETC

B401-ETC (Electronic Throttle Control) version is available on request. The sensor has an analog output signal which can be single or redundant. The output voltage range is chosen by the customer between 0 and 5V. Power supply 5V +/-10%, linearity +/-1%.

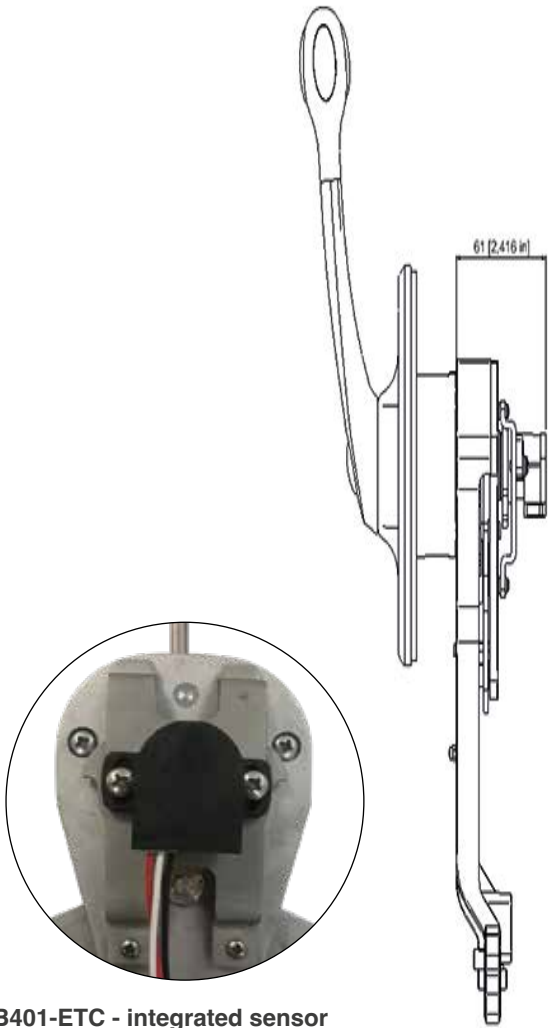
Featuring AISI 316 stainless steel lever and bezel, the B401-ETC has a sleek and modern design which is ideal for sailboats.

B401-ETC has a 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
- Angular lever stroke as in the B400

Control cables

- Accept Ultraflex C2, C8, MACHZero control cables (no kit required)



B401-ETC - integrated sensor

B401-ETC

B310 and B310-ETC series

Mechanical and hybrid single lever side mount controls



B310CH

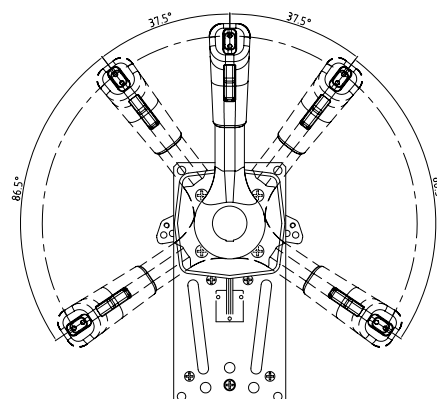


B310B



B310BR

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Installation	Horizontally or vertically
Applications	Inboard, outboard, sterndrives
Version	Fully mechanical or hybrid (mechanical shift, electronic throttle)
Adjustable friction	Yes
Warm up mode	Yes
X41 Neutral safety switch	Not included mechanical controls only
EN ISO 11547	Yes, when X41 safety switch is installed
Control cables	C2, C8, C14, MachZero, Mach14
Control cables that require a connection kit	C5, C16, Mach5 (K35); C22 (KB1)



The B310 controls combine elegance, functionality and versatility.

Available with chrome plated, burl or soft touch control levers, the B310 series can be used on outboards, sterndrives and inboard applications.

The universal control design allows for the connection of 33C Universal style cable and OMC (Johnson/Evinrude) cables with adapters included.

Mercury Gen I cables can be easily connected with the addition of the K35 connection kit

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a throttle friction system adjustable from outside
- Pull-out handle disengages shift for warm-up
- Neutral safety switch **X41** – 38130F (optional) prevents in-gear starting. **X41** switch is included in the hybrid controls.
- Exceeds EN ISO 11547 standards when X41 safety switch is installed
- All models are provided with positive lock-in neutral to prevent accidental gear engagement
- All models are provided with a power trim switch conveniently located in the handle grip that enables an easy tilting of the engine

Control cables

For use with:

- All Ultraflex control cables except C36 and MACH36
- Ultraflex C5, C16, MACH5 and Mercury® cables require K35 – 34730U connection kit
- Ultraflex C22 cables require KB1 – 39964L connection kit

B310 and B310-ETC series

Mechanical and hybrid single lever side mount controls



B310B-ETC

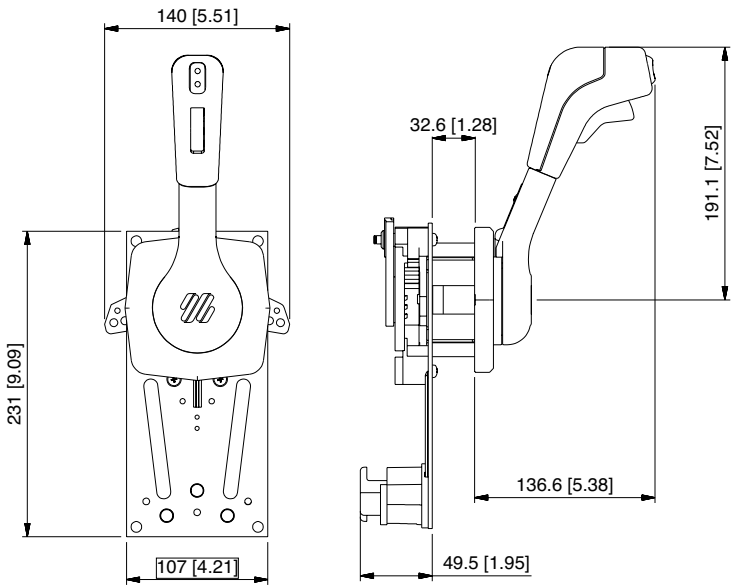


B310B-NT No Trim

B310B-ETC (Electronic Throttle Control) version is available on request. The sensor has an analog output signal which can be single or redundant.

The output voltage range is chosen by the customer between 0 and 5V. Power supply 5V +/-10%, linearity +/-1%.

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
B310B-ETC	44041N	Hybrid version (mechanical shift, electronic throttle)



B310CH - B310BR - B310B - B310B-ETC

B183 - B184 - B85 - B183-ETC - B184-ETC - B85-ETC

Mechanical or hybrid single lever side mount controls



B183
B183-ETC



B184 - with Trim
B184-ETC

Mechanical or hybrid single lever / dual action control to operate both throttle and shift.
Suitable for any type of boat with outboard and inboard (no trim version) engine

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a throttle friction system adjustable from outside
- Pull-out handle disengages shift for warm-up
- Neutral safety switch **X41** – 38130F (optional) prevents in-gear starting. **X41** switch is included in the hybrid controls.
- Exceeds EN ISO 11547 standards when X41 safety switch is installed
- Provided with positive lock-in neutral to prevent accidental gear engagement

B184 model is provided with a **power trim switch** conveniently located in the handle grip that enables an easy tilting of the engine

B85 model has a smooth design for use on sailboats.

	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 or hybrid	Fully mechanical or hybrid	Fully mechanical or hybrid
Adjustable friction	Yes	Yes	Yes
Warm-up mode	Yes	Yes	Yes
Positive lock-in neutral	Yes	Yes	Yes
Power trim switch	No	Yes	No
X41 Neutral Safety Switch	Not included mechanical controls only	Not included mechanical controls only	Not included mechanical controls only
EN ISO 11547	Yes, when X41 safety switch is installed	Yes, when X41 safety switch is installed	Yes, when X41 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 - B183-ETC - B184-ETC - B85-ETC

Mechanical or hybrid single lever side mount controls



**B85
B85-ETC**

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

B183, B184, B85 are available also in the hybrid version (mechanical shift and electronic throttle)

B183-ETC	44020E	Provided with a positive lock-in neutral
B184-ETC	43983P	Provided with a positive lock-in neutral and trim switch
B85-ETC	44040L	Provided with a positive lock-in neutral

B183-ETC - B184-ETC - B85-ETC (Electronic Throttle Control) version are available on request.

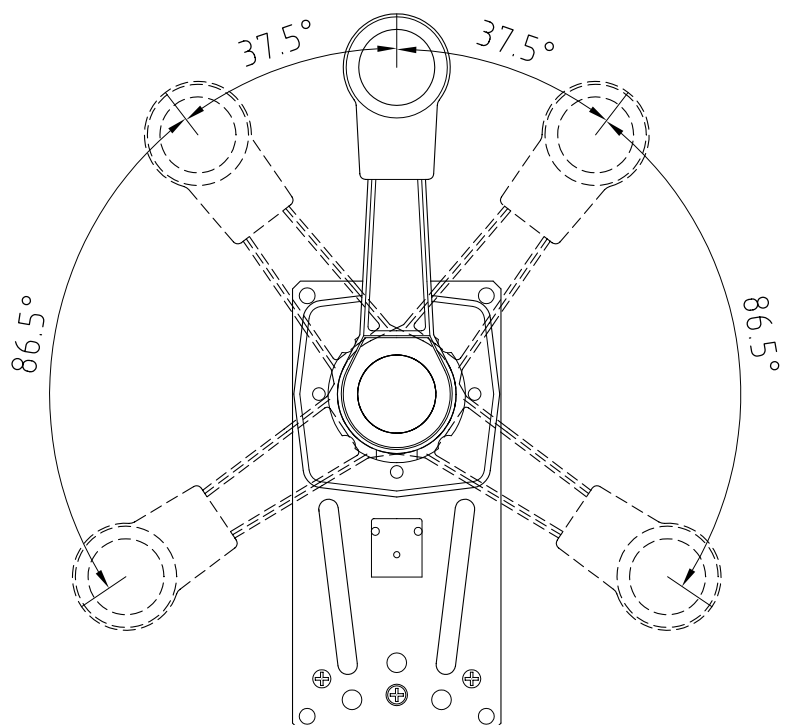
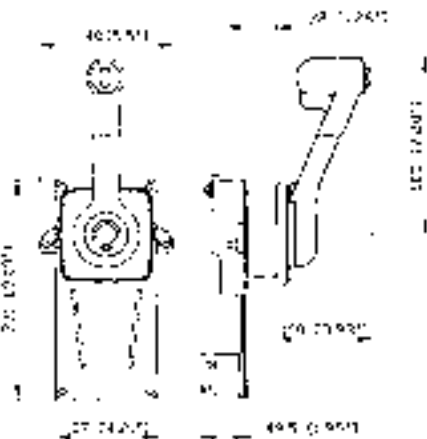
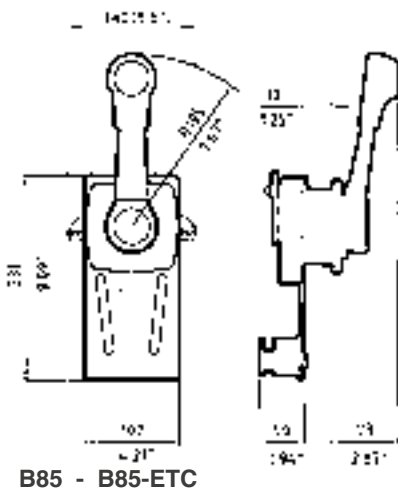
The sensor has an analog output signal which can be single or redundant.

The output voltage range is chose by the customer between 0 and 5V.

Power supply 5V +/-10%, linearity +/-1%.

Control cables:

- For use with all Ultraflex engine control cables except C22, C36 and MACH36.
- Ultraflex C5, C16 and MACH5 cables require K35 – 34730U connection kit
- Ultraflex C22 cable requires KB1 – 39964L connection kit



B120 - B120/KS

Single lever side mount controls

new



B120B



B120W



Single lever / dual action control to operate both throttle and shift.
Suitable for any type of boat with outboard or sterndrive engines.

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Provided with a throttle friction system adjustable from outside
- Push-in button for throttle operation in neutral (engine warm-up)
- Provided with positive lock-in neutral to prevent accidental gear engagement
- 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

B120B	44121L	Black, with trim, with no emergency safety switch
B120W	44123R	White, with trim, with no emergency safety switch
B120B/KS	44122N	Black, with trim, with emergency safety switch
B120W/KS	44124T	White, with trim, with emergency safety switch

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Applications	Outboard, sterndrives
Version	Fully mechanical
Adjustable friction	Yes
Engine warm up mode	Yes
Positive lock in neutral	Yes
Power trim switch	Yes
Emergency Safety Switch	Provided on the KS version
Lever Stroke	+/- 110°
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);

B120 - B120/KS

Single lever side mount controls

CE UK
CA

new



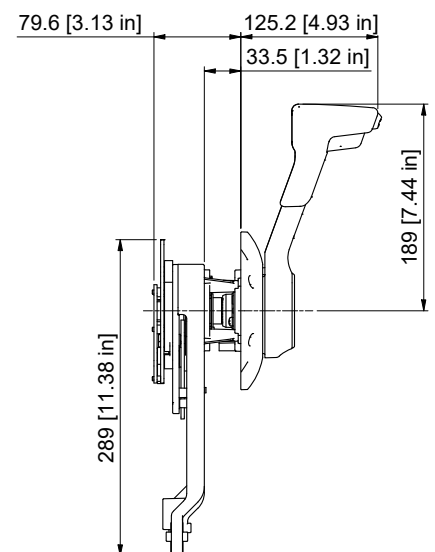
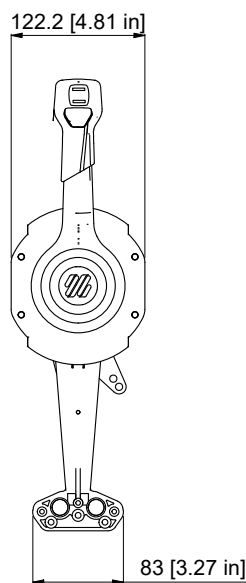
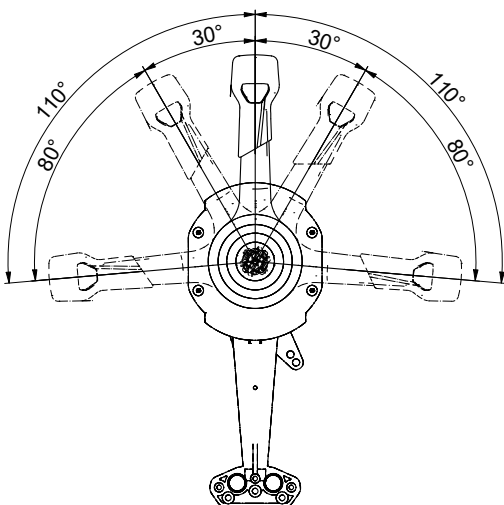
B120B/KS



B120W/KS

Control cables

- For use with Ultraflex C2, C8 and MachZero control cables
- Ultraflex C5 and Mach5 cables require the K74 - 44170A connection kit
- Ultraflex C36 and Mach36 cables require the K75 - 44171C connection kit
- Ultraflex C14 and Mach14 cables require the K76 - 44172E connection kit



B120

B110 - B110/KS

Single lever console mount controls



B110B



B110W



Single lever / dual action control to operate both throttle and shift.
Suitable for any type of boat with outboard engine or sterndrive units.

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Provided with an easy adjustable brake tension release system
- Push-in button for throttle operation in neutral (engine warm-up)
- Provided with positive lock-in neutral to prevent accidental engaging
- 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 emergency safety switch
B110W	43521Y	White, with trim, with no emergency safety switch
B110B/KS	43522A	Black, with trim, with emergency safety switch
B110W/KS	43523C	White, with trim, with emergency safety switch

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Applications	Outboard, sterndrives
Version	Fully mechanical
Adjustable friction	Yes
Engine warm up mode	Yes
Positive lock in neutral	Yes
Power trim switch	Yes
Emergency Safety Switch	Provided on the KS version
Lever Stroke	+/- 110°
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);

B110 - B110/KS

Single lever console mount controls



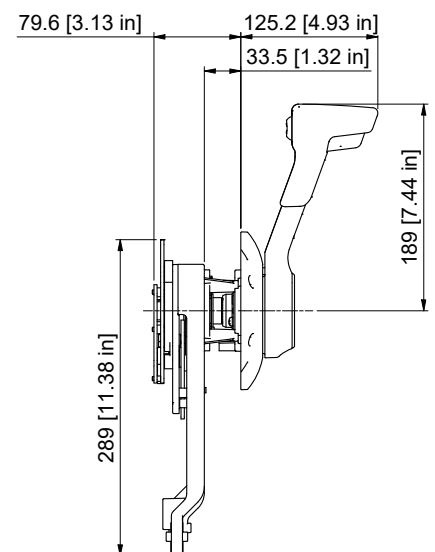
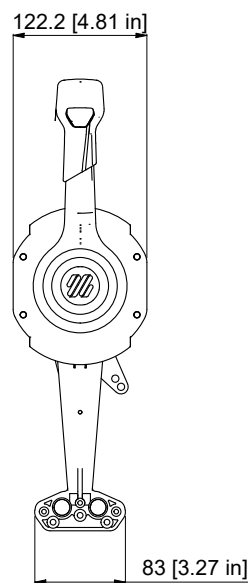
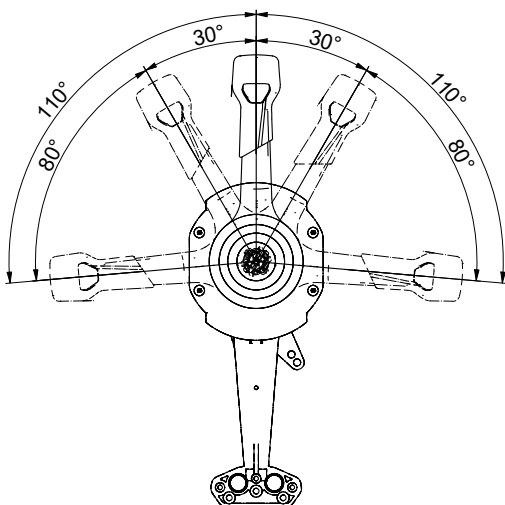
B110B/KS



B110W/KS

Control cables

- For use with Ultraflex C2, C8 and MachZero control cables
- Ultraflex C5 and Mach5 cables require the K74 - 44170A connection kit
- Ultraflex C36 and Mach36 cables require the K75 - 44171C connection kit
- Ultraflex C14 and Mach14 cables require the K76 - 44172E connection kit



B110

B110-ETC (Electronic Throttle Control)

Hybrid single lever console mount controls



B110B-ETC



B110W-ETC



B110 ETC (Electronic Throttle Control) is a Single lever / dual action control to operate both throttle and shift and is a version of the B110 Control box Available on request.

The sensor has an analog output signal which can be single or redundant.

The output voltage range is chosen by the customer between 0 and 5V. Power supply 5V +/-10%, linearity +/-1%.

For ETC controls please contact our technical Service for Custom Configuration.

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Applications	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 mode	Yes
Positive lock in neutral	Yes
Power trim switch	Yes
Emergency Safety Switch	Provided on the KS version
Lever Stroke	+/- 110°
X41 Neutral Safety Switch - with IP67 Protection	Included
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

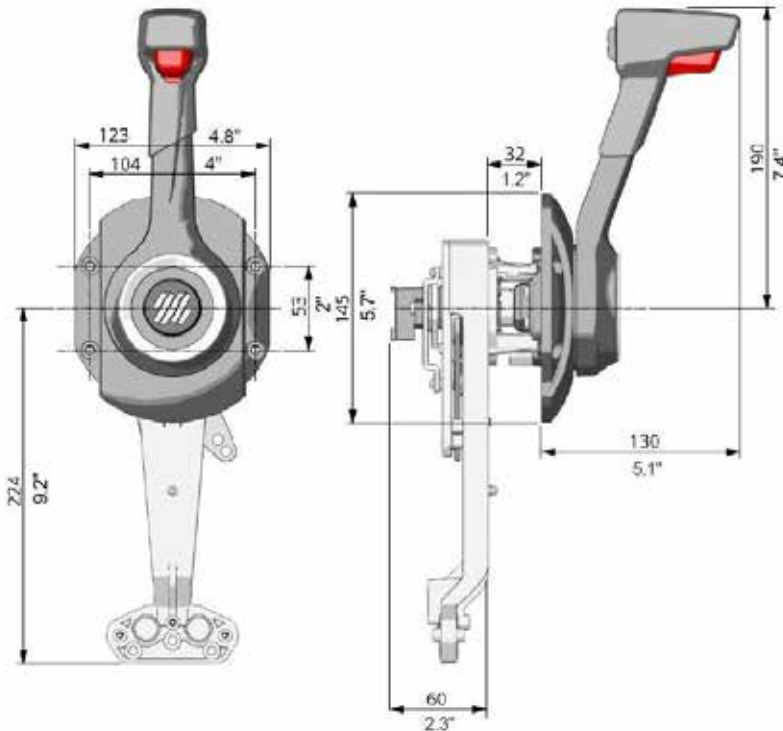


B110W/KS-ETC

B110-ETC (Electronic Throttle Control) Hybrid single lever console mount controls



B110B-ETC B110W-ETC



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

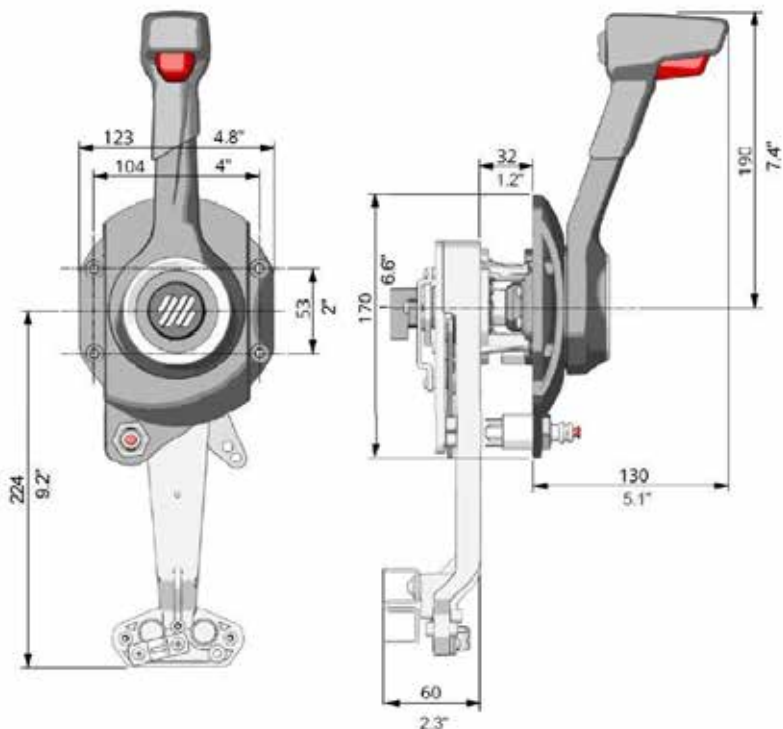
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Provided with a throttle friction system adjustable from outside.
- Push-in button for throttle operation in neutral (engine warm-up)
- Positive lock-in neutral to prevent accidental ingearing
- X41 (IP67 protection) 38130F and X48 - 43527L (optional) safety switches available to prevent in-gear starting
- Exceeds EN ISO 11547 standards when X41 or X48 safety switch is installed
- Center console trim switch thumb operated

Control cables

- For use with Ultraflex C2, C8 and MachZero control cables
- Ultraflex C5 and Mach5 cables require the K74 - 44170A connection kit
- Ultraflex C36 and Mach36 cables require the K75-44171C connection kit
- Ultraflex C14 and Mach14 cables require the K76-44172E connection kit

NOTE: Customizable configuration for the ETC hybrid controls is available contacting our Technical Service

B110B/KS-ETC B110W/KS-ETC



B89 -B90

Single lever side mount controls



B90



B89



Single lever / dual action control to operate both throttle and shift.

Suitable for any type of boats with outboard, inboard or I/O power plants.

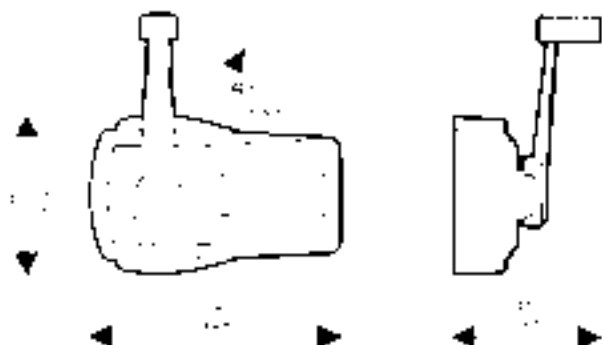
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Made of painted marine aluminum
- Pull-out handle disengages shift for warm-up
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- Provided with a positive lock-in neutral to prevent accidental gear engagement

Control cables

- For use with all Ultraflex engine control cables except C22, C36 and MACH36.
- Ultraflex C5, C16 and MACH5 cables require K35 – 34730U connection kit.
- To connect C14 and MACH14 cables to engine, use K51 – 32526N connection kit.

Lever	Single lever
Lever control	Dual action control
Assembly	Side mount
Applications	Inboard
Material	Painted marine aluminum
Version	Fully mechanical
Adjustable friction	No
Warm-up mode	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



B501CHT



B502CH



B501BT/L



B502BT

Single-lever dual-action control units for throttle and inverter control. Available with and without lock in neutral and with and without trim.

- They make control safer by preventing the inverter from engaging if the throttle is not idling
- Two versions available:
 - Chrome control boxes with chrome die-cast levers
 - Painted control boxes with gunmetal-colored die-cast levers
- Pressing a button disengages the inverter during engine warm-up operation
- By means of safety switch X12 - 34543Q (optional), engine starting is achieved only with the inverter in neutral position
- The trim located on the lever operates the 2 engines simultaneously, while the switch trims located on the binnacle allow independent adjustment of the engines
- Compliant with EN ISO 11547 with X12 safety switch

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

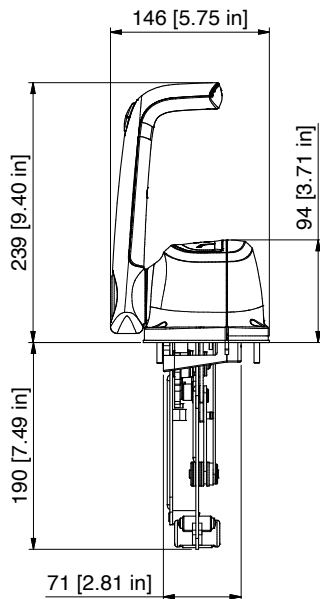


	B501-B502	B501-B502 with trim	B501-B502 with trim and lock in neutral
Lever	Single lever/Twin lever for 2 engines	Single lever/Twin lever for 2 engines	Single lever/Twin lever for 2 engines
Level control	Dual action control	Dual action control	Dual action control
Assembly	Top mount	Top mount	Top mount
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
Warm-up mode	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)

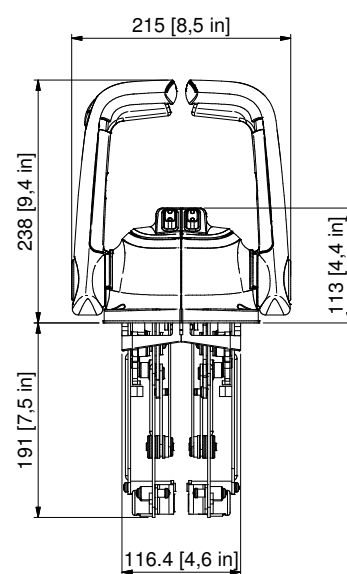
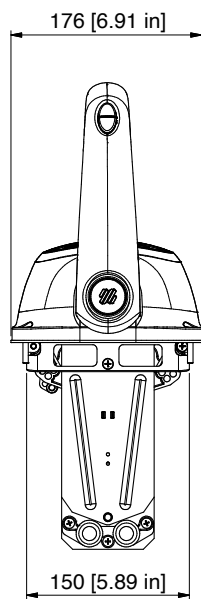
B501 - B502 series Top mount controls

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

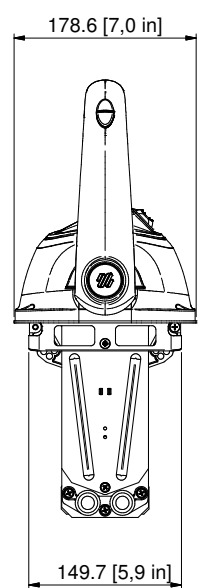
B501B	43031E	Single engine, no trim - Gun metal
B501BT	43032G	Single engine, with trim - Gun metal
B502B	43033J	Double engine, no trim - Gun metal
B502BT	43257H	Double engine, with trim - Gun metal



B501 - B502 Dimensions



B502CHT/L - B502BT/L Dimensions



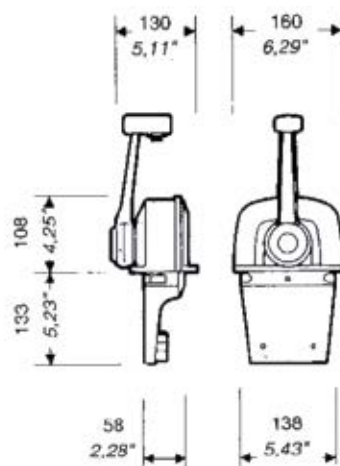
B65 - B76 - B73 - B77

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	Dual action
Assembly	Top mount
Applications	Inboard (B65, B73), outboard & sterndrive (B76, B77)
Version	Fully mechanical
Material	Marine aluminum
Adjustable friction	No
Warm-up mode	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



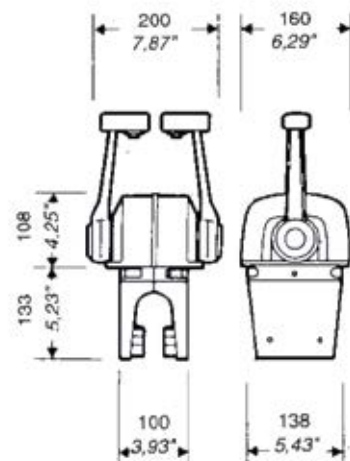
Handle with trim

B66 - B78 - B74 - B79 Single lever top mount controls

B66
B78 with trim



B74
B79 with trim



Twin lever control for 2 engines

Dual action control to operate both throttle and shift.

Suitable for any type of boats with inboard (B66 e B74) outboard or I/O power plants (B78 e B79, Trim version)

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, chrome plated or with a black powder coat finish
- Pull-out handle disengages shift for engine warm-up
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- **B78 and B79** models have a power Trim switch conveniently located in the handle grip that enables for easy tilting of the engine.

Control cables

- For use with all Ultraflex engine control cables except C22, C36 and MACH36.
- Ultraflex C5, C16 and MACH5 cables require K35 kit – 34730U

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
Warm-up mode	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

B301 - B302

“Low profile” single lever top mount controls

Compact single lever controls offering a unique low profile style compared to other controls available on the market
Single lever / dual action control to operate both throttle and shift.

Suitable for any type of boat with inboard engine

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, chrome plated
- Push in button disengages shift for engine warm-up
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed

Control cables

- For use with all Ultraflex control cables
- C14 and MACH14 cables require no kit
- for C2, C8 and MACHZero cables the connection kit K59 – 40144C is included
- C5, C16 and MACH5 cables require K60 Kit – 40145E
- C36 and MACH36 cables require K62 Kit – 40157J
- C22 cable requires K61 Kit – 40146G



B301CR



B302CR



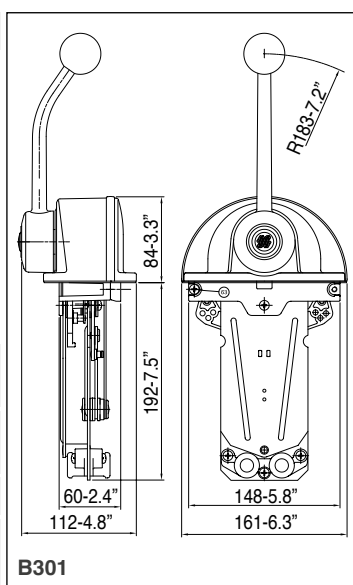
2 X75 Optional



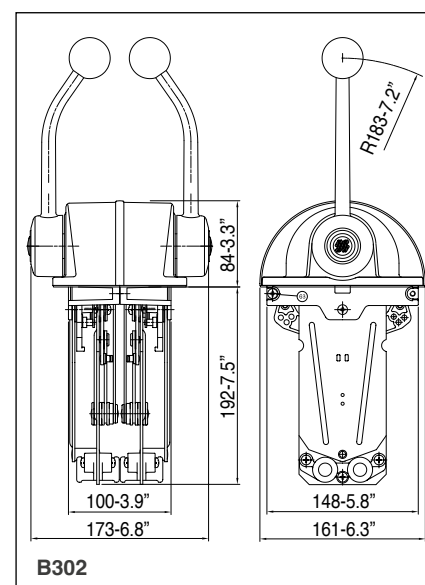
B302CR + 2 X75

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

Lever	Single lever
Lever control	Dual action control
Assembly	Top mount
Applications	Inboard
Version	Fully mechanical
Material	Chromed marine aluminum
Adjustable friction	Yes
Warm-up button	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



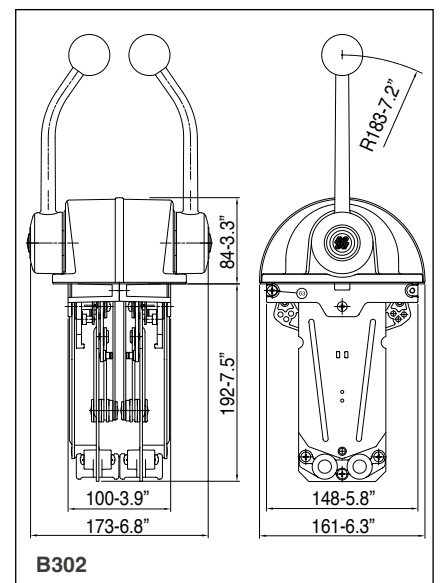
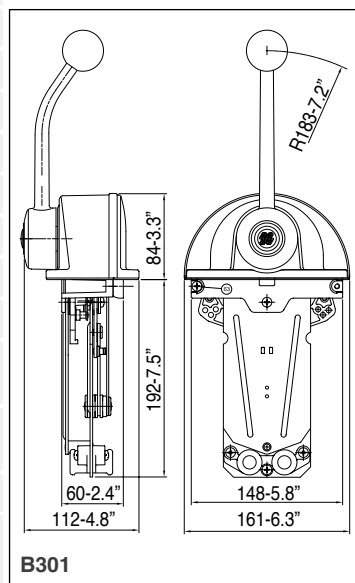
2 X75 Optional



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
Warm-up button	Yes
Positive lock-in neutral	No
Power trim switch	No
X12 Neutral Safety Switch	Not included - to be ordered separately
EN ISO 11547	Yes, when X12 safety switch is installed
Control cables	C14, Mach14
Control cables that require a connection kit	C2, C8, MachZero (K59 incluso); C5, C16, Mach5 (K60); C36, Mach36 (K62); C22 (K61);



B103 - B104

Single lever top mount controls

Single lever / dual action control to operate both throttle and shift.
Suitable for any type of boat with inboard engine



- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of chrome plated marine aluminum
- Pull-out handle disengages shift for warm-up
- Neutral safety switch X43 – 38160L (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X43 safety switch is installed

Control cables

- For use with C2, C8 and MACHZero Ultraflex engine control cables
- Only for B103, To connect C22 cable use **K33** – 38378D connection kit



B104+ 2 X55



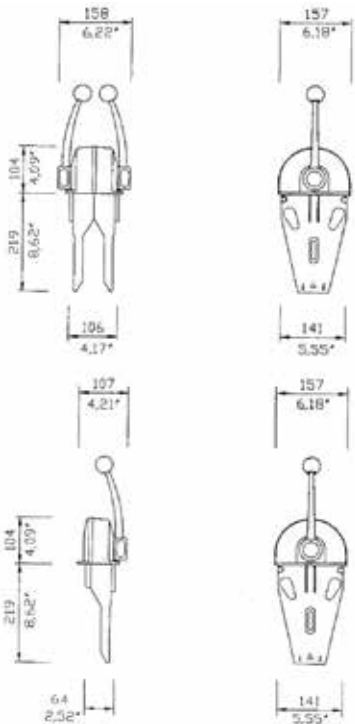
B103



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)



B505-ESTC (Electronic Shift Throttle Control) Electric single lever top mount control

Ergonomic and compact single lever control, designed to control outboards and sterndrive electric engines.

B505-ESTC is **customizable**:

- Sensor output
- Lever switch (Trim - standard - or lock-in trigger)
- Switches

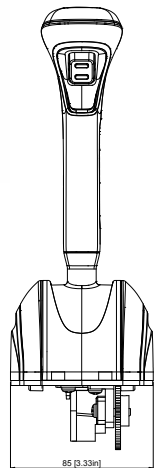
- Compact single lever controls offering a unique low profile style compared to other controls available on the market
- Equipped with adjustable clutch to set the throttle hardness.
- Fully electronic lever; the installed position sensor output can be customized
- Sensor output is redundant and can be chosen by the customer between 0 and 5V
- Equipped with 3 customizable switches - Standard version has High idle, warm, dock functions
- Provided with an easy adjustable brake tension release system
- Positive lock-in neutral 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.

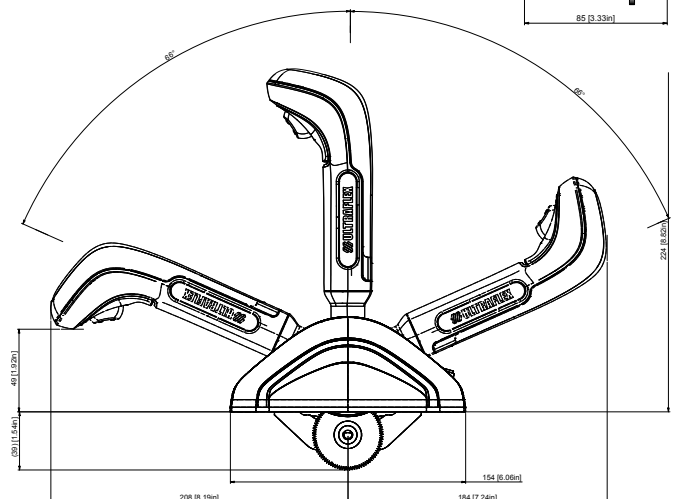


B505L-ESTC

B505-ESTC



Customizable switches



Lever	Single lever
Lever control	Dual action control
Assembly	Top mount
Applications	Inboard, outboard, sterndrives, jet
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 mode	Yes, if present on keypad
Positive lock-in neutral	Yes, in the locked version
Power trim switch	Yes, in the trim version
Emergency Safety Switch	No
Lever Stroke	+/- 66°

B505-ESTC	43581T	Black, with trim, with no emergency safety switch
B505L-ESTC	44145B	Black, with lock, with no emergency safety switch

B204 - B208

Twin lever top mount control - mechanical version



Two lever / single action control: each lever operates separately either the throttle or the shift
Suitable for any type of boat with inboard engine (with separate trim control) and jet.

- 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 throttle lever the optional kit K52 – 37382B
- Neutral safety switch **X12 – 34543Q** (optional) prevents in-gear starting
- Raked throttle handle and straight gear handle for a better manoeuvring
- Exceeds EN ISO 11547 standards when **X12** safety switch is installed

Control Cables

- For use with Ultraflex C2, C8, MACHZero and all 33C style engine control cables
- Ultraflex C22 and all 43C style cables require K22 – 34713Q connection kit



B204R with interlock



B208R with interlock

B204R	37383C	Throttle and shift - black
B208R	37654C	Throttle and shift - white

Lever	Single lever
Lever control	Single action control
Assembly	Top mount
Applications	Inboard, jet
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)

B204R - B208R (ETC - ESC - ESTC) Twin lever top mount control - hybrid 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
Version	Hybrid
Adjustable friction	Yes
Output voltage range	Chosen by the customer between 0 & 5V
X12 safety switch	Included
EN ISO 11547	Yes, when X12 safety switch is installed
Control cables	C2, C8, MachZero
Control cables that require a connection kit	C22 (K22)

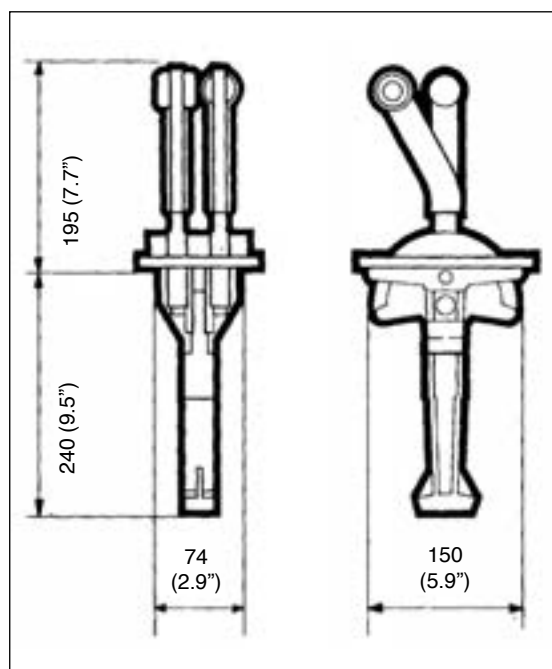
Two lever / single action control: each lever operates separately either the throttle or the shift

Suitable for any type of boat with inboard engine (with separate trim control) and jet.

- 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 throttle lever the optional kit K52 – 37382B
- Neutral safety switch **X12** – 34543Q prevents in-gear starting
- Raked throttle handle and straight gear handle for a better manoeuvring
- Exceeds EN ISO 11547 standards when X12 safety switch is installed

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



B46 - B58 - B50 - B59

Twin lever top mount controls

Two lever / single action control: each lever operates separately either the throttle or the shift.

Suitable for any type of boat with inboard engine.

- Flush mount suitable for exposed positions such as fly bridge
- Made of marine aluminum with chrome plated lever
- Adjustable friction to avoid throttle creep and positive detent for shift. Both can be adjusted from the outside
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- B58 model is provided with an interlock kit to prevent accidental gear engagement
- Exceeds EN ISO 11547 standards when X12 safety switch is installed

Control cables:

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

Ultraflex C22 cable requires K22 – 34713Q connection kit

Lever	Two lever
Lever control	Single action control
Assembly	Top mount
Applications	Inboard
Version	Fully mechanical
Material	Marine aluminum
Adjustable friction	Yes
Lever Stroke	+/-95°
Positive lock in neutral	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

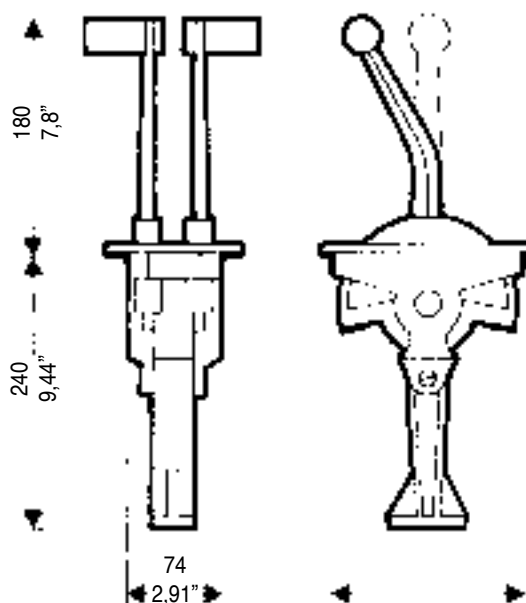
B46	34461P	Throttle and shift
B46T	34462Q	Throttle only
B46S	34463R	Shift only
B58R	34570W	Throttle and shift with interlock. Right hand installation
B58L	34716T	Throttle and shift with interlock. Left hand installation



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

B322

Twin lever top mount control



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

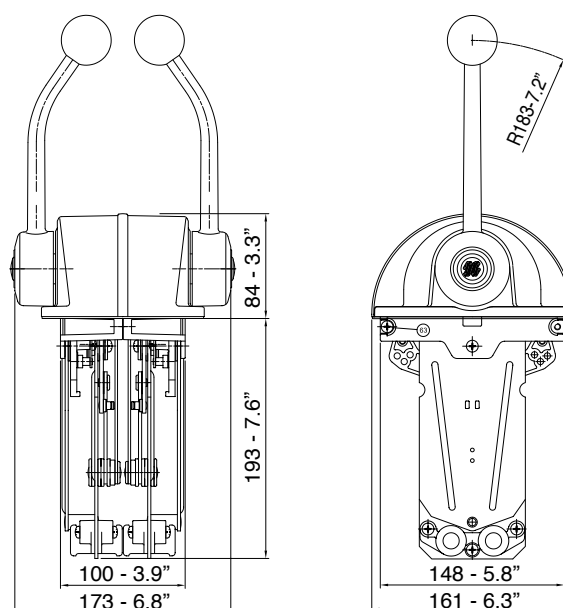
- Use with all Ultraflex control cables
- C14 and MACH14 cables require no kit
- For C2, C8 and MACHZero cables the connection kit K67 – 40705T is included
- C5, C16 and MACH5 cables require K63 kit – 40757N
- C22 cable requires K64 kit – 40758R
- C36 and MACH36 cables require K65 kit – 40759T



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

B99 - B102

Twin lever top mount controls

Two lever / single action control: each lever operates separately either the throttle or the shift
Suitable for any type of boat with inboard engine

- Both versions are provided with the shift lever detents and with a friction system adjustable from the outside of the throttle lever
- Neutral safety switch X12 – 34543Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- Suitable for exposed positions such as fly bridge

Control cables

- For use with Ultraflex C2, C8 and MACHZero engine control cables
- Ultraflex C22 cable requires K32 – 34662Z connection kit



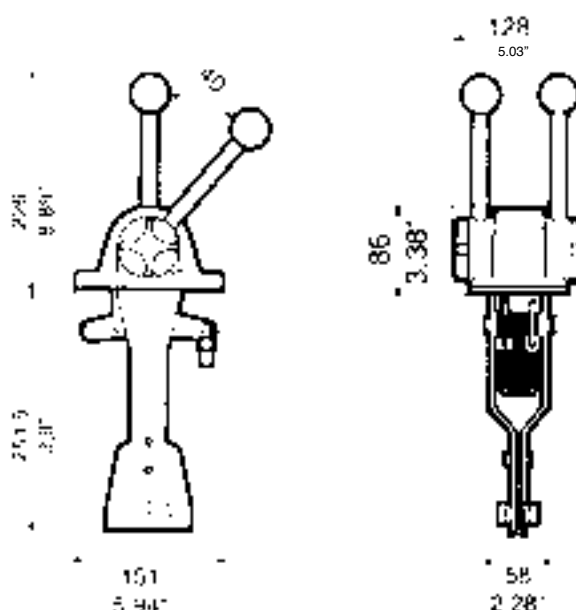
B102

B99	36854N	Throttle and shift - Black painted with chrome levers
B102	36899G	Throttle and shift - Black painted



B99

Lever	Two lever
Lever control	Single action control
Assembly	Top mount
Applications	Inboard
Version	Fully mechanical
X12 safety switch	Not included - to be ordered separately
EN ISO 11547	Yes, when X12 safety switch is installed
Control cables	C2, C8 MachZero
Control cables that require a connection kit	C22 (K32);



B47 - B49 Twin lever side mount controls

Suitable for small outboard engines.

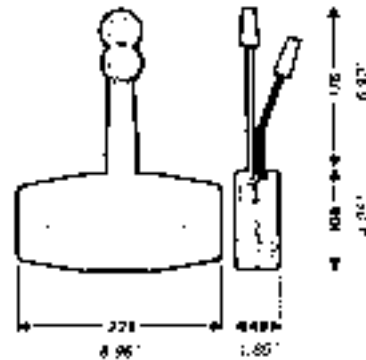
- Made of nylon fiberglass with anodized aluminum levers
- Left or right side mount installation

Control cables

- For use with Ultraflex engine control cables:
 - C14 and MACH14 with K23 – 32773D connection kit
 - C2, C8, and MACHZero with K25 – 32775F connection kit
 - C5 and MACH5 without connection kit



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 Single action control box

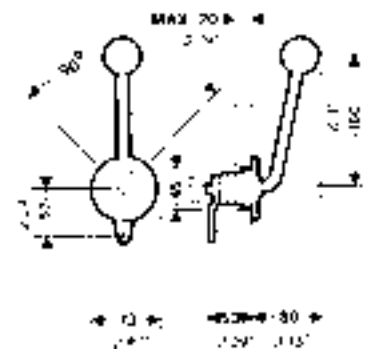
- Lever and flange all stainless steel
- Flush side mount installation
- Particularily suitable for throttle control or hydraulic shift operation
- Provided with adjustable friction and detents

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
-----	--------	-----------------



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

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 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 controls.

K64 - 40758R

Kit to connect C22 cable to B322 controls.

K65 - 40759T

Kit to connect C36 and MACH36 cables to B322 controls.

K67 - 40705T

Kit to connect C2, C8 and MACHZero cables to B322 controls (supplied with the box)

K74 - 44170A

Kit to connect C5 and MACH5 cables to B110 and B120 controls

K75 - 44171C

Kit to connect C36 and MACH36 cables to B110 and B120 controls

K76 - 44172E

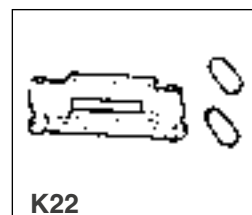
Kit to connect C14 and MACH14 cables to B110 and B120 controls

K83 - 42836V

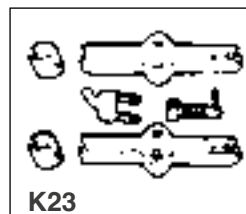
Kit to connect C48 cable to B310, B183, B184 controls



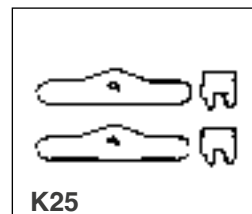
KB1



K22



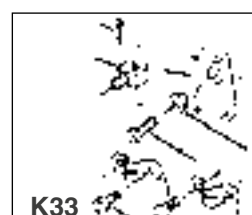
K23



K25



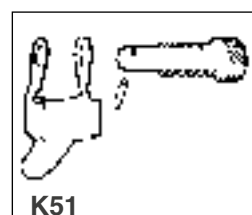
K32



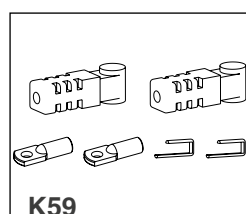
K33



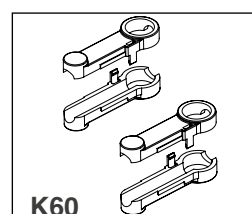
K35



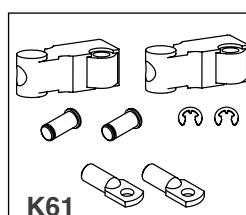
K51



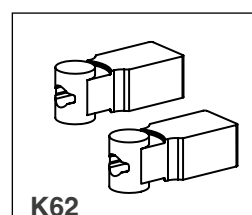
K59



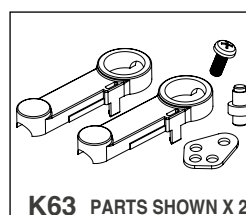
K60



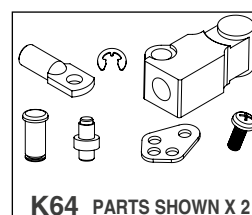
K61



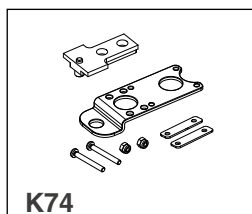
K62



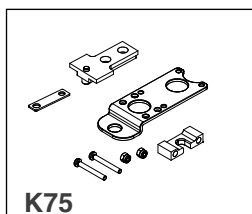
K63 PARTS SHOWN X 2



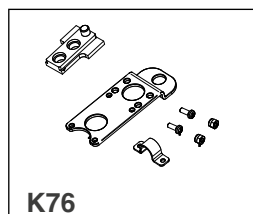
K64 PARTS SHOWN X 2



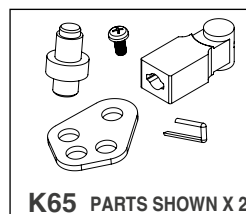
K74



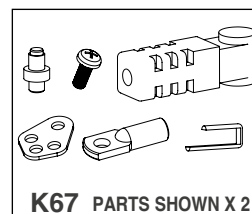
K75



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

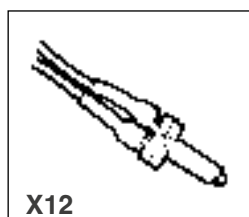
Neutral safety switch to prevent in-gear starting, suitable for B400, B110, B120 and hybrid controls. IP67 protection.

X43 - 38160L

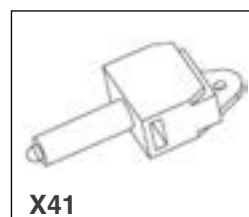
Neutral safety switch to prevent in-gear starting, suitable for B103 and B104 controls.

X48 - 43527L

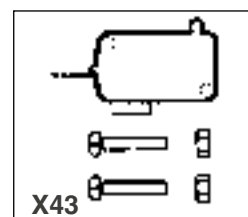
Neutral safety switch to prevent in-gear starting, suitable for B110 and B120 controls. It allows to connect a double signal. IP67 protection.



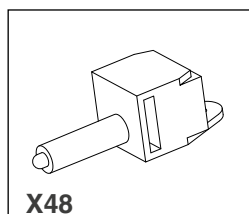
X12



X41



X43



X48

Control box - control cable application matrix

Single lever controls

MODEL	B400	B183 - B184 - B85 B310 Series	B110 B120	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

Twin lever controls

MODEL	B322	B46 - B50 - B58 B59 - B204R - B208R	B99 - 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.

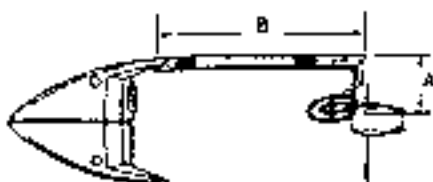
To determine the needed length of the REPLACEMENT CABLE, measure it from tip to tip.

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.

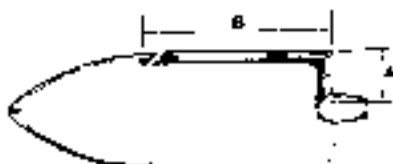
OUTBOARD

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



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
STERNDRIVE	Mercruiser® and Gen. II™ Controls	C36 - MACH36
	Mercruiser®	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



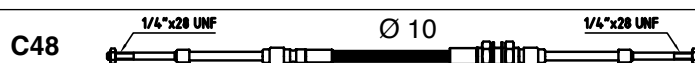
C40



C48



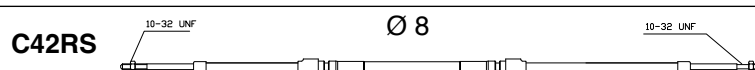
C40



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

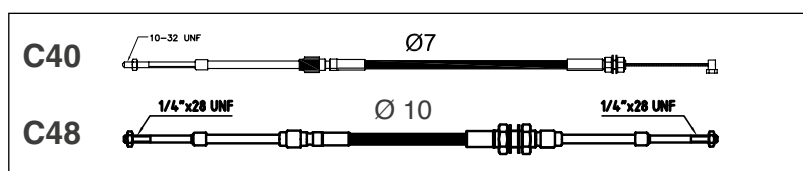
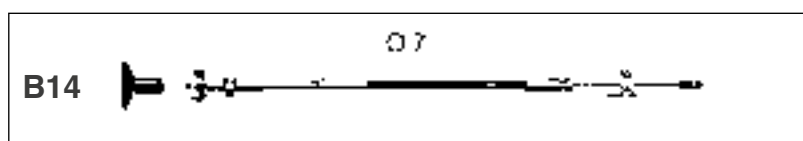
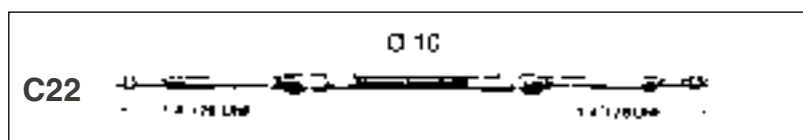
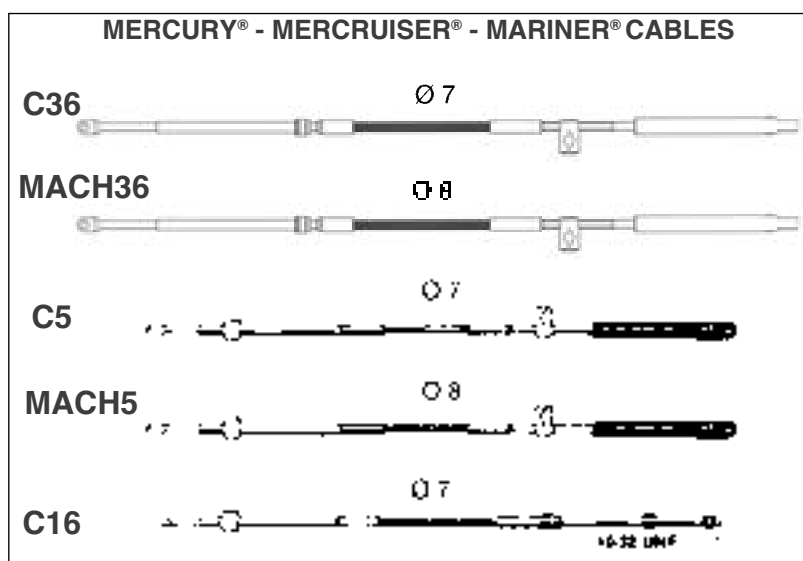
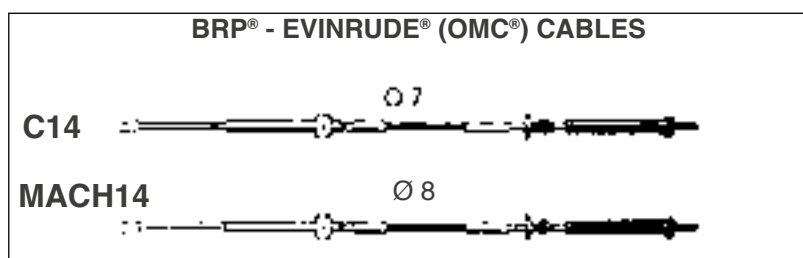
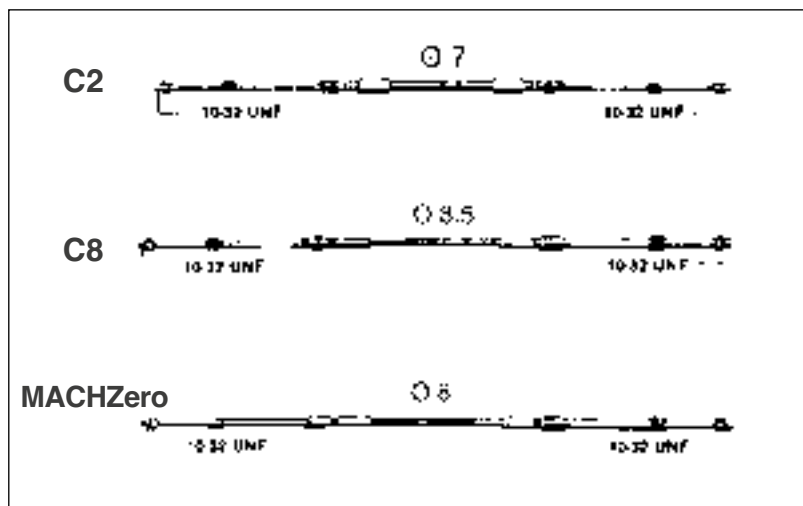
C16 Stroke: 80 mm (3.1"). For Mariner® engines up to 40 hp.

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

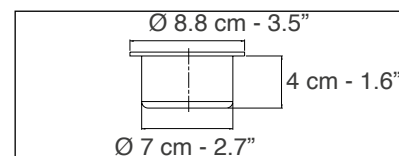
C48 Stroke: 84 mm (3.3")
Shift and throttle cable for jet boats 40 Class



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.

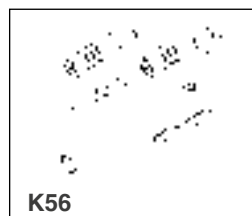
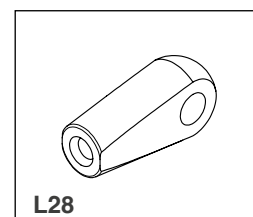
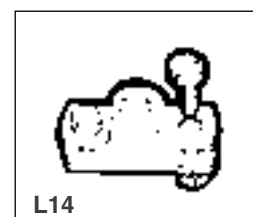
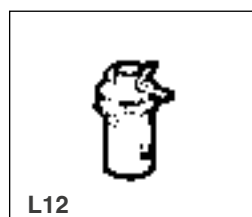
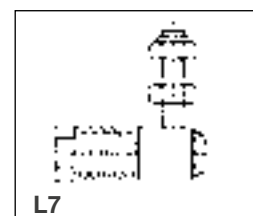
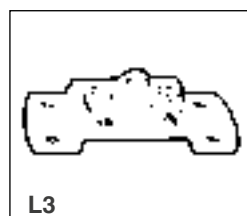
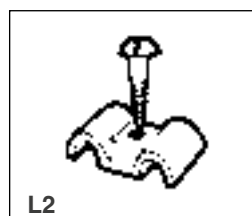
Fits C48 Jet boat cable.

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.



Monofilament polyester braided sleeves for cables

Available in UFLEX

STANDARDS:

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



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

Accessories for engine control cables

Throttle converter

The Throttle Converter allows to steer a tension controlled engine with a mechanical control box.

The system converts the mechanical input from a control cable into an electrical output to the engine.

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

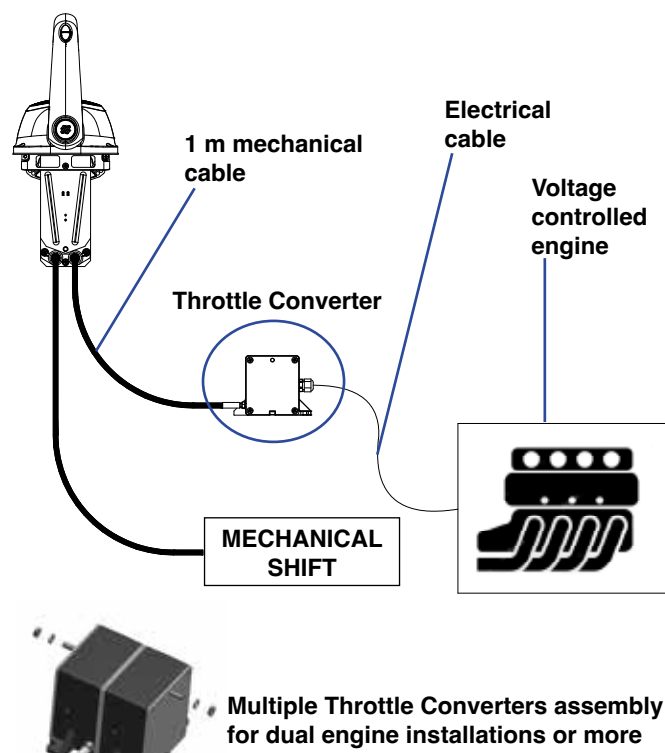
Throttle Converters can be easily packed together for multiple engines.

- Equipped with 1 m (3.28 ft) mechanical cable with C2, C8 universal end fitting
- 76 mm (3") minimum stroke, 80 mm (3.15") maximum stroke.
- 30 cm (1 ft) electrical wire length

Throttle Converter is suitable for most of the voltage controlled engines. For further information, please contact our Technical Assistance Service

Mechanical side IP65
Sensor IP67

Throttle converter TC - 43501S



Selector unit for dual station applications

Selector unit for use with single lever controls in dual station applications. It enables independent control over throttle and shift from either the main station or the flying bridge station.

NOTE: before changing station, throttle must be on idling position and shift in neutral.

L23 - 31649B - only for inboard and sterndrive engines



YAMAHA engine kits 2T *

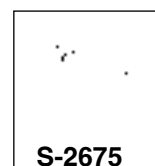
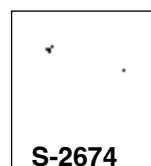
K8 - 30321A for 25 hp engines

K14F - 38098C for 10/15 hp engines

S-2674 - 32654X Yamaha Throttle Connector

S-2675 - 32655Y Yamaha Shift Connector

* Minimum order quantity:
10 pieces for part number



Available spare parts

Mechanical products

WARNING

In order to maintain the correct functionality of the product, the replacement with spare parts has to be made by qualified technicians only.

T67	
Black bezel	59336W
White bezel	59601U
Zinc-chrome steel bushing	56402K
Installation kit	38070K
Shaft kit	70550J
M58	
Lock nut engine side	55170M
T85	
Black bezel	59336W
White bezel	59601U
Shaft kit	70549A
Spent travel nylon tube	59869F
Plastic ferrule for nylon tube	59857Z
Cable lock-in screw	59926R
Installation kit	41165S
T71FC - T72FC - T73NRFC	
90° Black bezel	58051L
90° White bezel	71942H
20° Black bezel	70068H
Shaft kit	70549A
Cable lock-in screw	70022G
Spent travel nylon tube	59869F
Plastic ferrule for nylon tube	59857Z
T91 - T93ZT	
90° Black bezel	58051L
90° White bezel	71942H
20° Black bezel	70068H
Shaft kit	70549A
Cable lock-in screw	74871C
Spent travel nylon tube	59869F
Plastic ferrule for nylon tube	59857Z
X52 - X66 Tilt Mechanisms	
Upper cover	72297K
Lower cover	70140N
Gasket	70138C
X82 - X88 Tilt Mechanisms	
Upper cover	44175L
Lower cover	44176N
Docking clip	44177R
TM87J - TM87O	
Screw kit	77229U
Steering system cap kit	43894R
Steering Wheels	
Stainless steel TS silver screws	60697Q
Stainless steel TS black screws	60698T
Stainless steel TB silver screws	66734W
Black cap for V32	58078Y
White cap for V32	58079Z
Grey cap for V32	70155C
Black cap for V33	59763O
White cap for V33	59764P
Grey cap for V33	59765Q
Black cap for V45	59061O
White cap for V45	59002D
Grey cap for V45	71108Y
Black cap for V38	59061O
White cap for V38	59002D
Black cap for Antigua	70161X
White cap for Antigua	70162Z
Grey cap for Antigua	70163B
Wood cap for V23 and V35	56384G
B301CR - B302CR - B301B - B302B - B322	
Lever assembly with black knob	40897F
Lever assembly with red knob B322	40898H
Black knob	72054G
Red knob	72020N
Chrome rear cover B301CR	71461R
Black painted rear cover B301B	71501A
Gasket for B301CR - B301B	71366X
Gasket for B302CR - B302B - B322	71516P

Available spare parts

Mechanical products

WARNING

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Installation kit B301	40170D
Installation kit B302	40192P
Installation kit B322	40703N
B400	
Screw kit	43866K
B501 - B502	
B501 coponents 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 - B66 - B73 - B74 - B76 - B77 - B78 - B79	
Lever assembly B66 – B65 – B73 – B74	57076R
Lever assembly with trim B76-B77-B78-B79	57459E
Chrome rear cover	55529Z
Black rear cover	55608X
Installation kit B65	35147J
Installation kit B66	30078K
Installation kit B73	30049F
Installation kit B74	35366S
Installation kit B76	36134F
Installation kit B77	30016Q
Installation kit B78	36135G
Installation kit B79	30017R
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 - B102	
Red knob B99 – B102	58266Y
Black knob B99 – B102	53185V
Installation kit B99 – B102	35391A
B14 Engine Stop Cable	
B14 Kit	59976G
B110 - B120	
Switch with Logo	43644R
Lever assembly B110	43645T
Lever assembly B120	44174J
Flange + seal kit	43646V
Screw kit	43647X
33C cables screw kit	43648Z

Available spare parts

Hydraulic 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.

B505

Seal kit	43649B
Top and side cover kit	43650K

HELM PUMPS

Vented filler plug kit with valve	40801N
Non vented filler plug kit	40800L
Shaft seal kit from UP25 to UP39	40875V
Shaft seal kit for UP20	42310D
Installation kit for UP20 F	42861U
Installation kit for UP20 T	42864A
Installation kit for:	
UP25 F/25 F/28 F/33 F/39 F/45 F and UP28-SVS	42862W
Installation kit for UP25 T/28 T/33 T/39 T/45T	42864A
Installation kit for UP28 R/33 R/39 R/45 R	42863Y
Nylon round flange for X57	70666E
Nylon square flange for X64	70670V
Chrome plated cover ring - X68	40894Z
Pump filling kit	42960W

UC81-OBF OUTBOARD CYLINDER

Bull horn mounting bracket	42851R
Through tube stainless steel rod	42852T
Spacer kit	42853V
Tiller arm connecting	42854X
Replaceable heads kit + Seal kit + Tool kit	43473P

UC94-OBF OUTBOARD CYLINDER (DISCONTINUED)

Black bull horn mounting bracket	42837X
Through tube stainless steel rod	42666W
Spacer kit	40878B
Tiller arm connecting	42838Z
Seal kit for UC94-OBF P. No: 40154F, 40161C	41919U
Tool kit for UC94-OBF P. No: 40154F, 40161C	41920C
Seal kit for UC94-OBF P. No: 42918X, 42968N	43174D
Tool kit for UC94-OBF P. No: 42918X, 42968N	43175F

UC95-OBF OUTBOARD CYLINDER

Black bull horn mounting bracket	42837X
Through tube stainless steel rod	42666W
Spacer kit	40878B
Tiller arm connecting	42838Z
Tool kit for UC95-OBF	43446L
Replaceable heads kit for UC95-OBF	43444G

UC128-OBF OUTBOARD CYLINDER

Black bull horn mounting bracket	43248G
Through tube stainless steel rod	39491T
Spacer kit	41812Z
Plastic cap kit	41810V
UC128 Hardware kit (link arm)	39979A
Tiller arm connecting kit (ultrabolt)	40822X
Shaft screws kit	43255D
Replaceable heads kit for UC128-OBF P. No: 43231N, 43232R, 43233T, 43234V, 43235X	43350X
Tool kit for UC128-OBF P. No: 43231N, 43232R, 43233T, 43234V, 43235X	43395W

UC128-SVS OUTBOARD CYLINDER

Tiller arm connecting kit (ultrabolt)	42081R
Tool kit for UC128-SVS P.No. 43870A, 43872E, 43871C, 43873G	43868P
Replaceable heads kit for UC128-SVS 43870A, 43872E, 43871C, 43873G	43869S

UC130-SVS OUTBOARD CYLINDER

Tiller arm connecting kit (ultrabolt)	42081 R
Replaceable heads kit for UC130-SVS P.No: 43225U, 43226W, 43223P, 43224S	43364J
Tool kit for UC130-SVS P.No: 43225U, 43226W, 43227Y	43386V

Available spare parts

Hydraulic products

UC120 OUTBOARD CYLINDERS	
Replaceable heads kit for UC120 cylinder	43572S
Tool kit for UC120 cylinder	43614F
UC68-OBS OUTBOARD CYLINDER	
Stainless steel tilt tube extension	39495B
UC132-OBS OUTBOARD CYLINDER	
Stainless steel tilt tube extension	39495B
Extension rod connecting pin	40917J
ZTF	
Replaceable heads kit for UC128-ZTF cylinder	43350X
Tool kit for UC128-ZTF cylinder	43395W
Tilt tube stainless steel rod	42666W
Spacer kit	41812Z
Plastic cap kit	41810X
Engine rod bolt and screw kit	41809L
KIT M2 (Mercury®) mechanical cables	43642L
KIT Y (Yamaha®) mechanical cables	43640G
KIT S2 (Suzuki®) mechanical cables	43641J
KIT ND1-MM (Mercury®)	43636S
KIT ND1-Y (Yamaha®)	43639Y
KIT QU1-Y (Yamaha®)	43638W
KIT QU1-S (Suzuki®)	43635P
Nickel plate plug+ o-ring kit	43637U
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
NUT AND SLEEVE	
Brass nut and sleeve	71004K
Nickel plated brass nut and sleeve	71013L

WARNING

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