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**A LEADER IN
MARINE PRODUCT
INNOVATION
SINCE 1935**



 **ULTRAFLEX**

NEW20



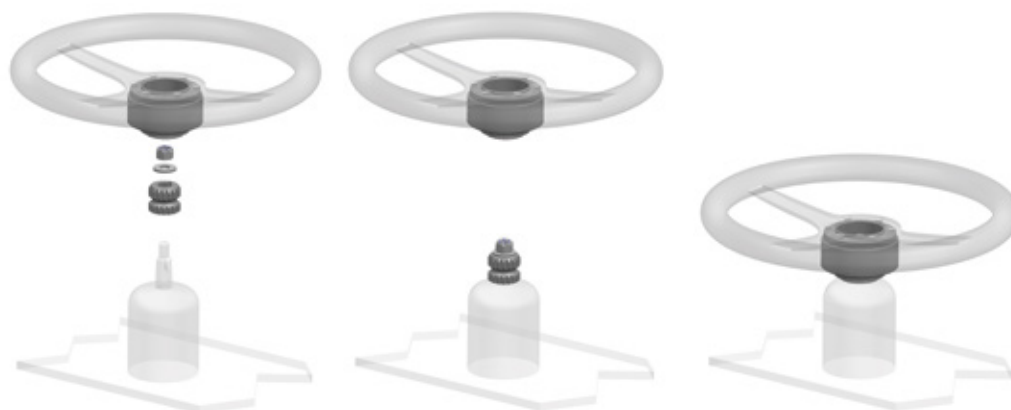
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ULTRAFLEX GROUP
85 years
1935-2020



1935 - 2020

Ultraflex Group has 85 years of experience in manufacturing and distributing the highest quality and most innovative products. The Ultraflex Group affiliate Companies that design and produce widely known equipments in the marine, industrial, architectural, Led technology and alternative energy fields.



Steering and control systems
for pleasure boats



Manufacturing of steering wheels and
distribution of technical marine accessories



UFLEX - Renewable Energy

Systems and accessories
for alternative energy applications



ULTRAFLEX CONTROL SYSTEMS

Window and skylight remote controls.
Building automation



INDUSTRIA di LEVI

Mechanical remote controls
in the industrial field



UFLEX USA

Steering and control systems
for pleasure boats





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.



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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.



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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.



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ULTRAFLEX GUARANTEE

DNV-GL

MANAGEMENT SYSTEM CERTIFICATE

Certificato no./Certificate No.: 249284-2017-AQ-ITA-ACCREDIA
Data prima emissione/Initial date: 27 gennaio 2006
Data precedente Odi/Previous CB date: 25 gennaio 2017 - 25 gennaio 2021

Si certifica che il sistema di gestione di/This is to certify that the management system of

ULTRAFLEX S.p.A.

Sede Legale: Via Crose, 2 - 16015 Casella (GE) - Italy

È conforme ai requisiti della norma per il Sistema di Gestione Ambientale/
Has been found to conform to the Environmental Management System standard:

UNI EN ISO 14001:2015 (ISO 14001:2015)

Valutato secondo le prescrizioni del Regolamento Tecnico RT-09/
Evaluated according to the requirements of Technical Regulations RT-09

Questa certificazione è valida
per il seguente campo applicativo:

Progettazione e realizzazione di sistemi ed accessori meccanici, idraulici ed elettronici per la nautica, tramite assemblaggio elettromeccanico, lavorazioni meccaniche e stampaggio plastica
(Settore EA: 18 - 19)

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
(EA Sector: 18 - 19)

Luogo e Data/Place and date:
Vimercate (MB), 05 dicembre 2017



ACCREDIA
Società per Azioni
Via Salaria, 1000 - 00198 Roma
Tel. 06 5200 99 99 - Fax 06 5200 99 98
www.accredia.it

Per l'Organismo di Certificazione/
For the Certification Body

Nicola Privato
Management Representative

La validità del presente Certificato è subordinata al rispetto delle condizioni contenute nel Contratto di Certificazione/
L'uso di questo Certificato è subordinato al rispetto delle condizioni contenute nel Contratto di Certificazione.

DNV GL Business Assurance Italia S.r.l., via Enea Park, 14 - 20121 Cinisello B. (MI) - Italia Tel. 02 50 50 50 50 - Fax 02 50 50 50 51 - www.dnvgl.it/assurances

DNV-GL

MANAGEMENT SYSTEM CERTIFICATE

Certificato no./Certificate No.: 249429-2017-AQ-ITA-ACCREDIA
Data prima emissione/Initial date: 08 aprile 2002
Data precedente Odi/Previous CB date: 20 novembre 2017 - 20 novembre 2020

Si certifica che il sistema di gestione di/This is to certify that the management system of

ULTRAFLEX S.p.A.

Sede Legale: Via Crose, 2 - 16015 Casella (GE) - Italy

È conforme ai requisiti della norma per il Sistema di Gestione Qualità/
has been found to conform to the Quality Management System standard:

UNI EN ISO 9001:2015 (ISO 9001:2015)

Questa certificazione è valida
per il seguente campo applicativo:

Progettazione e realizzazione di sistemi e accessori per la nautica
(Settore EA: 18 - 19)

This certificate is valid
for the following scope:

Design and construction of marine systems and accessories
(EA Sector: 18 - 19)

Luogo e Data/Place and date:
Vimercate (MB), 20 novembre 2017



ACCREDIA
Società per Azioni
Via Salaria, 1000 - 00198 Roma
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DNV GL Business Assurance Italia S.r.l., via Enea Park, 14 - 20121 Cinisello B. (MI) - Italia Tel. 02 50 50 50 50 - Fax 02 50 50 50 51 - www.dnvgl.it/assurances

ULTRAFLEX - GUARANTEE CONDITIONS AND EXCLUSIONS

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

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

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

This guarantee does not cover labor.

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

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

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

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

ULTRAFLEX mechanical steering systems components as steering helms, steering cables and steering wheels are all marked CE in compliance with the EEC Directive 2013/53/EU and the rules EN29775 - EN28848. Ultraflex hydraulic steering system components are all marked CE in compliance with the EEC Directive 2013/53/EU and the rule ISO 10592. The CE Examination on the ULTRAFLEX steering systems has been carried out by an Institute certified by the European Commission.

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

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 on page 13.

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





SUGGESTIONS AND WARNINGS WHEN SELECTING A MECHANICAL STEERING SYSTEM

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

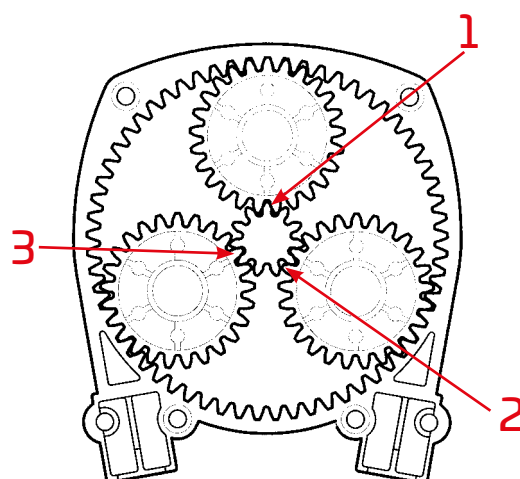
The combination of engine power, hull type and boat speed influence the correct selection of the steering system.

The load on the steering system increases with the boat speed and engine power; the torque generated by the propeller rotation in high power outboard applications can make it hard to steer.

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

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

ADVANTAGES OF A PLANETARY GEAR DESIGN

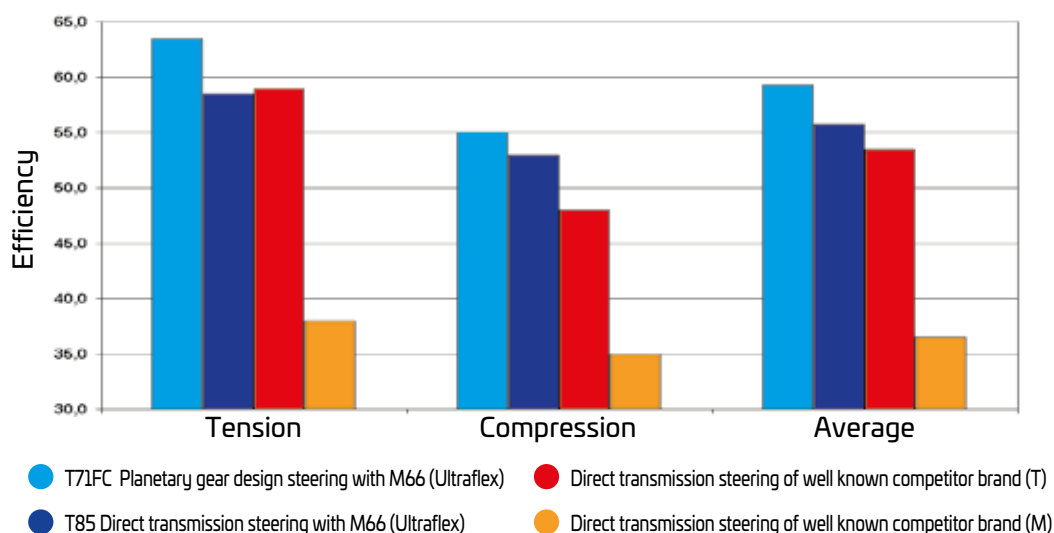


Ultraflex mechanical steering helms T71FC, T73NRFC, T91, T93ZT as well as dual cable versions and tilt wheel versions use a Planetary Gear Design. A Planetary Gear Design has three satellite gears that rotate on their axis and at the same time rotate around the central helm axis. This allows for equal distribution of engine torque over three points of the central gear, dividing and balancing the system loads. The benefits of this special design are increased system longevity, increased efficiency and less engine feedback compared to single pinion gear helms.

EFFICIENCY COMPARISON TESTS

Test configuration:
3 bends at 90°; 1000N load

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



THE IMPORTANCE OF AN ANTI- FEEDBACK STEERING SYSTEM FOR INCREASED SAFETY

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

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

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

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

With **Ultraflex Anti-feedback** steering helms T73NRFC, T74NRFC, T83NRFC, T93ZT, T103ZT, T88NR the loads applied to the steering system are no longer a problem.

A special patented device allows the helm shaft to lock until turned by the driver, maintaining the boat direction and neutralizing the feedback loads on the steering cable. This mechanism is engaged when the driver is not turning the wheel and is automatically disengaged as soon as the driver applies pressure on the wheel to change direction of the boat.

The **Ultraflex Anti-feedback** mechanism makes driving a boat safer and easier.

ATTENTION

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

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.





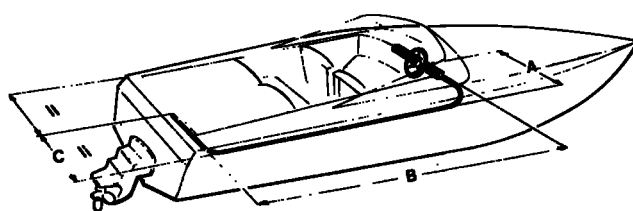
SELECTION OF STEERING SYSTEM AND CABLE LENGTH MEASUREMENT

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 - T86 - T88NR - T96 - T98NR - T91 T93ZT - T101 - T103ZT	
		Twin cable rotary steering systems	
STERNDRIVE POWER ASSISTED 	up to 35' (10.5m)	T71FC - T81FC - T73NRFC - T83NRFC - T86 - T88NR - T96 - T98NR - T91 - T93ZT - T101 - T103ZT	
		Twin cable rotary steering systems	
STERNDRIVE POWER ASSISTED 		T85 T71FC - T81FC - T86 - T96 T91 - T101	
		Twin cable rotary steering systems	

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.

- 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.

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.

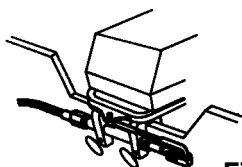


Fig. 1

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
 $390,5 \text{ cm} : 30,5 = 12,8 \text{ ft}$
round off to 13 ft

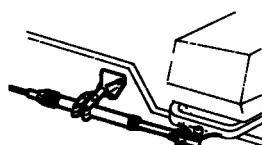


Fig. 2

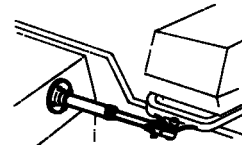
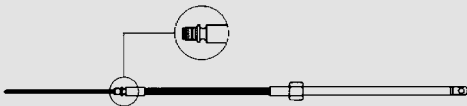
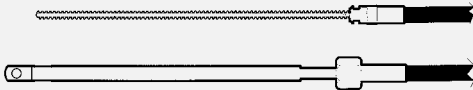
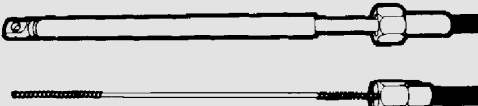
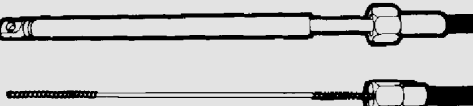

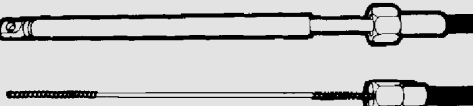
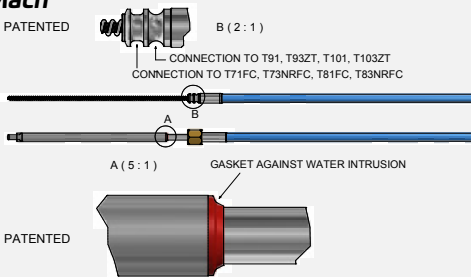



Fig. 3

TRANSOM SUPPORT OR SPLASHWELL MOUNTING - Fig. 2-3

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

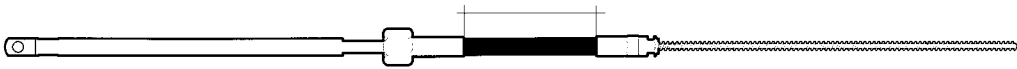
REPLACEMENT
STEERING
CABLES

ULTRAFLEX REPLACEMENT CABLE	STEERING HELM	ADAPTOR REQUIRED
M58 	T67 Ultraflex C230/C231 Morse® Compac - T® Teleflex® 805 TX®	none*
M66 	T85 - T71FC - T72FC - T73NRFC - T74NRFC - T81FC - T83NRFC - Ultraflex Safe - TQC® - NFB Safe - TII® - NFB 4.2® Teleflex® - D290 Morse®	none
M47 - DISCONTINUED USE M66 + K66 	T71 - T72 - T73NR - T74NR - T81 - T83NR Ultraflex (discontinued)	none
	T85 - T71FC - T72FC - T73NRFC - T74NRFC - T81FC - T83NRFC Ultraflex	K66 - 38432Q 
	Safe - T® - Big-T® - Teleflex®	none
M90 Mach 	T91 - T93ZT T101 - T103ZT T85 - T71FC - T72FC - T73NRFC - T74NRFC - T81FC - T83NRFC Ultraflex Safe - TQC® - NFB Safe TII® NFB 4.2® Teleflex® - D290 Morse®	none
TM86 	G86 - G88NR - G96 - G98NR Ultraflex	none
NOTE: will NOT work with dual cable helms		

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

HOW TO
MEASURE
FOR
REPLACEMENT
STEERING
CABLES

D = Conduit length



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



T67 STEERING SYSTEM



A COMPLETE STEERING SYSTEM

CONSISTS OF:

- Steering helm with friction:
T67 - 35809 J - Black bezel
T67W - 37925 M - White bezel
- Steering cable:
M58 available in one foot increments
- Optional steering wheel (see index)
- Engine connection kits (see index)

FEATURES AND TECHNICAL

SPECIFICATIONS:

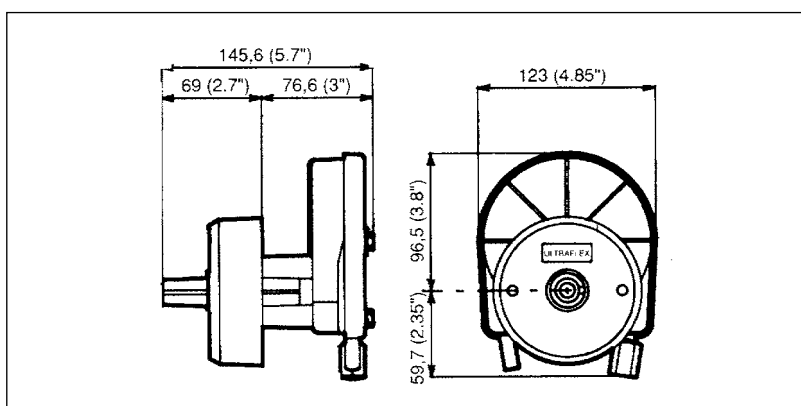
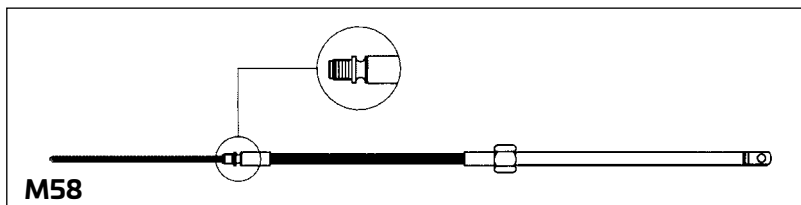
- All stainless steel output end of cable as per ABYC P17 safety standards
- Corrosion resistant materials
- Standard friction externally adjustable
- 90° bezel
- Four optional helm positions to facilitate steering cable installation
- Lock-to-lock steering wheel turns: approx. 2,5
- Stroke: 230 mm (9")
- Maximum allowable steering wheel diameter: 380 mm (15")
- Minimum steering cable bend radius: 200 mm (7.9")
- Available in package with ROTECH-IV
- Exceeds EN 29775 safety standards
- APPLICATIONS: for use with outboard engines up to 40 kW (55 hp) with the exception of EVINRUDE E-TEC™ 50 for which the use of T85, T71FC or T91 is recommended.



T67



T67W



T85 ROTARY STEERING SYSTEM

CE



15

A COMPLETE STEERING SYSTEM

CONSISTS OF:

- Steering helm:
T85 - 38439 Z - Black bezel
T85W - 39213 M - White bezel
- Steering cable: **M66**
- Optional steering wheel (see index)
- Engine connection kits (see index)

FEATURES AND TECHNICAL

SPECIFICATIONS::

- All stainless steel cable output ends
- Corrosion resistant materials
- Particularly suitable where clearance is limited
- Lock-to lock steering wheel turns: approx. 3
- Stroke 228 mm (9")
- Maximum allowable steering wheel diameter: 406 mm (16")
- Minimum steering cable bend radius: 200 mm (7.9")
- Minimal feedback
- Compact for mounting
- T85 steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Available in package with ROTECH-V
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards

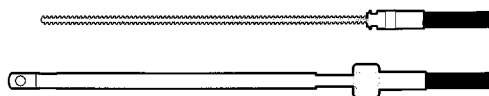


T85

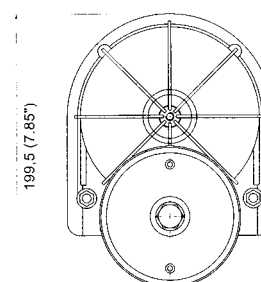
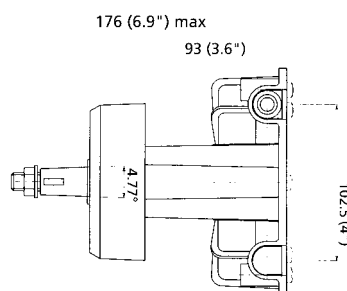


T85W

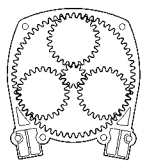
M66



T85



T71FC - T72FC ROTARY STEERING SYSTEMS



**FEATURING
PLANETARY GEAR
DESIGN**

A COMPLETE STEERING SYSTEM

CONSISTS OF:

- Steering helm:
 - T71FC** - 38867 H - single cable steering helm
 - T72FC** - 38868 K - dual cable steering helm
- Mounting bezel:
 - X34** - 36654 B - black, 90° mounting
 - X34W** - 40654 C - white, 90° mounting
 - X35** - 36655 C - black, 20° mounting
- Steering cable: **M66**
 - NOTE:** two M66 are needed with the T72FC system
- Optional steering wheel (see index)
- Engine connection kits (see index)

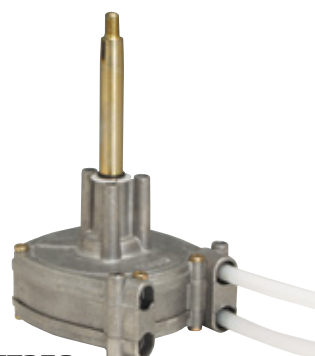
FEATURES AND TECHNICAL

SPECIFICATIONS:

- Fast connect, simple installation
- All stainless steel cable output ends
- Corrosion resistant materials
- Particularly suitable where clearance is limited
- Optional 90° or 20° installation
- Standard 3/4" tapered shaft
- Lock-to-lock steering wheel turns: approx. 3,8
- Stroke: 228 mm (9")
- Maximum allowable steering wheel diameter: 406 mm (16")
- Minimum steering cable bend radius: 200 mm (7.9")
- Minimal feedback
- Compact for mounting
- 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
- T71FC steering system is also available in package with ROTECH-I
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards



T71FC



T72FC

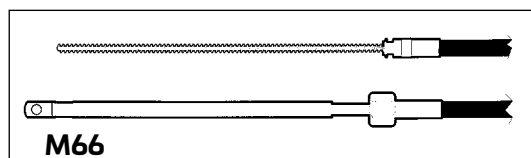


X34W

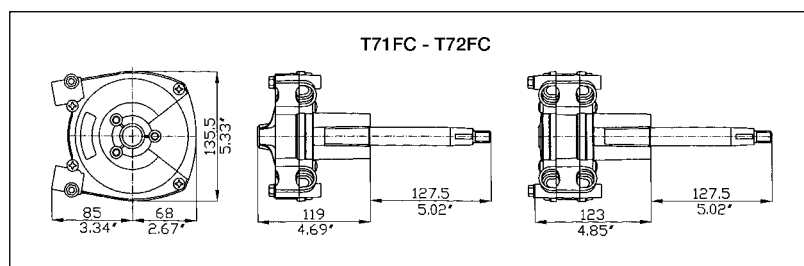
X34

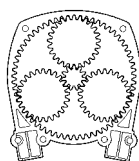


X35



M66





FEATURING PLANETARY GEAR DESIGN

A COMPLETE STEERING SYSTEM

CONSISTS OF:

- Steering helm:
T73NRFC - 38869 M
anti-feedback single cable steering helm
T74NRFC - 38870 W
anti-feedback dual cable steering helm
- Mounting bezel:
X34 - 36654 B - black, 90° mounting
X34W - 40654 C - white, 90° mounting
X35 - 36655 C - black, 20° mounting
- Steering cable: **M66**
NOTE: two M66 are needed with the T74NRFC system
- Optional steering wheel (see index)
- Engine connection kits (see index)

FEATURES AND TECHNICAL

SPECIFICATIONS:

- Easy and safe steering : a **patented anti-feedback mechanism** eliminates the continuous load on the operator caused by the propeller torque
- Fast connect, simple installation
- Compact rotary helm unit: the central location of the steering shaft makes these systems the most compact in their class
- Most suitable where clearance is limited
- Ideal for outboards and surfacing propellers
- Optional 90° or 20° installation
- Standard 3/4" tapered shaft
- All stainless steel cable output ends
- Made exclusively in corrosion resistant materials
- Lock-to-lock steering wheel turns: approx 3,8
- Stroke: 228 mm (9")
- Maximum allowable steering wheel diameter: 406 mm (16")
- Minimum steering cable bend radius: 200 mm (7.9")
- T73NRFC and T74NRFC steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- For boats faster than 50 mph our hydraulic steering systems are recommended
- Available in package with ROTECH-III
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards



T73NRFC



T74NRFC

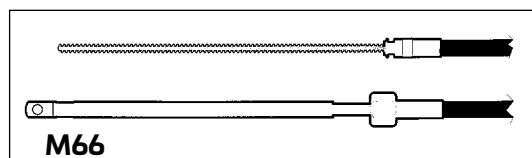


X34W

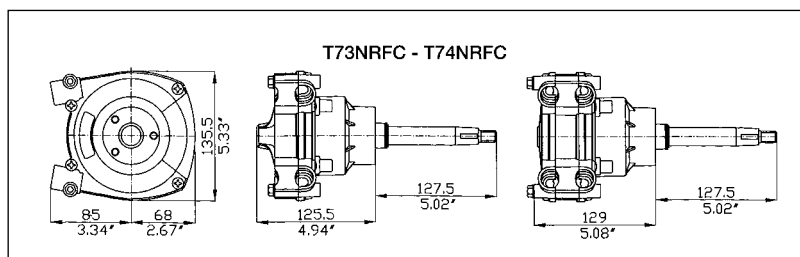
X34



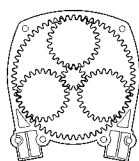
X35



M66



T81FC - T83NRFC (ANTI-FEEDBACK) TILT STEERING SYSTEMS



**FEATURING
PLANETARY GEAR
DESIGN**

A COMPLETE STEERING SYSTEM

CONSISTS OF:

- Steering helm:
T81FC - 38957 J
single cable steering helm
T83NRFC - 38959 N
anti-feedback single cable steering helm
- Tilt mechanism:
X52 - 39250 U
NOTE: X52 tilt mechanism fits Ultraflex tilt mount rotary and rack and pinion steering helms as well as Ultraflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems
- Steering cable: **M66**
- Optional steering wheel (see index)
- Engine connection kits (see index)

FEATURES AND TECHNICAL

SPECIFICATIONS:

- 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
- Corrosion resistant materials
- Lock-to-lock steering wheel turns: approx. 3,8
- Stroke: 228 mm (9")
- Maximum allowable steering wheel diameter: 406 mm (16")
- Minimum steering cable bend radius: 200 mm (7.9")
- T81FC and T83NRFC 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
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards

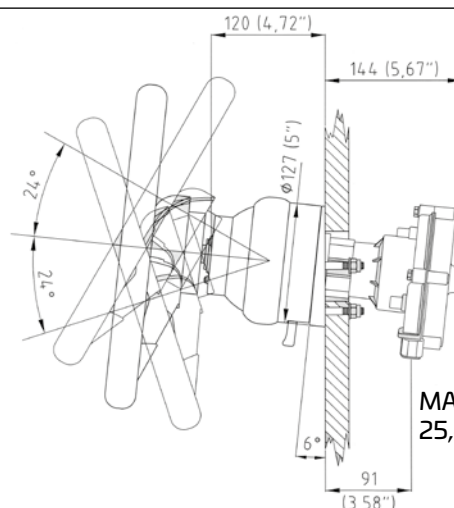
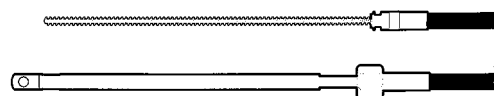


T81FC with X52



X52

M66



T86 - T88NR (ANTI-FEEDBACK) RACK AND PINION STEERING SYSTEMS

A COMPLETE STEERING SYSTEM

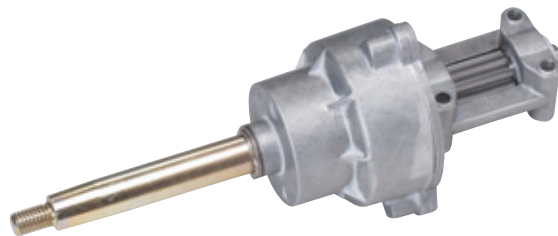
CONSISTS OF:

- Preassembled helm with steering cable: **TM86**
- Helm assembly:
G86 - 39418 G standard
G88NR® - 39419 J - anti-feedback
- Mounting bezel:
X34 - 36654 B - black, 90° mounting
X34W - 40654 C - white, 90° mounting
X35 - 36655 C - black, 20° mounting
- Optional steering wheel (see index)
- Engine connection kits (see index)

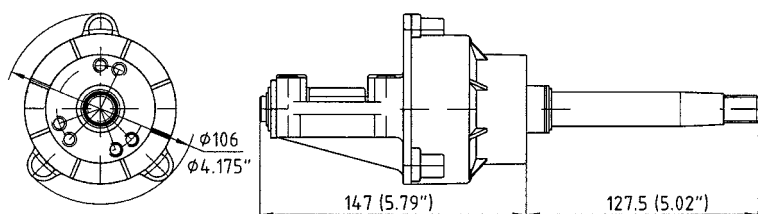
FEATURES AND TECHNICAL

SPECIFICATIONS:

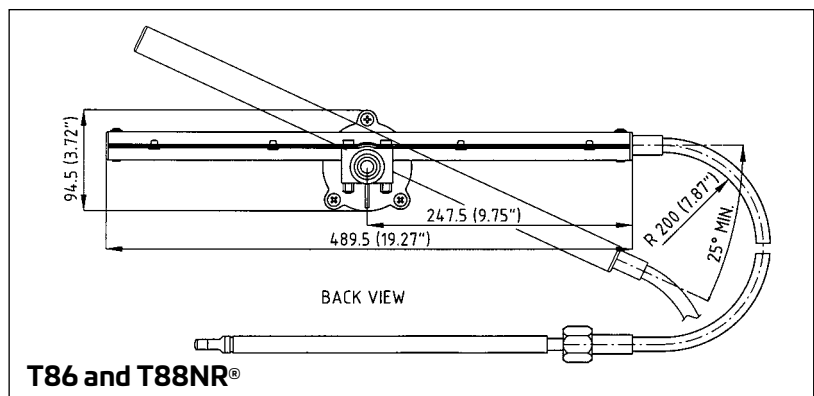
- Easy and safe steering: **patented anti-feedback G88NR helm** eliminates the continuous load on the operator caused by the propeller torque
- All stainless steel cable output ends
- Made exclusively in corrosion resistant materials
- Optional 90° or 20° installation
- Standard 3/4" tapered shaft
- Lock-to-lock steering wheel turns: 3,5
- Stroke: 210 mm (8.2")
- Maximum allowable steering wheel diameter: 420 mm (16.5")
- Minimum steering cable bend radius: 200 mm (7.9")
- T86 and T88 NR steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards



G86 and G88NR®



G86 and G88NR®



T86 and T88NR®

T96 - T98NR (ANTI-FEEDBACK) RACK AND PINION TILT STEERING SYSTEMS

A COMPLETE STEERING SYSTEM

CONSISTS OF:

- Preamsembled helm with steering cable:
TM86
- Helm assembly:
G96 - 39650 L standard
G98NR® - 39649 C anti-feedback
- Tilt mechanism:
X52 - 39250 U
NOTE: X52 tilt mechanism fits Ultraflex tilt mount rotary and rack and pinion steering helms as well as Ultraflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems
- Optional steering wheel (see index)
- Engine connection kits (see index)

FEATURES AND TECHNICAL

SPECIFICATIONS:

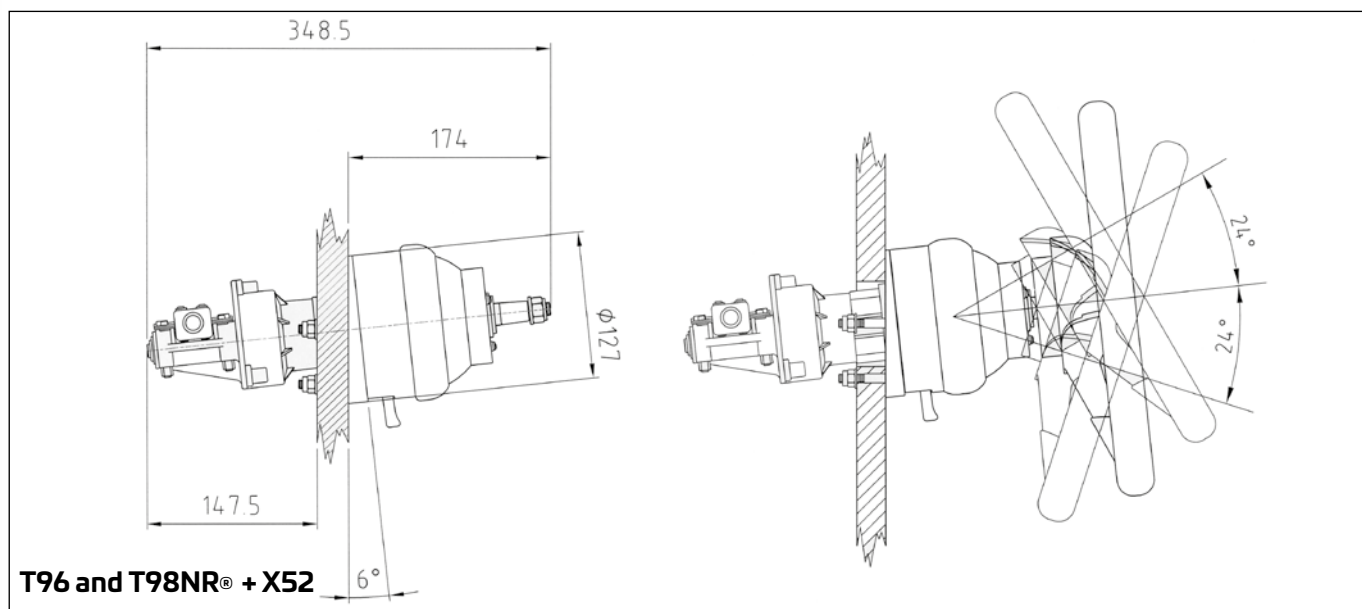
- Easy and safe steering: **the patented anti-feedback G98NR helm** eliminates the continuous load on the operator caused by the propeller torque
- Fast, simple installation
- Tilt range of 48° and five locking positions
- Tilt device eliminates underdash movement
- Standard 3/4" tapered shaft - stainless steel
- All stainless steel cable output ends
- Made exclusively in corrosion resistant materials
- Lock-to-lock steering wheel turns: 3,5
- Stroke: 210 mm (8.2")
- Maximum allowable steering wheel diameter: 420 mm (16.5")
- Minimum steering cable bend radius: 200 mm (7.9")
- T96 and T98NR® steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards



T96 and T98NR®



X52



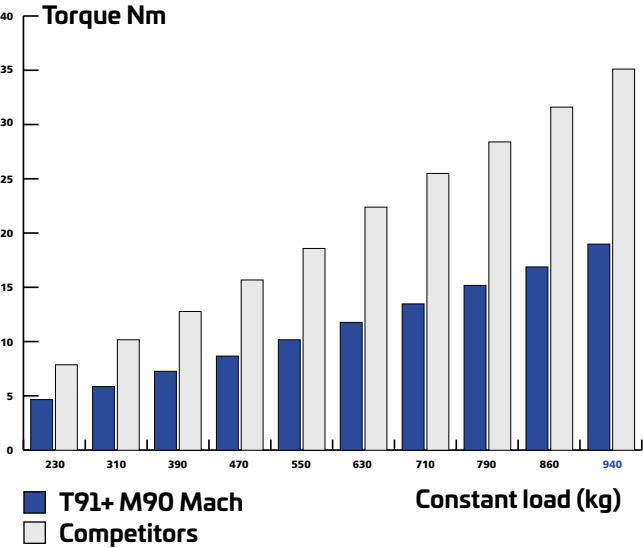
T91 - T93ZT STEERING SYSTEMS - TORQUE COMPARISION

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.

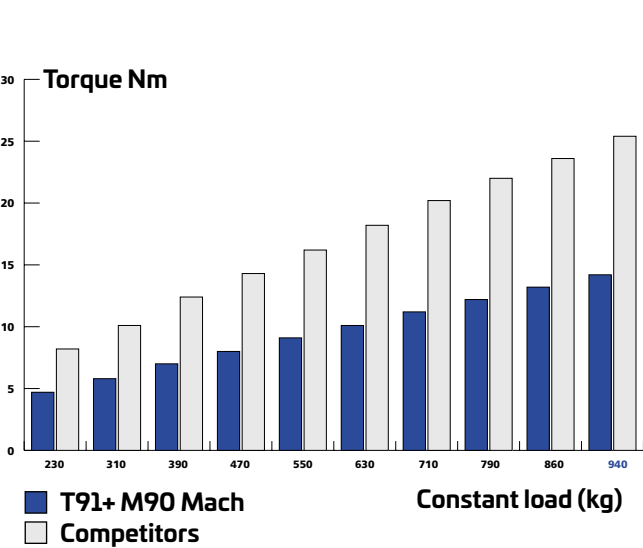
The new Ultraflex T91 and T93ZT steering systems, fitted with the M90 Mach single-cable, are the best mechanical steering systems on the market today. They combine a minimal backlash with higher efficiency and they guarantee results with very narrow cable bends.

TORQUE COMPARISION WITH PUSH AND PULL LOAD - RADIUS 200 mm

Push load:

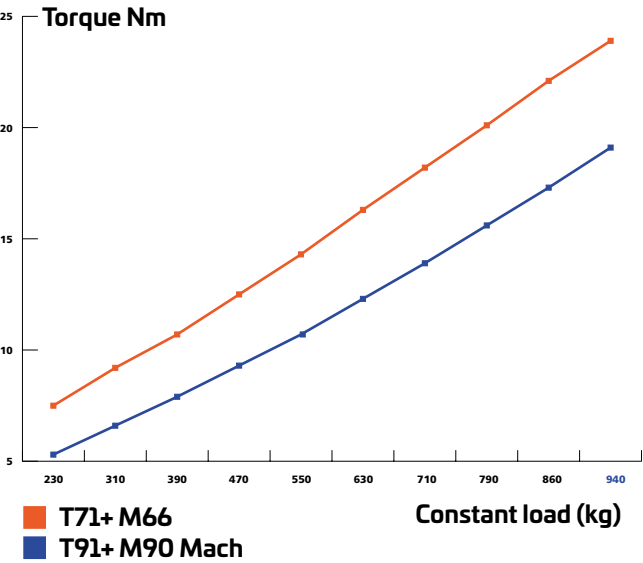


Pull load:

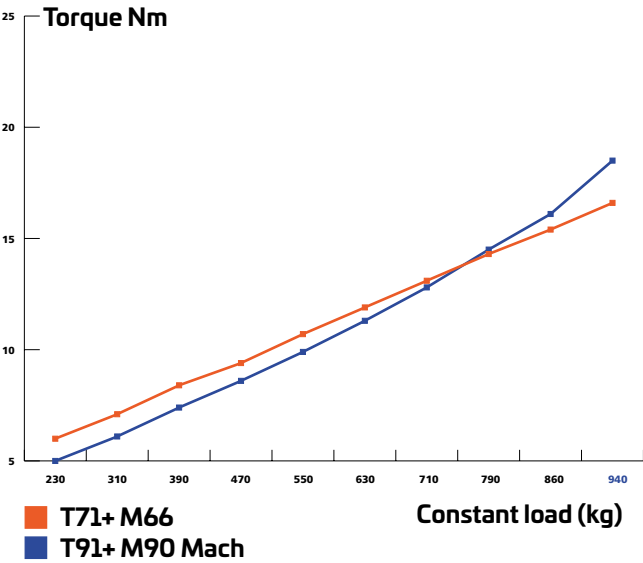


TORQUE COMPARISION WITH PUSH AND PULL LOAD - RADIUS 100 mm

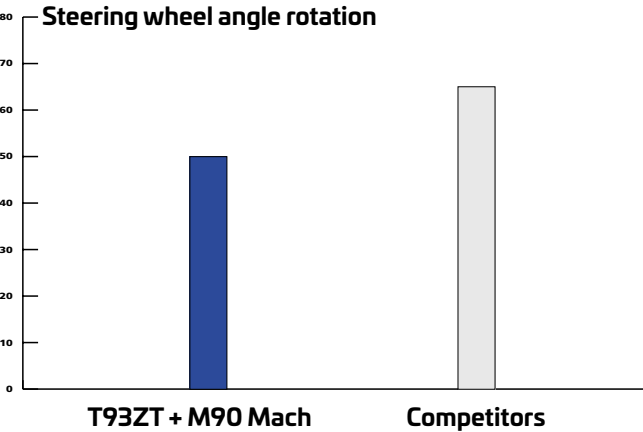
Push load:



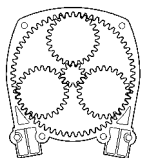
Pull load:



BACKLASH ON THE STEERING SYSTEM COMPARISION



T91 HIGH PERFORMANCE ROTARY STEERING SYSTEM



FEATURING
PLANETARY GEAR
DESIGN



A COMPLETE STEERING SYSTEM CONSISTS OF:

- Steering helm:
T91 - 42647 S - single cable steering helm
- Mounting bezel (please refer to the mounting bezel selection):
X34 - 36654 B - black, 90° mounting
X34W - 40654 C - white, 90° mounting
X91 - 42850 N - chrome - 90° mounting
X90 - 42646 P - chrome - 90° mounting with **lock device**
X35 - 36655 C - black, 20° mounting
- Steering cable: **M90 Mach** (patented)
ATTENTION: M90 Mach steering cable is suitable for use also with T85, T71FC, T72FC, T73NRFC, T74NRFC, T81FC, T83NRFC Ultraflex steering helms. M66 steering cable is not fit for T91, T93ZT, T101, T103ZT steering systems.
- Optional steering wheel (see index)
- Engine connection kits (see index)



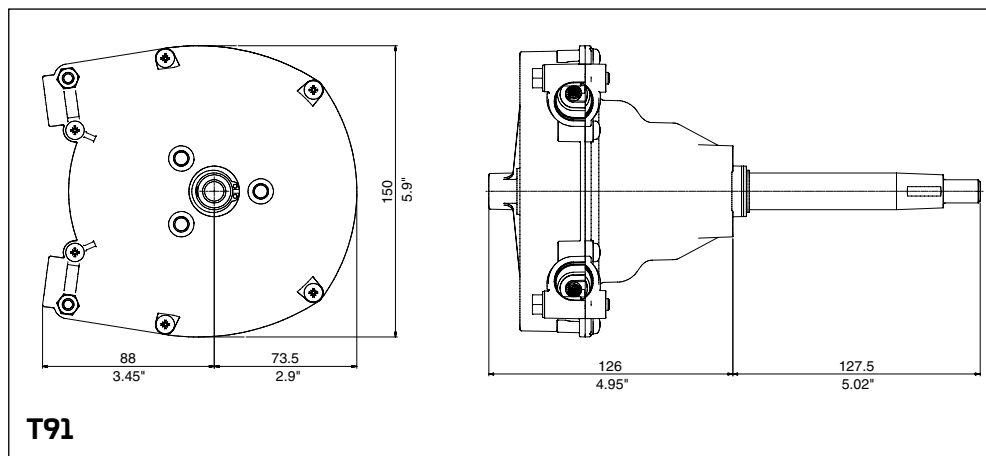
T91 shown with X91 bezel

FEATURES AND TECHNICAL SPECIFICATIONS:

- 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
- Corrosion resistant materials
- Particularly suitable where clearance is limited
- Optional 90° or 20° installation
- Standard 3/4" tapered shaft
- Lock-to-lock steering wheel turns: approx. **4,2**
- Stroke: 228 mm (9")
- Maximum allowable steering wheel diameter: 406 mm (16")
- Suggested steering cable bend radius: **200 mm (7.87")**
- Minimum steering cable bend radius: **100 mm (3.94")**
- Minimal feedback
- Compact for mounting
- 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 EN 28848 safety standards
- Exceeds ABYC P17 safety standards

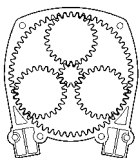


T91 high performance



M90 Mach (Patented)

T93ZT (ZERO TORQUE) HIGH PERFORMANCE ROTARY STEERING SYSTEM



**FEATURING
PLANETARY GEAR
DESIGN**



A COMPLETE STEERING SYSTEM CONSISTS OF:

- Steering helm:
T93ZT - 42648 U - zero torque single cable steering helm
- Mounting bezel (please refer to the mounting bezel selection)
X34 - 36654 B - black, 90° mounting
X34W - 40654 C - white, 90° mounting
X91 - 42850 N - chrome - 90° mounting
X90 - 42646 P - chrome - 90° mounting with **lock device**
X35 - 36655 C - black, 20° mounting
- Steering cable: **M90 Mach** (patented)
ATTENTION: M90 Mach steering cable is suitable for use also with T85, T71FC, T72FC, T73NRFC, T74NRFC, T81FC, T83NRFC Ultraflex steering helms. M66 steering cable is not fit for T91, T93ZT, T101, T103ZT steering systems.
- Optional steering wheel (see index)
- Engine connection kits (see index)



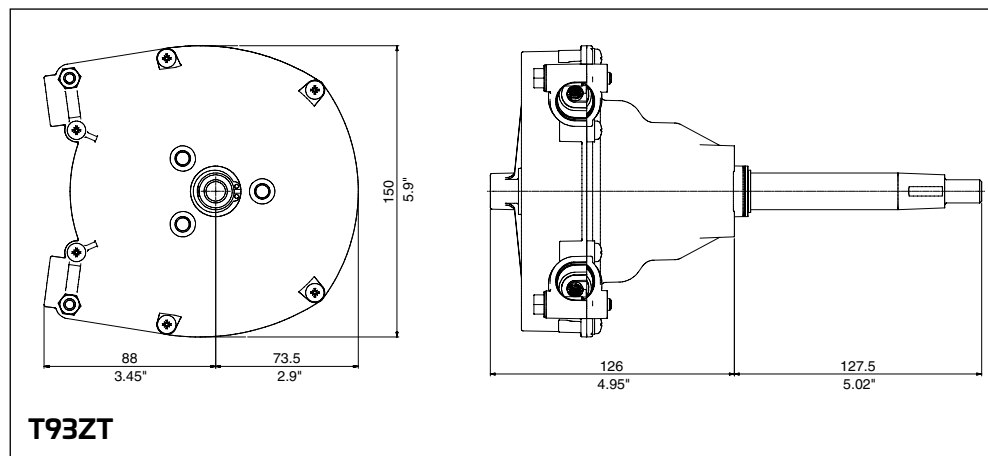
T93ZT shown with X91 bezel

FEATURES AND TECHNICAL SPECIFICATIONS:

- 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
- Corrosion resistant materials
- Particularly suitable where clearance is limited
- Optional 90° or 20° installation
- Standard 3/4" tapered shaft
- Lock-to-lock steering wheel turns: approx. **4,2**
- Stroke: 228 mm (9")
- Maximum allowable steering wheel diameter: 406 mm (16")
- Suggested steering cable bend radius: **200 mm (7.87")**
- Minimum steering cable bend radius: **100 mm (3.94")**
- Minimal feedback
- Compact for mounting
- 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 EN 28848 safety standards
- Exceeds ABYC P17 safety standards



T93ZT high performance



T93ZT



M90 Mach (Patented)

T91 - T93ZT (ZERO TORQUE) STEERING SYSTEM MOUNTING BEZEL SELECTION



X34* - 36654 B

Black bezel
90° mounting

X34W* - 40654 C

White bezel
90° mounting



X35* - 36655 C

Black bezel
20° mounting

***Note:** X34, X34W and X35 bezels fit also on T71FC, T72FC, T73NRFC, T74NRFC and T86 steering systems.



X90 - 42646 P

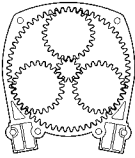
Chrome plated bezel with
steering lock device



X91 - 42850 N

Chrome plated mounting bezel

T101 - T103ZT (ZERO TORQUE) HIGH PERFORMANCE TILT STEERING SYSTEMS



**FEATURING
PLANETARY GEAR
DESIGN**

A COMPLETE STEERING SYSTEM CONSISTS OF:

- Steering helm:
T101 - 42839 B - single cable steering helm
T103ZT - 42840 K - zero torque single cable steering helm
- Tilt mechanism:
X52 - 39250 U
NOTE: X52 tilt mechanism fits Ultraflex tilt mount rotary and rack and pinion steering helms as well as Ultraflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems
- Steering cable: **M90 Mach** (patented)

ATTENTION: M90 Mach steering cable is suitable for use also with T85, T71FC, T72FC, T73NRFC, T74NRFC, T81FC, T83NRFC Ultraflex steering helms. M66 steering cable is not fit for T91, T93ZT, T101, T103ZT steering systems.

- Optional steering wheel (see index)
- Engine connection kits (see index)

FEATURES AND TECHNICAL SPECIFICATIONS:

- 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
- Corrosion resistant materials
- Lock-to-lock steering wheel turns: approx. 4,2
- Stroke: 228 mm (9")
- Maximum allowable steering wheel diameter: 406 mm (16")
- Suggested steering cable bend radius:
200 mm (7.87")
- Minimum steering cable bend radius: **100 mm (3.94")**
- T101 and T103ZT 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
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards



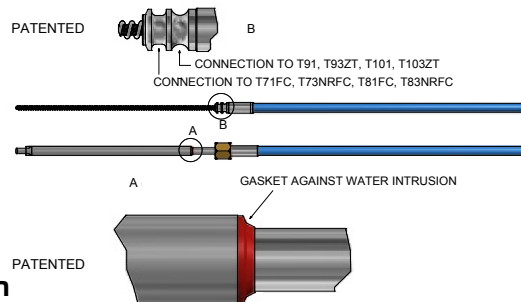
T101 shown with X52 tilt mechanism



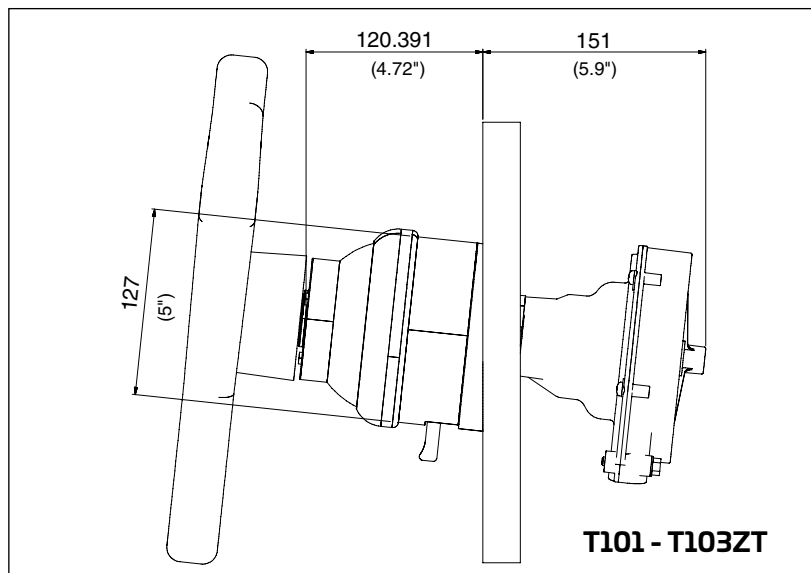
T101 high performance



T103ZT high performance



M90 Mach



T101 - T103ZT



M90 MACH - HIGH EFFICIENCY AND FLEXIBILITY STEERING CABLE

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

FEATURES AND TECHNICAL

SPECIFICATIONS:

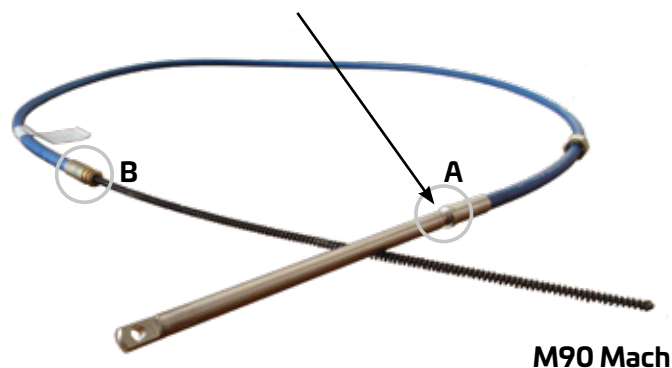
- Ideal solution for long cable runs and tight bend applications
- Corrosion resistant materials, stainless steel engine side output fitting
- Minimal feedback
- Fast connect, simple installation, patented end fitting

- M90 Mach steering cable is suitable for use with T91, T93ZT, T101, T103ZT, T71FC, T72FC, T73NRFC, T74NRFC, T81FC, T82FC, T83NRFC, T85 Ultraflex steering helms. M66 steering cable is not fit for T91, T93ZT, T101, T103ZT steering systems.

- Stainless steel cable output end featuring **patented gasket**, engine side

- Minimum steering cable **bend radius**: 150 mm (5.9")

Stainless steel output fitting



M90 Mach

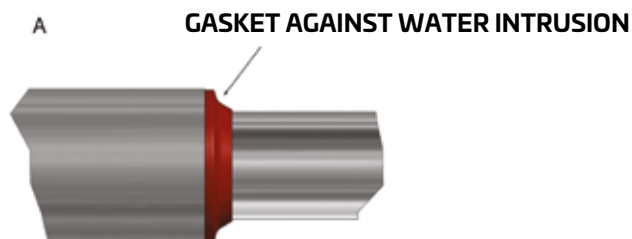
PATENTED



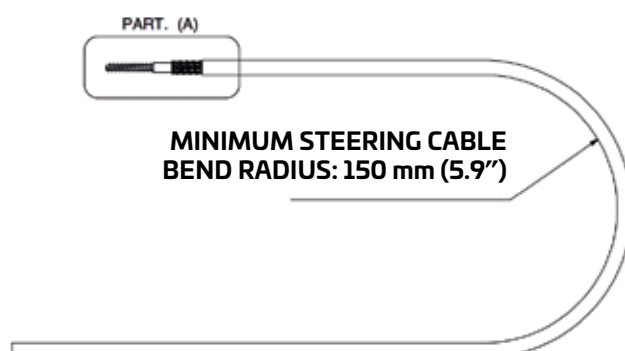
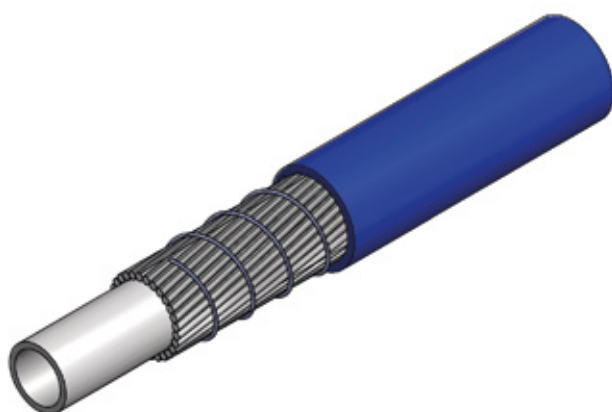
CONNECTION TO T71FC, T73NRFC, T81FC, T83NRFC

CONNECTION TO T91, T93ZT, T101, T103ZT

PATENTED



M90 Mach



PACKAGED MECHANICAL STEERING SYSTEMS

ROTECH

ULTRAFLEX ROTARY STEERING SYSTEM PACKAGED IN A BOX

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 20 feet (specify cable length when ordering)

The wheel is not included

ROTECH - I

- T71FC - helm
- X34 - 90° bezel
- M66 - steering cable



ROTECH - I

ROTECH - III

- T73NRFC® - non-reversible helm
- X34 - 90° bezel
- M66 - steering cable



ROTECH - III

ROTECH - IV

- T67 - helm and bezel
- M58 - steering cable



ROTECH - IV

ROTECH - V

- T85 - helm and bezel
- M66 - steering cable



ROTECH - V

FOURTECH

Featuring high performance helms with a Planetary Gear Design, the Fourtech offers performance, flexibility and durability increased by top quality materials and construction. Centered on the main drive shaft, this helm requires less room behind the dash and is a direct "drop in" replacement for competing system; requiring no new holes for installation.

The package includes helm (PLANETARY GEAR DESIGN), bezel and highly flexible M90 Mach cable (patented).

FOURTECH - I

- T91 - helm
- X34 - 90° bezel
- M90 Mach - steering cable



FOURTECH - I

FOURTECH - II

- T93ZT - non-reversible helm
- X34 - 90° bezel
- M90 Mach - steering cable



FOURTECH - II

NAVITECH™ STEERING SYSTEM



Now you can get the same technology used to drive the most powerful and best handling cars for your boat.

Taking the latest technology from the automotive industry, Ultraflex has combined Electronic Power Steering (EPS) used in the most popular cars in the world with the latest mechanical steering helms and Mach 90 high efficiency steering cable to deliver unprecedented performance.

Perfectly silent, the system draws minimal power and furthermore is very easy to install. The NaviTech™ also has Integrated System Monitoring (ISM) which detects certain operating conditions including the number of cycles and notifies the end user with a vibration signal in the steering wheel, if the cable needs to be changed. Never before has a steering system monitored it's own operating conditions and given the driver diagnostic feedback.

For specific applications Ultraflex can use programmable software to dial in the hand wheel effort and steering output to meet specific performance objectives of boat builders.



NAVITECH™ STEERING SYSTEM



A COMPLETE STEERING SYSTEM CONSISTS OF:

- Power assisted steering helm:
T91NAV - 43207 S - single cable steering helm
- Tilt mechanism:
X66 - 40613 M - Tilt mechanism for NaviTech™ tilt mount helms.
Tilt range of 48° and five locking positions
- Steering cable: **M90 Nav** (patented)
ATTENTION: M90 Nav steering cable is suitable for use also with T71FC, T72FC, T73NRFC, T81FC, T82FC, T83NRFC, T91, T93ZT, T101, T103ZT. Ultraflex steering helms. M66 will not fit the following Uflex helms: T91, T93ZT, T101, T103ZT.
- Optional steering wheel (see index)



M90 Nav (Patented)

FEATURES AND TECHNICAL

SPECIFICATIONS:

- Automotive steering effort and response
- 100% Balanced steering - Port to Starboard / Starboard to Port
- Silent Operation
- Monitoring software with integrated cycle counter, for a correct cable replacement.
By haptic feedback on the wheel, the system is able to signal anomalies, such as:
 - Excessive cable load
 - Stuck cable alarm
- Field tested for over 3 years
- 16 Nm of assist torque capability
- Able to tune on center and end of travel torque effort
- Consistent steering assist through all vessel speed ranges
- Applied in leading automotive application since 2011. Nowadays automotive production is over 1 million units per year
- 10 - 15 Vdc
- 8 - 15 A nominal current during steering maneuvers
- Supplied with 3 m (10 ft) electrical harness. It needs a 40 A fuse (to be ordered separately).
- Validation for Marine application is per CE, ABYC P17, P27, and ISO 25197
- NMMA Type Acceptance Completed

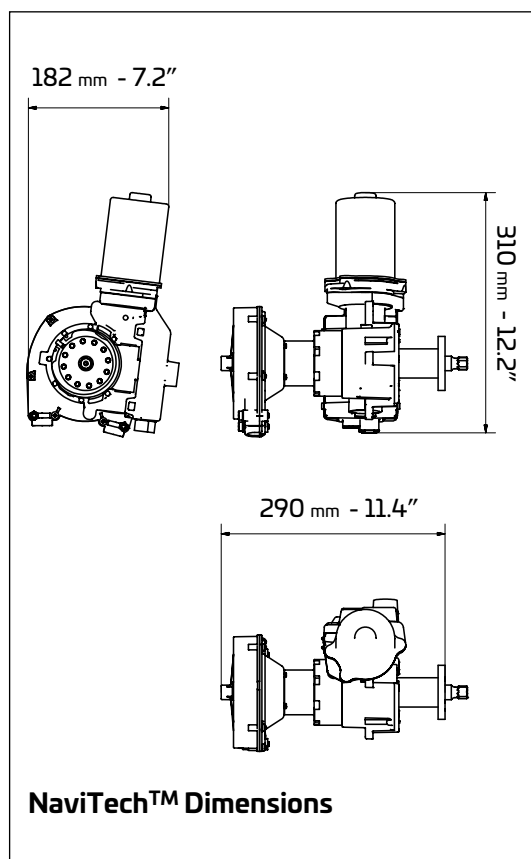
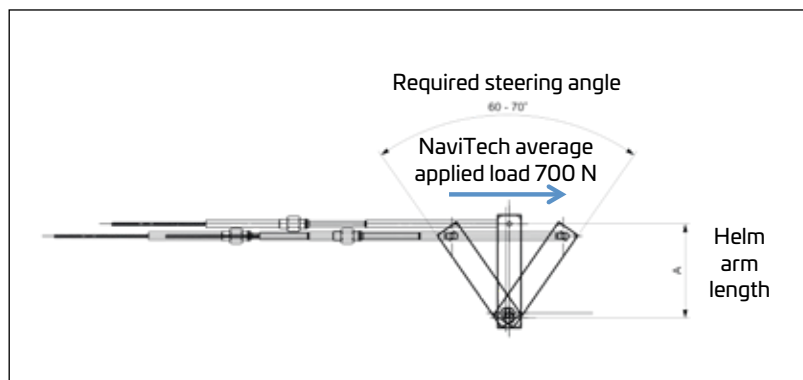


LIMIT OF APPLICATION

Outboard engines:

Up to 150 hp, maximum 50 mph

Inboard engines:



ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

STEERING CABLE SUPPORTS

S39 - 31916 F

Clamp block in marine aluminum and stainless steel

S40 - 31917 G

Splashwell mounting, corrosion resistant

S55 - 34744 A

90° rudder support, corrosion resistant

S61 - 36191 S

Clamp block, corrosion resistant painted steel

S62 - 38830 H

Same design as S61, smaller dimensions

S39T - 53930 J - Tube only for S39

S40T - 53935 O - Tube only for S40

Steering cable supports with stainless steel tube also available:

S39SS - 41551 X

S40SS - 41552 Z

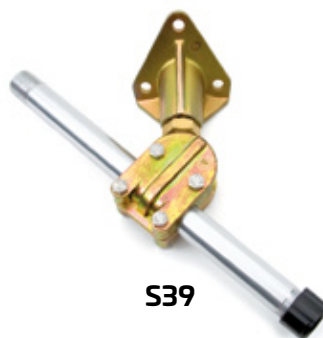
S55SS - 41553 B

S61SS - 41554 D

S62SS - 41555 F

S39TSS - 72971 W Stainless steel tube for S39SS

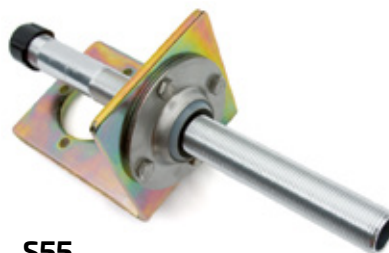
S40TSS - 72972 Y Stainless steel tube for S40SS



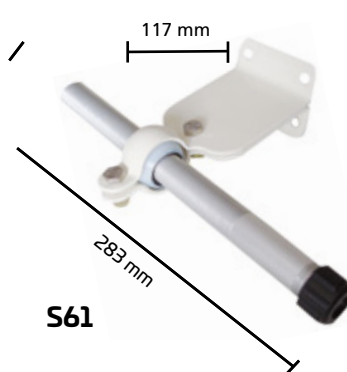
S39



S40



S55



S61



S62

ENGINE CONNECTION KITS

A50 - 31473 Q

Connection kit for Yamaha® engines

A73SS - 41255 T

Stainless steel tiller arm for some Mercury® engines

A74SS - 41256 V

Stainless steel tiller arm for some Johnson®, Evinrude®, BRP® engines

A75 - 34459 X Clevis



A73SS/A74SS - INOX



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



A50



A75

STEERING CABLE ADAPTORS

K46 - 35679 L

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

K66 - 38432 Q

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



K46



K66

MONOFILAMENT POLYESTER BRAIDED SLEEVINGS FOR CABLES

TECHNICAL FEATURES

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



APPLICATIONS



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)

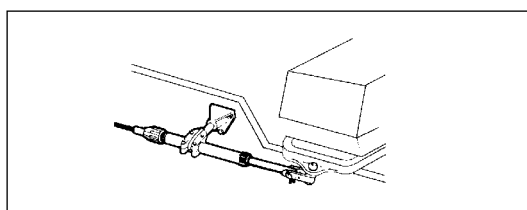


NOMINAL INTERNAL DIAMETER	PART No. 1 m length	BULK PART No. 100 m length	ROLL WEIGHT Kg
10 mm (0.39")	68146 N	68180 N	8,0
15 mm (0.59")	68147 R	20540 Y	12,16
20 mm (0.78")	68148 T	20542 C	17,8
25 mm (0.98")	68149 V	20543 E	20,2
30 mm (1.18")	68150 D	20544 G	27,0

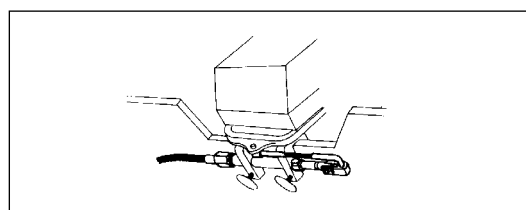
Available in UFLEX

TYPICAL INSTALLATIONS

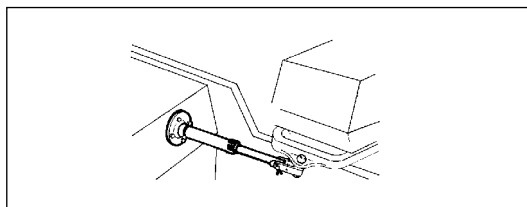
INSTALLATION	CABLE SUPPORT + ENGINE CONNECTION KIT	INSTALLATION	CABLE SUPPORT + ENGINE CONNECTION KIT
A	S39 or S61 or S62 + A75	C	A73SS or A74SS
B	S40 + A75	D	S55 + A75



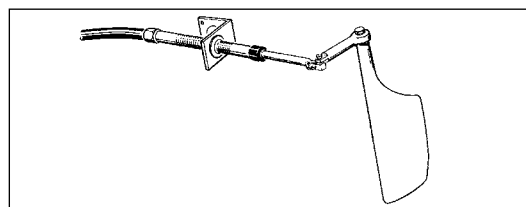
A = With clamp block



C = With tiller arm



B = With splashwell



D = With 90° rudder support

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 - 40128 E

- Adjustable from 650 mm (25.6") to 950 mm (37.4") engine centers
- All stainless steel components
- Kit includes all mounting hardware

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

A92/700 - 40892 V

A92/950 - 40893 X

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



A 88



A 92



WIRE TYPE STEERING GROMMETS AND RINGS

BLACK GROMMETS

- R1 B - 38060 I - Ø 152 mm (6"); h 110 mm (4.3")
 R2 B - 38061 J - Ø 105 mm (4.1"); h 65 mm (2.5")
 R3 B - 38062 K - 2 holes Ø 105 mm (4.1"); h 52 mm (2")
 R4 B - 38827 V - Adjustable Ø 105 mm (4.1"); h 68 mm (2.6")



R1 B

R2 B

R3 B

R4 B

WHITE GROMMETS

- R1 W - 38953 A - Ø 152 mm (6"); h 110 mm (4.3")
 R2 W - 38954 C - Ø 105 mm (4.1"); h 65 mm (2.5")
 R3 W - 38955 E - 2 holes Ø 105 mm (4.1"); h 52 mm (2")
 R4 W - 38956 G - Adjustable Ø 105 mm (4.1"); h 68 mm (2.6")



R1 W

R2 W

R3 W

R4 W

GREY GROMMETS

- R1 G - 39279 V - Ø 152 mm (6"); h 110 mm (4.3")
 R2 G - 39280 D - Ø 105 mm (4.1"); h 65 mm (2.5")
 R3 G - 39281 F - 2 holes Ø 105 mm (4.1"); h 52 mm (2")



R1 G

R2 G

R3 G



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HYDRAULIC AND ELECTRO-HYDRAULIC STEERING SYSTEMS

WARNING: This steering system can only be used for emergency steering. When installing, the clearance check must be made. Failure to comply with the instructions may result in damage to the steering system and loss of control. Read the instructions for details.



PACKAGED HYDRAULIC STEERING SYSTEMS

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PACKAGED HYDRAULIC STEERING SYSTEMS

MAX HORSEPOWER				KIT	HELM	CYLINDER (1)	FLEX HOSES (2)	OIL litres	WHEEL TURNS	OPTIONAL	
	115 hp		GOTECH-OBF	UP18	UC81-OBF	KIT OB-GT/M-60	2	4,5	Steering wheel Thru hull R5; R5SS		
			GOTECH-OBS	UP18	UC68-OBS	KIT OB-GT/M-60	2	3,7 / 5,5			
			GOTECH-I	UP18	UC69-I	KIT OB-GT/M-60	2	3,8			
		150 hp	HYCO-OBF	UP20F	UC94-OBF	KIT OB	2	4,7	Steering wheel Flange X64 Thru hull R5; R5SS; R8; R9		
			HYCO-OBS	UP20F	UC68-OBS	KIT OB	2	3,4 / 5,0			
			HYCO-I	UP20F	UC69-I	KIT OB	2	3,5			
			HYCO-OBF/M	UP20F	UC94-OBF	KIT OB/M-60 (90)	2	4,7			
			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			
	300 hp		NAUTECH-1	UP28F	UC128-OBF	KIT OB	2	4,3		Steering wheel Flange X64; X57 Thru hull R5; R5SS; R8; R9	
		NAUTECH-3	UP25F	UC128-OBF	KIT OB	2	4,8				
		NAUTECH-1/M	UP28F	UC128-OBF	KIT OB/M-60 (90, 150)	2	4,3				
		NAUTECH-3/M	UP25F	UC128-OBF	KIT OB/M-60 (90, 150)	2	4,8				
	>300 hp			SilverSteer™ and MasterDrive™ steering systems are recommended							

NOTE:

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



GOTECH-OBF



GOTECH-OBS



GOTECH-I



HYCO-OBF



HYCO-OBS



HYCO-I



HYCO-OBF/M



HYCO-OBS/M



HYCO-I/M



**NAUTECH-1
NAUTECH-3**



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

NOTE:
GOTECH, HYCO 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) - X66 tilt mechanism - Flex hoses: KIT OB-SVS (2)
	MD32-T	UH32-T	UPMD/UCMD	4	4,1	
	MD40-F	UH40-F	UPMD/UCMD	4	6,5	
	MD40-T	UH40-T	UPMD/UCMD	4	6,5	

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



SVS-28, SVS 33



MD

ULTRAFLEX HYDRAULIC STEERING SYSTEMS

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 A 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

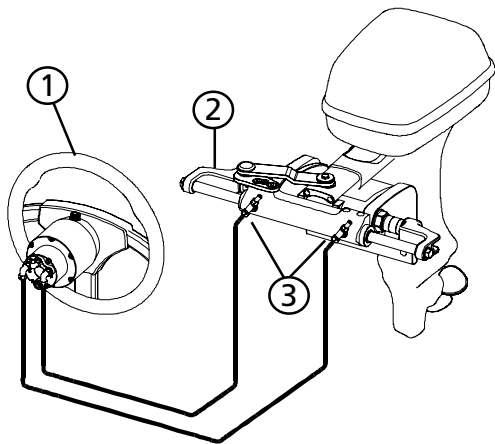
The above Cross Reference chart has been drawn to facilitate a functional comparison among brands and should be used as general reference only.

For any further information please contact our Technical Service

HELM PUMPS		CYLINDRES	
ULTRAFLEX®	SEASTAR®	ULTRAFLEX®	SEASTAR®
UP18	BayStar™ HH4311	UC81-OBF	-
UP20 F	BayStar™ HH4314	UC94-OBF	Baystar™ HC4645
UP20 T	BayStar™ HH4315	UC128-OBF	Seastar™ HC5345
UP25 F	Seastar™ 1.4 HH5269	UC130-SVS	Seastar™ HC6345
UP25NV F	-	UC68-OBS	-
UP25 T	Seastar™ 1.4 HH6544	UC132-OBS	Seastar™ HC5370/5328
UP28 F	Seastar™ 1.7 HH5271	UC69-I	Baystar™ HC4461-3
UP28 T	Seastar™ 1.7 HH6541	UC116-1	Seastar™ HC5312
UP 28 R	Seastar™ 1.7 HH5261	UC168-I	Seastar™ HC5314
UP33 F	Seastar™ 2.0 HH5273	UC215-I	Seastar™ HC5319
UP33NV F	Seastar™ 2.0 HH5760	UC293-I	-
UP33 T	Seastar™ 2.0 HH6543	UC378-I	-
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		

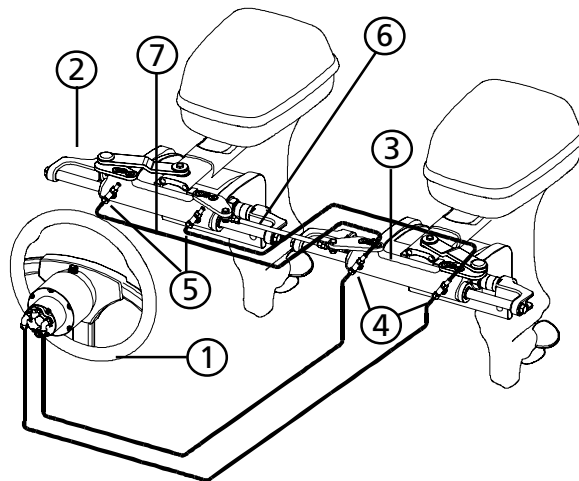


SINGLE STATION / SINGLE ENGINE:



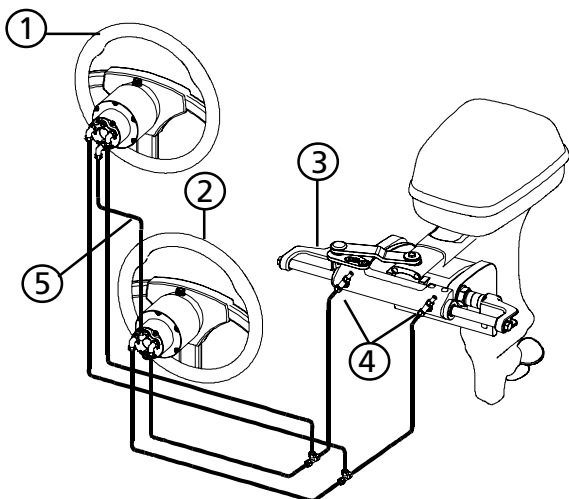
1. helm
2. starboard cylinder
3. bleed valves

SINGLE STATION / DUAL ENGINE:



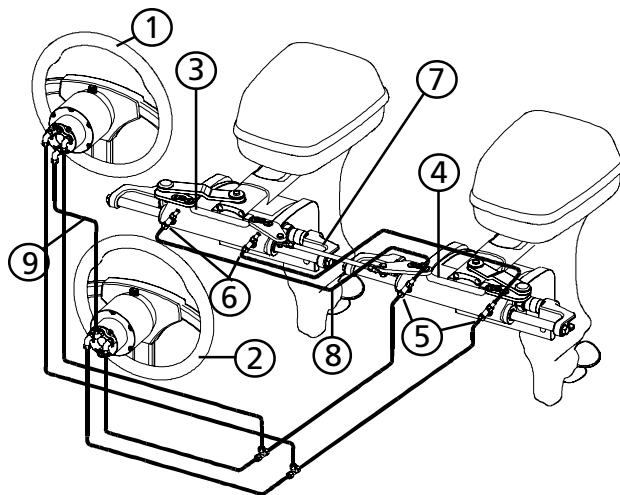
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

DUAL STATION / SINGLE ENGINE



1. upper station helm
2. lower station helm
3. starboard cylinder
4. bleed valves
5. kit OB-25

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-25

SUGGESTION AND WARNINGS WHEN SELECTING AN OUTBOARD HYDRAULIC STEERING SYSTEM



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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	Max hp power
UC81-OBF	115	not applicable	not applicable	not applicable	not applicable
UC94-OBF	150	not applicable	not applicable	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	300	300	450	500	600

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

	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	-	-	-	-	-	-	-	-	-
UC94-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

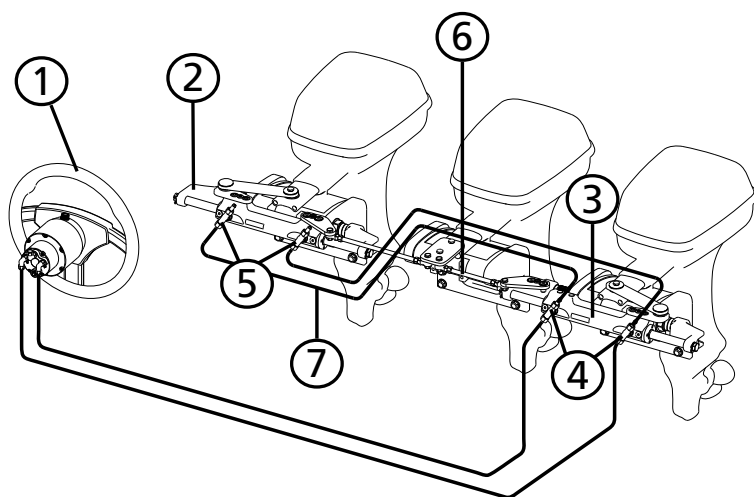
STEERING WHEEL TURNS double cylinder

	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

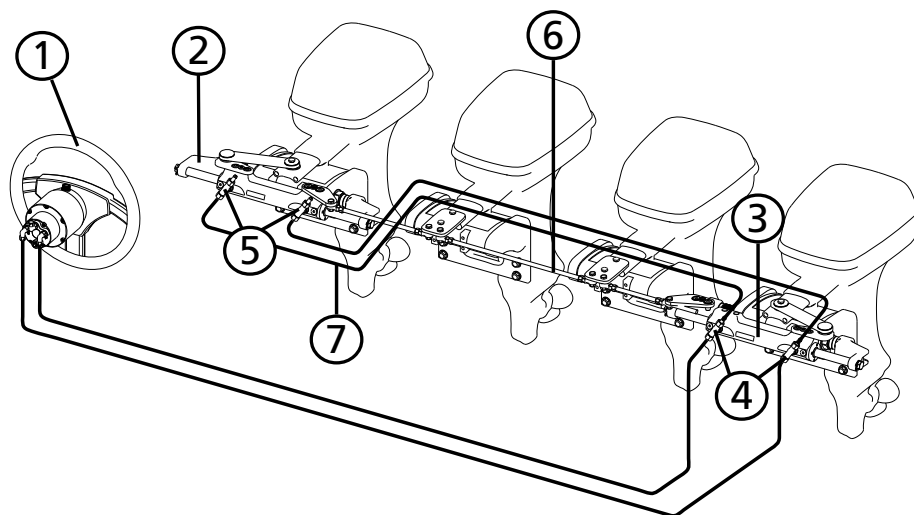


SINGLE STATION / THREE ENGINES



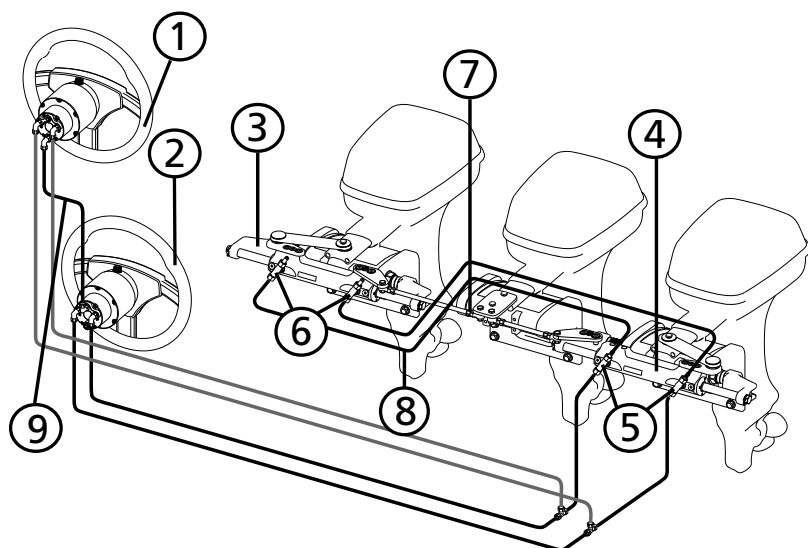
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

SINGLE STATION / FOUR ENGINES



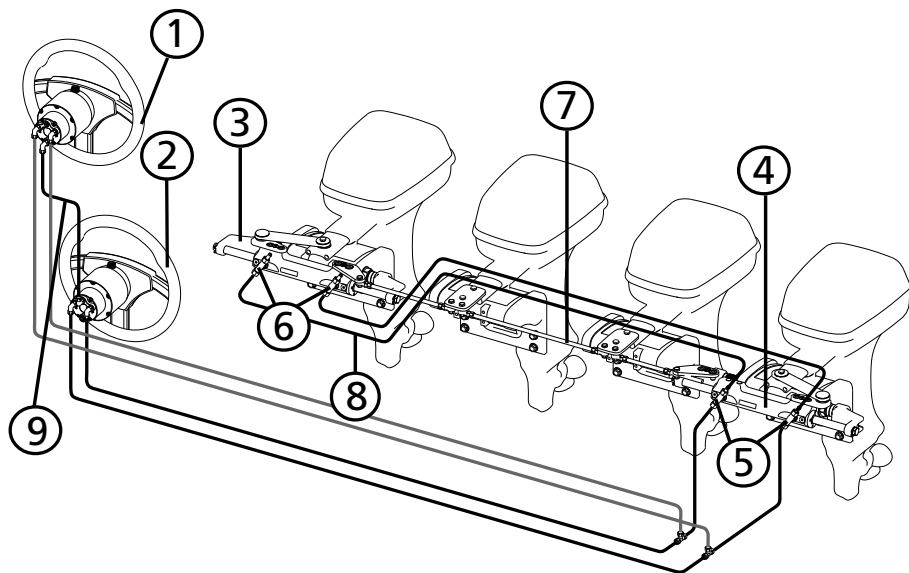
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

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



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ADJUSTABLE STEERING WHEEL SYSTEMS (TILT MECHANISM)

TILT MECHANISMS SUITABLE FOR TILT MOUNT HELMS

- Tilt range of 48° and five locking positions. Please refer to the next page application chart.

X52 - 39250 U

X66 - 40613 M

X70-SVS - 41880 T



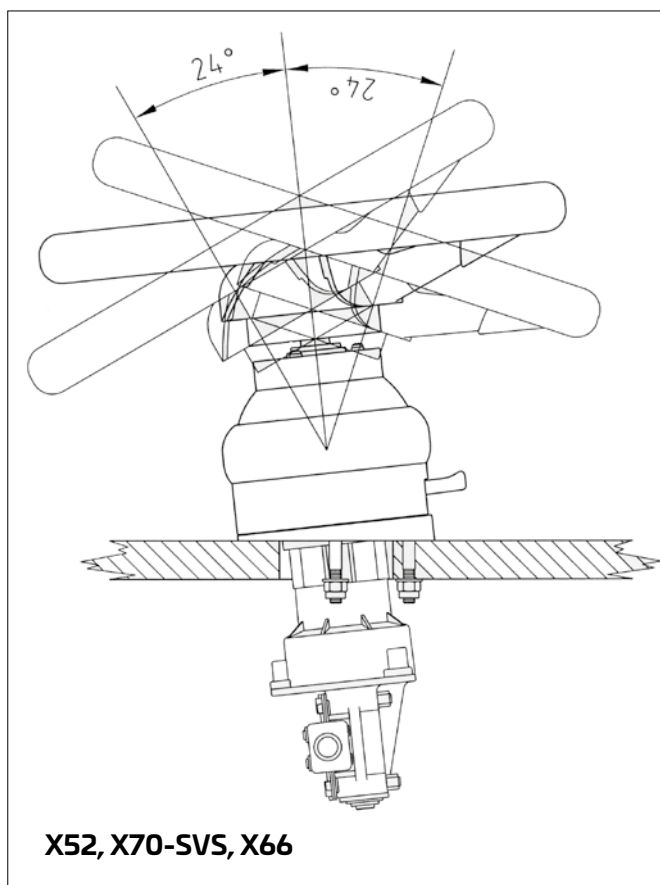
X52



X66



X70-SVS



X52, X70-SVS, X66

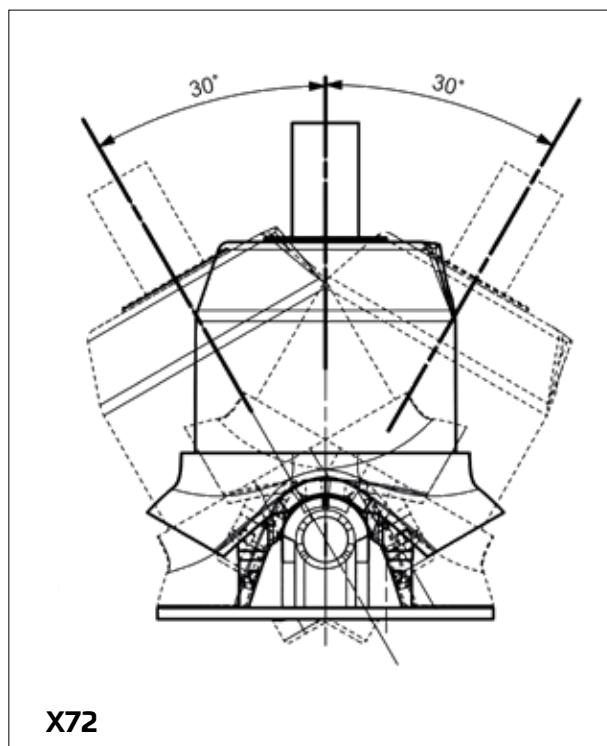
TILT MECHANISMS SUITABLE FOR FRONT MOUNT HELMS

- Tilt range of 60° and five locking positions. Please refer to the application chart below.

X72 - 43140 K Shown with optional UP series helm. Not applicable to UP18 or UP20 helms.



X72



X72

TILT MECHANISM APPLICATION FOR MECHANICAL STEERING SYSTEMS

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

TILT MECHANISM APPLICATION FOR HYDRAULIC STEERING SYSTEMS

TILT MECHANISM	Part No.	UP18 UP20F	UP20T	FRONT MOUNT HELMS		TILT MOUNT HELMS		MASTER- DRIVE NAVITECH
				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	39250 U	-	X	-	-	X	-	-
X72	43140 K	-	-	X	X	-	-	-
X70-SVS	41880 T	-	-	-	-	-	X	-
X66	40613 M	-	-	-	-	-	-	X



PACKAGED OUTBOARD STEERING SYSTEM FOR SINGLE ENGINE UP TO 115 HP

GOTECH-OBF WHEEL TURNS 4,5 - 42634 G For outboard single engine up to 115 hp

GOTECH-OBF package kit contains:

- UP18** Intermediate mount helm pump
UC81-OBF Front mount outboard cylinder
OL 150 Hydraulic oil – 2 litres.
KIT OB-GT/M-60 Hose kit dia. 1/4" 6 m (19.7") length with fitting preassembled at one end only

NOTE: GOTECH kit is also available without flexible hydraulic hoses.

The wheel is not included.



GOTECH-OBF - 42634 G

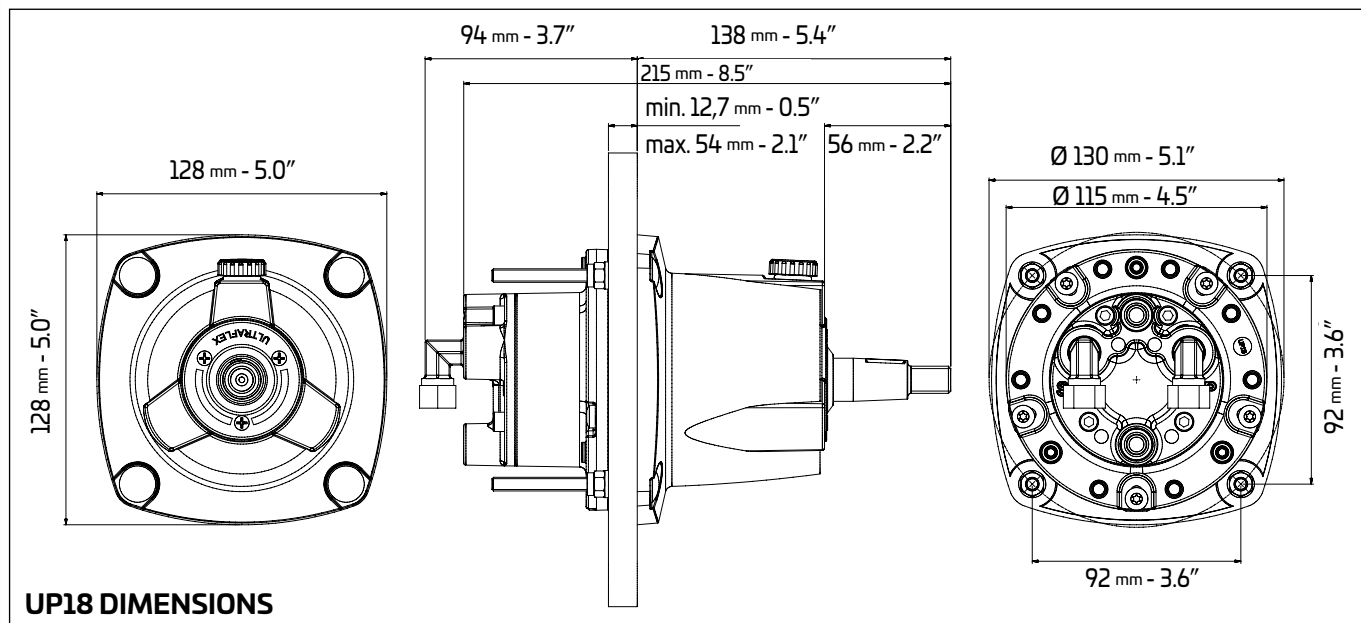
UP18 - HELM PUMP

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



UP18

MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP18	43182 C	Semi-incasso	18 cc – 1.1 cu.in.	5	55 Bar - 800 PSI	508 mm - 20"	3.6 kg - 8 lbs



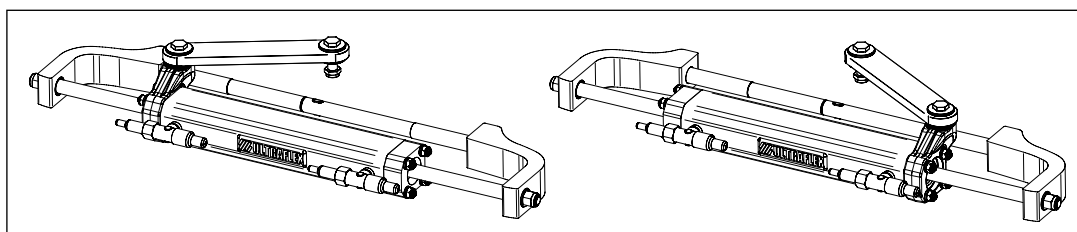
UC81-OBF **FRONT** **MOUNT** **CYLINDER**



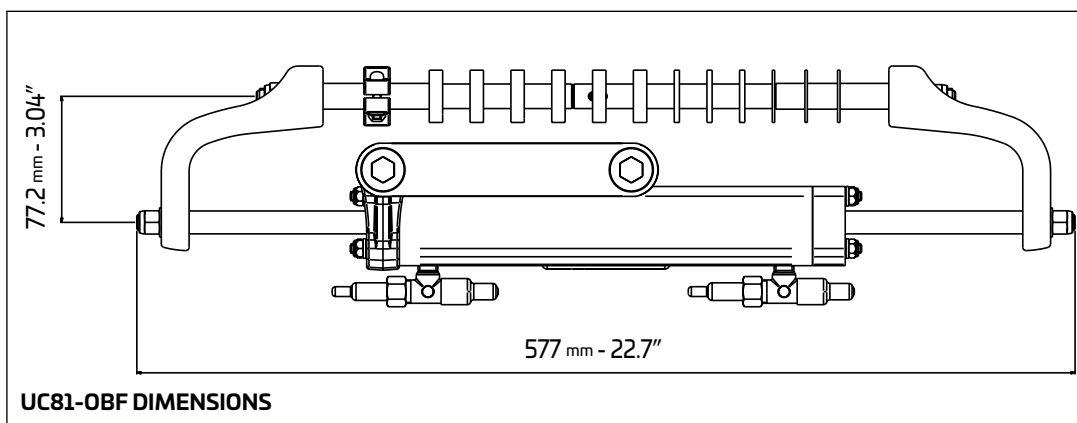
45

UC81-OBF - Balanced: the number of turns lock-to-lock is equal port to starboard and vice-versa.
 Replaceable cylinder heads

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



SPECIFICATIONS	UC81-OBF - 42654 N
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



KIT FOR AUTOPILOT APPLICATION WITH GOTECH™

K18 - 43414 X

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



PACKAGED OUTBOARD STEERING SYSTEM UP TO 115 HP



PACKAGED OUTBOARD STEERING SYSTEM UP TO 115 HP



Suzuki® engines built from 1998 to 2008 install UC81-OBF cylinder require optional **KIT SU** cod. 41954W.

***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.

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



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 lengths.

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



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 lengths.

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



KIT OB-GT/R5



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PACKAGED OUTBOARD STEERING SYSTEM UP TO 115 HP



UP20F - UP20T HELM PUMPS



FEATURES

- Built-in lock valve for positive rudder lock
- Integral 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" tube
- For use with UC94-OBF, UC68-OBS and UC69-I cylinders only
- Tilt mechanism **X52** - 39250 U for UP20T pump
- Tilt range of 48° and five locking positions
- **X74** - 43048 Y square flange permits to install the **UP20F** pump in an intermediate dashboard position



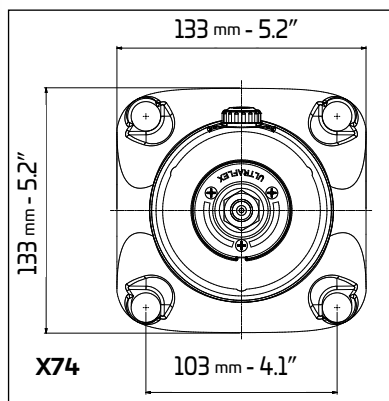
UP20F



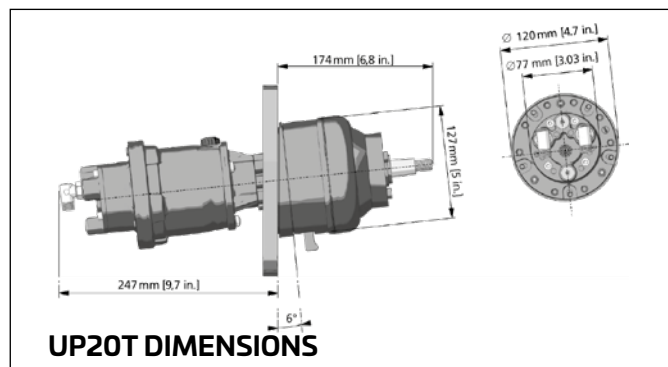
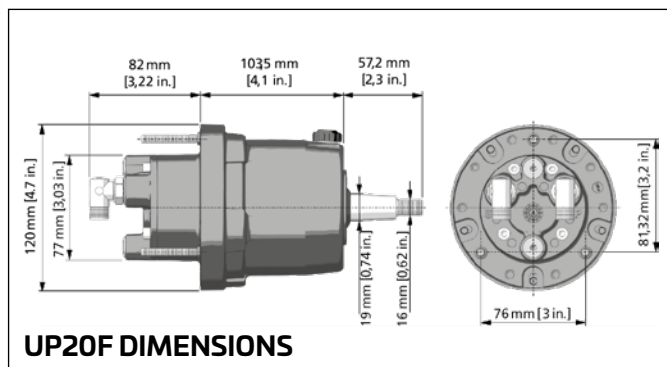
UP20T + X52



UP20F + X74



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
UP20T	43181 A	With X52 tilt	20 cc - 1.2 cu. in	5	70 Bar - 1000 PSI	406 mm - 16"	3,9 kg - 8.5 lbs



UP25F - UP25NVF
UP28F - UP33F - UP33NVF
UP39F - UP45F
FRONT MOUNT HELM PUMPS

FEATURES

- Available in five different displacement sizes
- UP25F and UP33F models are also available without built-in lock valve (**UP25NVF** and **UP33NVF** models)
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock (except UP25 NVF and UP33NVF)
- Integral relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- Includes 90° **adjustable** fittings for 3/8" tube
- **UP45 F** pump is ideal for dual cylinder applications
- **X64** - 40198 C square flange or **X57** - 39464 P round flange permit to install the pumps in an intermediate dashboard position.
- Tilt mechanism:
X72 - 43140 K
Tilt range of 60° and five locking positions

NOTE: Please refer to the tilt mechanism application chart



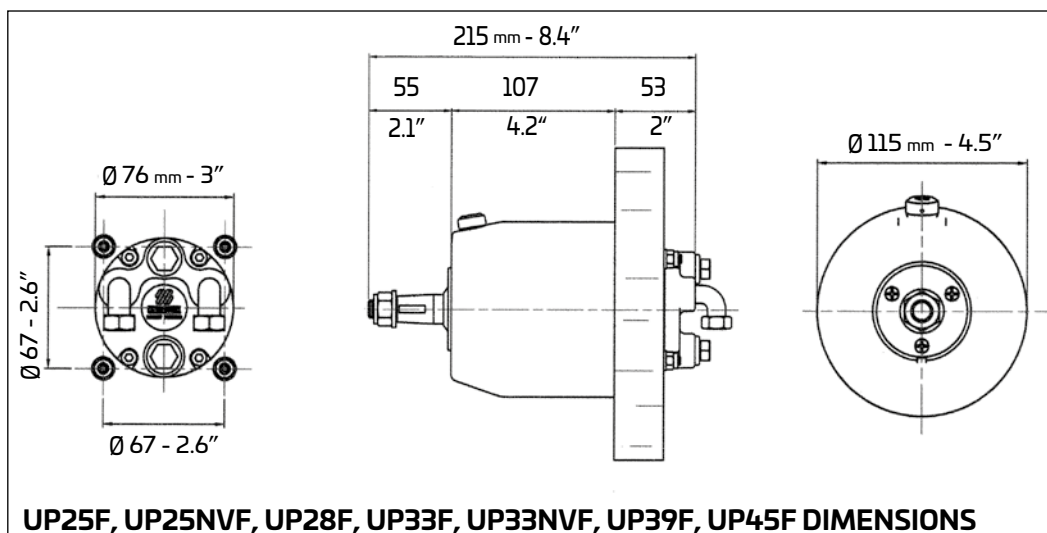
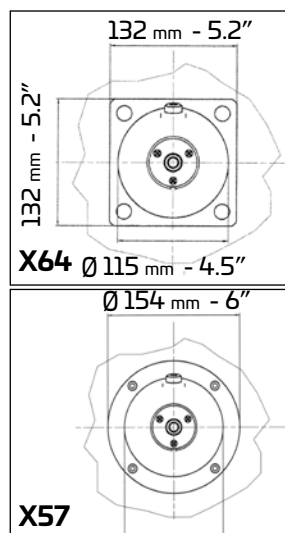
X64 with front mount helm



X57 with front mount helm



MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP25F	42462 D	Front mount	25 cc - 1.5 cu.in	5	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP25NVF	42473 J	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
UP33NVF	42472 G	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





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TILT MOUNT HELM PUMPS

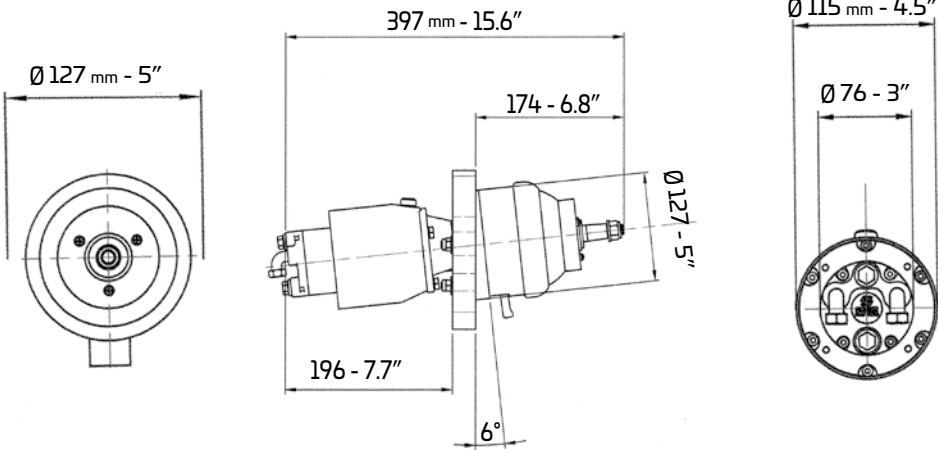
UP25T - UP28T - UP33T **UP39T - UP45T** **TILT MOUNT HELM PUMPS**

FEATURES

- Available in five different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- Integral relief valve for over-pressure protection
- Stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- Includes 90° **adjustable** fittings for 3/8" tube
- **UP45T** pump is ideal for dual cylinder, dual outboard engine applications
- Tilt mechanism:
X52 - 39250 U
Tilt range of 48° and five locking positions
- **KIT F** (optional) - 39664 Y Remote fill adapter



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



UP25T, UP28T, UP33T, UP39T, UP45T DIMENSIONS

UP28R - UP33R

UP39R - UP45R

REAR MOUNT

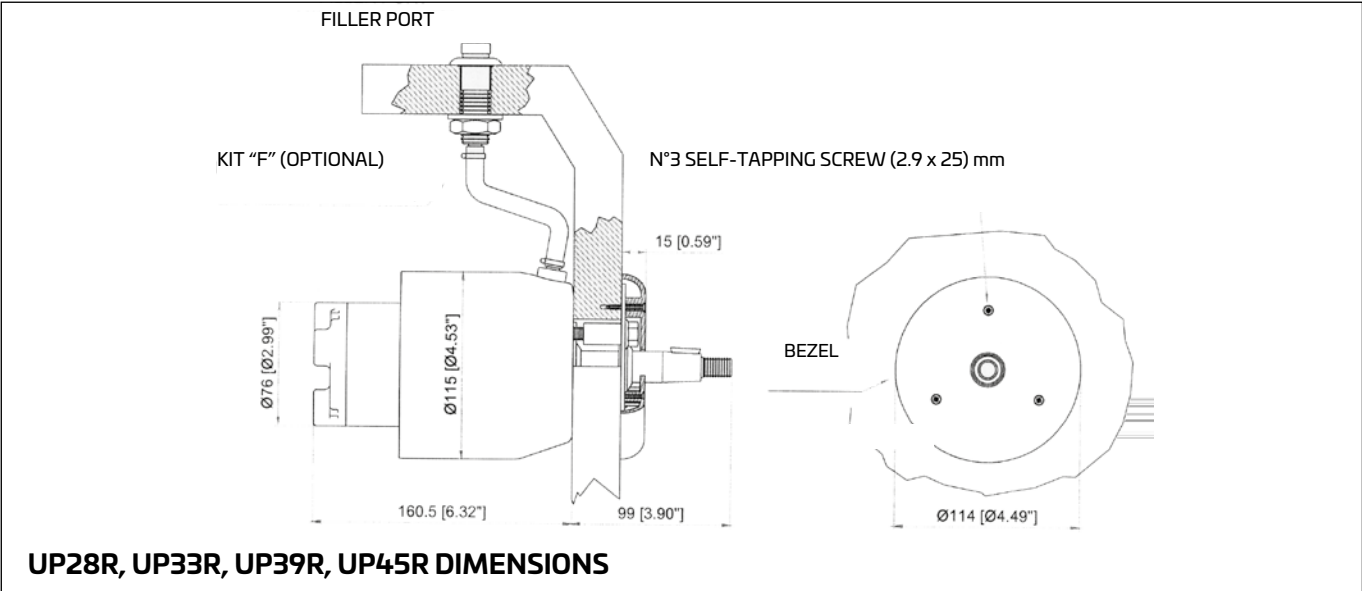
HELM PUMPS

FEATURES

- Available in four different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- Integral 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 (1/4" NPT straight fitting for 12 mm hose)
- **UP45R** pump is ideal for dual cylinder outboard applications
- **UP45** and **UP39** pumps are available also for inboard applications
- **X68** (optional) - 40894 Z Chrome bezel
- **KIT F** (optional) - 39664 Y Remote fill adapter



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



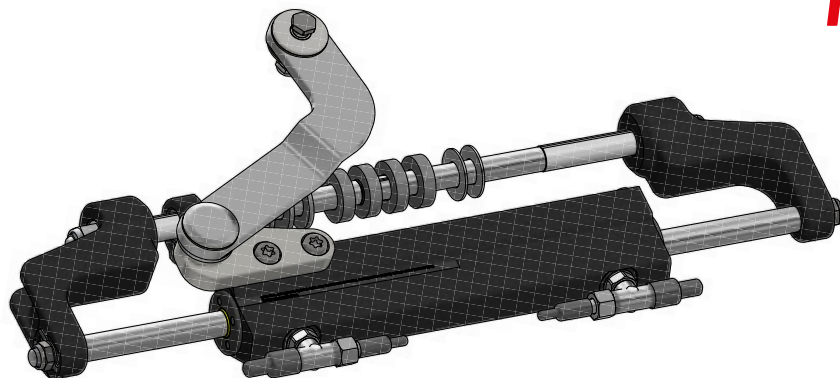
**UC94-OBF
FRONT MOUNT
CYLINDER FOR
OUTBOARD
ENGINES
UP TO 150 HP
TOTAL**



new



UC94-OBF/1 - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa



new



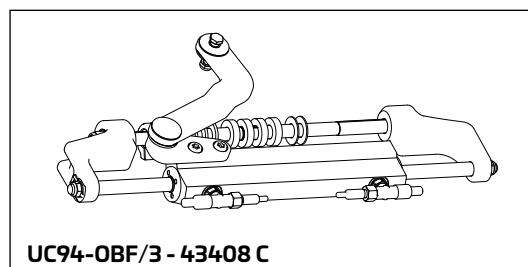
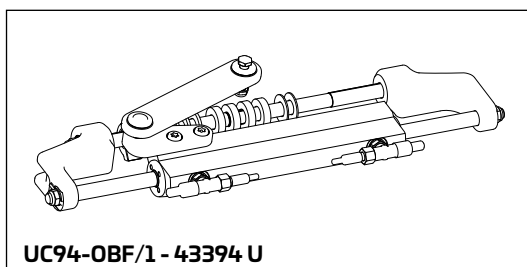
UC94-OBF/3 - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa

Adjustable boss style fittings for easy installation
High resistance stainless steel connection bolt (ULTRABOLT)
Replaceable cylinder heads

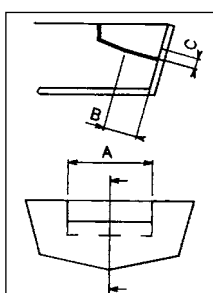
INNOVATIVE DESIGN (PATENTED):

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

Depending on the applications on the outboard engines, the UC94-OBF cylinder is available in 2 versions:



**UC94-OBF FRONT
MOUNT CYLINDER**

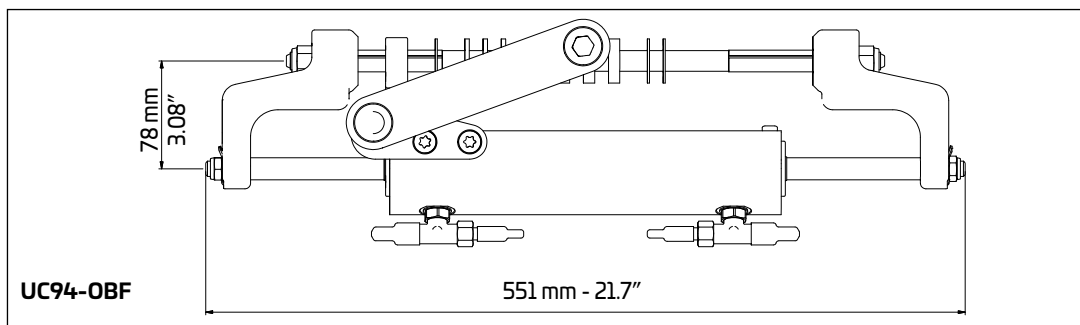


SPLASHWELL DIMENSION REQUIREMENTS

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



SPECIFICATIONS	UC94-OBF/1 -/3
Volume	94 cc - 5.7 cu. in
Output force	278 kg - 613 lbs
Internal diameter	30 mm - 1.18"
Stroke	186 mm - 7.3"
3/8" (9.5mm) Fittings	For high pressure flex hose
Bleed fittings	DN5 Quick connect



UC94-OBF

CYLINDER

APPLICATIONS

WARNING

The UC94-OBF front mount cylinder is recommended for use with outboard engines 150 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.

ENGINE	POWER	YEAR	CYLINDER	P. No.
Mercury® Mariner®	50-75-90 2S	1990-2008	UC94-OBF/1	43394U
	115-125-150 EFI 2S	1990-2007	UC94-OBF/1	43394U
	75-90-115 OPTIMAX	2004-to date	UC94-OBF/3	43408C
	135-150 OPTIMAX	1999-to date	UC94-OBF/1	43394U
	40-50-60 EFI 4S	2004-to date	UC94-OBF/1	43394U
	75-80-90 EFI 4S	2000-to date	UC94-OBF/1	43394U
	100-115 EFI 4S	2007-to date	UC94-OBF/1	43394U
Evinrude®	E40-E50-E55-E60 2S	2004-to date	UC94-OBF/1	43394U
	E75-E90 2S	2004-to date	UC94-OBF/1	43394U
	E115-E130-E135 2S V4	1995-to date	UC94-OBF/1	43394U
	E150 2S V6	1995-to date	UC94-OBF/1	43394U
Yamaha®	60-70 2S	1984-2008	UC94-OBF/1	43394U
	75C-90 2S	1998-2008	UC94-OBF/1	43394U
	115C-130B 2S	1990-2008	UC94-OBF/1	43394U
	150F	1996-2007	UC94-OBF/1	43394U
	150 HPDI VMAX 2S	2000-2008	UC94-OBF/1	43394U
	F60-F75-F80 EFI 4S	1999-2007	UC94-OBF/1	43394U
	F90-F100-F115-F150 EFI 4S	1999-2007	UC94-OBF/1	43394U
	F80-F100 4S	2000-to date	UC94-OBF/1	43394U
	F115-F150 4S	2004-to date	UC94-OBF/1	43394U
			UC94-OBF/1	43394U
Honda®	BF75-BF90 4S	1995-to date	UC94-OBF/1	43394U
	BF80-100-115DK-130A 4S	1998-to date	UC94-OBF/1	43394U
	BF115A-135-BF150 4S	2005-to date	UC94-OBF/1	43394U
	BF90-BF150 V-TEC 4S	2008-to date	UC94-OBF/1	43394U
Suzuki®	DF70-80-90 4S	1998-to date	UC94-OBF/1	43394U
	DF100-115-140 4S	1998-to date	UC94-OBF/1	43394U
	DF150 4S	2006-to date	UC94-OBF/1	43394U
Tohatsu® Nissan®	50-60-70-90 2S	2004-to date	UC94-OBF/1	43394U
	115-120-140 2S	2004-to date	UC94-OBF/1	43394U
	40-50TLDI 4S	2004-to date	UC94-OBF/1	43394U
	70-90-115 TLDI 4S	2004-to date	UC94-OBF/1	43394U
Selva®	50 MADEIRA/ BULL SHARK-60 GREY SHARK/ ST.TROPEZ	1995-2008 2001-2007	UC94-OBF/1	43394U
	70 MAKO SHARK 2S		UC94-OBF/1	43394U
	80 PORTOFINO/TIGERSHARK 2S		UC94-OBF/1	43394U
	150 WHITE SHARK 2S		UC94-OBF/1	43394U
	50-60 DORADO EFI 4S	2000-to date	UC94-OBF/1	43394U
	100EFI MARLIN -115 EFI NARWHAL-150EFI KILLER WHALE 4T		UC94-OBF/1	43394U
Johnson®	BJ60-70 4S	2001-2007	UC94-OBF/1	43394U
	BJ90-115-140 4S	2001-2007	UC94-OBF/1	43394U
	J90-115 V4 2S	1995-2007	UC94-OBF/1	43394U

*NOTE:

Suzuki® engines built from 1998 to 2008 installing UC94-OBF/1 cylinder require optional KIT SU - 41954W.



UC128-OBF **FRONT** **MOUNT** **CYLINDER**

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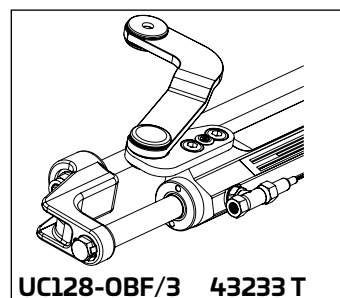
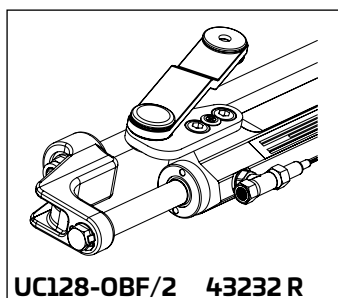
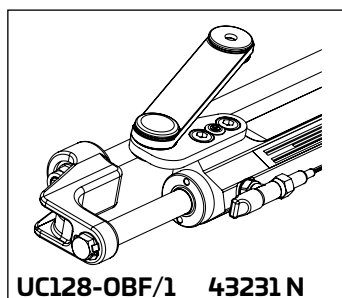
UC128-OBF - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa

Adjustable boss style fittings for easy installation
High resistance stainless steel connection bolt (ULTRABOLT)
Replaceable cylinder heads

The UC128-OBF cylinder is built to last with heavy duty stainless steel cylinder rod, seals and link assemblies. Constructed of top grade materials, this cylinder is simple to install and fits almost every 2 and 4 stroke outboard engine in the market. See the application guide next page to choose the appropriate cylinder (UC128-OBF/1, UC128-OBF/2 or UC128-OBF/3) for your application.

The UC128-OBF cylinders are recommended for use with UP25, UP28, UP33 and UP39 series helms and preassembled hoses (Kit OB and Kit OB/R5).

Depending on the applications on the outboard engines, the UC128-OBF is available in 3 versions:

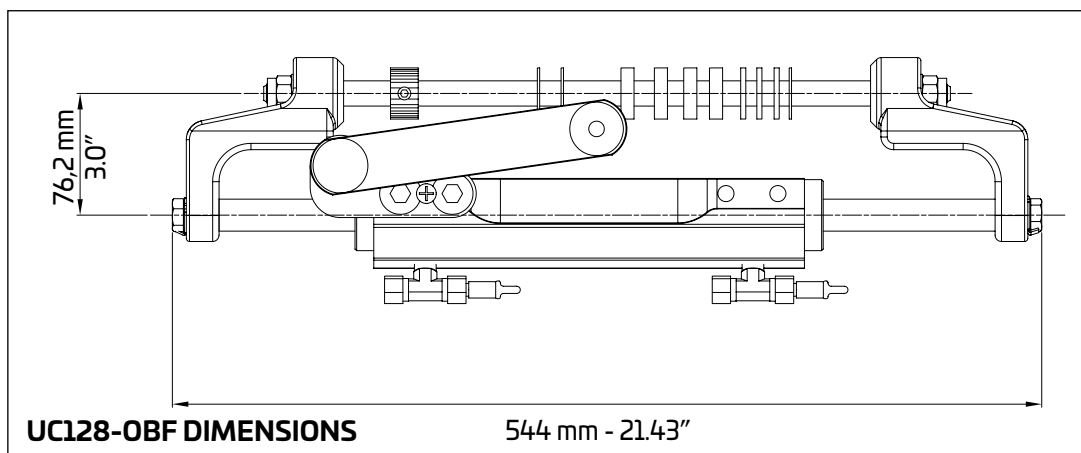
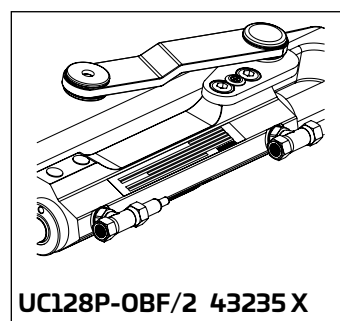
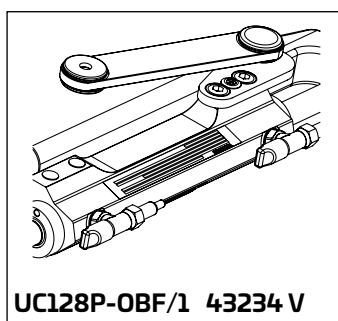


In the applications with dual UC128-OBF cylinder it is necessary to order a standard UC128-OBF cylinder (link arm attached to the starboard side of the cylinder) and a port UC128P-OBF cylinder (link arm attached to the port side of the cylinder). See appropriate section for A90 or A95 tie bars, required for dual engine/dual cylinder applications.

Depending on the applications on the outboard engines, the UC128P-OBF port cylinder is available in 2 versions:

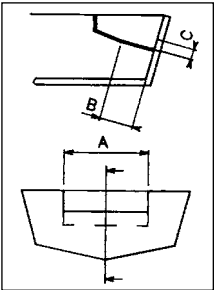


UC128P-OBF



UC128-OBF FRONT
MOUNT CYLINDER

SPECIFICATIONS	UC128-OBF/1 -/2 -/3
Volume	120 cc - 7.3 cu. in
Output force	450 kg - 992 lbs
Internal diameter	35 mm - 1.37"
Stroke	185 mm - 7.28"
3/8" (9.5mm) Fittings	For high pressure flex hose
Bleed fittings	DN5 Quick connect



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")

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).

“STANDARD” LINK ARMS:



LA1 40045 A
for UC128-OBF/1



LA2 40046 C
for UC128-OBF/2



LA3 40073 F
for UC128-OBF/3

“PORT” LINK ARMS:



LA1P 40104 P
for UC128P-OBF/1



LA2P 40105 S
for UC128P-OBF/2



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.





UC128-OBF

CYLINDER

APPLICATIONS

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.

ENGINE	MODEL	YEAR	CYLINDER	P. NO.
Mercury® Mariner®	115-125-150 EFI 2S	1990-2007	UC128-OBF/1	43231 N
	225-250 EFI 2S	2000-2007	UC128-OBF/1	43231 N
	75-90-115 OPTIMAX	2004-to date	UC128-OBF/3	43233 T
	135-150-175 OPTIMAX	1999-to date	UC128-OBF/1	43231 N
	200-225-250 OPTIMAX	1999-to date	UC128-OBF/1	43231 N
	RACING 300 OPTIMAX	1999-2011	UC128-OBF/1	43231 N
	100-115 EFI 4T	2007-to date	UC128-OBF/1	43231 N
	250 SALTWATER EFI 4S	2007-2011	UC128-OBF/1	43231 N
	135-150-175-200 VERADO L4	2004-to date	UC128-OBF/1	43231 N
	FOURSTROKE 175-200 V6	2018-to date	UC128-OBF/1	43231 N
	FOURSTROKE 225-300 V8	2018-to date	UC128-OBF/1	43231 N
Evinrude®	E75-E90 2S	2004-to date	UC128-OBF/2	43232 R
	E115-E130-E135 2S V4	1995-to date	UC128-OBF/2	43232 R
	E150-E175-E200-E225-E250-E300 2S V6	1995-to date	UC128-OBF/2	43232 R
Yamaha®	115C-130B 2S	1990-2008	UC128-OBF/2	43232 R
	75C-90 2S	1998-2008	UC128-OBF/2	43232 R
	115C-130B 2S	1990-2008	UC128-OBF/2	43232 R
	150F-200F-250G 2S	1996-2007	UC128-OBF/2	43232 R
	150 HPDI VMAX 2S	2000-2008	UC128-OBF/2	43232 R
	175-200-225-250-300 HPDI VMAX 2S	2000-2008	UC128-OBF/2	43232 R
	F115-F150 EFI 4S	1999-2007	UC128-OBF/1	43231 N
	F200-F225-F250 4S	2002-2007	UC128-OBF/2	43232 R
	F70 4S	2010-to date	UC128-OBF/1P	43234 V
	F115-F150-F175-F200 L4 4S	2004-to date	UC128-OBF/1	43231 N
	F200-F225-F250-F300 V6 4S	2004-to date	UC128-OBF/2	43232 R
Honda®	BF75-BF90 4S	1995-to date	UC128-OBF/1	43231 N
	BF115-BF130 4S	1998-to date	UC128-OBF/3	43233 T
	BF135-BF150 4S	2005-to date	UC128-OBF/1	43231 N
	BF150 V-TEC 4S	2008-to date	UC128-OBF/1	43231 N
	BF175-BF200-BF225- BF250 4S	2001-to date	UC128-OBF/1	43231 N
Suzuki®	DF70-80-90 4T	1998-to date	UC128-OBF/2	43232 R
	DF100-115-140 4S	1998-2008	UC128-OBF/1*	43231 N
	DF100-115-140 4S	1998-to date	UC128-OBF/1	43231 N
	DF150-175-DF200 L4 4S	2006-to date	UC128-OBF/1	43231 N
	DF200-DF225-DF250-DF300-V6 4S	2004-to date	UC128-OBF/2	43232 R
Tohatsu®	115-120-140 2S	2004-to date	UC128-OBF/2	43232 R
	70-90-115 TLDI 4S	2004-to date	UC128-OBF/1	43231 N
	BFT60-75-90 4S	2015-to date	UC128-OBF/1	43231 N
	BFT80-100-115 4S	2015-to date	UC128-OBF/3	43233 T
	BFT150-200-225-250 4S	2015-to date	UC128-OBF/1	43231 N
Selva®	80 PORTOFINO/TIGERSHARK 2S	1995-2008	UC128-OBF/1	43231 N
	150 WHITE SHARK 2S	2001-2007	UC128-OBF/2	43232 R
	100EFI MARLIN -115 EFI NARWHAL -150EFI KILLER WHALE 4S	2000-to date	UC128-OBF/1	43231 N
Johnson®	BJ90-115-140 4S	2001-2007	UC128-OBF/1	43231 N
	J90-115 V4 2S	1995-2007	UC128-OBF/2	43232 R
	J150-175 V6 2S	1995-2007	UC128-OBF/2	43232 R
	J200-225 V6 4S	2004-2007	UC128-OBF/2	43232 R

*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.

UC128-OBF
CYLINDER


ORDER GUIDE:

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.

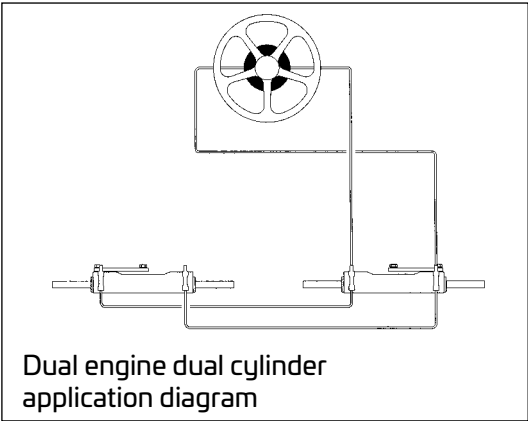
SYSTEM	APPLICATION	WHEEL TURNS	COMPONENTS	MODEL	Q.TY
Single engine Single cylinder 	Up to 300 hp max	4,8 (UP25)	Cylinder	UC128-OBF	1
			Helm pump	UP25 or UP28	1
			Hose Kit	KIT OB	1
		4,3 (UP28)	Oil	OL 150	2
			Steering wheel	(Wheel selection)	1
For a second station add: 1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OL 150, 1 steering wheel					

<div>Dual engine Single cylinder</div> <div></div>	Up to 300 hp max (non-counter rotating engine)	4,8 (UP25)	Cylinder	UC128-OBF	1
	Up to 500 hp max (counter rotating engine)	4,3 (UP28)	Helm pump	UP25 or UP28	1
			Hose Kit	KIT OB	1
			Oil	OL 150	2
			Tie bar	A94	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

<div>Dual engine Dual cylinder</div> <div></div>	Up to 500 hp max (non-counter rotating engines)	6,1 (UP39)	Cylinder	UC128-OBF	1
	Up to 600 hp max (counter rotating engines)		Cylinder Port	UC128P-OBF	1
			Helm pump	UP39 or UP45	1
		Hose Kit	KIT OB	1	
		Oil	OL 150	3	
	5,3 (UP45)	Tie bar	A90 or A95	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



NOTE:
For high performance applications SilverSteer™ systems are recommended.

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.





UC68-OBS SIDE MOUNT CYLINDER FOR OUTBOARD ENGINES UP TO 150 HP TOTAL

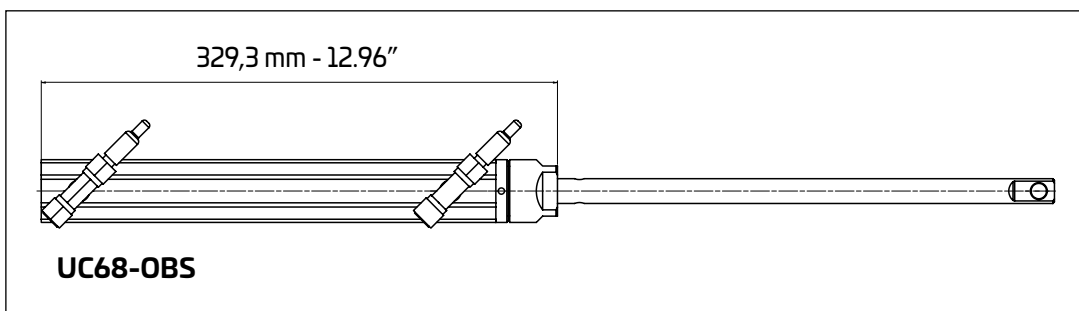


UC68-OBS - Unbalanced: the number of turns lock-to-lock is not equal port to starboard and vice-versa.

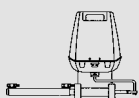
SPECIFICATIONS	UC68-OBS - 39784 J
Volume	68/100 cc - 4.1/6.1 cu. in
Output force	185/270 kg - 408/595 lbs
Internal diameter	25 mm - 0.98"
Stroke	203 mm - 8"
3/8" (9,5 mm) Fittings	For high pressure flex hose

UC68-OBS 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)



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

UC68-OBS cylinder is also available in kit: **GOTECH-OBS** and **HYCO-OBS**.

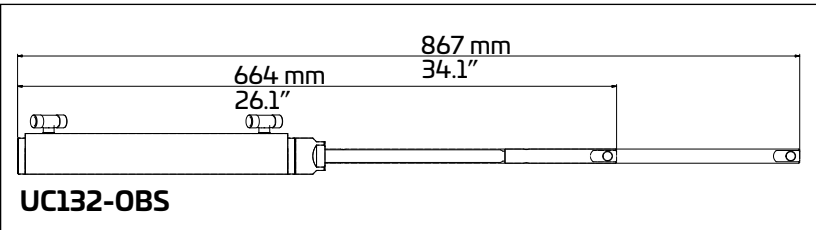
UC132-OBS
SIDE MOUNT
CYLINDER



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

WARNING
UC132-OBS cylinder is not intended for use with 105 Bar (1500 psi) SilverSteer Series Helms

SPECIFICATIONS	UC132-OBS - 39430 W
Volume	132 / 163 cc - 8 / 9.95 cu. in
Output force	464 / 574 kg - 1023 / 1265 lbs
Internal diameter	32 mm - 1.25"
Stroke	203 mm - 8"
3/8" (9,5 mm) fittings	For high pressure flex hose



UC132-OBS side mount cylinder features a turning nut for a fast and easy installation to the engine tube (PATENTED)

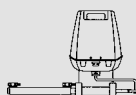
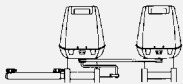

Clearance required at the engine tube side: 375 mm (14.76")

ORDER GUIDE:

WARNING
The UC132-OBS is not recommended for use in installations where the boat speed exceeds **55 mph (48 knots)** (60 mph (52 knots) for dual cylinder installations) and the power exceeds max Coast Guard recommendation for the boat.

Not intended for use in racing applications.

NOTE:
In case of power assisted sterndrive applications, please contact our Technical Service.

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



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	40852 G
KIT OB-35	3,50 m - 11.5 ft	40853 J
KIT OB-40	4,00 m - 13.2 ft	40752 C
KIT OB-45	4,50 m - 14.8 ft	40753 E
KIT OB-50	5,00 m - 16.4 ft	40754 G
KIT OB-55	5,50 m - 18.0 ft	40755 J
KIT OB-60	6,00 m - 19.7 ft	40749 P
KIT OB-65	6,50 m - 21.3 ft	40648 H
KIT OB-70	7,00 m - 22.9 ft	40796 Z
KIT OB-75	7,50 m - 24.6 ft	40854 L
KIT OB-80	8,00 m - 26.3 ft	40855 N
KIT OB-85	8,50 m - 27.8 ft	40856 R
KIT OB-90	9,00 m - 29.5 ft	40857 T



KIT OB

KIT OB/R5: HYDRAULIC HOSE KIT

Two high pressure flexible hoses with pre-crimped brass fittings, R5 bulkhead fittings and bend restrictors on both ends. Recommended for use with all Ultraflex standard helms with 70 Bar (1000 psi) relief valves. With SilverSteer™ and MasterDrive™ systems, use KIT OB-SVS.

Available lengths: from 3,00 m (9.8 ft) to 9,00 m (29.5 ft) with 0,5 m (1.6 ft) increments.

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



KIT OB/R5

HIGH PRESSURE FLEXIBLE HOSES

KIT OB/M: HOSE KIT WITH PREASSEMBLED FITTINGS AT ONE END SINGLE STATION APPLICATION

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

KIT OB/M	LENGTH	P. No.
KIT OB/M-60	6,00 m - 19.7 ft	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



KIT OB/M

KIT OB-2C: DUAL CYLINDER/DUAL ENGINE CONNECTION KIT

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

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



KIT OB-2C

KIT FOR A SECOND STEERING STATION OR AUTOPILOT FOR HYDRAULIC STEERING SYSTEMS WITH 5/16" HOSE (TU 5/16)

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

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



HIGH PERFORMANCE STEERING SYSTEMS UP28F-SVS - UP33F-SVS - UP39F-SVS FRONT MOUNT HELM PUMPS

SilverSteer™ SVS helms have been specifically designed for high torque applications such as bass boats, flats boats, and boats with shallow dead rise and high horsepower. Featuring a 1500 psi pressure valve, the SilverSteer™ helms will deliver very precise steering at all torque loads. The SVS helms have to be coupled to the UC130-SVS cylinders and the Kit OB-SVS hoses, which are also specifically designed for high torque applications. The front mount version is a direct drop-in replacement for competing helms. Both the front mount and tilt helms feature stainless steel shafts and 90° adjustable nickel-plated brass fittings.



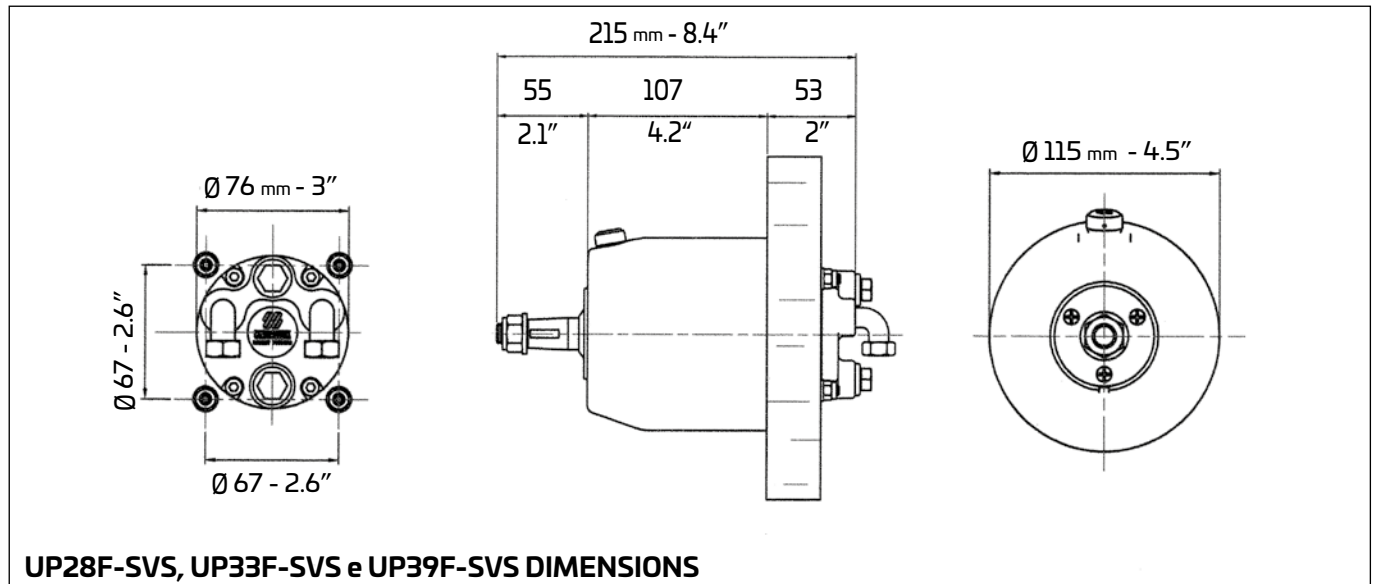
FEATURES

- Available in three different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- **Integral 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" tube**
- Tilt mechanism:
X72 - 4314-0 K
Tilt range of 60° and five locking positions. Please refer to tilt mechanism application chart.



X72

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



HIGH PERFORMANCE OUTBOARD STEERING SYSTEMS
UP28T-SVS - UP33T-SVS - UP39T-SVS TILT MOUNT HELM PUMPS

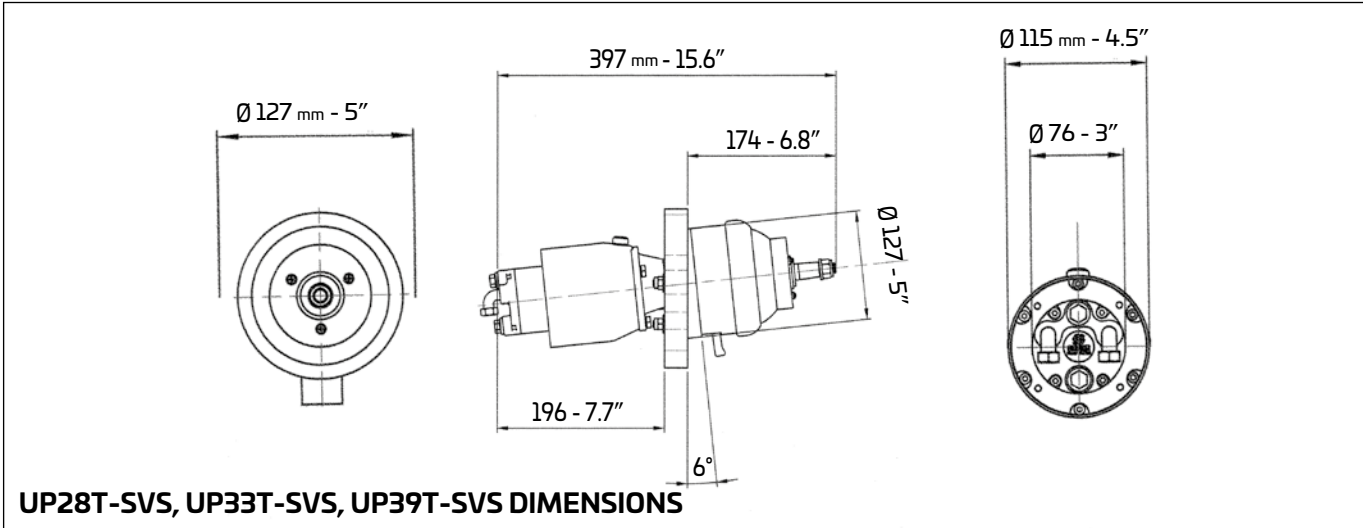
FEATURES

- Available in three different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock (patented)
- **Integral relief valve for over-pressure protection 105 bar (1500 psi)**
- Stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- Complete with 90° **adjustable** fittings for 3/8" hose
- Tilt mechanism for SilverSteer™ systems:
X70-SVS – 41880 T
 Tilt range of 48° and five locking positions
- **KIT-F** (optional) – 39664 Y Remote fill adapter



X70-SVS

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





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SILVERSTEER™

HIGH PERFORMANCE OUTBOARD STEERING SYSTEMS UC130-SVS FRONT MOUNT CYLINDER



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

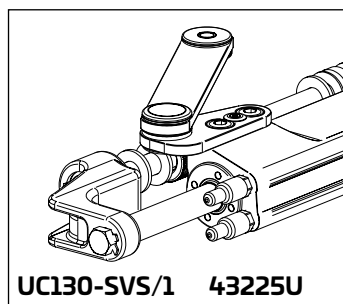
Side fittings for easy installation

High resistance stainless steel connection bolt (ULTRABOLT)

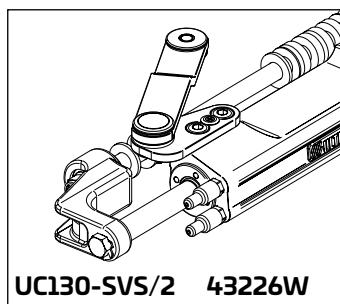
Replaceable cylinder heads

Specially designed for high performance, high torque applications the SilverSteer™ UC130-SVS cylinder is recommended for bass boats, flat boats and tournament fishing boats. The UC130-SVS is built to last with heavy duty stainless steel cylinder rod, seals and link assemblies. Constructed of top grade materials this cylinder is simple to install and fits almost every 2 and 4 stroke outboard engine in the market. See the application guide next page to choose the appropriate cylinder (UC130-SVS/1, UC130-SVS/2 or UC130-SVS/3) for your application.

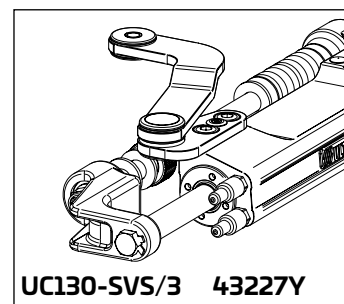
Depending on the applications on the outboard engines, the UC130-SVS is available in 3 versions:



UC130-SVS/1 43225U



UC130-SVS/2 43226W



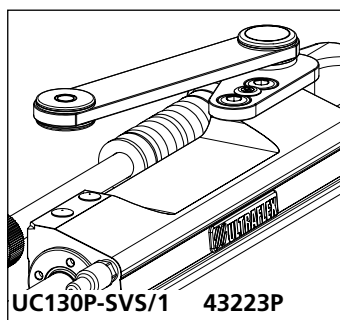
UC130-SVS/3 43227Y

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). See appropriate section for A95 tie bar required for use on dual engine/dual cylinder applications.

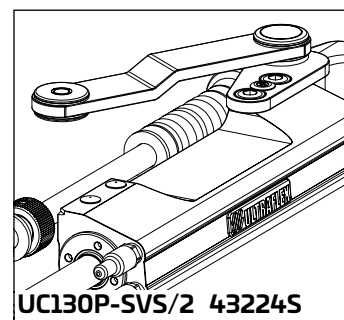
Depending on the applications on the outboard engines, the UC130P-SVS port cylinder is available in 2 versions:



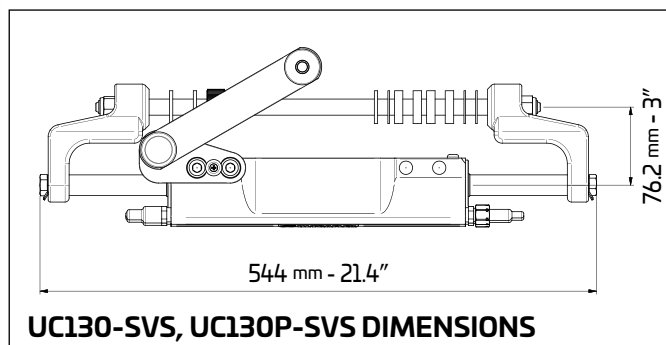
UC130P-SVS



UC130P-SVS/1 43223P

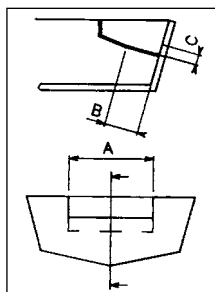


UC130P-SVS/2 43224S



UC130-SVS, UC130P-SVS DIMENSIONS

SPECIFICATIONS	UC130-SVS/1 - /2 - /3
Volume	130 cc - 7.93 cu. in
Output force	492 kg - 1085 lbs
Internal diameter	36 mm - 1.42"
Stroke	185 mm - 7.28"
3/8" (9,5 mm) Fittings	For high pressure flex hose
Bleed fittings	DN5 Quick connect



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")

UC130-SVS

CYLINDER

WAPPLICATIONS

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.

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

*NOTE:

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






SILVERSTEER™
UC130-SVS
CYLINDER

ORDER GUIDE:


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.

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	A94	1
			Steering wheel	(Wheel selection)	1

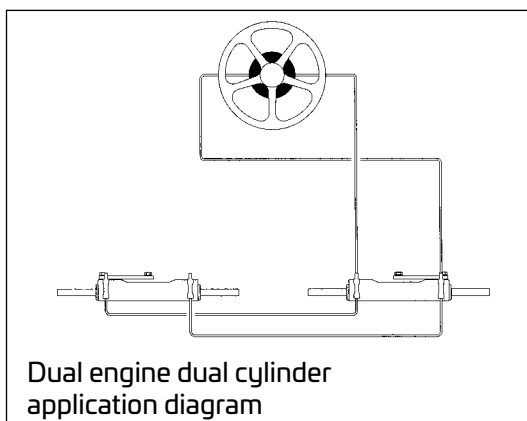
For a second station add:

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



ATTENTION:

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.



HIGH PERFORMANCE OUTBOARD STEERING SYSTEMS

KIT OB-SVS : HOSE KIT FOR SINGLE STATION INSTALLATION FOR SILVERSTEER™ SYSTEMS

Two high pressure Kevlar stranded flexible hoses with pre-crimped fittings and bend restrictors on both ends. Recommended for use with all Ultraflex SilverSteer™ and MasterDrive™ helms with 1500 psi relief valves.

Lengths available: from 3m (9.8') to 9m (29.5') with 0,5m (1.6') increments.



KIT OB-SVS

KIT OB/R5-SVS : HOSE KIT FOR SINGLE STATION INSTALLATION FOR SILVERSTEER™ SYSTEMS

Two high pressure Kevlar stranded flexible hoses with pre-crimped fittings, R5 bulkhead fittings and bend restrictors on both ends. Recommended for use with all Ultraflex SilverSteer™ and MasterDrive™ helms with 1500 psi relief valves.

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-SVS

KIT OB-SVS	LENGTH	P. No.
KIT OB-SVS-30	3,00 m - 9.8 ft	41286 E
KIT OB-SVS-35	3,50 m - 11.5 ft	41287 G
KIT OB-SVS-40	4,00 m - 13.2 ft	41288 J
KIT OB-SVS-45	4,50 m - 14.8 ft	41289 L
KIT OB-SVS-50	5,00 m - 16.4 ft	41290 V
KIT OB-SVS-55	5,50 m - 18.0 ft	41291 X
KIT OB-SVS-60	6,00 m - 19.7 ft	41292 Z
KIT OB-SVS-65	6,50 m - 21.3 ft	41293 B
KIT OB-SVS-70	7,00 m - 22.9 ft	41294 D
KIT OB-SVS-75	7,50 m - 24.6 ft	41295 F
KIT OB-SVS-80	8,00 m - 26.3 ft	41296 H
KIT OB-SVS-85	8,50 m - 27.8 ft	41297 K
KIT OB-SVS-90	9,00 m - 29.5 ft	41298 M

KIT OB/R5-SVS	LENGTH	P. No.
KIT OB/R5-SVS-30	3,00 m - 9.8 ft	41312 C
KIT OB/R5-SVS-35	3,50 m - 11.5 ft	41313 E
KIT OB/R5-SVS-40	4,00 m - 13.2 ft	41314 G
KIT OB/R5-SVS-45	4,50 m - 14.8 ft	41315 J
KIT OB/R5-SVS-50	5,00 m - 16.4 ft	41316 L
KIT OB/R5-SVS-55	5,50 m - 18.0 ft	41317 N
KIT OB/R5-SVS-60	6,00 m - 19.7 ft	41318 R
KIT OB/R5-SVS-65	6,50 m - 21.3 ft	41319 T
KIT OB/R5-SVS-70	7,00 m - 22.9 ft	41320 B
KIT OB/R5-SVS-75	7,50 m - 24.6 ft	41321 D
KIT OB/R5-SVS-80	8,00 m - 26.3 ft	41322 F
KIT OB/R5-SVS-85	8,50 m - 27.8 ft	41323 H
KIT OB/R5-SVS-90	9,00 m - 29.5 ft	41324 K

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-2C130-SVS: DUAL CYLINDER/DUAL ENGINE CONNECTION KIT FOR UC130-SVS

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

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

KIT OB-2C130-SVS	ENGINE CENTERS	HOSE LENGTH	PART No.
KIT OB-2C130-SVS-38	660 mm (26")	381 mm (15")	43421 U
KIT OB-2C130-SVS-41	686 mm (27")	407 mm (16")	43422 W
KIT OB-2C130-SVS-43	711 mm (28")	432 mm (17")	43423 Y
KIT OB-2C130-SVS-45	724 mm (28.5")	445 mm (17.5")	43424 A
KIT OB-2C130-SVS-46	737 mm (29")	457 mm (18")	43425 C
KIT OB-2C130-SVS-48	762 mm (30")	483 mm (19")	43426 E
KIT OB-2C130-SVS-50	777 mm (30.5")	496 mm (19.5")	43427 G
KIT OB-2C130-SVS-51	788 mm (31")	508 mm (20")	43428 J
KIT OB-2C130-SVS-53	813 mm (32")	534 mm (21")	43429 L



KIT OB-2C130-SVS





POWER ASSISTED OUTBOARD STEERING SYSTEM

Effortless steering for the most demanding applications! The MasterDrive™ power assisted outboard steering system delivers fingertip control regardless of speed or torque conditions.



MasterDrive™ 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
- For 3 or 4 engine applications please contact our Technical Support
- CE marked in conformity with ABYC P21, ISO 10592 safety standards
- Ignition protected (SAE J-1171 and UNI EN 28846)

SYSTEM APPLICATIONS

- 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)



CE

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COMPONENTS

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



- POWER ASSISTED OUTBOARD STEERING SYSTEM

MASTERDRIVE™



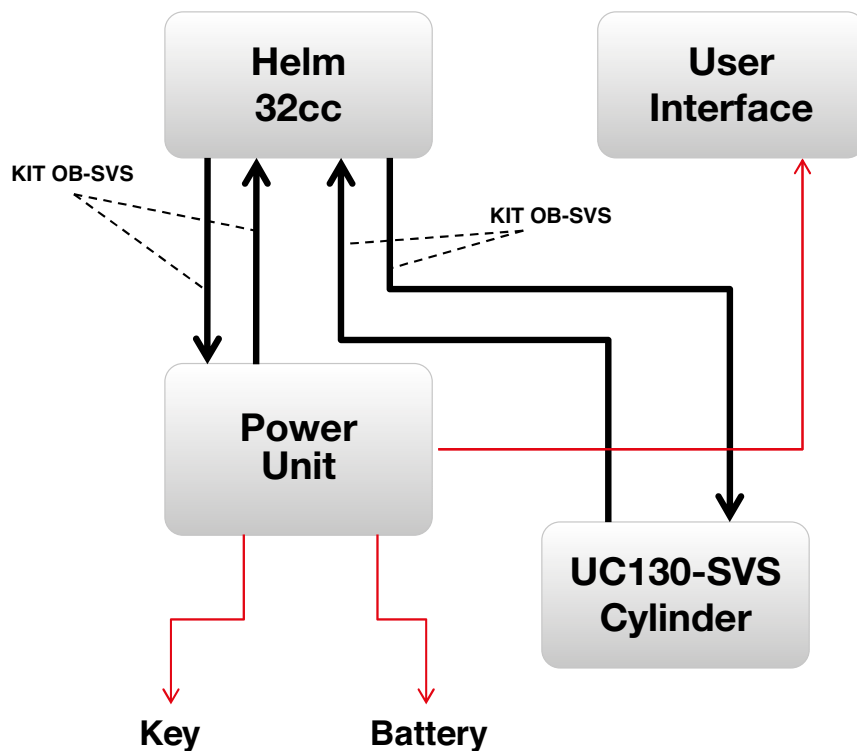
70

POWER ASSISTED OUTBOARD STEERING SYSTEM

MASTERDRIVE™



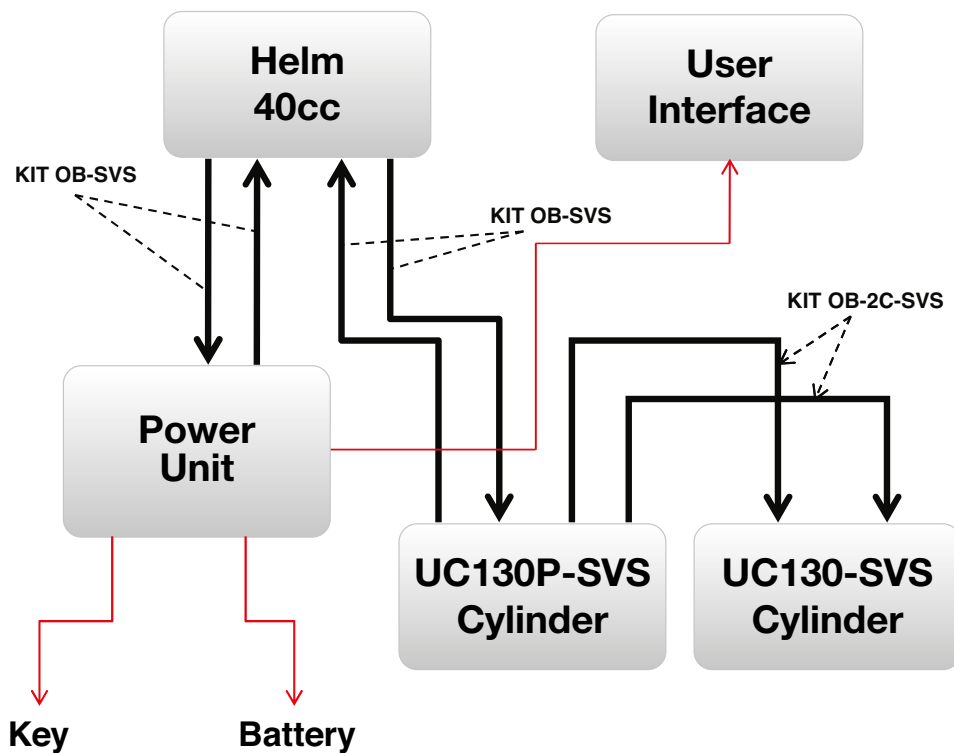
SINGLE CYLINDER SINGLE STATION APPLICATION



— wiring harness

— high pressure hoses

DUAL CYLINDER SINGLE STATION APPLICATION



— wiring harness

— high pressure hoses

UH - MASTER 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
- Tilt Mount version is suitable for use with **X66-40613 M** tilt mechanism



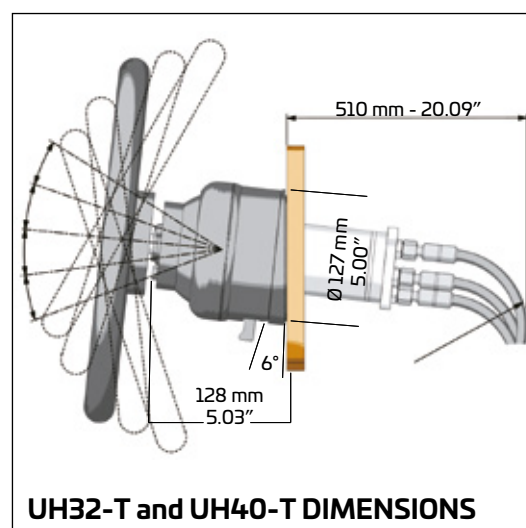
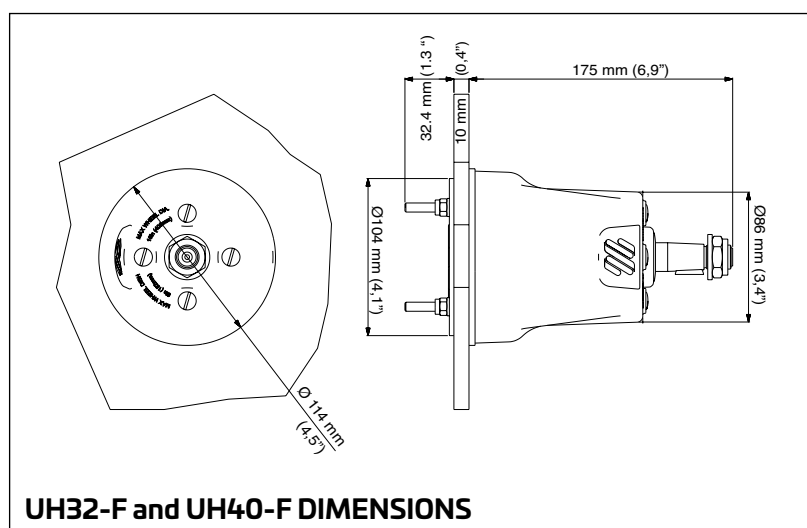
UH



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



TILT MECHANISM

- **X66 - 40613 M**
Tilt mechanism for MasterDrive™ tilt mount helms. Tilt range of 48° and five locking positions.

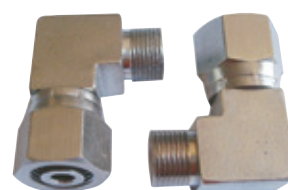
90° TWO FITTING KIT FOR

MASTERDRIVE HELMS (OPTIONAL)

- **MDF90 - 42821 F**



X66



MDF-90





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



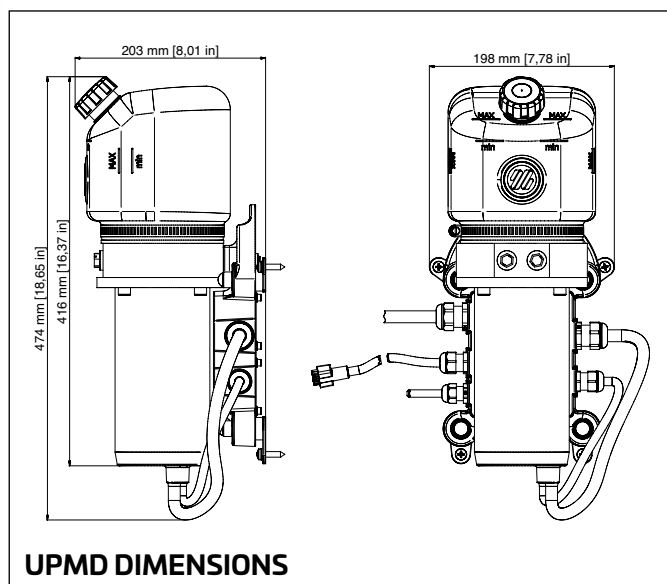
K81MM

UPMD - POWER UNIT - 42096 E

- 12VDC Motor
- 45° 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

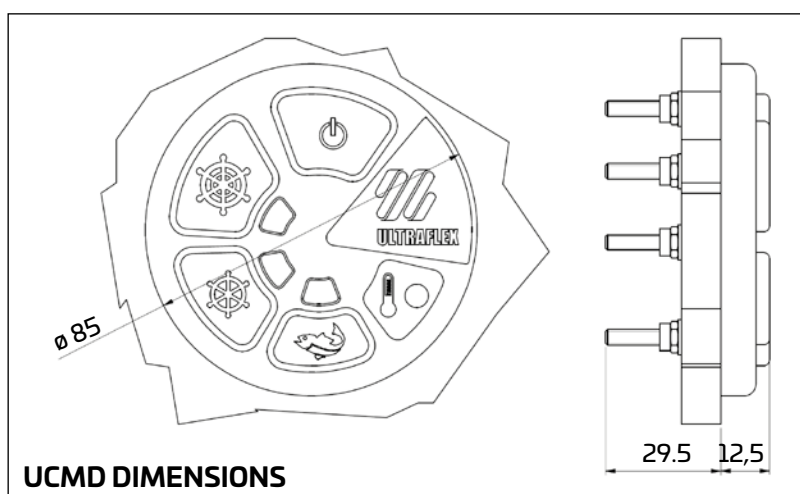


UCMD - USER INTERFACE - 42097 G

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



UCMD



UCMD DIMENSIONS

MD - PACKAGED KIT FOR SINGLE STATION

MasterDrive™ packaged kit contains:

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

Depending on the helm type, 4 versions are available:

MD32-F 42098 J

32 cc Front Mount Helm included

MD32-T 42100 S

32 cc Tilt Mount Helm included

MD40-F 42102 W

40 cc Front Mount Helm included

MD40-T 42104 A

40 cc Tilt Mount Helm included

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

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



KIT MD



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- POWER ASSISTED OUTBOARD STEERING SYSTEM

MASTERDRIVE™



MD2 - PACKAGED KIT FOR DUAL STATION

Master Drive™ MD2 packaged kit for dual station contains:

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

Depending on the helm type, 4 versions are available:

MD2 32-F - 42610 S

32 cc Front Mount Helm included

MD2 32-T - 42611 U

32 cc Tilt Mount Helm included

MD2 40-F - 42520 R

40 cc Front Mount Helm included

MD2 40-T - 42612 W

40 cc Tilt Mount Helm included



KIT MD 2

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

To order separately:

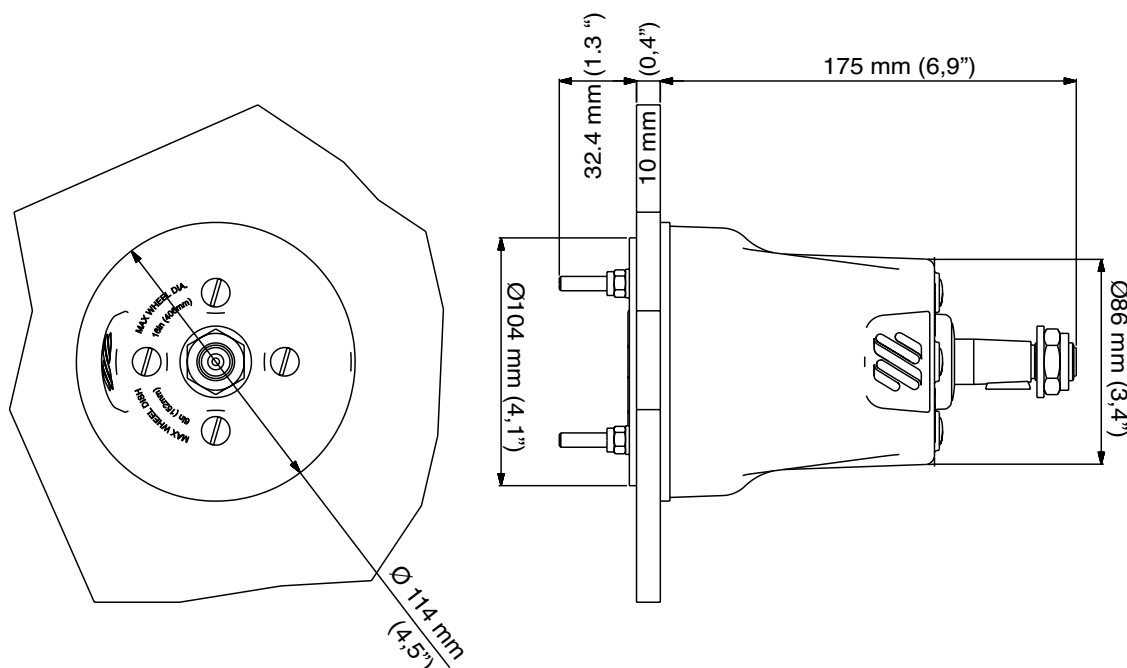
1x Kit OB-SVS with length equal to the distance between the master helm pump and the slave helm pump

2x Kits OB-SVS: select the desired length

For dual cylinder applications, order:

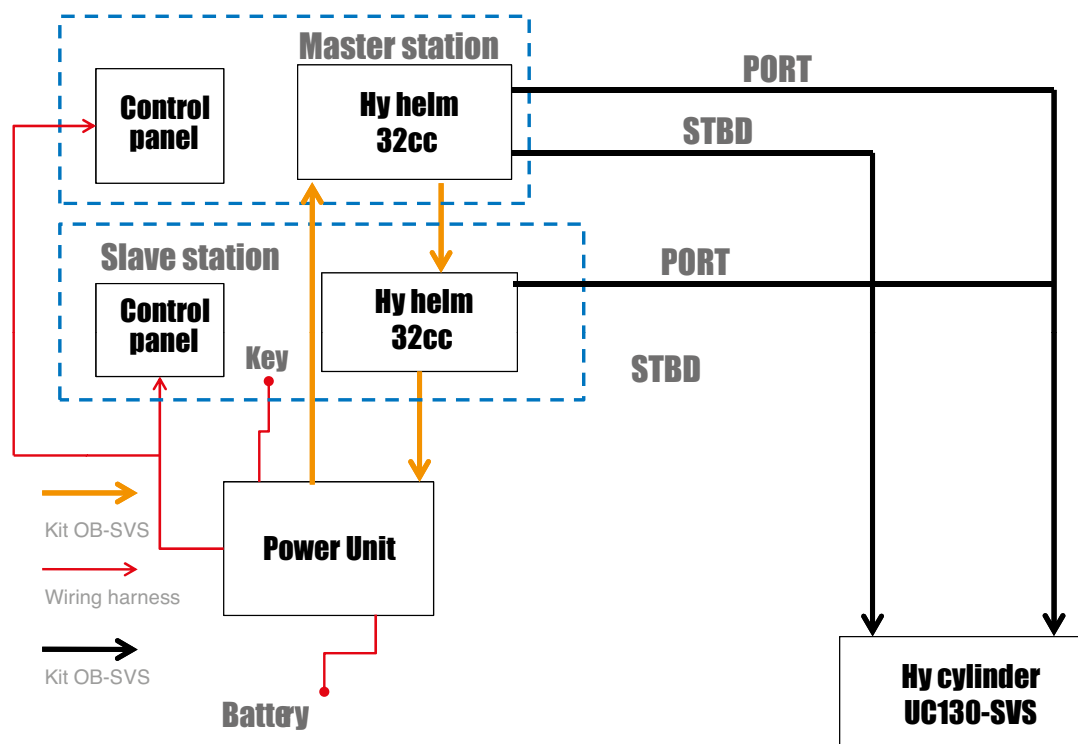
1x KIT OB-2C130-SVS: select the desired length.

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

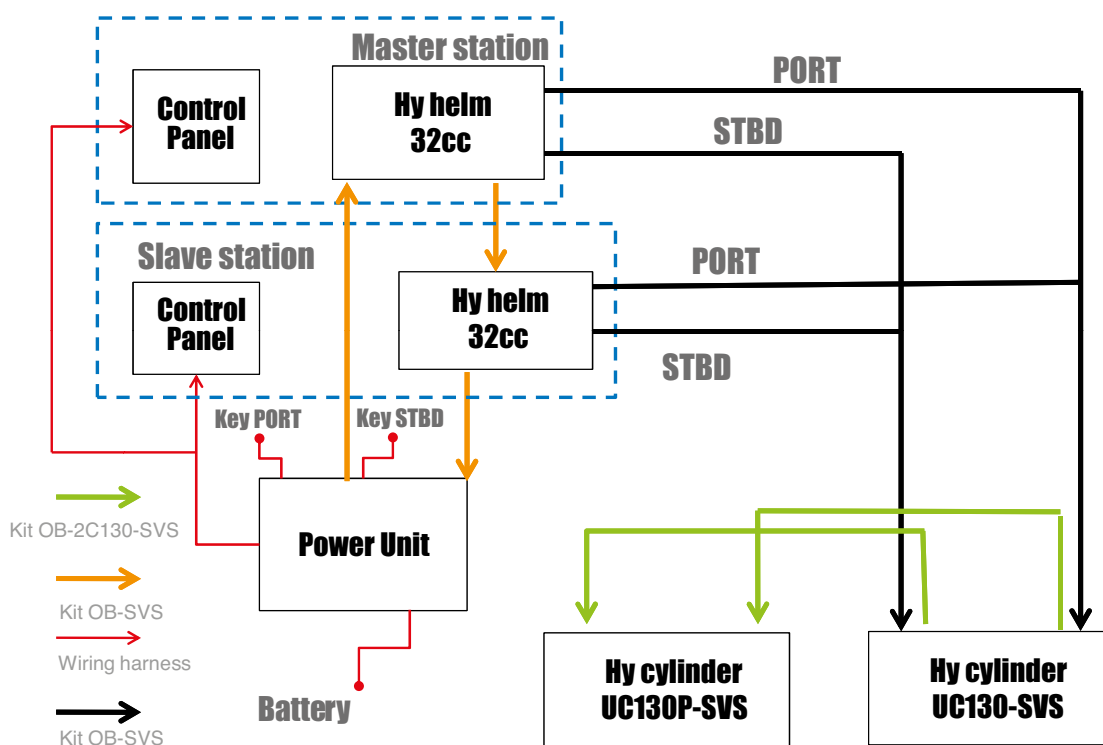


UHD32-F, UHD32-T, UHD40-F and UHD40-T DIMENSIONS

SINGLE CYLINDER DUAL STATION APPLICATION



DUAL CYLINDER DUAL STATION APPLICATION



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- POWER ASSISTED OUTBOARD STEERING SYSTEM

MASTERDRIVE™



HOSE KITS

KIT OB-SVS	LENGTH	PART No.
KIT OB-SVS-10	1,00 m - 3.3 ft	41334 N
KIT OB-SVS-15	1,50 m - 4.9 ft	41800 S
KIT OB-SVS-20	2,00 m - 6.6 ft	41339 Z
KIT OB-SVS-25	2,50 m - 8.2 ft	42106 E
KIT OB-SVS-30	3,00 m - 9.8 ft	41286 E
KIT OB-SVS-35	3,50 m - 11.5 ft	41287 G
KIT OB-SVS-40	4,00 m - 13.1 ft	41288 J
KIT OB-SVS-45	4,50 m - 14.8 ft	41289 L
KIT OB-SVS-50	5,00 m - 16.4 ft	41290 V
KIT OB-SVS-55	5,50 m - 18.0 ft	41291 X
KIT OB-SVS-60	6,00 m - 19.7 ft	41292 Z

KIT OB-2C130-SVS: DUAL CYLINDER/DUAL ENGINE CONNECTION KIT FOR UC130-SVS

Two high pressure Kevlar stranded flexible hoses with pre-crimped fittings.

Recommended only for use with UC130-SVS.

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



KIT OB-SVS



KIT OB-2C130-SVS

KIT OB-2C130-SVS	ENGINE CENTERS	HOSE LENGTH	PART No.
KIT OB-2C130-SVS-38	660 mm (26")	381 mm (15")	43421 U
KIT OB-2C130-SVS-41	686 mm (27")	407 mm (16")	43422 W
KIT OB-2C130-SVS-43	711 mm (28")	432 mm (17")	43423 Y
KIT OB-2C130-SVS-45	724 mm (28.5")	445 mm (17.5")	43424 A
KIT OB-2C130-SVS-46	737 mm (29")	457 mm (18")	43425 C
KIT OB-2C130-SVS-48	762 mm (30")	483 mm (19")	43426 E
KIT OB-2C130-SVS-50	777 mm (30.5")	496 mm (19.5")	43427 G
KIT OB-2C130-SVS-51	788 mm (31")	508 mm (20")	43428 J
KIT OB-2C130-SVS-53	813 mm (32")	534 mm (21")	43429 L

KIT FOR A SECOND STEERING STATION OR AUTOPILOT FOR SILVERSTEER™ STEERING SYSTEMS

KIT OB-2S-SVS - 43415 Z

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

POWER ASSISTED OUTBOARD STEERING SYSTEM

ORDER GUIDE

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 A94 tie bar	42098 J 43225 U (43226 W) specify length wheel selection 41204 Z	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 A94 tie bar	42100 S 43225 U (43226 W) specify length 40613M wheel selection 41204 Z	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
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 - 42636 L



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POWER ASSISTED OUTBOARD STEERING SYSTEM

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

A88 - A92 TIE BARS FOR TWIN OUTBOARD ENGINES

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

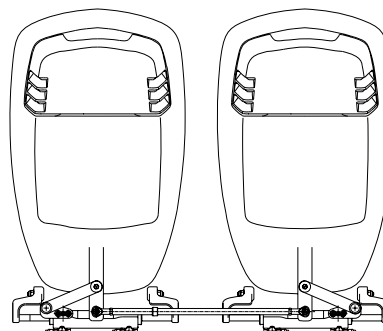
A88 - 40128 E

- 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 cowlings is not sufficient for the use of the A88, the **A92** tie bar is recommended



A88



A88 application example

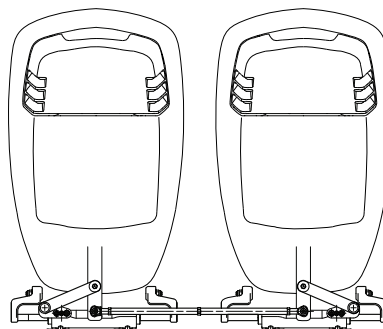
A92/700 - 40892 V

A92/950 - 40893 X

- 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



A92 application example

ATTENTION: 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.

A94 TIE BAR

FOR TWIN OUTBOARD ENGINE/SINGLE UC128-OBF OR UC130-SVS CYLINDER

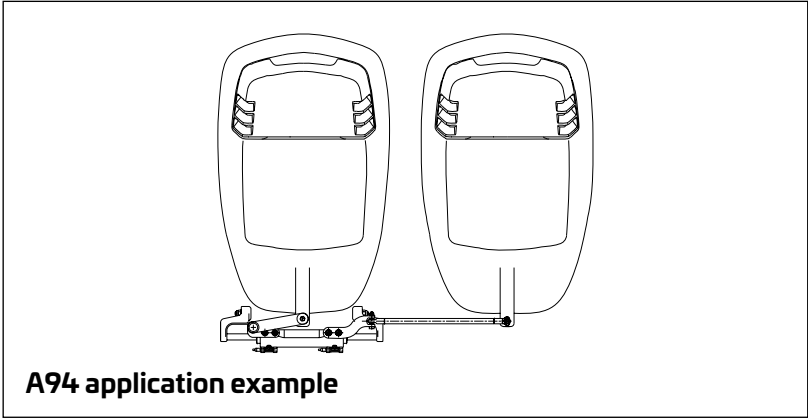
A94 - 41204Z

- Suitable for applications with single UC128-OBF or UC130-SVS front mount cylinder
- **NOTE:** In the applications with dual cylinder use **A90** tie bar for UC128-OBF and **A95** tie bar for UC130-SVS
- Allows to tilt the engines independently
- Stainless steel components
- Electropolished stainless steel ball joints
- Not recommended for applications exceeding 500 HP
- Adjustable from 660 mm (26") to 950 mm (37.4") engine centers

ATTENTION: 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.



A94



A94 application example

A94 TIE BAR APPLICATIONS

WARNING

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

ENGINE	power
Mercury®	135-150-175 Optimax 2 Stroke 200-225 Optimax 2 Stroke 250 PRO XS 135-150-175 Verado 4 Stroke 200 Verado 4 Stroke
Honda®	115-135-150 OHC BF 200 SOHC BF 225 A6
Yamaha®	F115-150-200-225-250 4 Stroke
Evinrude®	E115-130-150-175-200 V6 E200-225-250-300
Suzuki®	DF70-80-90 4 Stroke DF100-115-140-150-175 4 Stroke DF200-250-300 DOHC 4 Stroke



UC128 + A94





A90 TIE BAR FOR TWIN OUTBOARD ENGINE/TWIN UC128-OBF OR UC128-SVS CYLINDERS (NO UC130-SVS)

A90 - 40138 H

- Suitable for applications with dual UC128-OBF or UC128-SVS (not UC130-SVS) front mount cylinder
- NOTE:** in applications with single cylinder use **A94** tie bar
- 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").

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

UC128 starboard cylinders:

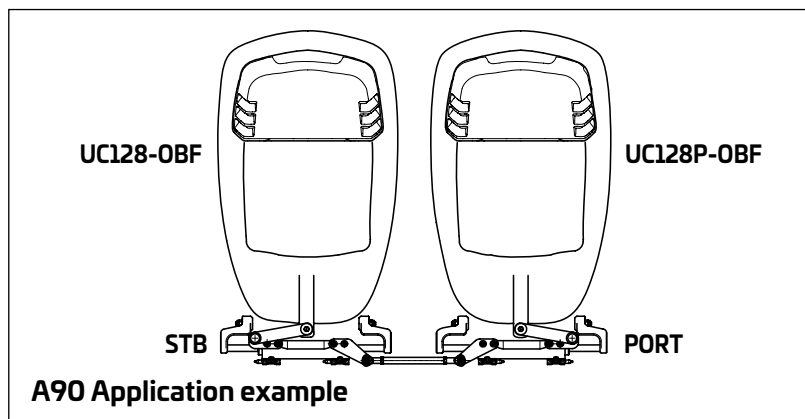
UC128-OBF/1 - 43231 N
UC128-OBF/2 - 43232 R
UC128-OBF/3 - 43233 T
UC128-SVS/1 - 41281 U
UC128-SVS/2 - 41282 W
UC128-SVS/3 - 41283 Y

UC128P port cylinders:

UC128P-OBF/1 - 43234 V
UC128P-OBF/2 - 43235 X
UC128P-SVS/1 - 41328 U
UC128P-SVS/2 - 41329 W



A90



UC128-OBF + A90

A95 TIE BAR FOR TWIN OUTBOARD ENGINE/TWIN UC130-SVS CYLINDERS

- 2 models in different lengths available:

A95-32 - 43409 E

Length: 26" (660 mm) to 32" (813 mm)

A95-37.5 - 43410 N

Length: 32" (813 mm) to 37.5" (952 mm)

- Suitable for applications with dual UC130-SVS (or UC128-OBF and UC128-SVS) front mount cylinder
- NOTE:** in applications with single cylinder use **A94** tie bar
- Allows to tilt the engines independently
- All stainless steel components
- Electropolished stainless steel ball joints

WARNING: 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 UC130P-SVS port cylinder (link arm attached to the port side of the cylinder).

UC130 starboard cylinders:

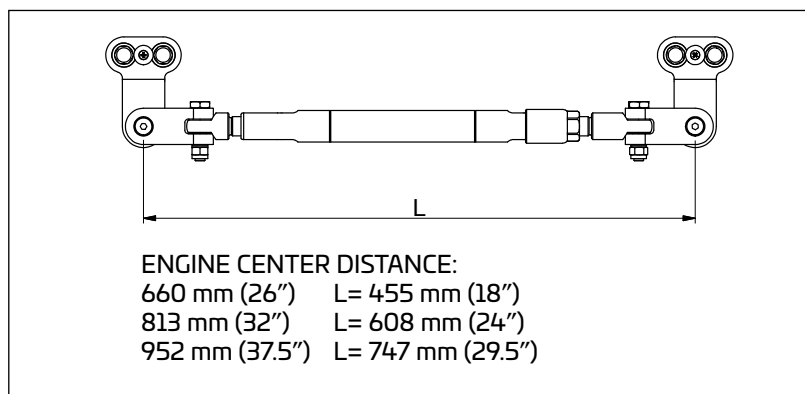
UC130-SVS/1 - 43225 U
UC130-SVS/2 - 43226 W
UC130-SVS/3 - 43227 Y

UC130P port cylinders:

UC130P-SVS/1 - 43223 P
UC130P-SVS/2 - 43224 S



A95



A93 TIE BAR

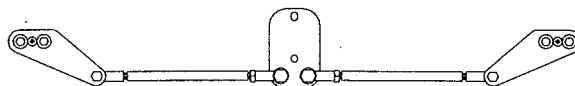
FOR TRIPLE OUTBOARD ENGINE/TWIN UC128-OBF, UC128-SVS CYLINDERS

A93

- 4 different lengths available:
A93 x 26 - 42613 Y - 26" (660,4 mm) twin engine centers
A93 x 27 - 42637 N - 27" (685,8 mm) twin engine centers
A93 x 28 - 42638 R - 28" (711,2 mm) twin engine centers
A93 x 30 - 42639 T - 30" (762,0 mm) twin engine centers
Specify engine type and required length on ordering
- AISI 304 electropolished and passivated stainless steel tie bars
- Easy to install, allow for independent trimming of engines with minimal effect on engine alignment



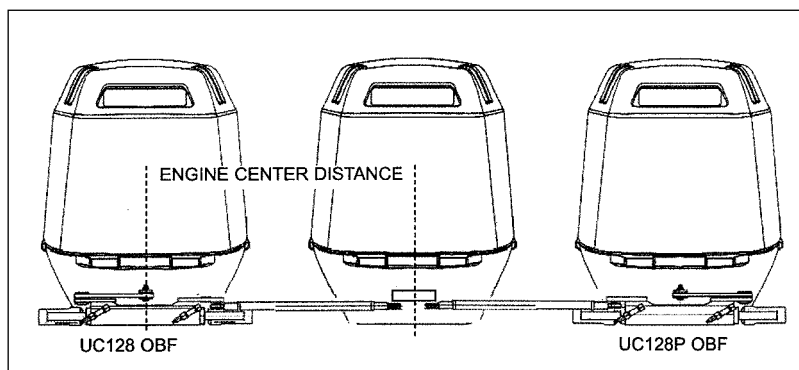
A93



A93 X LL X ENGINE MODEL
LL = ENGINE CENTER DISTANCE

ATTENTION: 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.



TIE BARS FOR APPLICATIONS WITH FOUR CYLINDERS AND FOUR ENGINES

A pre-packed kit is available which includes:

- 4x pre-connected and purged cylinders
- 4x tie bars

ATTENTION: For more details, please contact our Technical Assistance





STERNDRIVE CYLINDERS



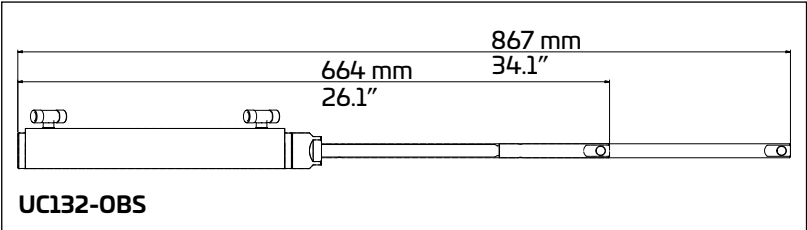
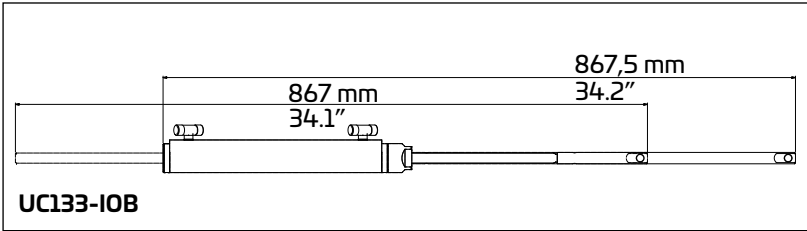
UC133-IOB
Balanced cylinder: the number of turns lock to lock is equal port to starboard or vice-versa



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

WARNING:
UC132-OBS cylinder is not intended for use with SilverSteer™ SVS 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



STERNDRIVE CYLINDERS

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

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.

- 1. Balanced cylinder** the number of turns lock to lock is equal port to starboard or vice-versa
- 2. Unbalanced cylinder** the number of turns lock to lock is not equal port to starboard or vice-versa
- 3. Clearance required at the engine tube side: 21.2" (540 mm).**
- 4. ULTRAFLEX hydraulic cylinder** can be installed as an alternative to a mechanical steering system only.
- 5. 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

SYSTEM A			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	
SYSTEM B			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	

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.



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.

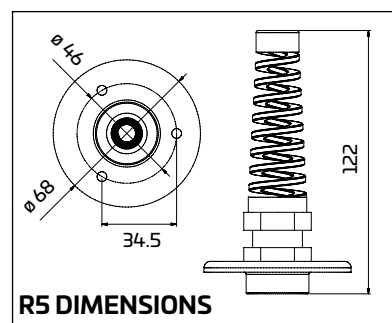
R5 - 39510 U

R5SS - 42419 C Bulkhead hose kit with stainless steel flange



R5

R5SS



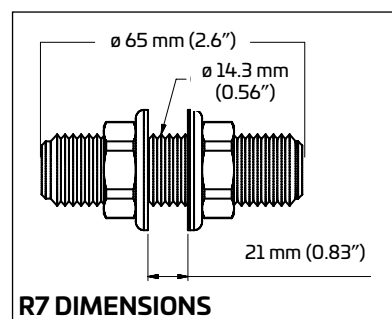
R7 - 3/4" BULKHEAD FITTING KIT

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

R7 - 40819 J



R7 KIT



R8 - DUAL THRU-HULL HOSE KIT

Connection flange available in three different colours

R8B - Black 41299 P

R8W - White 41300 V

R8CH - Chrome 41301 X



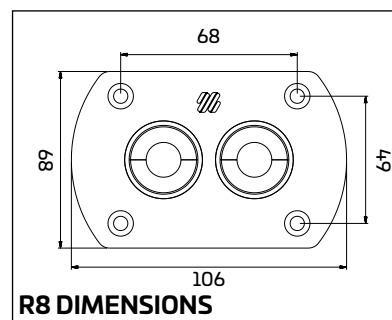
R8B



R8W



R8CH



R9 - BULKHEAD KIT FOR DUAL HOSE WITH PREASSEMBLED FITTINGS

Connection flange available in three different colours

R9B - Black 43165 C

R9W - White 43167 G

R9CH - Chrome 43166 E



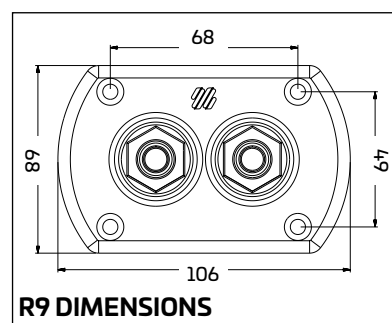
R9B



R9W



R9CH



TUBING - ACCESSORIES

KIT FOR AUTOPILOT APPLICATION WITH GOTECH™

K18 - 43414 X

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 FOR A SECOND STEERING STATION OR AUTOPILOT FOR HYDRAULIC STEERING SYSTEMS WITH 5/16" HOSE (TU 5/16)

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

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 FOR A SECOND STEERING STATION OR AUTOPILOT FOR SILVERSTEER™ STEERING SYSTEMS

KIT OB-2S-SVS - 43415 Z

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

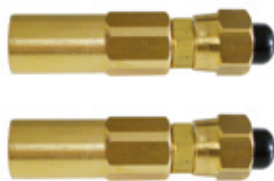


HOSES, FITTINGS, BEND RESTRICTORS FOR FLEXIBILITY OF THE INSTALLATIONS AND INTEGRATION WITH AUTOPILOT

- TU1/4** 1/4" tubing for outboard engines applications with Gotech™ only.
- TU5/16** 5/16" nylon tubing recommended for outboard engines applications and fittings OB-F5/16
- OB-F1/4: 42656 T** Two reusable fittings featuring turning nut for use with 1/4" hydraulic hose for Gotech™ only.
- OB-F5/16: 42670 L** Two reusable fittings featuring turning nut for use with 5/16" hydraulic hose and connection for 3/8" fitting
- KIT 2M-5/16: 41822 C** Kit with 2 bend restrictors 5/16"
- TU95: 70701 D** 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 - 42398 X:
Hydraulic oil sold in 1 litre (0.26 gallons) bottle

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

KIT F - 39664 Y:
Remote fill adapter for rear mount and tilt mount pumps.



OL 150



KIT F

FITTINGS

61BCA - 71004 K

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

61CA - 71013 L

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

AF45-130 - 43412 T

45° adjustable fitting for UC130-SVS cylinder

AF45 - 41284 A

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

AF90 - 74144 U

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

SF38 - 39471 L

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

SF12 - 41306 H

straight fitting, helm and tube Ø 12 mm

EF38 - 39472 N

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

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

TF38 - 39502 V

3/8" (9,5 mm) union T for tube

VF38 - 39503 X

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

VFN38 - 39925 A

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

VFN038 - 40868 Y

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

QCFN - 41307 K

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

QCFN94 - 41308 M

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 - 43155 Z

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

EXT-F916 - 43156 B

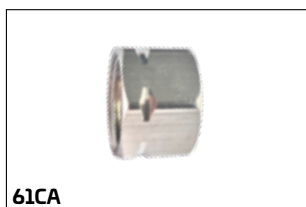
9/16" (14.3 mm) nickel plated brass male adapter to 9/16" (14.3 mm) female

SF916-14 - 43301 H

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



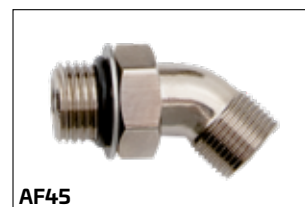
61BCA



61CA



AF45-130



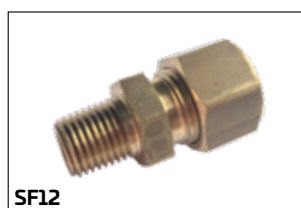
AF45



AF90



SF38



SF12



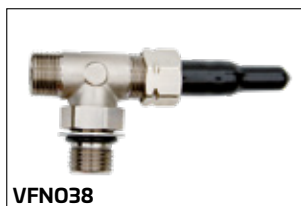
EF38



TF38



VF38 - VFN38



VFN038



QCFN



QCFN94



SF916



EXT-F916



SF916-14





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BubbleBuster™

BubbleBuster™

A 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



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

- **42593 V** - Helm purging fitting
- **42595 Z** - 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 UC94) with old bleeders (not fast connect)

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



ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS

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.

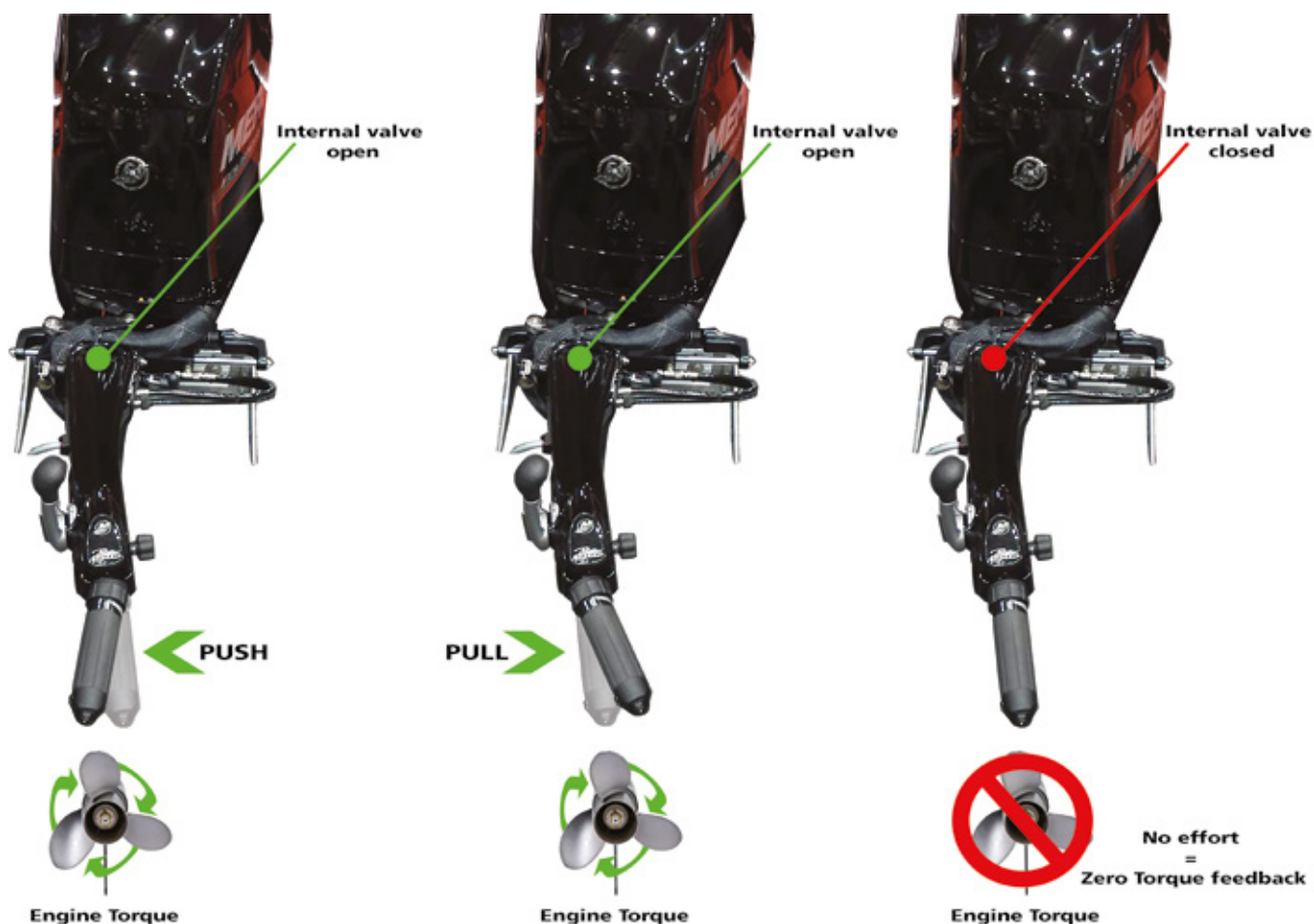
HOW THE ZTF TILLER SYSTEM WORKS:

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.



MERCURY® ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS



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ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS

MERCURY® BIG TILLER WITH INTEGRATED ZTF TILLER VALVE

- Rated up to 150 hp Four Stroke
- Easy steering
- Reduced operator fatigue
- Includes:
 - Mercury® Big Tiller Handle with key switch and lanyard*
 - Ultraflex® UC94 - ZTF Cylinder
 - Ultraflex® Integrated ZTF Tiller Valve

MODELS

ZTF Tiller MIT - For use with Mercury® 150 4 Stroke Outboard from 2005 to date
ZTF Tiller MC1* - Conversion for customer supplied Mercury® Big Tiller Handle

*ZTF Tiller Mercury® requires conversion of customer supplied Big Tiller handle at the Ultraflex® factory. See your distributor or contact Ultraflex® for more details.

YAMAHA® AND SUZUKI® ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS

ULTRAFLEX® ZTF TILLER SYSTEM

FOR YAMAHA® AND SUZUKI® TILLER HANDLES

- Rated up to 200 hp Four Stroke
- Easy steering
- Reduced operator fatigue
- Ultraflex® ZTF system includes:
 - UC130 - ZTF Cylinder
 - Conversion Yoke with integrated ZTF Tiller Valve
 - Engine Tiller Arm Adapter



MODELS

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

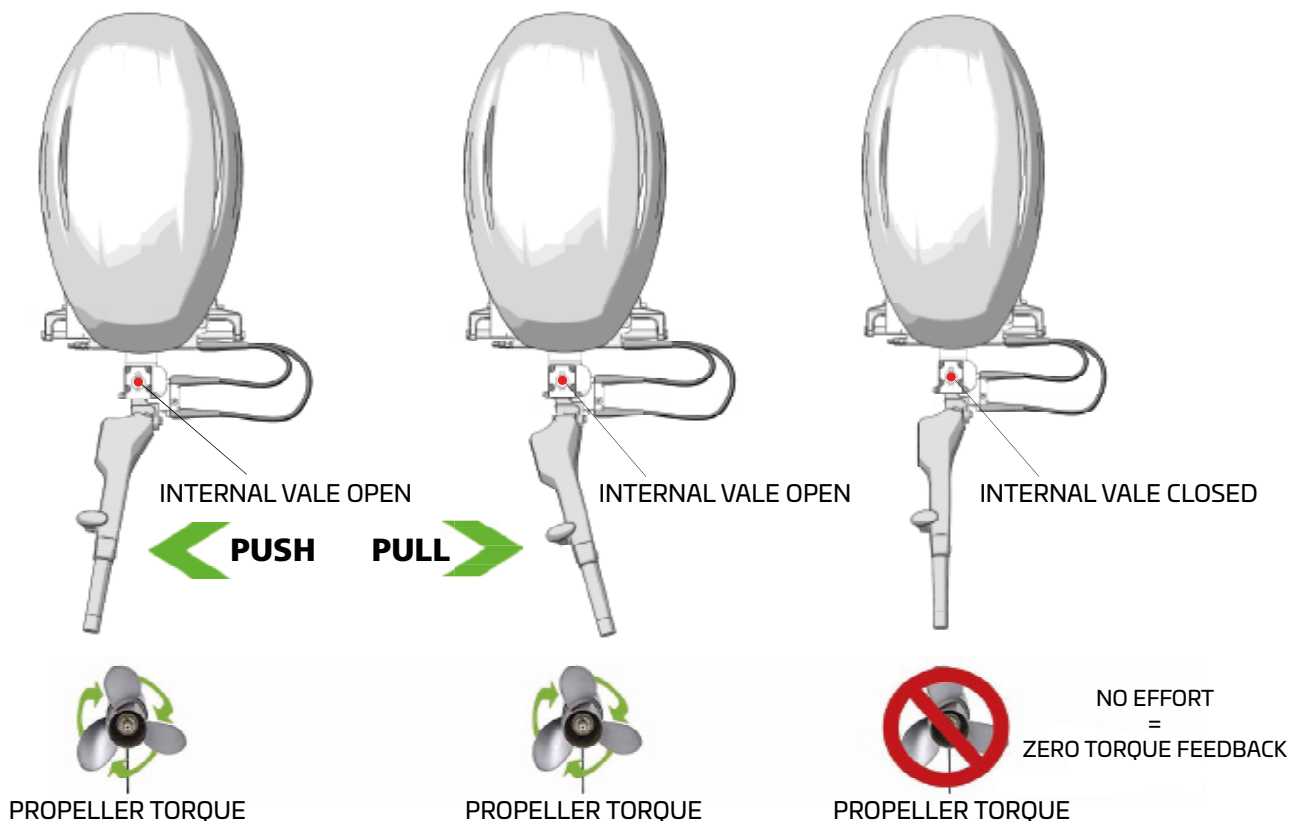
ZTF Tiller Y2 - For use with Yamaha® 150 hp - 175 hp - 200 hp

ZTF Tiller S1 - For use with Suzuki® DF150A - 175A - 200A

HOW THE SYSTEM WORKS:

The patented hydraulic valve and corresponding cylinder of the ZTF Tiller System opens when the operator pushes or pulls the tiller handle. When the operator neither pushes nor pulls the tiller handle (changing steering course), the hydraulic valve closes eliminating the steering load from propeller torque on the tiller handle.

The operator **MUST** maintain a firm grip on the tiller handle under **ALL** operating conditions; while actively changing course or while maintaining a fixed course (with valve closed) as sea conditions, floating debris, or other conditions could change the steering course without input directly from the operator.

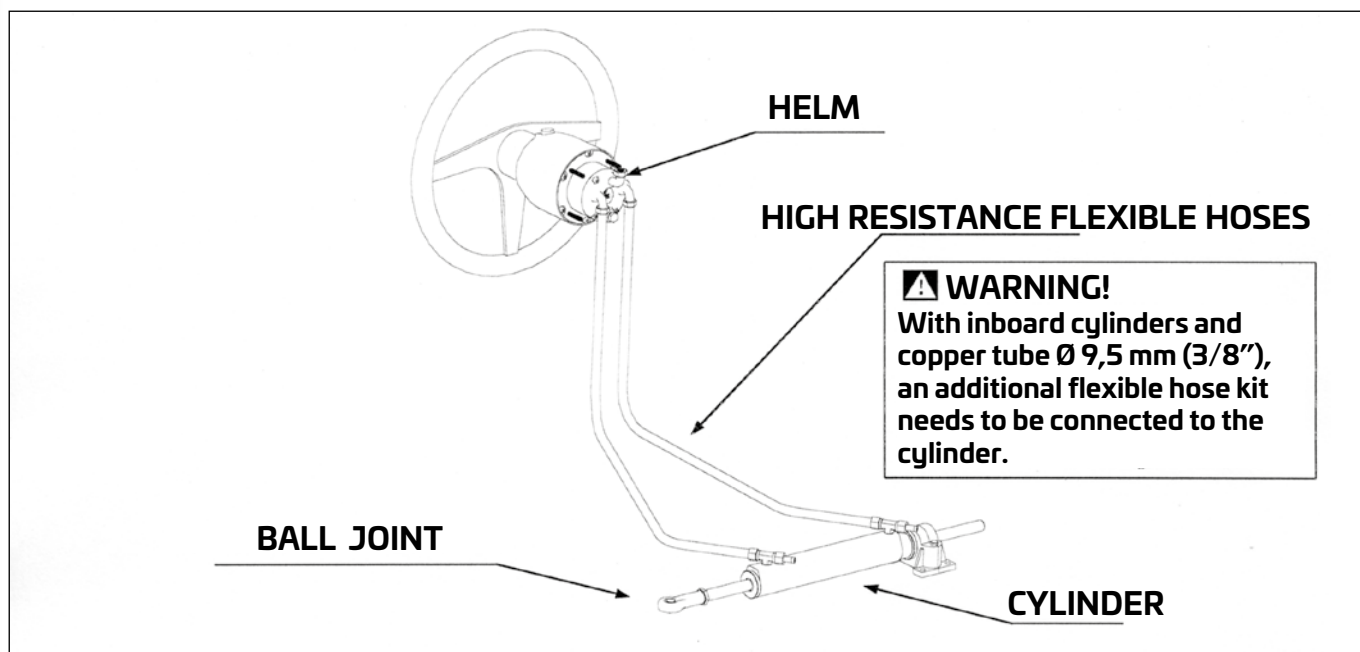


INBOARD STEERING SYSTEMS

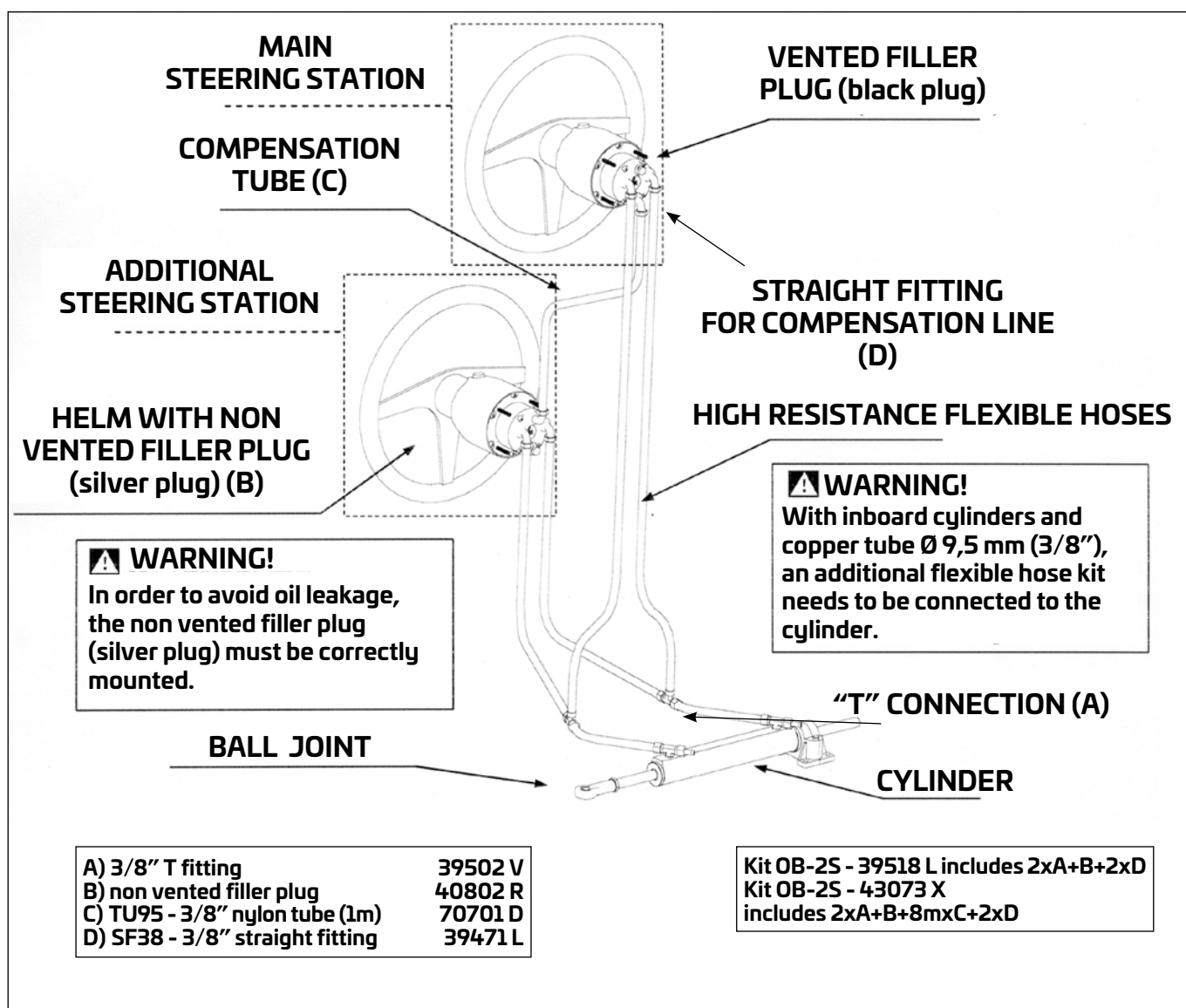


HYDRAULIC STEERING SYSTEMS

SINGLE STEERING STATION INSTALLATION DIAGRAM



DUAL STEERING STATION INSTALLATION DIAGRAM



INBOARD STEERING SYSTEM 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')
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	

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



Photo courtesy of Fluid Motion



UP20F - UP25F
UP28F - UP33F
UP39F - UP45F
FRONT MOUNT HELM PUMPS

FEATURES

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



UP20F + X74

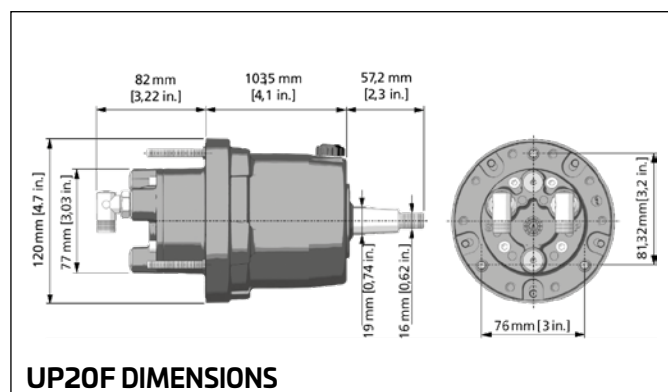
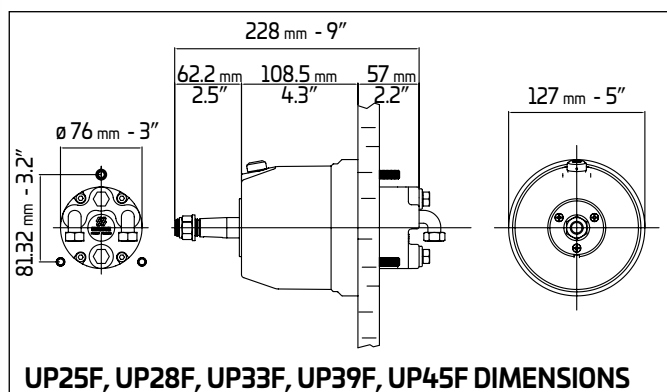


UP25F/28F/33F/39F/45F + X64



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



UP28R - UP33R - UP39R UP39-IR - UP45R - UP45-IR REAR MOUNT HELM PUMPS



FEATURES

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

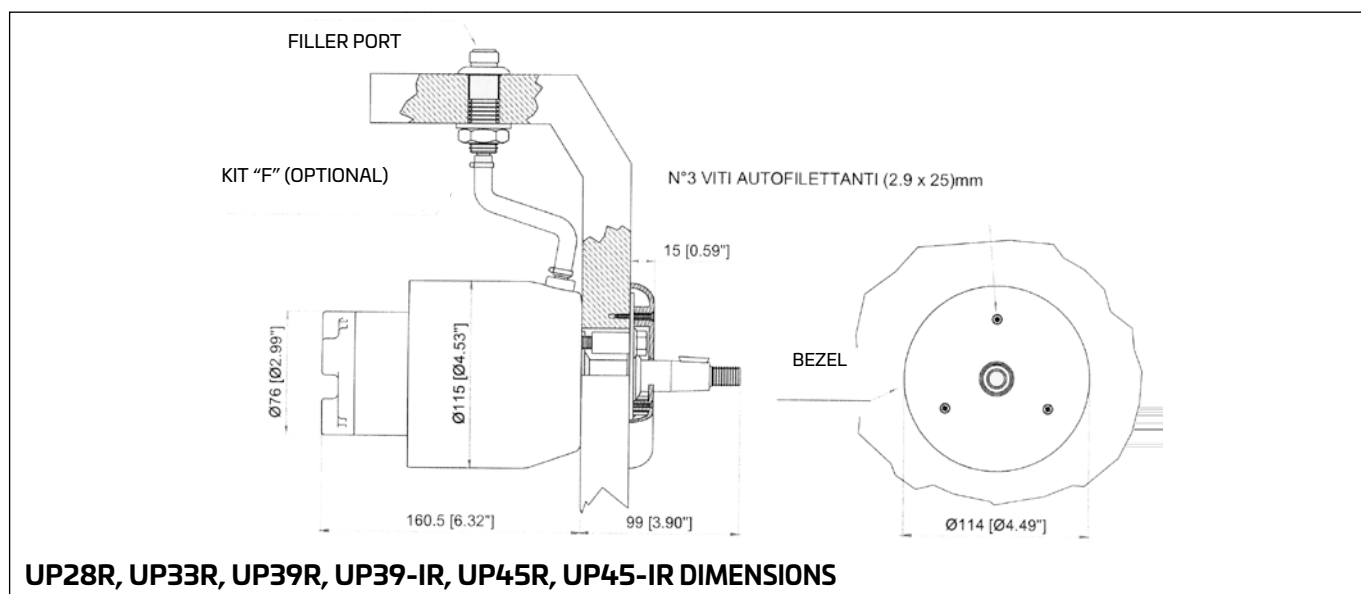


KIT F



X68

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



UP56 - UP68 HELM PUMPS



FEATURES

- Rear or intermediate mounting configuration
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- 3/4" tapered shaft
- Easily accessible lock valve and shaft seal for replacement
- Brass rotor for greater durability and longer life
- 3/8" BSPP fitting for 12 mm tube
- Complete with fittings
- **KR56** (optional) - 42558 T permits to install the UP56 and UP68 pumps in a rear mount position. Includes chrome plated cover ring.
- **KIM56** (optional) - 42559 V 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) - 40813 W Remote fill adapter



KIT F56



KR56

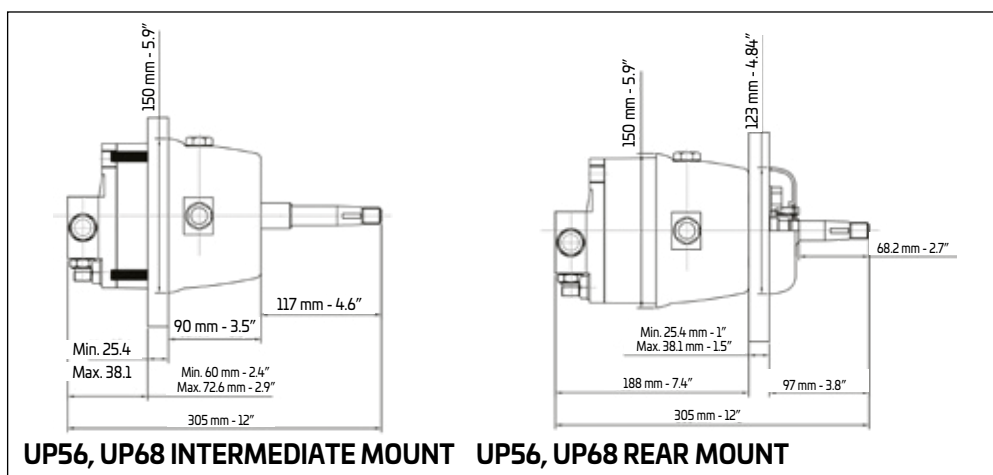
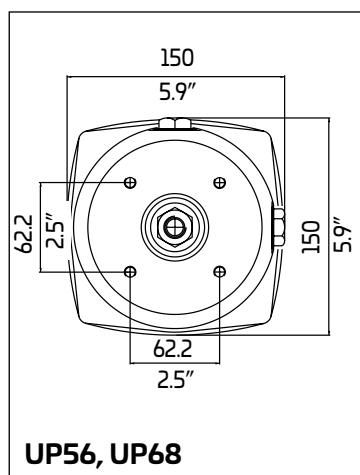
MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP56	40808 D	Rear (KR56) - Intermediate (KIM56)	56 cc - 3.4 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	7,5 kg - 16,5 lbs
UP68	42561 F	Rear (KR56) - Intermediate (KIM56)	68 cc - 4.15 cu.in	7	70 Bar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

RV70 - 42560 D - 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



INBOARD CYLINDERS

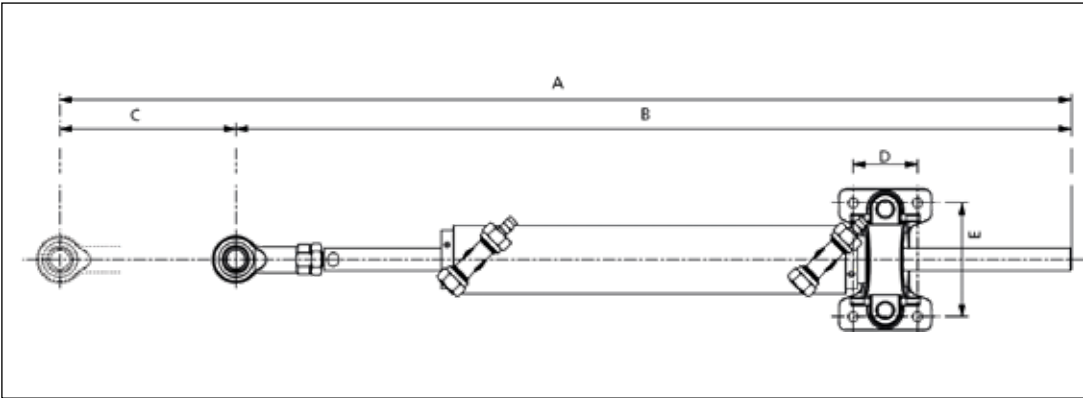


UC69-I - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



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 - 39782 E	UC116-I - 39431 Y Alluminium	UC168-I - 39432 A Alluminium	UC215-I - 39433 C 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 - 22.17"	792 mm - 31.18"	941 mm - 37.05"
B	494 mm - 19.43"	563 mm - 29.17"	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"	32 mm - 1.25"	20 mm - 0.79"	20 mm - 0.79"

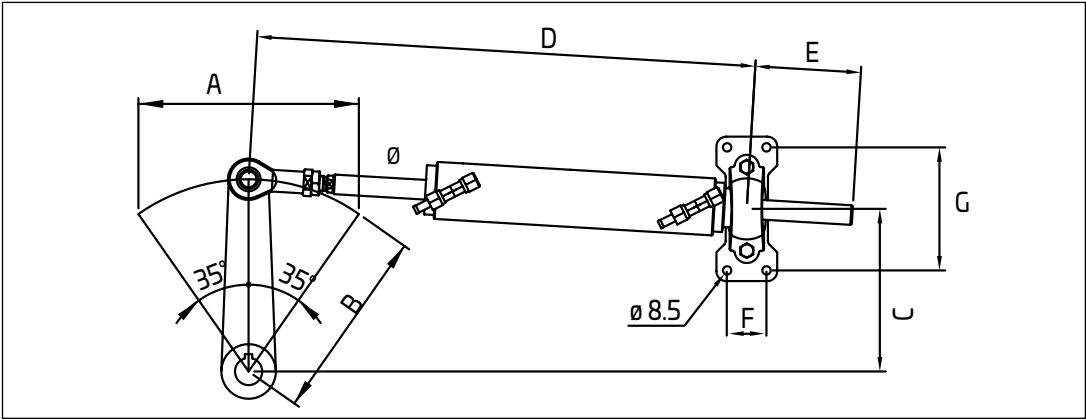




UC293-I; UC378-I

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

SPECIFICATIONS	UC293-I - 40246 L Brass	UC378-I - 40810 P 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"

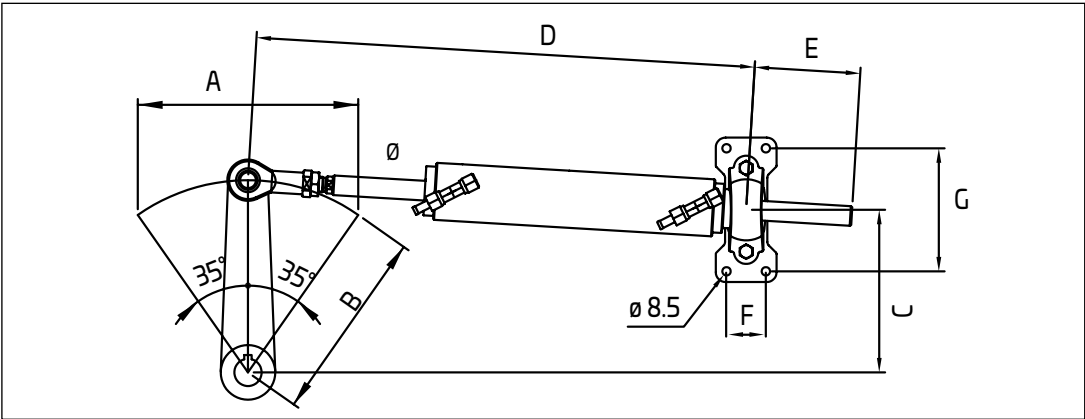


UC339-I; UC442-I
Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



UC530-I
Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.

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



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



HOSES - ACCESSORIES - FITTINGS

KIT OB/M: HOSE KIT WITH PREASSEMBLED FITTINGS AT ONE END FOR SINGLE STATION INSTALLATION

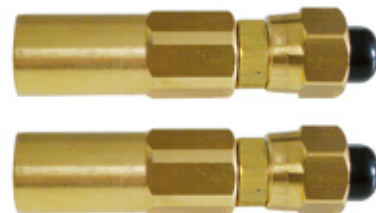
Two high pressure flexible hoses with fittings featuring turning nuts preassembled at one end only. It is supplied with two spare fittings and two bend restrictors. Available in three standard lengths that can be cut to fit the required application.

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

- TU5/16** 5/16" nylon tubing for OB-F5/16 fittings. Available per metre and 50 m (164 ft) coils.
- OB-F5/16 - 42670 L** two reusable fittings featuring turning nut for use with 5/16" hydraulic hose and connection for 3/8" end fitting
- TUR7** high pressure hydraulic hose for FR7 12mm end fittings. Available per metre and 50 m (164 ft) coils.
- FR7 - 42569 Y** 1 reusable fitting for use with 3/8" hydraulic hose and connection with 12 mm helm and cylinder fittings.
- RV70 - 42560 D** relief valve required for use in inboard applications with UP56 and UP68 pumps.
- KIT OB-2S - 43183 E** 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 - 39516 G** 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 - 42765 Y** 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 - 43184 G** 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 - 41625 A** 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 - 40821 V** For UP56 and UP68 pumps
- BP 95 - 42829 Y** by-pass for 3/8" flexible hose
- BP 56 - 42566 S** 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

ACCESSORIES

OL 150 - 42398 X:

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 - 39664 Y:

remote fill adapter for rear mount UP28, UP33, UP39, UP45 pumps.

KIT F56 - 40813 W:

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 39539 V or Kit 95-2S 39518 L
UP25 F	UC116-I	4,6	58 kgm 5043 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539 V or Kit 95-2S 39518 L
UP28 F or UP28	UC116-I	4,1	58 kgm 5043 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539 V or Kit 95-2S 39518 L
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 39539 V or Kit 95-2S 39518 L
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 39539 V or Kit 95-2S 39518 L
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 39539 V or Kit 95-2S 39518 L
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 39539 V or Kit 95-2S 39518 L
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 39539 V or Kit 95-2S 39518 L
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 39539 V or Kit 95-2S 39518 L
UP39-I R	UC339-I	8,6	172 kgm 14958 lbs.in	12mm copper tube or TUR7 flex hose	KIT120U-2S 41625 A
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 41625 A
UP56* with KR56 or KIM56	UC378-I	6,7	187,6 kgm 16347 lbs.in.	12mm copper tube or TUR7 flex hose	KIT120-2S 40821 V
UP56* with KR56 or KIM56	UC442-I	7,9	223 kgm 19336 lbs.in	12mm copper tube or TUR7 flex hose	KIT120-2S 40821 V
UP68* with KR56 or KIM56	UC442-I	6,5	223 kgm 19336 lbs.in	12mm copper tube or TUR7 flex hose	KIT120-2S 40821 V
UP68* with KR56 or KIM56	UC530-I	7,8	270 kgm 23443 lbs.in	12mm copper tube or TUR7 flex hose	KIT120-2S 40821 V

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





MD – Packaged kit for single station



MD2 – Packaged kit for dual station

MasterDrive™ 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 Master Helm
 - 1 **UPMD** Power Unit, 15' (4,5 m) wiring harness included
 - 1 **UCMD** User Interface
 - 4 **OL 150** bottles of hydraulic oil
- 1 inboard cylinder (suggested model: see "order guide" next page)
- 1 **KIT MD2** for dual station
- Flexible hydraulic hoses.
- 1 Tilt mechanism **X66** - 40613 M 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 master and the UHD slave 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
MD32F - 42098 J	UC116 - 39431 Y	3,6	52 kgm 5043 lbs. in	2 kit OB-SVS (length selection)	1 steering wheel
MD32F - 42098 J	UC168 - 39432 A	5,2	87 kgm 7565 lbs. in		
MD32F - 42098 J	UC215 - 39433 C	6,7	111 kgm 9642 lbs. in		
MD40F - 42102 W	UC215 - 39433 C	5,3	111 kgm 9642 lbs. in		
MD40F - 42102 W	UC293 - 42246 L	7,3	146,5 kgm 12816 lbs. in		

DUAL CYLINDER APPLICATION

MD32F - 42098 J	2 UC116 - 39431 Y	7,2	52 kgm 5043 lbs. in	2 kit OB-SVS (length selection)	1 steering wheel
MD40F - 42102 W	2 UC168 - 39432 A	8,4	87 kgm 7565 lbs. in	1 kit OB-2C130-SVS (length selection)	

NOTE: On tilt applications, replace MD32F or MD40F MasterDrive™ kit with MD32T or MD40T 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 - 42636 L



PACKAGED INBOARD STEERING SYSTEMS

GOTECH-I - WHEEL TURNS 3,8 - 42824 M

GOTECH-I package 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 - 42824 M

HYCO-I - WHEEL TURNS 3,5 - 40224 A

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 - 40224 A

FITTINGS

61BCA - 71004 K
3/8" (9,5 mm) nut and sleeve assembly, brass

AF45 - 41284 A
45° adjustable fitting, helm and tube.

AF90 - 74144 U
90° adjustable fitting, nickel plated brass

SF38 - 39471 L
3/8" (9,5 mm) connector fitting, helm and tube

SF12 - 41306 H
straight fitting, helm and tube Ø 12 mm

VF38 - 39503 X
3/8" (9,5 mm) bleed T for cylinders, brass

QCFN - 41307 K
Quick connect bleed T for cylinder, nickel plated





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STEERING WHEELS

STEERING WHEELS

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

- Thermoplastic antishock material
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

HARD TOUCH GRIP

V32B - 35458 X Black
V32W - 35509 R White
V32G - 39282 H Grey
V33B - 35819 L Black
V33W - 35817 H White
V33G - 37495 J Grey



V32B Ø 335 mm (13.2")



V32W Ø 335 mm (13.2")



V32G Ø 335 mm (13.2")



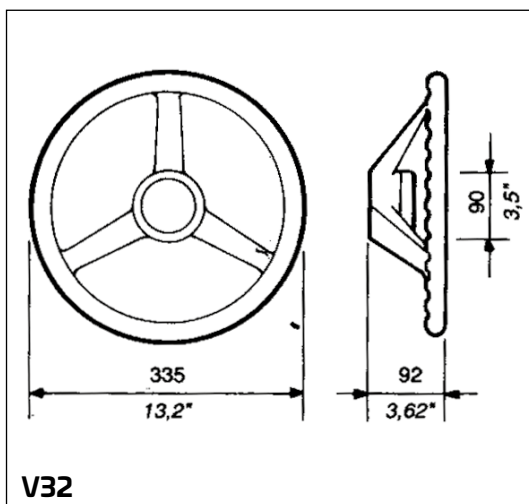
V33B Ø 342 mm (13.4")



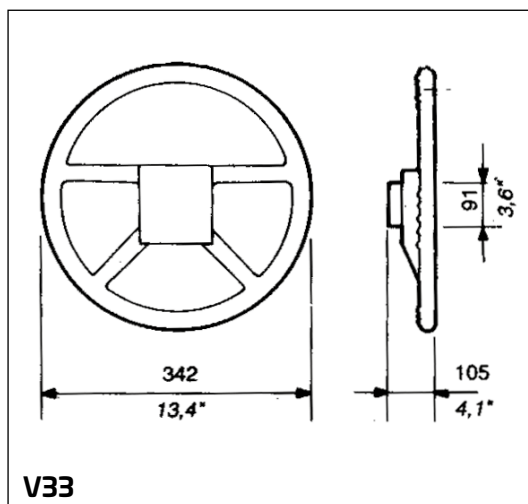
V33W Ø 342 mm (13.4")



V33G Ø 342 mm (13.4")



V32



V33



STEERING WHEELS

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

- Thermoplastic antishock material
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

SOFT TOUCH GRIP REDUCED

DIMENSION:

V45B - 37920 H Black

V45W - 38049 P White

V45G - 39291 J Grey

SOFT TOUCH GRIP

V38B - 36517 Q Black

V38W - 37373 T White

V38G/W - 37387 G Grey



V45B Ø 280 mm (11")



V45W Ø 280 mm (11")



V45G Ø 280 mm (11")



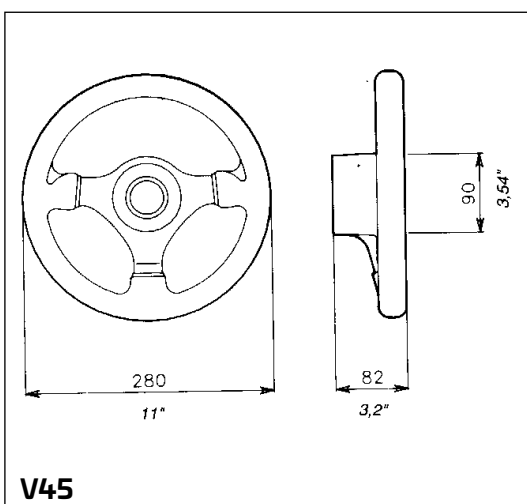
V38B Black grip - Black spokes
Ø 350 mm (13.8")



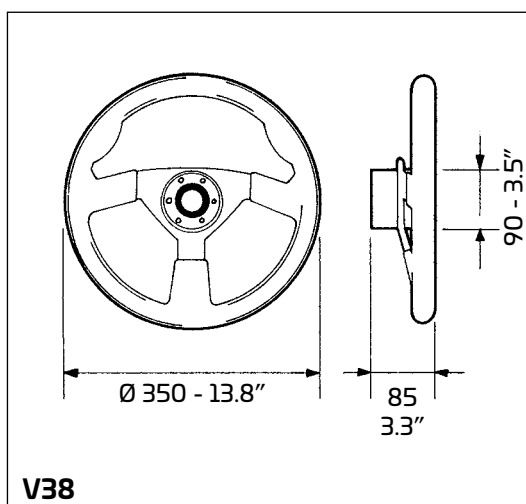
V38W White grip - White spokes
Ø 350 mm (13.8")



V38G/W Grey grip - White spokes
Ø 350 mm (13.8")



V45



V38

PORTOFINO STEERING WHEELS

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

- Thermoplastic antishock material
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

SOFT TOUCH GRIP

V99 B/B/CH - 43015 G
V99 B/CH/CH - 43016 J
V99 B/B/GL - 43017 L
V99 B/GL/GL - 43018 N



V99 B/B/CH Ø 350 mm (13.8'')
Chrome inserts, black central cap



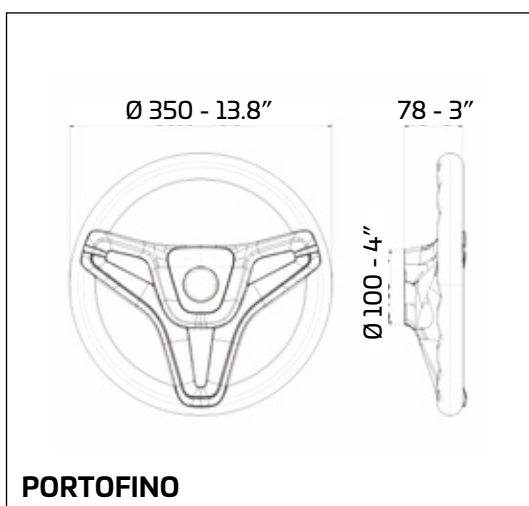
V99 B/CH/CH Ø 350 mm (13.8'')
Chrome inserts and central cap



V99 B/B/GL Ø 350 mm (13.8'')
Gold inserts, black central cap



V99 B/GL/GL Ø 350 mm (13.8'')
Gold inserts and central cap



All PORTOFINO steering wheels are provided with an exclusive hub that easily allows the steering wheel to always be aligned properly.



PORTOFINO STEERING WHEELS

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

- Thermoplastic antishock material
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

SOFT TOUCH GRIP

V99 B/B/S - 43413 V

V99 B/S/S - 43404 U

V99 B/GB/GB - 43403 S

V99 B/CB/CB - 43405 W



V99 B/B/S Ø 350 mm (13.8'')
Silver inserts, black central cap



V99 B/S/S Ø 350 mm (13.8'')
Silver inserts and central cap



V99 B/GB/GB Ø 350 mm (13.8'')
Glossy black inserts and central cap



V99 B/CB/CB Ø 350 mm (13.8'')
Carbon inserts and central cap





ANTIGUA STEERING WHEELS

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

- Thermoplastic antishock material
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

SOFT TOUCH GRIP

V60B	- 39189 U
V60W	- 39190 C
V60G	- 39274 J

BURL WOOD GRIP

V61BR	- 39191 E
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V60B Black grip - Black spokes
Ø 350 mm (13.8")



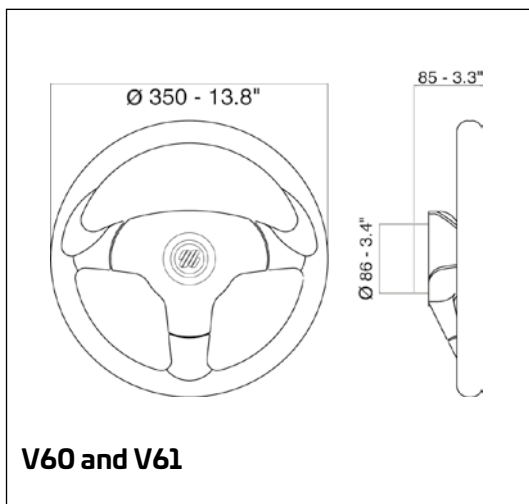
V60W White grip - White spokes
Ø 350 mm (13.8")



V60G Grey grip - Grey spokes
Ø 350 mm (13.8")



V61BR Burl wood grip - Black spokes
Ø 350 mm (13.8")



V60 and V61



All Antigua steering wheels are provided with an exclusive hub that easily allows the steering wheel to always be aligned properly.



CORSICA **STEERING** **WHEELS**

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

- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

SOFT TOUCH GRIP

CORSICA B/S - 38333 O
CORSICA B/B - 38332 N
CORSICA W/S - 38334 P
CORSICA G/S - 38393 H

BURL WOOD GRIP

CORSICA BR/B - 38647 T
CORSICA BR/S - 38684 Z



CORSICA B/S Black grip - Silver spokes
Ø 350 mm (13.8")



CORSICA B/B Black grip - Black spokes
Ø 350 mm (13.8")



CORSICA W/S White grip Silver spokes
Ø 350 mm (13.8")



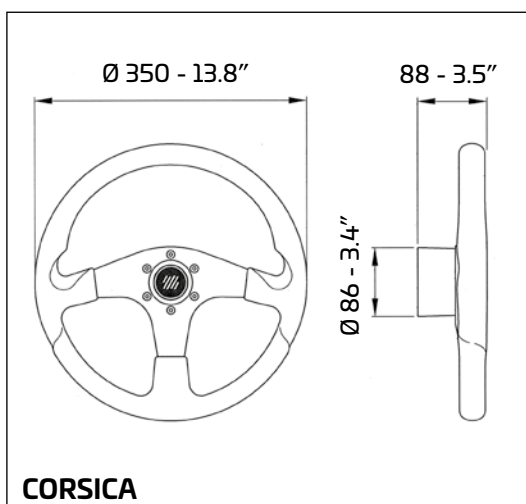
CORSICA G/S Grey grip - Silver spokes
Ø 350 mm (13.8")



CORSICA BR/B Burl wood grip
Black spokes - Ø 350 mm (13.8")



CORSICA BR/S Burl wood grip
Silver spokes - Ø 350 mm (13.8")



POLYURETHANE GRIP STEERING WHEELS

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All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards

- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

NISIDA B/B - 61812 M
NISIDA B/S - 61813 P
PIANOSA B/S - 22322 Y
PIANOSA B/B - 22906 H
PIANOSA B/SS - 22961 K
PALMARIA B/B - 63727 H



NISIDA B/B Black grip - Black spokes
 Ø 350 mm (13.8")



NISIDA B/S Black grip - Silver spokes
 Ø 350 mm (13.8")



PIANOSA B/S Black grip
 Silver spokes - Ø 350 mm (13.8")



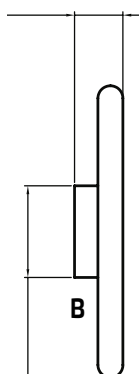
PIANOSA B/B Black grip
 Black spokes - Ø 350 mm (13.8")



PIANOSA B/SS Black grip - Stainless
 steel spokes - Ø 350 mm (13.8")



PALMARIA B/B Black grip
 Black spokes - Ø 350 mm (13.8")



MOD.	B mm (")
NISIDA	85 (3.35)
PALMARIA	40 (1.57)
PIANOSA	88 (3.46)



X63 - 40119D
 Easy centering hub (spare part)

POLYURETHANE GRIP STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

CAPRAIA B/S - 22958 X
CAPRAIA B/B - 22959 Z

WHEELS WITH INSERTS

SANTORINI B/S - 65995 W

REDUCED DIMENSION WHEELS

MYKONOS - 68365 B
PANTELLERIA B/S - 22232 X



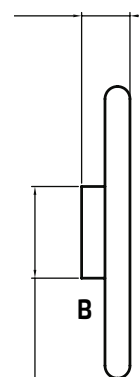
**CAPRAIA B/S Black grip
Silver spokes - Ø 350 mm (13.8")**



**CAPRAIA B/B Black grip
Black spokes - Ø 350 mm (13.8")**



**SANTORINI B/S Silver inserts - Silver
spokes - Ø 350 mm (13.8")**



MOD.	B mm (")
CAPRAIA	84 (3.3)
SANTORINI	91 (3.58)
PANTELLERIA	90 (3.54)
MYKONOS	83 (3.27)



**PANTELLERIA B/S Black grip
Silver spokes - Ø 320 mm (12.6")**



**MYKONOS Black grip
Silver spokes - Ø 320 mm (12.6")**



POLYURETHANE GRIP STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

DOMINO B/S - 23895 E

DOMINO B/B - 23896 G

TAVOLARA B/S - 65277 N

WHEELS

WITH INSERTS

VIVARA CH/P - 64643 G

BUDELLI CH/P - 65294 N

BUDELLI CH/S - 65293 L



DOMINO B/S Black grip
Silver spokes - Ø 350 mm (13.8")



DOMINO B/B Black grip
Black spokes - Ø 350 mm (13.8")



TAVOLARA B/S Black grip
Silver spokes - Ø 350 mm (13.8")



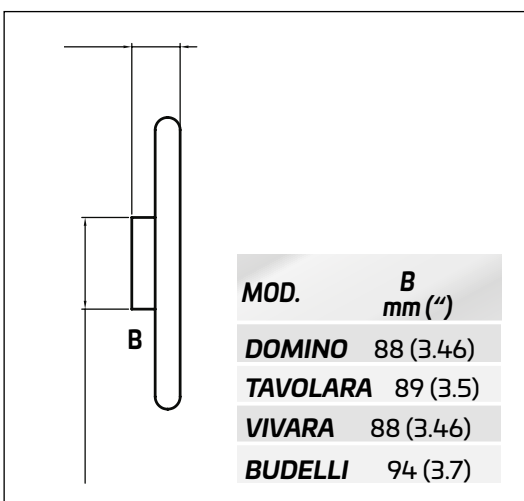
VIVARA CH/P Chrome inserts
Polished spokes - Ø 350 mm (13.8")



BUDELLI CH/P Chrome inserts
Polished spokes - Ø 350 mm (13.8")



BUDELLI CH/S Chrome inserts
Silver spokes - Ø 350 mm (13.8")



POLYURETHANE GRIP STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

REDUCED

DIMENSION WHEELS

USTICA B/S - 20926 X
USTICA B/B - 21622 F

REDUCED

DIMENSIONS WHEEL WITH INSERTS

LEVANZO B/S/CH - 20927 Z

SPEED KNOB FOR USTICA & LEVANZO WHEELS

KNOB/UST - 21721 H



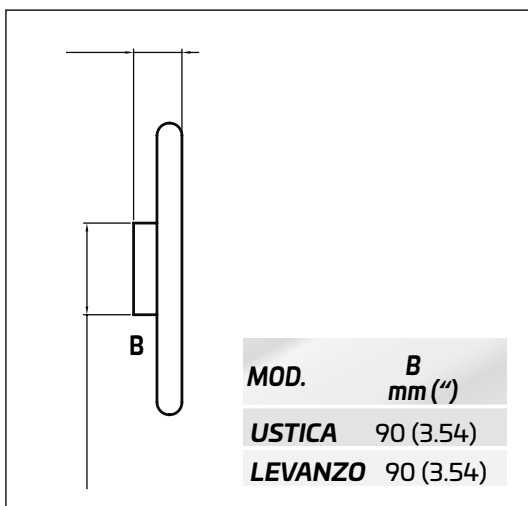
**USTICA B/S Black grip
Silver spokes - Ø 330 mm (13.0")**



**USTICA B/B Black grip
Black spokes - Ø 330 mm (13.0")**



**LEVANZO B/S/CH Chrome inserts
Silver spokes - Ø 330 mm (13.0")**



**X63 - 40119D
Easy centering hub (spare part)**



POLYURETHANE GRIP STEERING WHEELS

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All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards

- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

- *Floating cap also available*

MONTECRISTO B/B/CH

- 20351 V

MONTECRISTO B/SS/CH

- 20470 D

MONTECRISTO B/S/S

- 20350 T



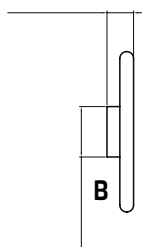
MONTECRISTO B/B/CH
Black spokes - Ø 350 mm (13.8")



MONTECRISTO B/SS/CH
Stainless steel spokes - Ø 350 mm (13.8")



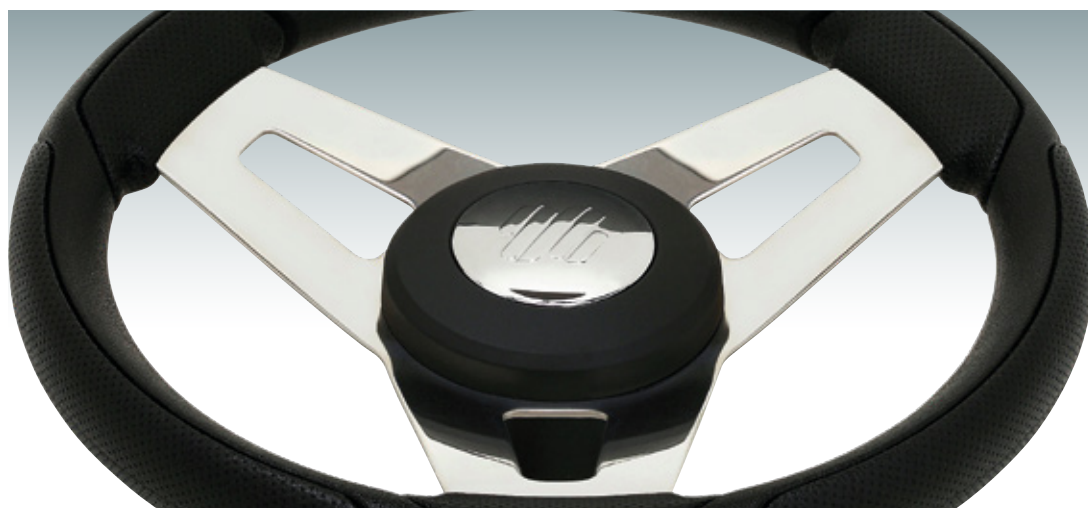
MONTECRISTO B/S/S
Silver spokes - Ø 350 mm (13.8")



MOD.	B mm (")
MONTECRISTO B/SS/CH	94 (3.7)
MONTECRISTO B/B/CH	98 (3.86)
MONTECRISTO B/S/S	98 (3.86)



X63 - 40119D
Easy centering hub (spare part)



WOOD GRIP STEERING WHEELS

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

- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

LAMPEDUSA - 62684 L
ALICUDI - 62682 G

**REDUCED
DIMENSION WHEEL**
CAPRI - 62465 Y



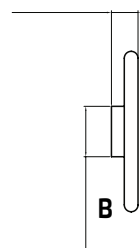
LAMPEDUSA Ø 360 mm (14.1")



ALICUDI Ø 350 mm (13.8")



CAPRI Ø 320 mm (12.6")



MOD.	B mm (")
LAMPEDUSA	43 (1.69)
ALICUDI	92 (3.62)
CAPRI	87 (3.43)



NON MAGNETIC STAINLESS STEEL WHEELS

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- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

STAINLESS STEEL GRIP

V21SS - 42121 A

POLYURETHANE GRIP

V21B - 42328 Z
V21W - 42324 R

NATURAL TEAK GRIP

V21TK - 42325 T

KNOB21 - 42371 A



V21SS Ø 350 mm (13.8")



V21B Ø 350 mm (13.8")



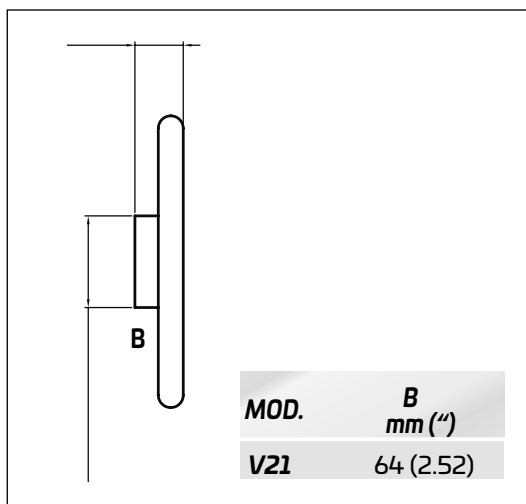
V21W Ø 350 mm (13.8")



V21TK Ø 350 mm (13.8")



KNOB21
Speed knob
for V21 wheels



NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP

V25B - 40640 R black
V25W - 40642 V white
V25G - 40641 T grey

MAHOGANY GRIP

V25M - 40644 Z

STAINLESS STEEL GRIP

V25SS - 40643 X



V25B Ø 350 mm (13.8")



V25W Ø 350 mm (13.8")



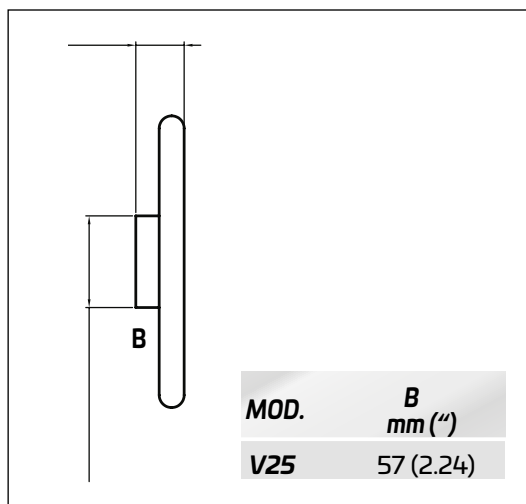
V25G Ø 350 mm (13.8")



V25M Ø 350 mm (13.8")



V25SS Ø 350 mm (13.8")



NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP

V20B - 42843 S black
V20W - 42844 U white
V20G - 42845W grey

V01B - 41687 Z black
V01W - 41688 B white
V01G - 41689 D grey

STAINLESS STEEL GRIP

V01SS - 41692 S



V20B Ø 350 mm (13.8")



V20W Ø 350 mm (13.8")



V20G Ø 350 mm (13.8")



V01B Ø 350 mm (13.8")



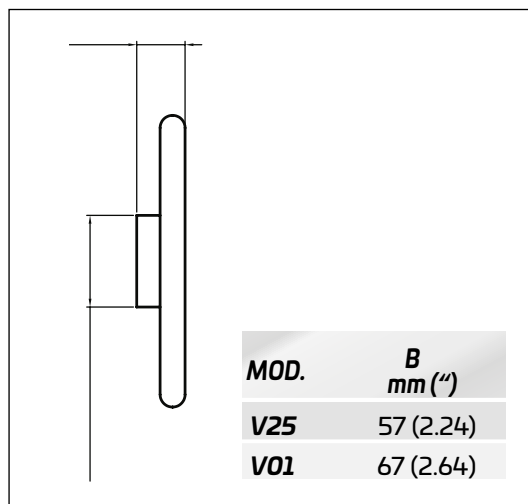
V01W Ø 350 mm (13.8")



V01G Ø 350 mm (13.8")



V01SS Ø 350 mm (13.8")



NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP

V10B - 41693 U black
V10W - 41694 W white
V10G - 41695 Y grey

POLISHED TEAK GRIP

V10TK 35 - 41697 C
V10TK 40 - 41698 E

STAINLESS STEEL GRIP

V10SS 35 - 41699 G



V10B Ø 350 mm (13.8")



V10W Ø 350 mm (13.8")



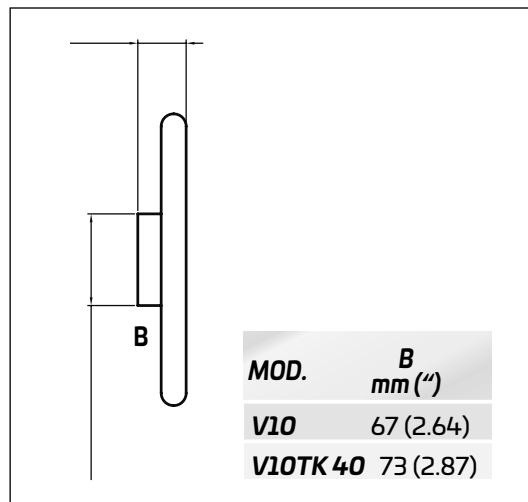
V10G Ø 350 mm (13.8")



V10TK 35 Ø 350 mm (13.8")
V10TK 40 Ø 400 mm (15.7")



V10SS 35 Ø 350 mm (13.8")



NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards 2

POLYURETHANE GRIP AND REDUCED DIMENSION

V28W - 42503 R white
V28B - 42502 N black

V52B - 40631 P black
V52W - 40633 U white
V52G - 40632 S grey

V31B - 43006 F black



V28W Ø 280 mm (11")



V28B Ø 280 mm (11")



V52B Ø 320 mm (12.6")



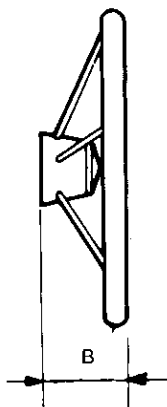
V52W Ø 320 mm (12.6")



V52G Ø 320 mm (12.6")



V31B Ø 320 mm (12.6")



MOD.	B mm (")
V28	65 (2.56)
V52	73 (2.87)
V31	75 (2.95)



NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP

V56B/CH - 21351 A
V56W/CH - 21406 Z
V56G/CH - 21407 B
V56SB/CH - 21408 D
V56B/R - 21524 F
V56W/W -



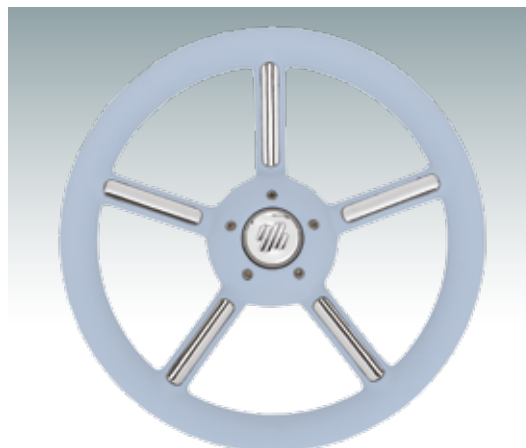
V56B/CH Ø 350 mm (13.8")



V56W/CH Ø 350 mm (13.8")



V56G/CH Ø 350 mm (13.8")



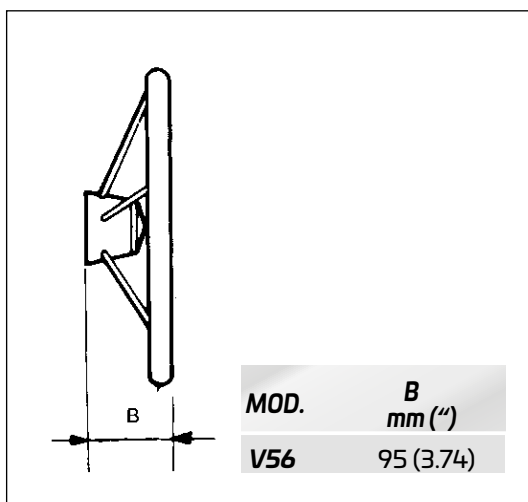
V56SB/CH Ø 350 mm (13.8")



V56B/R Ø 350 mm (13.8")



V56W/W Ø 350 mm (13.8")



NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

EXCLUSIVE POLYURETHANE "FIRM GRIP"

V70B - 39442 D black
V70W - 39929 J white
V70G - 39441 B grey

POLYURETHANE GRIP

V57B - 38155 O black
V57W - 38157 Q white
V57G - 38156 P grey



V70B Ø 350 mm (13.8")



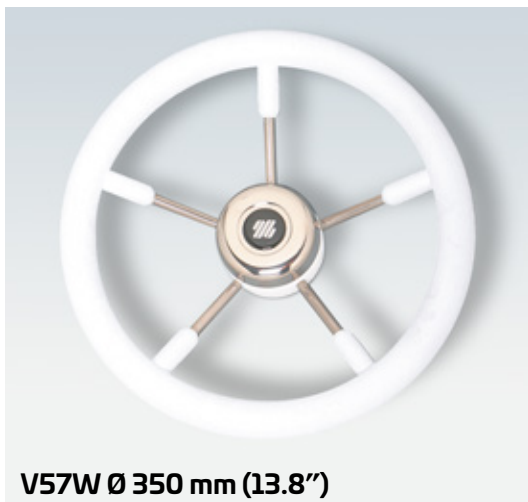
V70W Ø 350 mm (13.8")



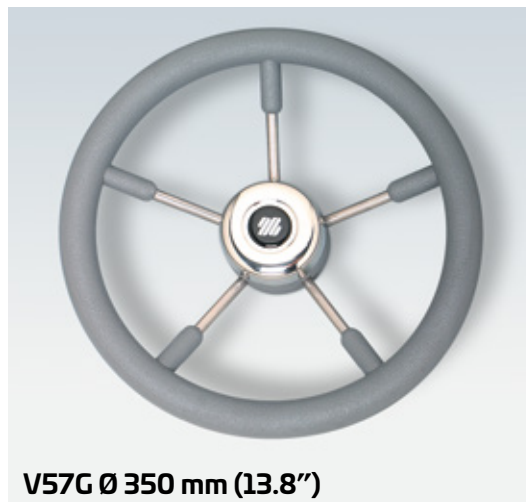
V70G Ø 350 mm (13.8")



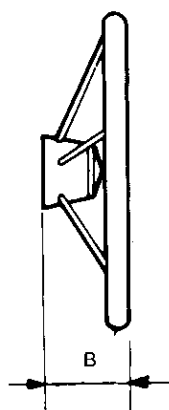
V57B Ø 350 mm (13.8")



V57W Ø 350 mm (13.8")



V57G Ø 350 mm (13.8")



MOD.	B mm (")
V70	90 (3.54)
V57	76 (2.99)



NON MAGNETIC STAINLESS STEEL WHEELS

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POLYURETHANE GRIP

V24W - 42347 D
V24B - 42345 Z
V24G - 42346 B

V24COMMANDO - 42370 Y



V24B Ø 350 mm (13.8")



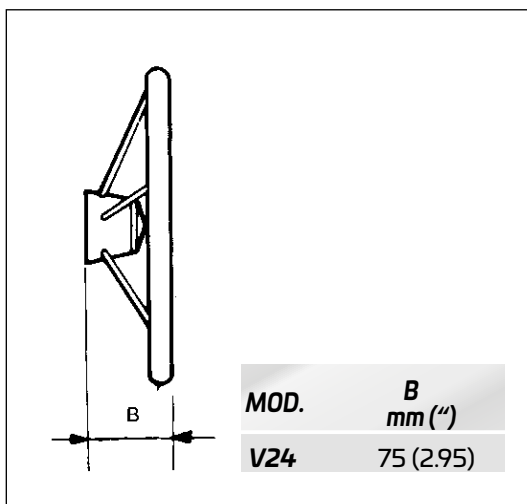
V24W Ø 350 mm (13.8")



V24G Ø 350 mm (13.8")



V24COMMANDO Ø 350 mm (13.8")





NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP

V29B - 42846 Y
V29W - 42847 A
V29G - 42848 C
V58G - 38650 F grey
V53B - 40634 W black



V29B Ø 350 mm (13.8")



V29W Ø 350 mm (13.8")



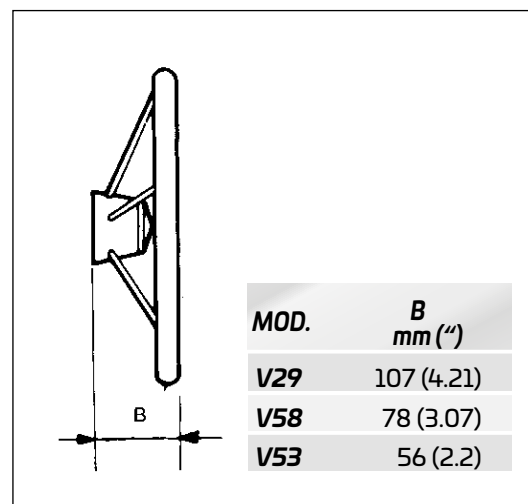
V29G Ø 350 mm (13.8")



V58G Ø 400 mm (15.7")



V53B Ø 450 mm (17.7")



NON MAGNETIC STAINLESS STEEL WHEELS

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- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

MAHOGANY GRIP

V30 - 42418 A
V66 - 39424 B
V62 - 39263 D

NATURAL OAK GRIP

V82 - 41685 V



V30 Ø 350 mm (13.8")



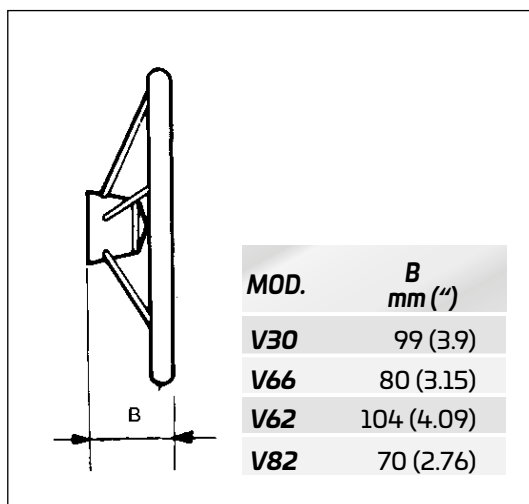
V66 Ø 350 mm (13.8")



V62 Ø 350 mm (13.8")



V82 Ø 350 mm (13.8")





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NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

MAHOGANY GRIP

V67 - 39425 D
V63 - 39264 F

KNOB67 - 40677 R

V74/40 - 41115 A

NATURAL TEAK GRIP

V77/40 - 41152 G

POLISHED TEAK GRIP

V85 - 42416 W



V67 Ø 400 mm (15.7'')



V74/40 Ø 400 mm (15.7'')



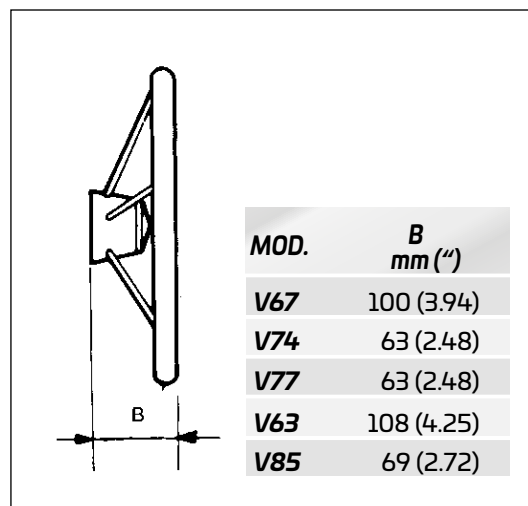
V77/40 Ø 400 mm (15.7'')



V63 Ø 450 mm (17.7'')



V85 Ø 500 mm (19.7'')



KNOB67
Speed knob for
V63 and V67 wheels



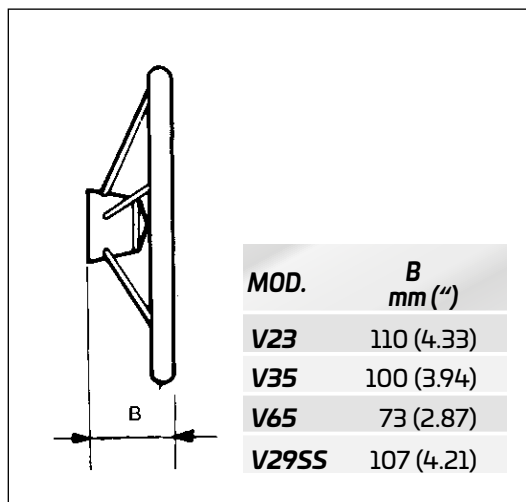
NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

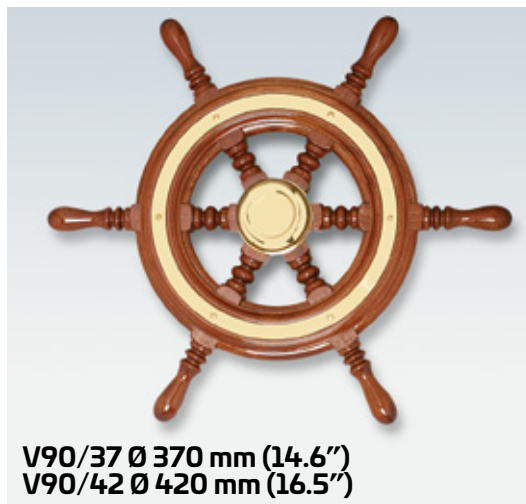
STAINLESS STEEL GRIP

V23 - 32397 D
V35 - 31602 H
V65 - 39436 J
V29SS - 43007 H



CAPTAIN'S WHEELS

V89 - 40721 R
V90/37 - 39931 V
V90/42 - 39932 X
V93 - 40645 B
KNOB93 - 40647 F





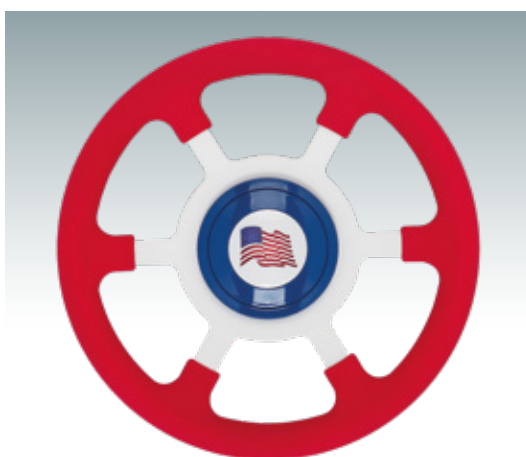
NON MAGNETIC STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- *Floating cap also available*

POLYURETHANE GRIP, ALUMINUM SPOKES

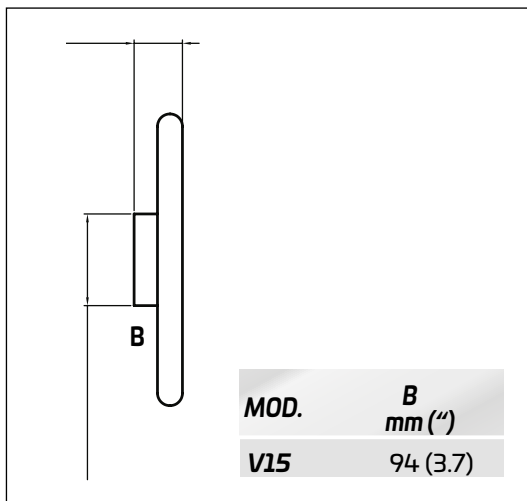
V15R/W - 22323 A



V15R/W Ø 350 mm (13.8")



V15B/SS Ø 350 mm (13.8")



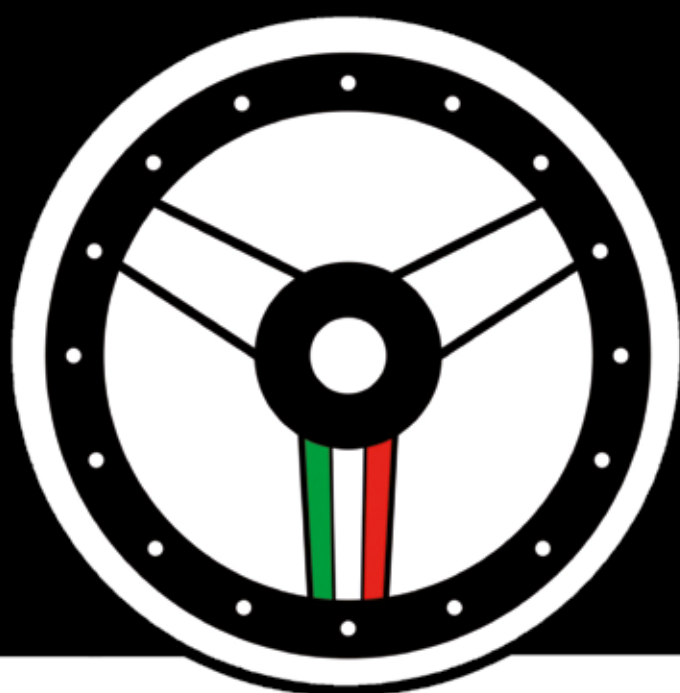
POLYURETHANE GRIP, STAINLESS STEEL SPOKES

V15B/SS - 22325 E





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VERO VOLANTE ITALIANO

"VERO VOLANTE ITALIANO"

***IS THE REGISTERED
TRADEMARK
WHICH DISTINGUISHES
THE STEERING WHEELS
FOR PLEASURE BOATS
PRODUCED BY ULTRAFLEX***

STEERING WHEELS



VERO VOLANTE ITALIANO - MAINTENANCE



VERO VOLANTE ITALIANO

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



BOCCANEGRA STEERING WHEELS

"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.

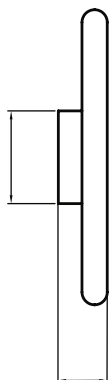
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes

LEATHER GRIP AND HUB

BOCCANEGRA L W/L -
67295 B white

LEATHER GRIP PAINTED HUB

BOCCANEGRA L SB/P -
67296 D sky-blue



B

B = 89 mm - 3.5"



Boccanegra L W/L - Ø 350 mm (13.8")



Boccanegra L SB/P - Ø 350 mm (13.8")


CHRISTIANGRADE
DesignWorks



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VERO VOLANTE ITALIANO



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STEERING WHEELS

BOCCANEGRA STEERING WHEELS

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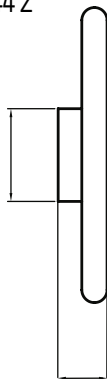
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes

LEATHER GRIP AND HUB

BOCCANEGRA L B/L -
67460 P black

LEATHER GRIP CHROME HUB

BOCCANEGRA L B/CH -
20944 Z



B

B= 89 mm - 3.5"



Boccanegra L B/L - Ø 350 mm (13.8")



Boccanegra L B/CH - Ø 350 mm (13.8")

CHRISTIANGRANDE
DesignWorks



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

ODERICO STEERING WHEELS

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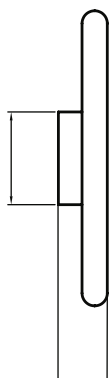
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes
- *Floating cap also available*

LEATHER GRIP

ODERICO L B/SS/CH - 69570 H
ODERICO L B/SS/B - 69565 R

VYNIL GRIP

ODERICO V B/SS/CH - 69563 L
ODERICO V B/SS/B - 69564 N



B

B= 72 mm - 2.83"



Oderico V B/SS/CH - Ø 350 mm (13.8")



Oderico V B/SS/B - Ø 350 mm (13.8")



Oderico L B/SS/CH - Ø 350 mm (13.8")



Oderico L B/SS/B - Ø 350 mm (13.8")

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



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STEERING WHEELS

TRON STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes
- *Floating cap also available*

LEATHER GRIP

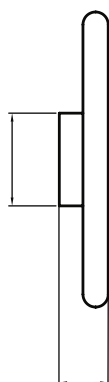
TRON L B/SS/PU -
22125 W

VYNIL GRIP

TRON V B/SS/PU -
22321 W

POLYURETHANE GRIP

TRON PU B/SS/PU -
22124 U



B

B = 95 mm - 3.74"



Tron L B/SS/PU - Ø 350 mm (13.8")



Tron V B/SS/PU - Ø 350 mm (13.8")



Tron PU B/SS/PU - Ø 350 mm (13.8")

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VERO VOLANTE ITALIANO

SPINOLA STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes
- *Floating cap also available*

LEATHER GRIP BRUSHED SPOKES

SPINOLA L B/BRU -
23900 U



Spinola L B/BRU - Ø 350 mm (13.8")



Spinola L B/P - Ø 350 mm (13.8")

VYNIL GRIP BRUSHED SPOKES

SPINOLA V B/BRU -
23899 N



Spinola V B/BRU - Ø 350 mm (13.8")

LEATHER GRIP POLISHED SPOKES

SPINOLA L B/P -
23902 Y



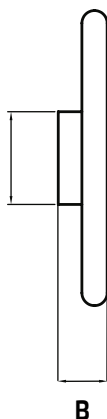
Spinola V B/P - Ø 350 mm (13.8")

VYNIL GRIP POLISHED SPOKES

SPINOLA V B/P -
23901 W



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



B

B= 82 mm - 3.22"



VERO VOLANTE ITALIANO



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STEERING WHEELS



IMPERIALE STEERING WHEELS

"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.

- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- *Floating cap also available*

VYNIL GRIP, 316L STAINLESS STEEL SPOKES

IMPERIALE VB/SS/P -
21299 B



POLYURETHANE GRIP, ALUMINUM SPOKES

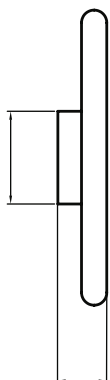
IMPERIALE PU B/S/S -
21300 G



Imperiale V / B/SS/P - Ø 350 mm (13.8'')



Imperiale PU B/S/P - Ø 350 mm (13.8'')



B

B = 66,5 mm - 2.62"



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

DOLFIN **STEERING** **WHEELS**

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes
- *Floating cap also available*

LEATHER GRIP

DOLFIN L B/SS/P - 69562 J

VYNIL GRIP

DOLFIN V B/SS/P - 69561 G

LEATHER GRIP

BRUSHED BLACK SPOKES

DOLFIN L B/B/P - 23023 T



Dolfin V B/SS/P - Ø 350 mm (13.8")



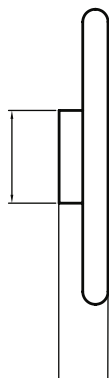
new



Dolfin L B/SS/P - Ø 350 mm (13.8")



Dolfin L B/B/P - Ø 350 mm (13.8")



B

B= 92 mm - 3.62"



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



141

STEERING WHEELS

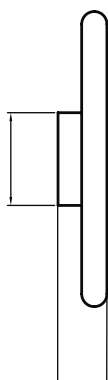
MOROSINI STEERING WHEELS

"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.

- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

LEATHER GRIP AND HUB

MOROSINI L SB/L -
67301 T



B

B= 78 mm - 3.07"



Morosini L SB/L - Ø 350 mm (13.8")



CHRISTIANGRANDE
DesignWorks



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

MOROSINI STEERING WHEELS

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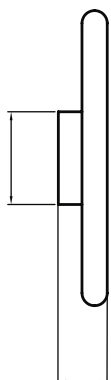
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

LEATHER GRIP, CHROME HUB

MOROSINI L B/CH -
67297 F
MOROSINI L G/CH -
67300 R

POLYURETHANE GRIP, CHROME HUB

MOROSINI PU B/CH -
67461 S



B

B= 78 mm - 3.07"



Morosini L B/CH - Ø 350 mm (13.8")



Morosini L G/CH - Ø 350 mm (13.8")

CHRISTIANGRANDE
DesignWorks



All ULTRAFLEX steering wheels meet the EEC directive 94/25 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



143

STEERING WHEELS

MOROSINI STEERING WHEELS

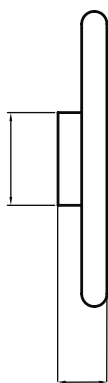
"VERO VOLANTE ITALIANO" is the registered trademark which distinguishes the steering wheels for pleasure boats produced by Ultraflex. They are conceived by Italian designers, engineered and manufactured in Italy by employing genuine Italian components and technologies according to Ultraflex quality management system.

- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

LEATHER GRIP, PAINTED HUB

MOROSINI L W/P -
67298 H

MOROSINI L C/P -
67299 K



B

B= 78 mm - 3.07"



Morosini L W/P - Ø 350 mm (13.8")



Morosini L C/P - Ø 350 mm (13.8")

CHRISTIANGRANDE
DesignWorks



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

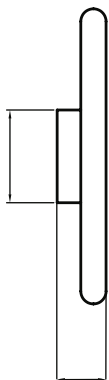
MOROSINI STEERING WHEELS

“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.

- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

MOHOGANY GRIP, CHROME HUB

MOROSINI M/CH -
68378 L



B

B= 78 mm - 3.07"

CHRISTIANGRANDE
DesignWorks



Morosini M/CH - Ø 350 mm (13.8")

All ULTRAFLEX steering wheels meet the EEC directive 94/25 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



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STEERING WHEELS

FOSCARI STEERING WHEELS

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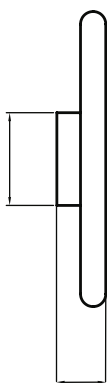
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

VYNIL GRIP

FOSCARI V B/R - 21552 L

POLYURETHANE GRIP

FOSCARI PU B - 67303 X



B

B = 78 mm - 3.07"



Foscari PU B - Ø 350 mm (13.8")



Foscari V B/R - Ø 350 mm (13.8")

CHRISTIANGRANDE
DesignWorks



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

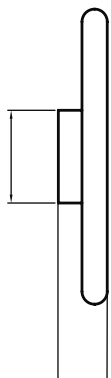
FOSCARI STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

POLYURETHANE GRIP

FOSCARI PU W - 67302 V
FOSCARI PU C - 67304 Z



B

B= 78 mm - 3.07"

CHRISTIANGRANDE
DesignWorks



Foscari PU W - Ø 350 mm (13.8")



Foscari PU C - Ø 350 mm (13.8")

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



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STEERING WHEELS



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ADORNO STEERING WHEELS

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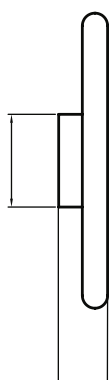
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

LEATHER GRIP

ADORNO L B/CH - 69169 G
ADORNO L B/B - 69170 R

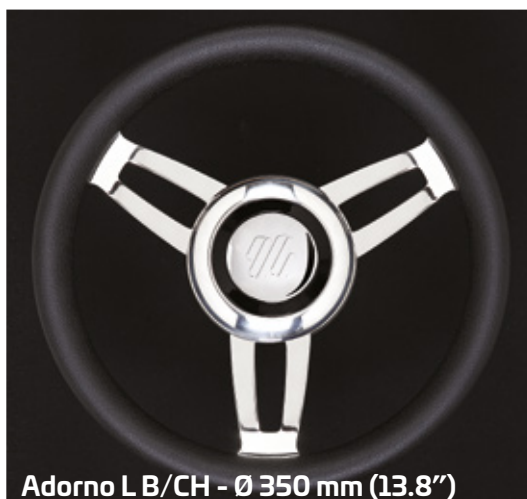
POLYURETHANE GRIP

ADORNO PU B/CH - 69167 C
ADORNO PU B/B - 69168 E



B

B= 81 mm - 3.19"



Adorno L B/CH - Ø 350 mm (13.8")



Adorno L B/B - Ø 350 mm (13.8")



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VERO VOLANTE ITALIANO

CONTARINI STEERING WHEEL

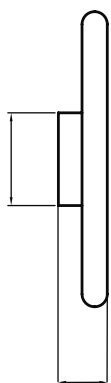
"VERO VOLANTE ITALIANO" is the registered trademark which distinguishes the steering wheels for pleasure boats produced by Ultraflex. They are conceived by Italian designers, engineered and manufactured in Italy by employing genuine Italian components and technologies according to Ultraflex quality management system.

- Standard 3/4" taper
- Hub and center cap included
- Meets with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes
- *Floating cap also available*

POLYURETHANE GRIP

CONTARINI TPU/SS - 69199 S

KNOB/SK - 68832 G



B

B= 79,5 mm - 3.13"



Contarini TPU/SS - Ø 350 mm (13.8")



KNOB/SK - Speed knob for Contarini



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



149

STEERING WHEELS

SIESTAKEY STEERING WHEELS

"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.

- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes

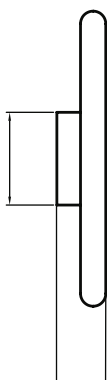
316L STAINLESS STEEL GRIP

SIESTAKEY/B - 68188 F
SIESTAKEY/G - 68203 Y

KNOB/SK - 68832 G



SIESTAKEY/B Ø 368 mm (14.5")



B

B = 90 mm - 3.54"



SIESTAKEY/G Ø 368 mm (14.5")



KNOB/SK - Speed knob for SiestaKey



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VERO VOLANTE ITALIANO

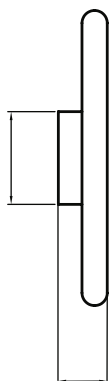
BALBI STEERING WHEEL

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- Standard 3/4" taper
- Hub and center cap included
- Meets with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

POLYURETHANE GRIP

BALBI - 68833 J



B

B= 73 mm - 2.87"



Balbi - Ø 350 mm (13.8")

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



151



MANIN STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- *Floating cap also available*

POLYURETHANE

GRIP, 304

STAINLESS STEEL SPOKES

MANIN PU B/SS - 68204 A



Manin PU B/SS - Ø 350 mm (13.8")

POLYURETHANE

GRIP

ALUMINUM SPOKES

MANIN PU B/S - 68205 C

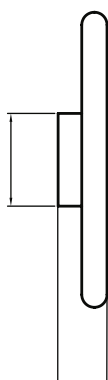
MANIN PU B/B - 68206 E



Manin PU B/B - Ø 350 mm (13.8")



Manin PU B/S - Ø 350 mm (13.8")



B

B= 81 mm - 3.19"



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VERO VOLANTE ITALIANO

GRIMANI STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- *Floating cap also available*

POLYURETHANE GRIP, 304

STAINLESS STEEL SPOKES

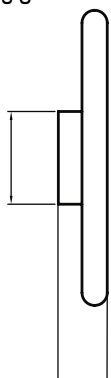
GRIMANI PU B/SS/CH -
69198 P

POLYURETHANE GRIP

ALUMINUM SPOKES

GRIMANI PU B/S/VE -
69297 S

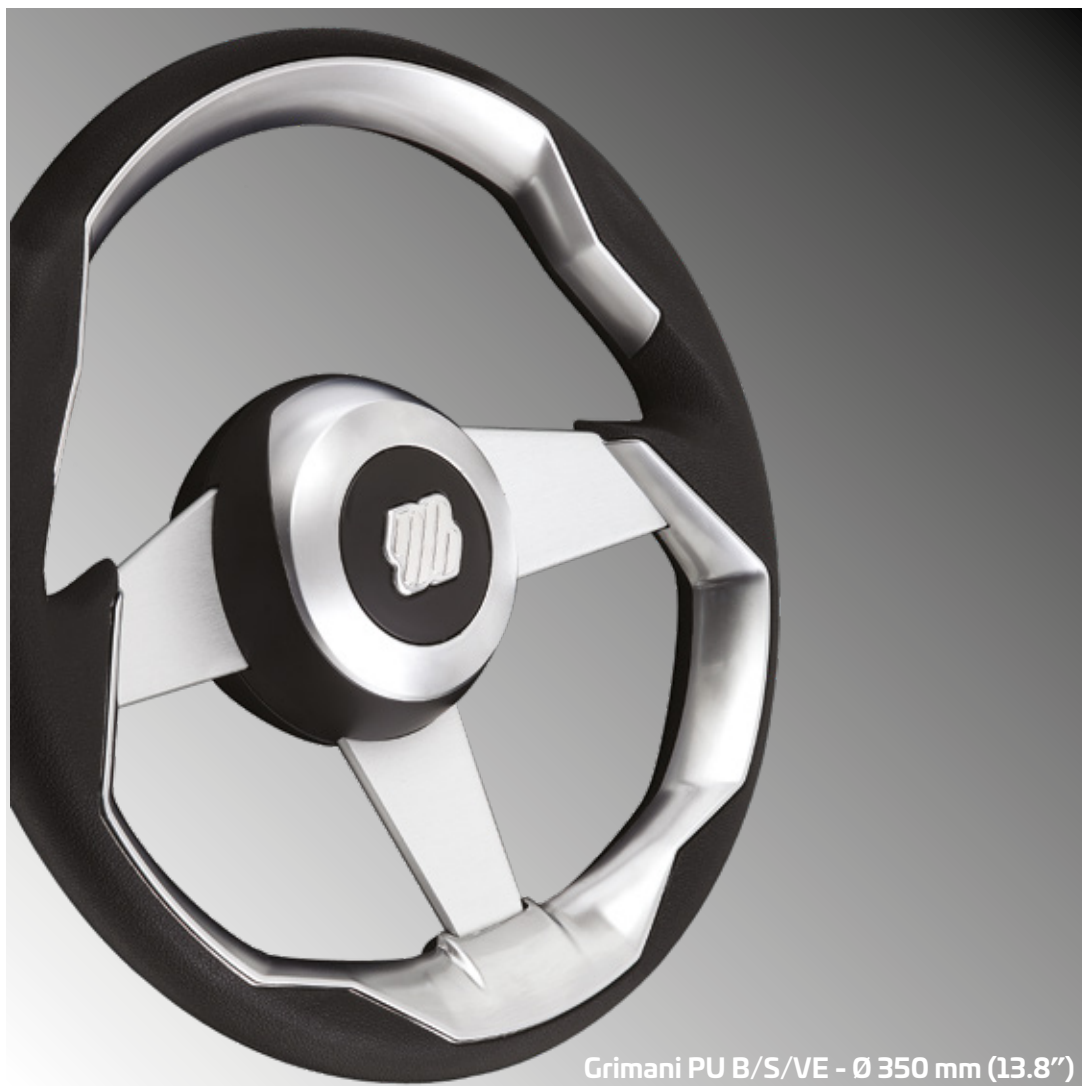
GRIMANI PU B/B/CH -
69298 U



B

B= 89,5 mm - 3.52"
stainless steel spokes

B= 91,5 mm - 3.6"
aluminium spokes



Grimani PU B/S/VE - Ø 350 mm (13.8")



Grimani PU B/SS/CH - Ø 350 mm (13.8")



Grimani PU B/B/CH - Ø 350 mm (13.8")



VERO VOLANTE ITALIANO

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



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STEERING WHEELS

LOREDAN STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- *Floating cap also available*

POLYURETHANE

GRIP, 304

STAINLESS STEEL

SPOKES

LOREDAN PU B/SS/CH -
69557 S

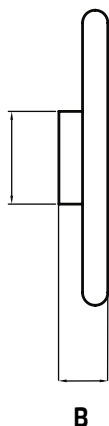
POLYURETHANE

GRIP

ALUMINUM SPOKES

LOREDAN PU B/S/CH -
69558 U

LOREDAN PU B/B/CH -
69559 W



B

B= 92,5 mm - 3.64"



Loredan PU B/SS/CH - Ø 350 mm



Loredan PU B/S/CH - Ø 350 mm (13.8")



Loredan PU B/B/CH - Ø 350 mm (13.8")

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VERO VOLANTE ITALIANO

DORIA STEERING WHEELS

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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP WITH INSERTS

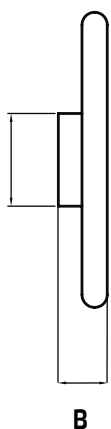
DORIA PU B/S/R - 67309 K
DORIA PU CH/CH - 69706 G
DORIA PU B/S/B - 67465 A
DORIA PU W/S/W - 67728 G



Doria PU B/S/R - Ø 350 mm (13.8")



Doria PU CH/CH - Ø 350 mm (13.8")



B

B= 52 mm - 2.05"



Doria PU B/S/B - Ø 350 mm (13.8")



Doria PU W/S/W - Ø 350 mm (13.8")



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VERO VOLANTE ITALIANO



155

STEERING WHEELS



156

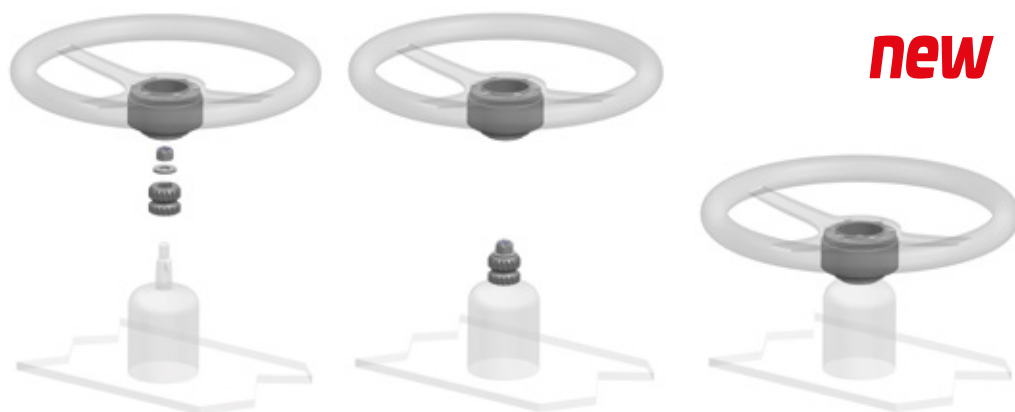
ACCESSORIES FOR STEERING WHEELS

QUICK CONNECT REMOVABLE HUB

HSO-K - 23013 D - Quick connect removable hub for standard 3/4" taper

Suitable with the following steering wheel models:

- Loredan
- Grimaldi
- Manin
- Morosini
- Adorno
- Foscari



PROTECTION COVER

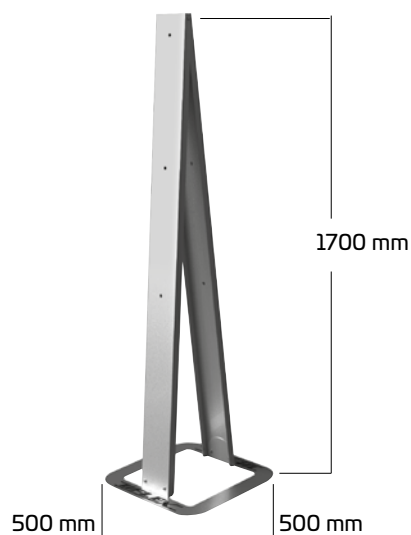
22824 Z - with Ultraflex Logo

Also available with customized logo (minimum quantity ordered: 20 pieces).



ULTRAFLEX WHEEL DISPLAY

67436 T - Fashionable dismountable display in light gray painted metal.



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

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



Single or dual

Adjustable positioning

Tilt or front mount

FEATURES

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

KTR KIT

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



KTR kit





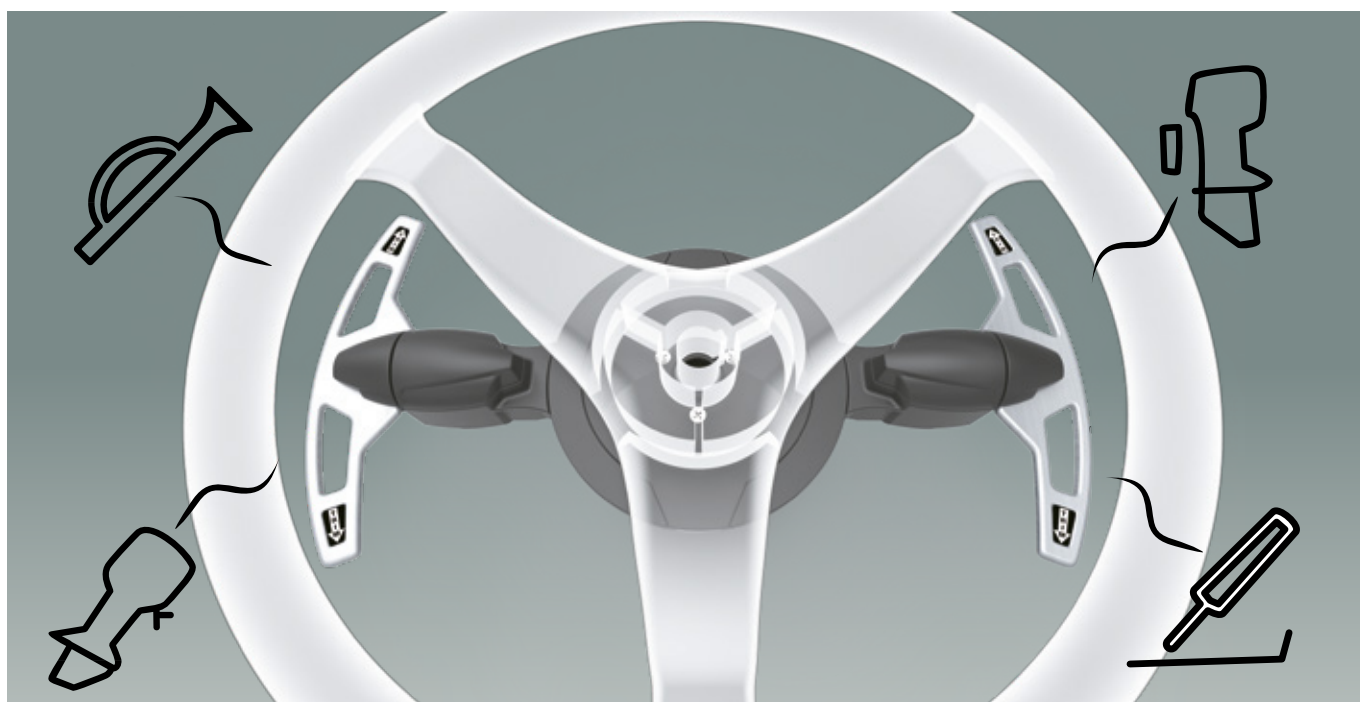
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PADDLE TRIM LABELS

	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



PADDLE TRIM



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Power & Control

ELECTRONIC CONTROL SYSTEM

ELECTRONIC CONTROL SYSTEM

The easy to install PowerA Mark II™ control system provides fingertip operation of throttle and shift levers.

Using reliable and precise digital data transmission, this single or dual function control system is specifically designed to work on mechanically controlled as well as electronic and electro-hydraulic gas and diesel inboards, sterndrives and outboards.

The PowerA Mark II™ comes with many features including Dock Assist, which offers the operator the opportunity to reduce the sensitivity of the throttle function for easier dockside handling.

Other standard features include RPM Synchronization, which reduces engine vibration and improves fuel economy, a High Idle feature to increase RPM where higher idle is necessary for cold engine operations, 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 2 engines from up to 4 different stations, the PowerA Mark II™ is a modular and flexible system with simple to install components.

The unique Control Unit Display of the PowerA Mark II™ provides simple touch pad programming with descriptive information regarding the set up, tuning and diagnostics of the system.

The Power A Mark II is a system that can replace mechanical controls either on fully mechanical engines, or on fully electronic engines, or on engines with the combination of both characteristics.

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 ENGINES SYNCHRONIZATION

DOCK ASSIST

FULLY PROGRAMMABLE SHIFT DELAYS

PERSONALIZED LABEL UPON REQUEST

AVAILABLE INSTALLATION ALSO FOR 3 OR 4 ENGINES*

**CHROME FINISH CONTROL STATIONS:****Control without trim:**

Single engine - 42009 G
Twin engines - 42011 T

Control with trim:

Single engine - 42010 R
Twin engines - 42012 V

IP protection: IP66

BLACK FINISH CONTROL STATIONS:**Control without trim:**

Single engine - 42426 Z
Twin engines - 42425 X

Control with trim:

Single engine - 42427 B
Twin engines - 42428 D

IP protection: IP66

*Please, contact our Technical Department for 3 or 4 engine installations.

TECHNICAL FEATURES:

- Single Lever/Dual Function and Dual Lever/Dual Function for shift, throttle and trolling
- Up to 4 control stations
- Control boxes IP Protection: IP66
- Power supply: min 9 max 32V
- Working temperature: -25°C to +75°C
- Control station functions:
 - Station Select
 - Engines Warm up
 - High idle
 - Docking
 - Engine synchronization
 - Trolling valve, on request, according to customer's specifications
- Electronic throttle outputs:
 - Voltage (double output 0 - 5V and 0 - 2,5V)
 - PWM (0-100%, frequency from 200Hz to 1kHz)
 - Current (4 - 10mA)
- Digital Throttle Output:
 - SAE J 1939
 - NMEA 2000
- Trolling valve output
 - Voltage (0 - 5V)
 - PWM (0-100%, frequency from 100Hz to 1 kHz)
 - Current (4 - 20mA)
- Electric shift control:
 - 2 or 3 ON/OFF or proportional solenoids
 - Shift delays fully settable

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

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

EMC CERTIFICATION AND CE MARK

Conforms with:

- CEI EN60945
- UNI-EN ISO 11547

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 ecc.



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.



Control Unit



PA2-CU - 42017 F

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

PA2-IT - 42019 K - 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 4.7")

PWM-Throttle



PA2-PWMT - 42020 U

It supplies the electrical signals to PWM interfaces

IP protection: IP65

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

Shift Unit



PA2-SU - 42023 A

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 - 42026 G

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 - 42027 J

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

IP protection: IP66

Length: 320 mm (12.6")





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CHART A - E-Throttle Unit

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	42437 E	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	42020 U	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
VM V-Throttle cable	VM engines 0 – 5 V cable	2 4	42314M 42315P	VM engines
Perkins PWM-Throttle cable	Perkins engine PWM Throttle cable	2 4	42374 G 42373 E	Perkins engines

CHART C - Main system cables

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

Note:

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

CHART D - Troll Cables

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

Spare parts

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



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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
		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	Tav. A	1
		E-Shift unit	42023A	1
		Throttle cable	Tav. B	2
		Shift cable	Tav. C	2
Power supply cable (general)		Tav. C	1	
CAN cable		Tav. C	3	
Network terminators		42028L	1	
	Power Unit (optional for second battery)	42026G	1	
	Power cable extension (optional for second battery)	Chart C	1	
	Power supply cable (optional for second battery)	Chart C	1	
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	Tav. A	1
		Mechanical actuator	42027J	1
		Throttle cable	Tav. B	1
		CAN cable	Tav. C	3
		Power supply cable (general)	Tav. C	1
		Network terminators	42028L	1
			Power Unit (optional for second battery)	42026G
	Power cable extension (optional for second battery)		Chart C	1
	Power supply cable (optional for second battery)		Chart C	1
	Two Engines	Dual control with trim (or no trim)	Select control	1
		Control Unit	42017F	1
		E-Throttle unit	Tav. A	1
		Mechanical actuator	42027J	2
		Throttle cable	Tav. B	2
		CAN cable	Tav. C	4
		Power supply cable (general)	Tav. C	1
Network terminators		42028L	1	
Power Unit		42026G	1	
Power extension cable	Tav. C	2		
		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	43157 D	1
		Mechanical actuator	42027J	6
		CAN cable	Tav. C	8
		Power supply cable (general)	Tav. 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	43157 D	1	
	Mechanical actuator	42027J	8	
	CAN cable	Tav. C	10	
	Power supply cable (general)	Tav. 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	



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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	Tav. C	1
		Power cable extension	Tav. C	1
	Twin Engines	Mechanical actuator	42027J	2
		Power Unit	42026G	0 (*)
		CAN cable	Tav. C	2
		Power supply cable (general)	Tav. C	0 (*)
		Power cable extension	Tav. 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
CAN cable			Tav. C	1(**)
Power cable extension			Tav. C	1(**)
Cavo Shift con Troll			Tav. C	1
Twin Engines		Shift Unit	42023A	1(**)
		CAN cable	Tav. C	1(**)
		Power cable extension	Tav. C	1(**)
		Power Unit	42026G	0 (*)
		Power supply cable (general)	Tav. C	0 (*)
Shift cable with Troll		Tav. 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



SINGLE LEVER SIDE MOUNT CONTROLS

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.

Available on request in mechanical version or hybrid version (on request) to control the shift by a mechanical cable and the throttle via 0-5V electric signal.

FEATURES

- 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 brake tension release system easily adjustable
 - Push-in button for throttle operation in Neutral (ENGINE WARM UP).
 - Neutral safety switch **X41** - 38130 F included prevents in-gear starting
 - Exceeds EN ISO 11547 standards when X41 safety switch is installed
 - The B400 **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%.
- For ETC controls please contact our Technical Service for custom configuration.

- For use with Ultraflex C2, C8, MACHZero control cables (no kit required)

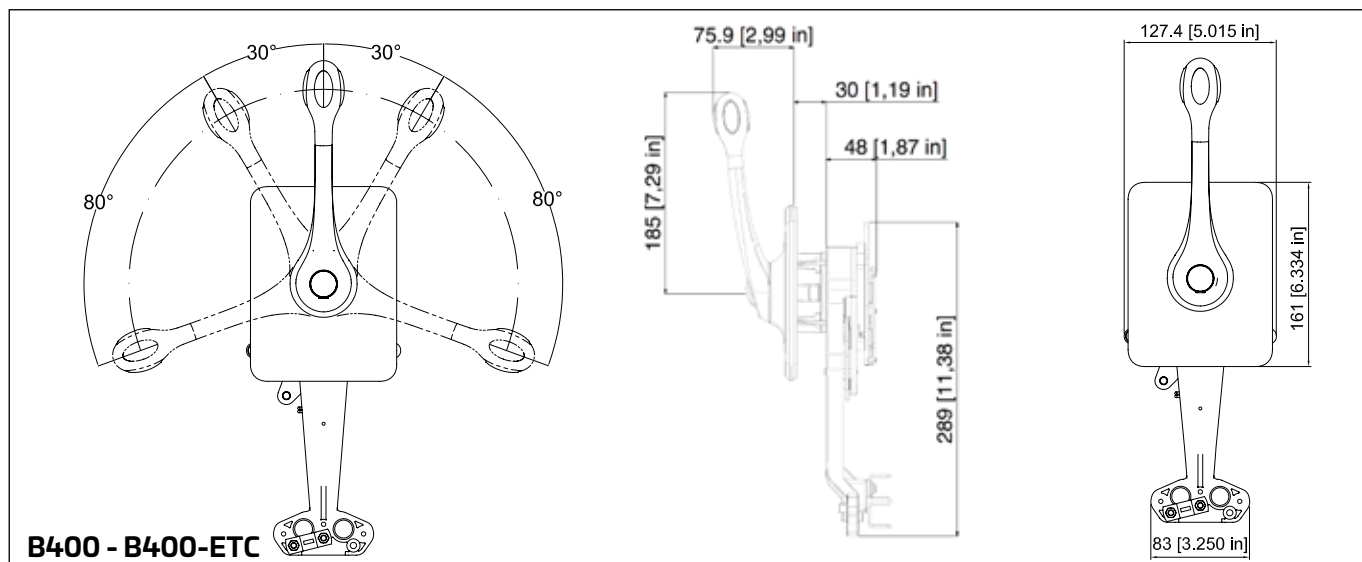


B400



MODELS

B400 - 42076 Y Fully mechanical version



SINGLE LEVER B310 SERIES SIDE MOUNT CONTROLS

The B310 controls combine elegance, functionality and versatility.

Available with chrome, 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.

FEATURES

- 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 brake tension release system adjustable from outside
- Pull-out handle disengages shift for warm-up
- Neutral safety switch **X12** - 34543 Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- All models are provided with positive lock-in neutral to prevent accidental gear engagement
- All models are provided with a power trim switch conveniently located in the handle grip that enables an easy tilting of the engine
- For use with:
 - All Ultraflex control cables except C4, C36 and MACH36
 - Mercury® \ current BRP® (OMC®) \ Yamaha® \ Suzuki® Honda® \ Volvo® style cables
 - 33C style cables
- Ultraflex C5, C16, MACH5 and Mercury® cables require **K35** - 34730 U connection kit
Ultraflex C22 cables require **KB1** - 39964 L connection kit

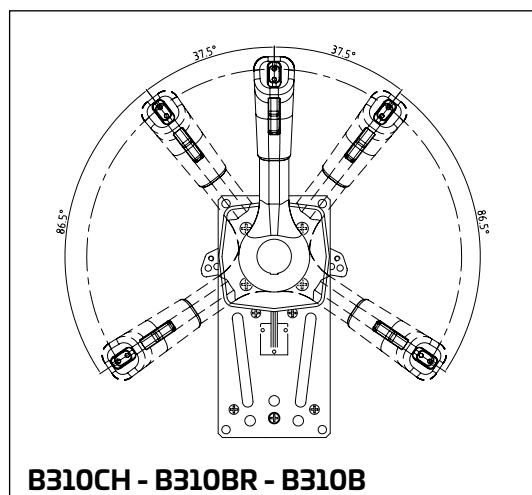
MODELS

B310CH - 41789 H - Provided with a positive lock-in neutral and trim switch

B310BR - 41788 F - Provided with a positive lock-in neutral and trim switch

B310B - 41790 S - Provided with a positive lock-in neutral and trim switch

B310B-NT - 42628 M - Provided with a positive lock-in neutral and without trim switch



B310CH



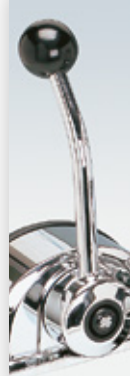
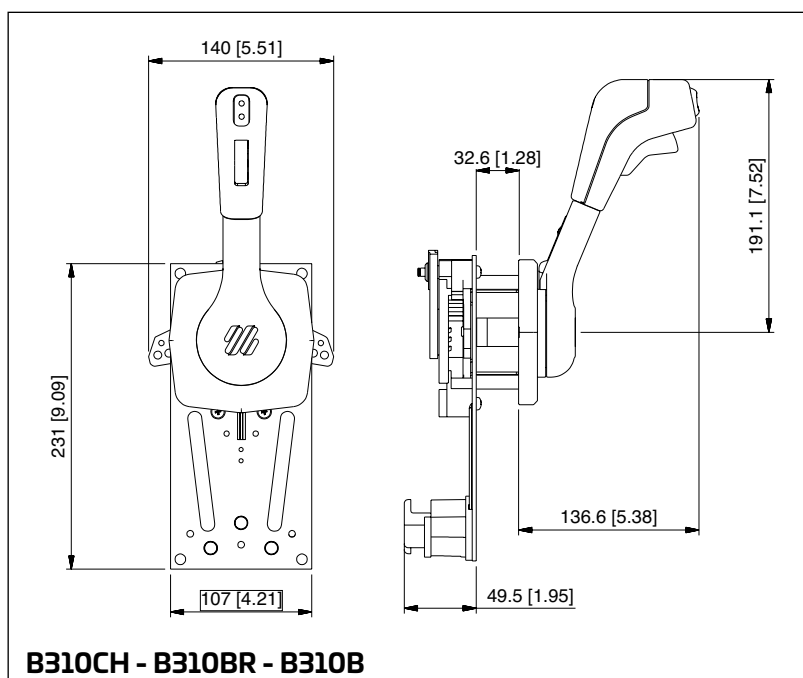
B310BR



B310B



B310B-NT No Trim



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SINGLE LEVER SIDE MOUNT CONTROLS



SINGLE LEVER **SIDE MOUNT CONTROLS**

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.

FEATURES

- 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 brake tension release system adjustable from outside
- Pull-out handle disengages shift for warm-up
- Neutral safety switch **X12** - 34543 Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- All models are provided with positive lock-in neutral to prevent accidental gear engagement
- B184 model is provided with a power trim switch conveniently located in the handle grip that enables an easy tilting of the engine
- For use with all Ultraflex engine control cables except C4 (discontinued) , C22, C36 and MACH36.
- Ultraflex C5, C16 and MACH5 cables require **K35** - 34730 U connection kit



B183



B184



B85



MODELS

B183 - 38945 B

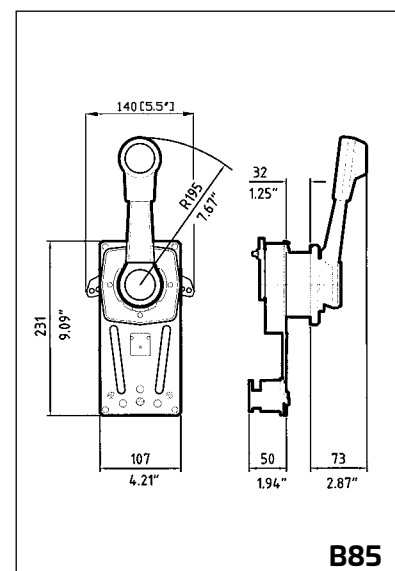
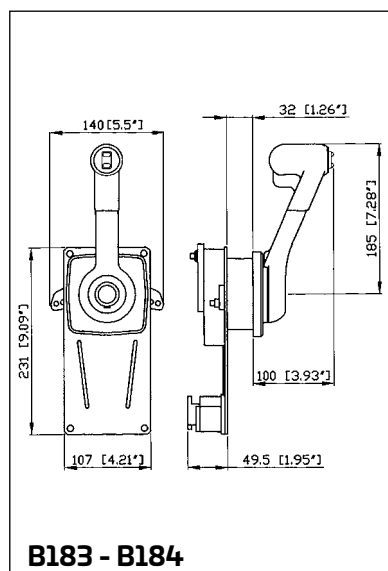
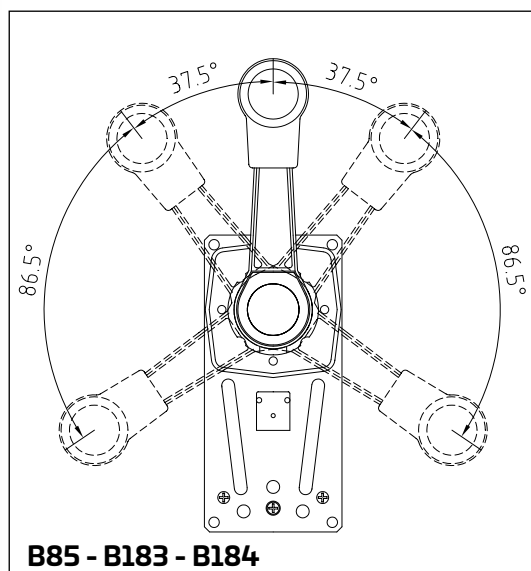
Provided with a positive lock-in neutral

B184 - 38946 D

Provided with a positive lock-in neutral and trim switch

B85 - 35682 I

Standard model, smooth design for use on sailboats. Provided with a positive lock-in neutral



SINGLE LEVER **SIDE MOUNT CONTROLS**

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.

FEATURES

- 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** - 34543 Q (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
- For use with all Ultraflex engine control cables except C4 (discontinued), C22, C36 and MACH36.
- Ultraflex C5, C16 and MACH5 cables require **K35** - 34730 U connection kit.
- To connect C14 and MACH14 cables to engine, use **K51** - 32526 N connection kit.

MODELS

B89 - 36151 G

Ivory finish with positive lock-in neutral.

B90 - 36152 H

Black finish with positive lock-in neutral.



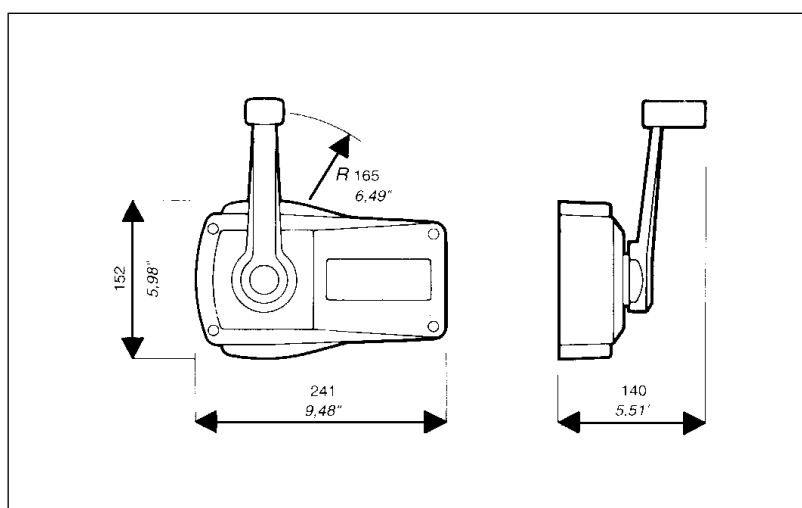
B89



B90



**Lock-in
neutral**



SINGLE LEVER B501 - B502 **SERIES TOP MOUNT CONTROLS**

Available with and without lock in neutral and with and without trim switches. In the twin engine installation a single switch will operate both trims. With a focus on efficiency these controls have been specifically designed to improve the functionality of control systems, making the boat easier to control.

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

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

FEATURES

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Two versions available:
 - Chrome plated high resistance ABS housing control with die cast chrome plated levers
 - Gunmetal painted high resistance ABS housing with die cast black painted levers
- Push in button disengages shift for warm-up
- **X12** - 34543 Q (optional) neutral safety switch which prevents in-gear starting
- Double controls with trim: operated simultaneously on the lever or independently on the core body
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- For use with all Ultraflex control cables except C4:
 - C14 and MACH14 cables require no kit
 - for C2, C8 and MACHZero cables the connection kit **K59** - 40144 C is included
 - C5, C16 and MACH5 cables require **K60** Kit - 40145 E
 - C36 and MACH36 cables require **K62** Kit - 40157 J
 - C22 cable requires **K61** Kit - 40146 G



B501CHT

CE



B502CH

CE



B501BT/L



B502BT

CE

CONTROLS WITHOUT LOCK IN NEUTRAL

B501CH - 43023 F - Single engine, no trim - Chrome

B501CHT - 43024 H - Single engine, with trim - Chrome

B502CH - 43025 K - Double engine, no trim - Chrome

B502CHT - 43256 F - Double engine, with trim (simultaneously or independently operated engines) - Chrome

B501B - 43031 E - Single engine, no trim - Gunmetal

B501BT - 43032 G - Single engine, with trim - Gunmetal

B502B - 43033 J - Double engine, no trim - Gunmetal

B502BT - 43257 H - Double engine, with trim (simultaneously or independently operated engines) - Gunmetal

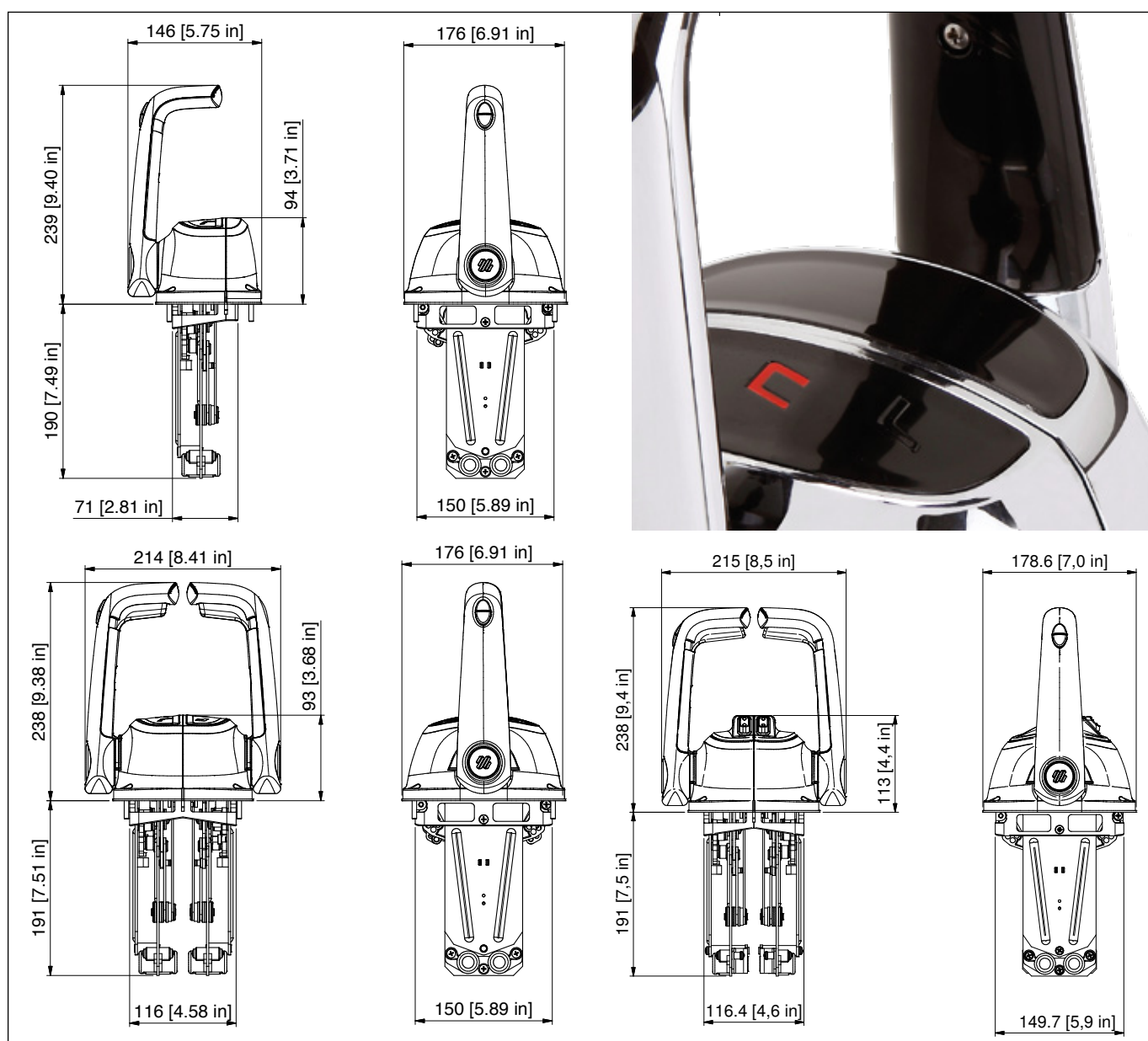
CONTROLS WITH LOCK IN NEUTRAL

B501CHT/L - 43028 S - Single engine, with lock and trim - Chrome

B502CHT/L - 43258 K - Double engine, with lock and trim (simultaneously or independently operated engines) - Chrome

B501BT/L - 43036 R - Single engine, with lock and trim - Gunmetal

B502BT/L - 43259 M - Double engine, with lock and trim (simultaneously or independently operated engines) - Gunmetal



SINGLE LEVER TOP MOUNT CONTROLS

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.

FEATURES

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, chrome plated or powder coat finish
- Pull-out handle disengages shift for warm-up
- Neutral safety switch **X12** - 34543 Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- Power trim switch conveniently located in the handle grip enables for easy tilting of the engine
- For use with all Ultraflex engine control cables except C22, C4 (discontinued), C36 and MACH36.
- Ultraflex C5, C16 and MACH5 cables require **K35** kit - 34730 U

MODELS

B65 -34731 V

Single lever control for one engine, chrome plated.

B76 - 35312 E

Single lever control for one engine, chrome plated, with trim.

B66 - 34732 W

Twin lever control for two engines, chrome plated.

B78 - 35314 G

Twin lever control for two engines, chrome plated, with trim.

B73 -35007 U

Single lever control for one engine, black dome, chrome plated lever.

B77 - 35313 F

Single lever control for one engine, black dome, chrome plated lever, with trim.

B74 - 35008 B

Twin lever control for two engines, black dome, chrome plated lever.

B79 - 35315 H

Twin lever control for two engines, black dome, chrome plated lever, with trim.

B65
B76 with trim



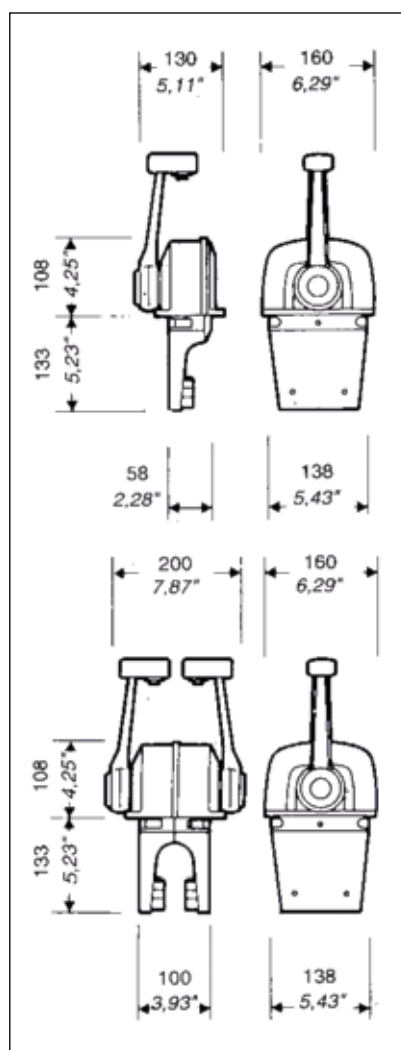
B66
B78 with trim



B73
B77 with trim



B74
B79 with trim



Handle with trim

SINGLE LEVER TOP MOUNT CONTROLS

CE

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.

FEATURES

- 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** - 38160 L (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X43 safety switch is installed
- For use with C2, C8 and MACHZero Ultraflex engine control cables.
- To connect C22 cable to B103 control only, use **K33** - 38378 D connection kit

MODELS

B103 - 37923 K

Single lever control for one engine

B104 - 37924 L

Twin lever control for two engines

X55 - 39421 V - Silver knob **optional**



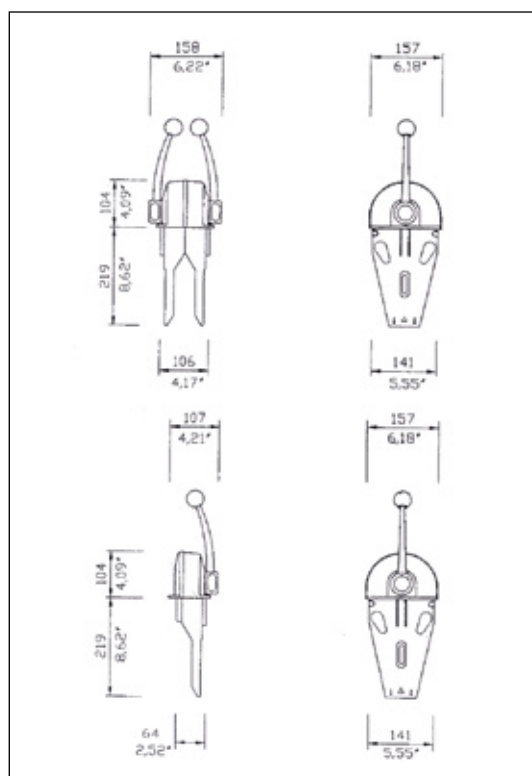
B103



B104



2 X55 (OPTIONAL)



B104 + 2 X55

CE



"LOW PROFILE" SINGLE LEVER TOP MOUNT CONTROLS

178

Single lever / dual action control to operate both with throttle and shift.
Suitable for any type of boats with outboard, inboard or I/O power plants.

FEATURES

- Compact single lever controls offering a unique low profile style compared to other controls available on the market
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, chrome plated or powder coat finish
- Push in button disengages shift for warm-up
- Neutral safety switch **X12** - 34543 Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- For use with all Ultraflex control cables except C4 (discontinued):
 - C14 and MACH14 cables require no kit
 - for C2, C8 and MACHZero cables the connection kit **K59** - 40144 C is included
 - C5, C16 and MACH5 cables require **K60** Kit - 40145 E
 - C36 and MACH36 cables require **K62** Kit - 40157 J
 - C22 cable requires **K61** Kit - 40146 G

MODELS

B301CR - 40140 U

Single lever control for one engine, chrome plated.

B302CR - 40141 W

Twin lever control for two engines, chrome plated.

X75 - 40662 B

Silver knob **optional**



B301CR



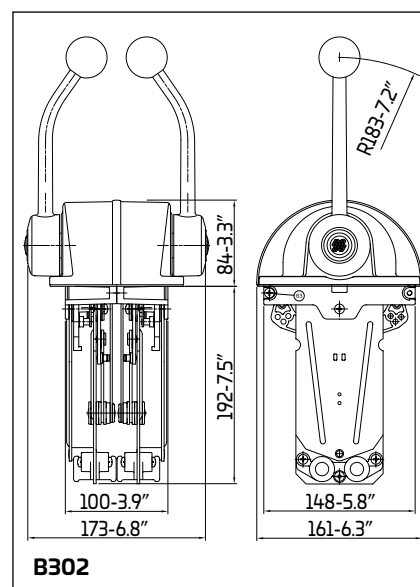
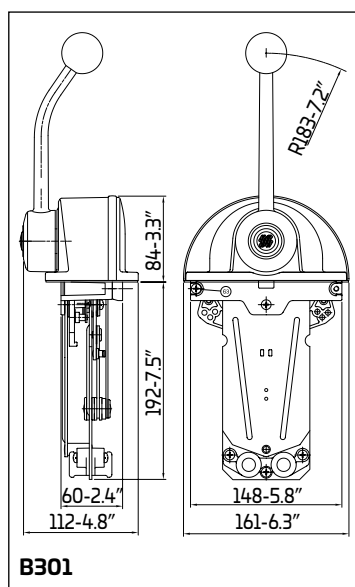
B302CR



2 X75 (OPTIONAL)



B302CR + 2 X75



"LOW PROFILE" SINGLE LEVER TOP MOUNT CONTROLS

Single lever / dual action control to operate both with throttle and shift.
Suitable for any type of boats with outboard, inboard or I/O power plants.

FEATURES

- Compact single lever controls offering a unique low profile style compared to other controls available on the market
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, chrome plated or powder coat finish
- Push in button disengages shift for warm-up
- Neutral safety switch **X12** - 34543 Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- For use with all Ultraflex control cables except C4 (discontinued):
 - C14 and MACH14 cables require no kit
 - for C2, C8 and MACHZero cables the connection kit is **K59** - 40144 C included
 - C5, C16 and MACH5 cables require **K60** Kit - 40145 E
 - C36 and MACH36 cables require **K62** Kit - 40157 J
 - C22 cable requires **K61** Kit - 40146 G

MODELS

B301B - 40142 Y

Single lever control for one engine, black dome, chrome plated lever.

B302B - 40143 A

Twin lever control for two engines, black dome, chrome plated lever.

X75 - 40662 B

Silver knob **optional**



B301B



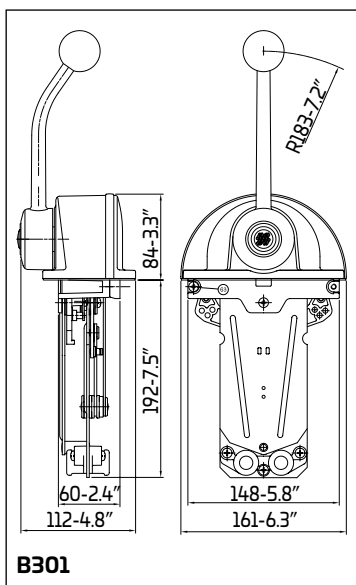
B302B



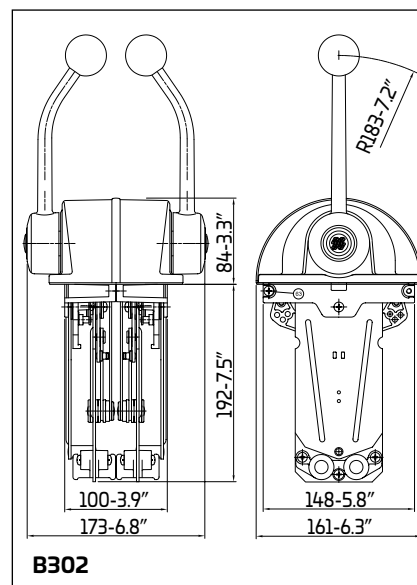
2 X75 (OPTIONAL)



B302B + 2 X75



B301



B302



179

SINGLE LEVER TOP MOUNT CONTROLS

SINGLE LEVER TOP MOUNT CONTROLS

180

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.

FEATURES

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, chrome plated or powder coat finish
- Pull-out handle disengages shift for warm-up
- Neutral safety switch **X12** - 34543 Q (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
- For use with all Ultraflex engine control cables except C22, C4 (discontinued), C36 and MACH36.
Ultraflex C5, C16 and MACH5 cables require **K35** kit - 34730 U

MODELS

B665 - 40656 G

Single lever control for one engine. Chrome plated.

B666 - 40657 J

Twin lever control for two engines. Chrome plated.

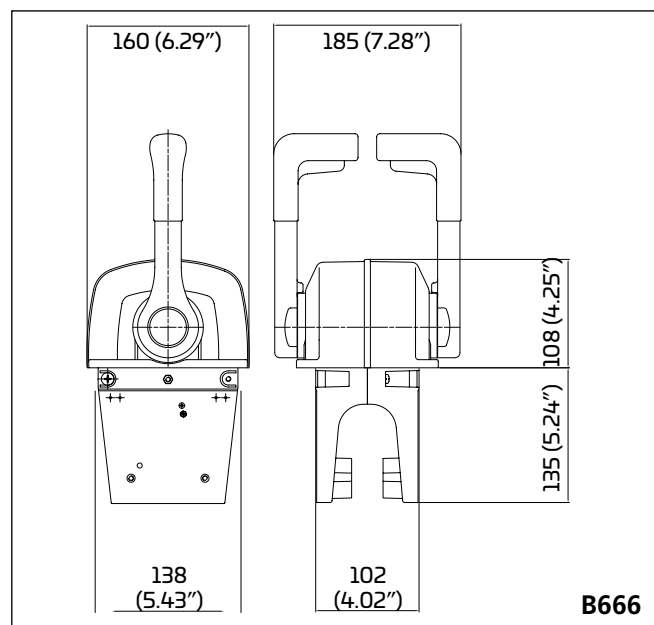
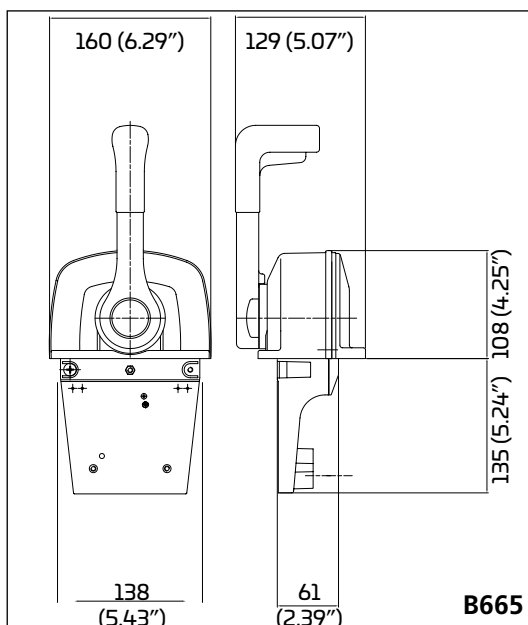
B665



B666



**Lock-in
neutral**



TWO LEVER TOP MOUNT CONTROLS

CE

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

Suitable for use with outboard, inboard or I/O power plants.

FEATURES

- Flush mount suitable for exposed positions such as flying bridge
- Made of marine aluminum with chrome plated lever
- Adjustable brake to avoid throttle creep and positive detent for shift. Both can be adjusted from the outside
- Neutral safety switch **X12** - 34543 Q (optional) prevents in-gear starting
- Available with straight or bent levers
- B58 and B59 models are provided with an interlock kit to prevent accidental gear engagement
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- For use with Ultraflex C2, C8 and MACHZero engine control cables.
- Ultraflex C22 cable requires **K22** - 34713 Q connection kit.

MODELS

BENT LEVERS:

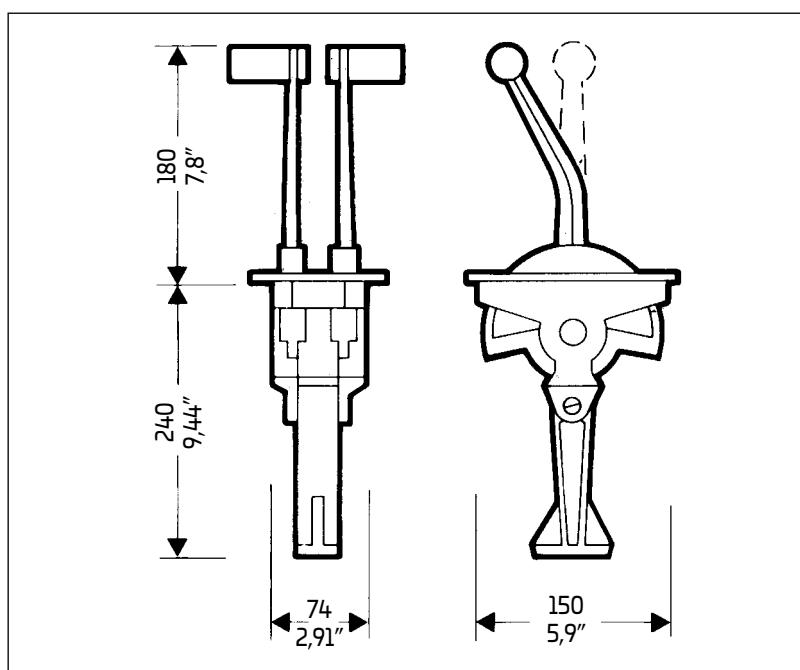
B46 - 34461 P	Throttle and shift
B46T - 34462 Q	Throttle only
B46S - 34463 R	Shift only
B58R - 34570 W	Throttle and shift. With interlock. Right hand installation
B58L - 34716 T	Throttle and shift. With interlock. Left hand installation

STRAIGHT LEVERS:

B50 - 34464 S	Throttle and shift
B50T - 34465 T	Throttle only
B50S - 34466 U	Shift only
B59R - 34571 X	Throttle and shift. With interlock. Right hand installation
B59L - 34717 U	Throttle and shift. With interlock. Left hand installation

**B46
B58 with interlock**

**B50
B59 with interlock**

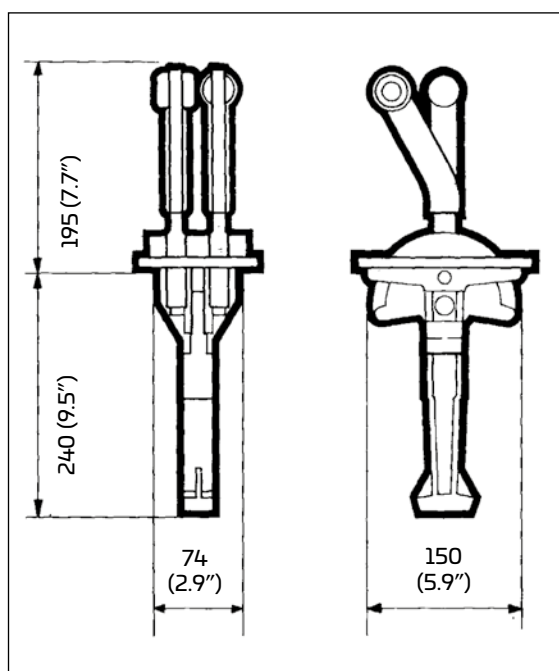


TWO LEVER TOP MOUNT CONTROLS HYBRID OR MECHANICAL VERSIONS

Two lever / single action control: each lever operates separately either the throttle or shift. Suitable for use with outboard, inboard or I/O power plants.

FEATURES

- Flush mount suitable for exposed positions such as flying bridge
- On hybrid versions, especially suitable for jet boats, throttle or shift, or throttle and shift control is provided by a 0-5V voltage signal. The sensor has an analog output signal which can be single or redundant. For the hybrid controls, please contact our Technical Service for custom configuration.
- Levers structure made of die cast zinc alloy provided with a soft thermoplastic ergonomical handgrip
- Adjustable brake to avoid throttle creep and positive detent for shift
- Provided with an interlock kit to prevent accidental gear engagement
- Adjustable ratchet for precise throttle operation obtained applying to the gas lever the optional kit **K52** - 37382 B
- Neutral safety switch **X12** - 34543 Q included prevents in-gear starting
- Raked throttle handle and straight gear handle for a better manoeuvring
- Supplied for right hand installation. Left hand installation available on request
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- For use with Ultraflex C2, C8, MACHZero and all 33C style engine control cables.
- Ultraflex C22 and all 43C style cables require **K22** - 34713 Q connection kit.



B204R with interlock



B208R with interlock

MODELS

Fully mechanical controls:

B204R - 37383 C - Throttle and shift - Black

B208R - 37654 C - Throttle and shift - White

Hybrid controls:

Black finish:

B204R-ETC - 42832 L - Throttle controlled by an electric signal, shift by a mechanical cable.

B204R-ESC - 42775 B - Shift controlled by an electrical signal, throttle by a mechanical cable.

B204R-ETSC - 42776 D - Throttle and shift controlled by an electrical signal

White finish:

B208R-ETC - 42835 T - Throttle controlled by an electric signal, shift by a mechanical cable.

B208R-ESC - 42833 N - Shift controlled by an electrical signal, throttle by a mechanical cable.

B208R-ETSC - 42834 R - Throttle and shift controlled by an electrical signal

TWO LEVER TOP MOUNT CONTROLS

CE

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

Suitable for use with outboard, inboard or I/O power plants.

FEATURES

- Made of aluminium, chrome plated or black powder coat finish
- Throttle lever is provided with adjustable brake tension release system and shift lever with forward, reverse and neutral detents.
- Neutral safety switch **X12** - 34543 Q (optional) prevents in-gear starting
- In dual station applications the **L23** - 31649 B selector unit has to be used
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- Use with all Ultraflex control cables except C4 (discontinued):
 - C14 and MACH14 cables require no kit
 - For C2, C8 and MACHZero cables the connection kit **K67** - 40705 T is included
 - C5, C16 and MACH5 cables require **K63** kit - 40757 N
 - C22 cable requires **K64** kit - 40758 R
 - C36 and MACH36 cables require **K65** kit - 40759 T

MODELS

CHROME PLATED:

B322 - 40669 S	Throttle and shift
B322T - 40670 A	Throttle only
B322S - 40673 G	Shift only

BLACK FINISH:

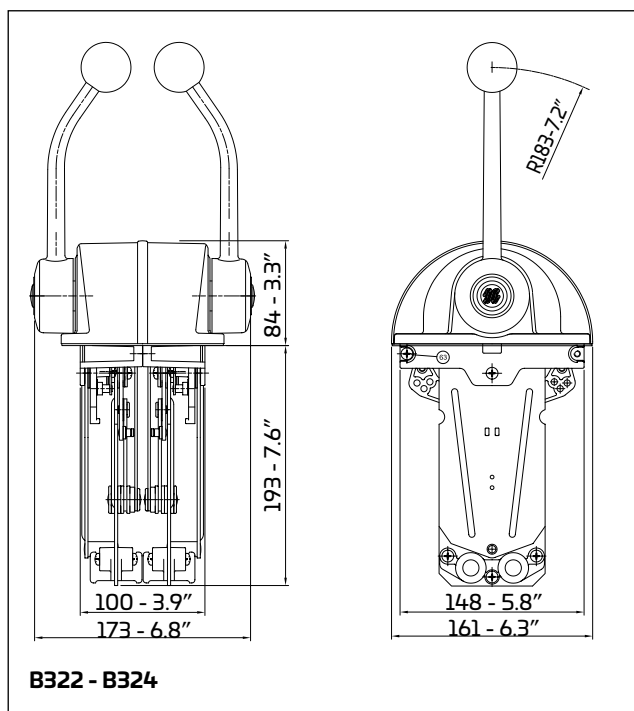
B324 - 40674 J	Throttle and shift
B324T - 40675 L	Throttle only
B324S - 40676 N	Shift only



B322



B324



TWO LEVER TOP MOUNT CONTROLS

184

Two lever / single action control: each lever operates separately either the throttle or the shift.
Suitable for use with outboard, inboard or I/O power plants.

FEATURES

- All the four versions are provided with the shift lever detents and with a brake tension release system adjustable from the outside of the throttle lever
- Neutral safety switch **X12** - 34543 Q (optional) prevents in-gear starting
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- Suitable for exposed positions such as flying bridge
- For use with Ultraflex C2, C8 and MACHZero engine control cables
- Ultraflex C22 cable requires **K32** - 34662 Z connection kit

MODELS

B99 - 36854 N

Throttle and shift. Black painted with chrome levers

B101 - 36856 P

Throttle and shift. White painted

B102 - 36899 G

Throttle and shift. Black painted



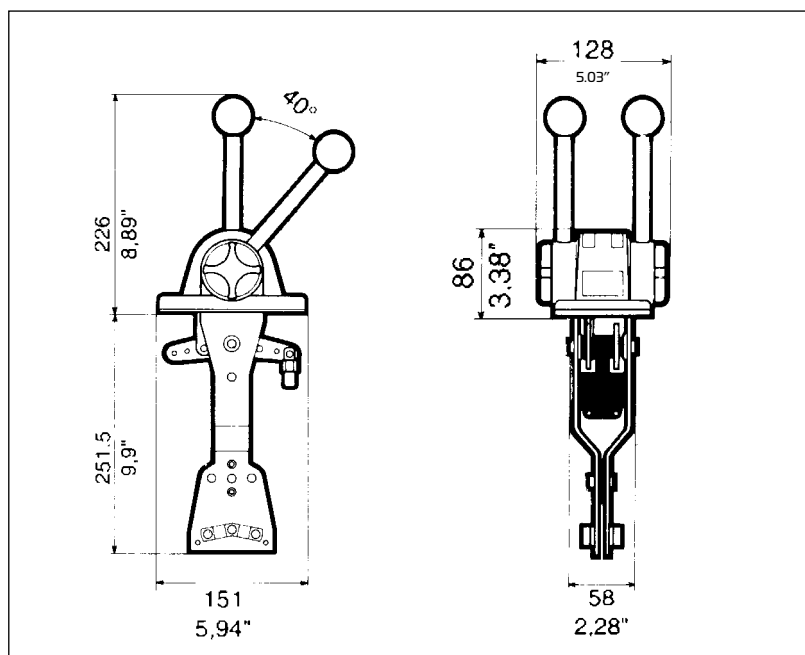
B101



B102



B99



TWO LEVER SIDE MOUNT CONTROLS

Suitable for all outboard engines.

FEATURES

- Made of nylon fiberglass with anodized aluminum levers
- Left or right side mount installation
- For use with Ultraflex engine control cables:
 - C14 and MACH14 with **K23** - 32773 D connection kit
 - C2, C8, and MACHZero with **K25** - 32775 F connection kit
 - C5 and MACH5 without connection kit

MODELS

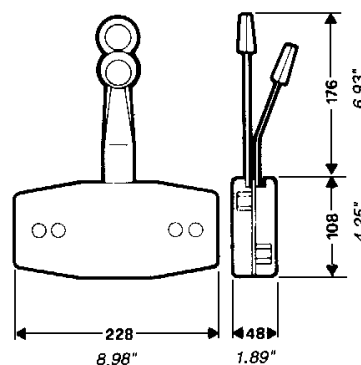
B47 - 32770 A - Light grey finish

B49 - 33283 S - Black finish



B47

B49

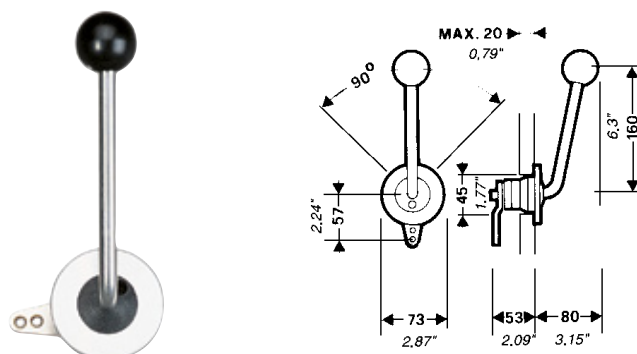


B47 - B49

B35 CONTROL BOX

FEATURES

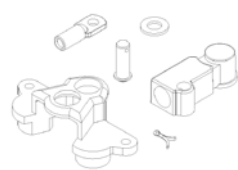
- Lever and flange all stainless steel.
 - Flush side mount installation.
 - Particularity suitable for throttle control or hydraulic shift operation.
 - Provided with adjustable brake tension release and detents.
 - For use with Ultraflex C2, C8 and MACHZero engine control cables
- B35** - 32386 A



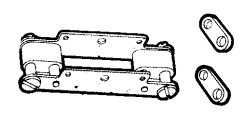
B35

ACCESSORIES FOR CONTROL BOXES

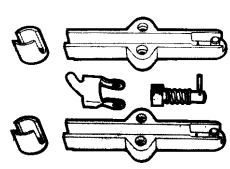
- KB1** - 39964 L
Kit to connect C22 cable to B310, B183, B184 controls.
- K22** - 34713 Q
Kit to connect C22 cable to top mount two lever control boxes, B46, B50, B58, B59, B204, B208, B322, B324
- K23** - 32773 D
Kit to connect C14 and MACH14 cables to B47 and B49 control boxes.
- K25** - 32775 F
Kit to connect C2, C8 and MACHZero cables to B47 and B49 control boxes.
- K32** - 34662 Z
Kit to connect C22 cable to top mount two lever control boxes B99, B101 and B102.
- K33** - 38378 D
Kit to connect C22 cable to B103 control box.
- K35** - 34730 U
Kit to connect C5, C16 and MACH5 cables to single lever control boxes, except B301, B302, B103 and B104.
- K51** - 32526 N
Kit to connect C14 and MACH14 cables to engine for use with B89 and B90 controls.
- K59** - 40144 C
Kit to connect C2, C8 and MACHZero cables to B301 and B302 controls (supplied with the box).
- K60** - 40145 E
Kit to connect C5, C16 and MACH5 cables to B301 and B302 control boxes.
- K61** - 40146 G
Kit to connect C22 cable to B301 and B302 control boxes.
- K62** - 40147 J
Kit to connect C36 and MACH36 cables to B301 and B302 control boxes.
- K63** - 40757 N
Kit to connect C5, C16, MACH5 cables to B322 and B324 controls.
- K64** - 40758 R
Kit to connect C22 cable to B322 and B324 controls.
- K65** - 40759 T
Kit to connect C36 and MACH36 cables to B322 and B324 controls.
- K67** - 40705 T
Kit to connect C2, C8 and MACHZero cables to B322 and B324 controls (supplied with the box)



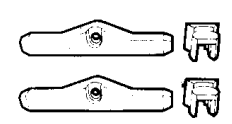
KB1



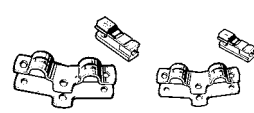
K22



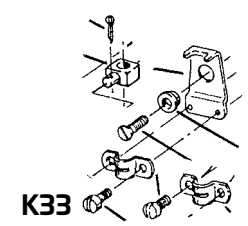
K23



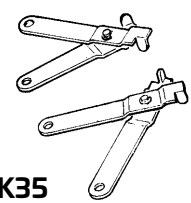
K25



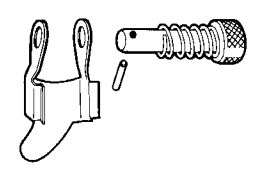
K32



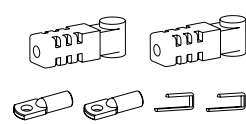
K33



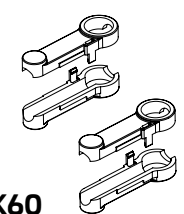
K35



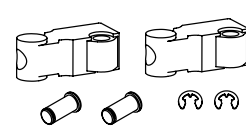
K51



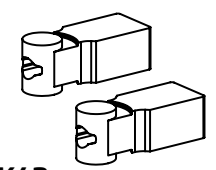
K59



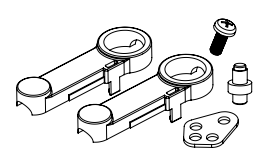
K60



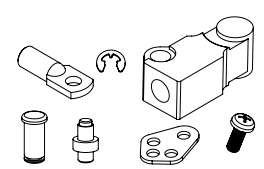
K61



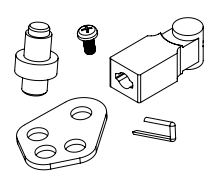
K62



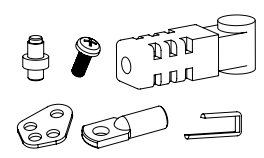
K63 PARTS SHOWN X2



K64 PARTS SHOWN X2



K65 PARTS SHOWN X2



K67 PARTS SHOWN X2

ACCESSORIES FOR CONTROL BOXES

X12 - 34543 Q

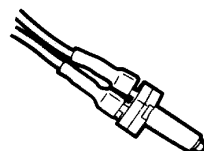
Neutral safety switch to prevent in-gear starting.

X41 - 38130 F

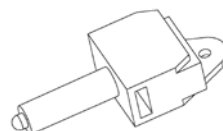
Neutral safety switch to prevent in-gear starting, suitable for B400 and hybrid controls. IP67 protection.

X43 - 38160 L

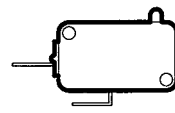
Neutral safety switch to prevent in-gear starting, suitable for B103 and B104 controls.



X12



X41



X43

CONTROL BOX - CONTROL CABLE APPLICATION MATRIX

SINGLE LEVER CONTROLS

MODEL	B400	B183 - B184 - B85 B310 Series	B301 - B302 B501 Series	B103	B104	B73 - B74 B77 - B79	B89 - B90
C2	X	X	K59*	X	X	X	X
C8	X	X	K59*	X	X	X	X
C14	-	X	X	-	-	X	X
C5	-	K35	K60	-	-	K35	K35
C36	-	-	K62	-	-	-	-
C16	-	K35	K60	-	-	K35	K35
C22	-	-	K61	K33	-	-	-
MACHZero	X	X	K59*	X	X	X	X
MACH5	-	K35	K60	-	-	K35	K35
MACH36	-	-	K62	-	-	-	-
MACH14	-	X	X	-	-	X	X

*: Supplied with the control

X: No kit required

- : No connection

TWO LEVER CONTROLS

MODEL	B322 - B324	B46 - B50 - B58 B59 - B204R - B208R	B99 - B101 - B102	B47 - B49	B35
C2	K67*	X	X	K25	X
C8	K67*	X	X	K25	X
C14	X	-	-	K23	-
C5	K63	-	-	X	-
C36	K65	-	-	-	-
C16	K63	-	-	X	-
C22	K64	K22	K32	-	-
MACHZero	K67*	X	X	K25	X
MACH5	K63	-	-	X	-
MACH36	K65	-	-	-	-
MACH14	X	-	-	K23	-

*: Supplied with the control

X: No kit required

- : No connection



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HOW TO MEASURE FOR CONTROL CABLE INSTALLATION

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.

SELECTION OF ENGINE CONTROL CABLES

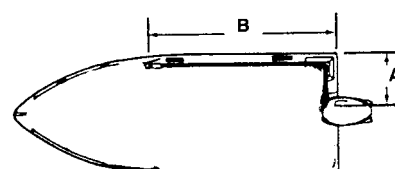
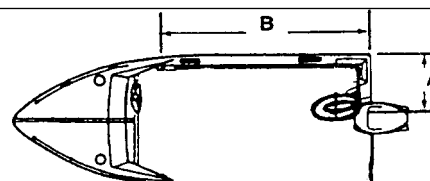
	ENGINE	ULTRAFLEX ENGINE CONTROL CABLES
OUTBOARD	Mercury® and Gen. II™ Controls	C36 - MACH36
	Mercury® Mariner® over 50 hp (37kW)	C5 - MACH5
	Mariner® up to 50 hp (37kW)	C16
	Force® Selva® Yamaha® Suzuki® Tohatsu® Honda® Nissan®	C2 - C8 - MACHZero
	Johnson® - Evinrude® - BRP®	after 1979 C14-MACH14
JET	Weber®	C40 - C41
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

OUTBOARD

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

INBOARD/STERNDRIVE

$$A + B = L$$



MACH™ SERIES

HIGH EFFICIENCY

AND FLEXIBILITY

ENGINE CONTROL CABLES

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.



MACHZero

MACH5

MACH14

MACH36

FEATURES AND PERFORMANCE

- Available in the following configurations:
 - **MACHZero** - Universal style (like C2, C8)
 - **MACH5** - Mercury® style (like C5)
 - **MACH14** - Current OMC® - BRP® style (like C14)
 - **MACH36** - Gen II Mercury® style (like C36)
- Suitable for outboard – inboard and sterndrive engines
- High efficiency for smooth operation
- High flexibility for reduced bend radius. Ideal for long complex cable routings
- Maintenance free
- Stainless steel cables end fittings
- High resistance blue outer jacket against abrasion, UV and chemicals

CONTROL CABLES FOR JET ENGINES

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

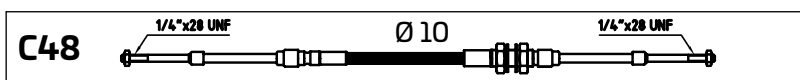
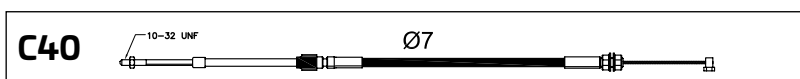
C48 Stroke: 84 mm (3.3")
Shift and throttle cable for jet boats 40 Class. Suitable for Teleflex® controls. With K83 - 42836V connection kit is suitable for use with Ultraflex B310, B183, B184 controls.



C40



C48



ENGINE CONTROL CABLES

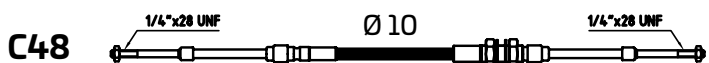
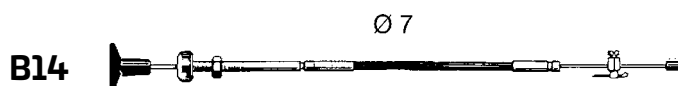
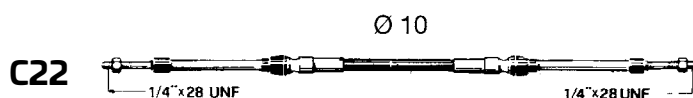
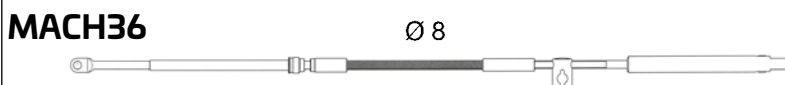
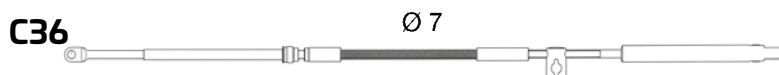
- C2** Stroke: 87 mm (3.4")
For use with inboard, sterndrive and outboard engines with appropriate accessories.
- C8** Stroke: 87 mm (3.4")
For use with inboard, sterndrive and outboard engines, with appropriate accessories.
- MACHZero** 87 mm (3.4")
For use with inboard, sterndrive and outboard engines.
Ideal for high performance applications, long cable runs and complex routings. Blue color jacket.
- C14** Stroke: 75 mm (3")
For BRP® - Evinrude® (OMC®) engines manufactured from 1979 to date.
- MACH14** Stroke: 75 mm (3").
For BRP® - Evinrude® (OMC®) engines manufactured from 1979 to date.
Blue color jacket
High performance applications
- C36** Stroke: 87 mm (3.4")
For Mercury® and Mercruiser® engines and Mercury® Generation II™ series controls.
- MACH36** Stroke: 87 mm (3.4").
For Mercury® and Mercruiser® engines and Mercury® Generation II™ series controls.
Blue color jacket
High performance applications
- C5** Stroke: 95 mm (3.75")
For Mercury® and Mercruiser® engines.
- MACH5** Stroke: 95 mm (3.75").
For Mercury® and Mercruiser® engines.
Blue color jacket
High performance applications
- C16** Stroke: 80 mm (3.1"). For Mariner® engines up to 40 hp.
- C22** Stroke: 80 mm (3.1")
Stainless steel clamp fittings.
Recommended for heavy duty applications.
- B14** Stroke: 70 mm (2.8")
Designed for throttle, fuel shut-off and other applications. Supplied with L13 and L14 clamp and shim.
- C40** Stroke: 86 mm (3.4")
Throttle Cable for Weber® jet engines
- C48** Stroke: 84 mm (3.3")
Shift and throttle cable for jet boats 40 Class



BRP® - EVINRUDE® (OMC®) CABLES



MERCURY® - MERCUISER® - MARINER® CABLES



ACCESSORIES FOR ENGINE CONTROL CABLES

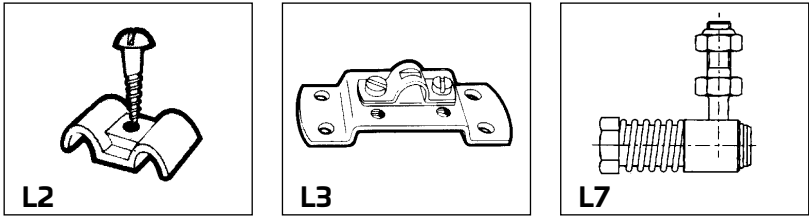
K68 - 40895 B
Recessed bulkhead support for B14 cable.



L2 - 30324 D
Cable clamp block

L3 - 30325 E
Shim and clamp block.
Fits C2, C8 and MACHCZero cables.

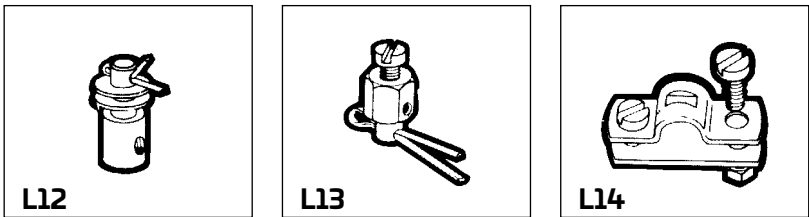
L7 - 38078 U
Ball joint 10-32 UNF.
Stainless steel, fits C2, C8 and MACHCZero cables.



L12 - 30334 F
Cable end fitting.
Fits C2, C8 and MACHCZero cables.

L13 - 30335 G
Stop collar. Fits B14 cables.

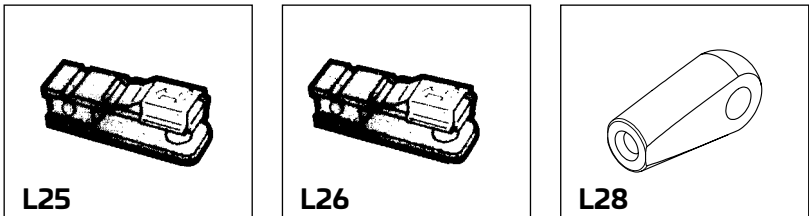
L14 - 30336 H
Cable clamp block.
Fits C2, C8 and MACHCZero cables.



L25 - 31906 D
Clevis 10-32 UNF.
Fits C2, C8 and MACHCZero cables.

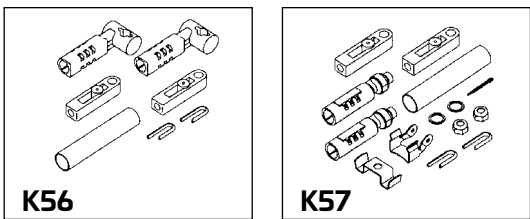
L26 - 33517 N
Clevis 1/4" x 28 threaded.
Fits C22 cable.

L28 - 43228 A
0.3" cable terminal.
Fits C48 Jet boat cable.



K56 - 39237 C
Adapts C2, C8 and MACHCZero cables for use with Mercury engines.

K57 - 39238 E
Adapts C2, C8 and MACHCZero cables for use with BRP® - Evinrude engines.



MONOFILAMENT POLYESTER
BRAIDED SLEEVINGS 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	BULK PART No. 100 m length	ROLL WEIGHT Kg
10 mm (0.39")	68146 N	68180 N	8,0
15 mm (0.59")	68147 R	20540 Y	12,16
20 mm (0.78")	68148 T	20542 C	17,8
25 mm (0.98")	68149 V	20543 E	20,2
30 mm (1.18")	68150 D	20544 G	27,0



THROTTLE CONVERTER

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

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

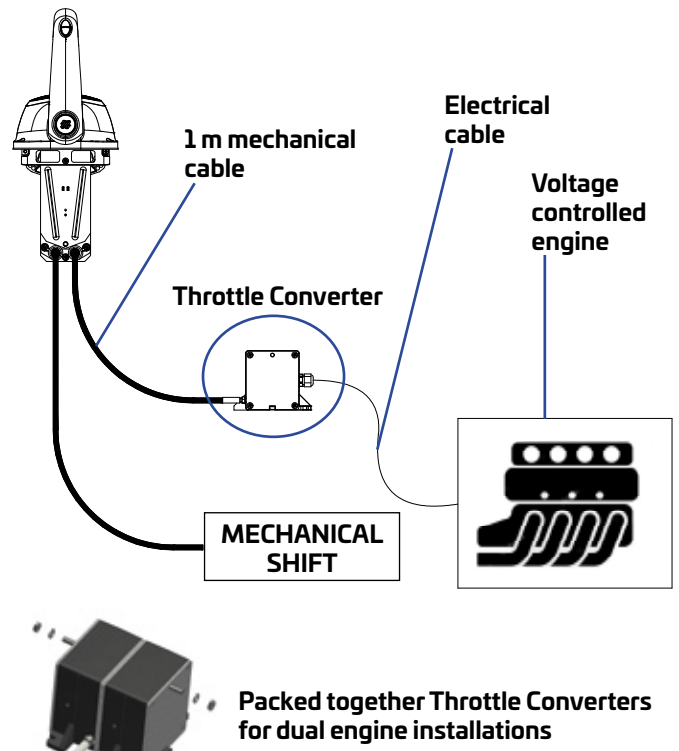
Suitable either for new installations and refitting, it allows to use an existing mechanical control and connect it to the electrical input of the new engine's throttle.

Throttle Converters can be easily packed together for multiple engines.

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

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

Mechanical side IP65
Sensor IP67

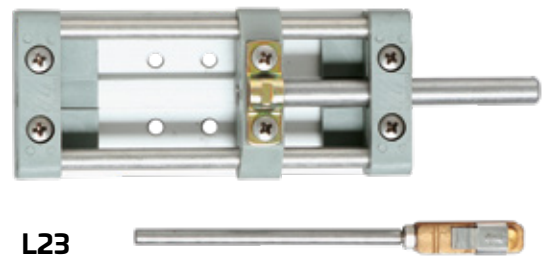


SELECTOR UNIT FOR DUAL STATION APPLICATIONS

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

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

L23 - 31649 B - only for inboard and sterndrive engines



YAMAHA ENGINE KITS 2T*

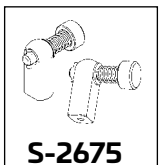
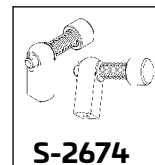
K8 - 30321 A for 25 hp engines

K14F - 38098 C for 10/15 hp engines

S-2674 - 32654 X Yamaha Throttle Connector

S-2675 - 32655 Y Yamaha Shift Connector

* Minimum order quantity:
10 pieces for part number







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MECHANICAL PRODUCTS

AVAILABLE SPARE PARTS

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	59336 W
White bezel	59601 U
Zinc-chrome steel bushing	56402 K
Installation kit	38070 K
Shaft kit	70550 J

M58	
Lock nut engine side	55170 M

T85	
Black bezel	59336 W
White bezel	59601 U
Shaft kit	70549 A
Spent travel nylon tube	59869 F
Plastic ferrule for nylon tube	59857 Z
Cable lock-in screw	59926 R
Installation kit	41165 S

T71FC - T72FC - T73NRFC - T74NRFC	
90° Black bezel	58051 L
90° White bezel	71942 H
20° Black bezel	70068 H
Shaft kit	70549 A
Cable lock-in screw	70022 G
Spent travel nylon tube	59869 F
Plastic ferrule for nylon tube	59857 Z

T91 - T93ZT	
90° Black bezel	58051 L
90° White bezel	71942 H
20° Black bezel	70068 H
Shaft kit	70549 A
Cable lock-in screw	74871 C
Spent travel nylon tube	59869 F
Plastic ferrule for nylon tube	59857 Z

X52 - X66 Tilt Mechanisms	
Upper cover	72297 K
Lower cover	70140 N
Gasket	70138 C

T86 - T88	
2 Shaft kits	71109 A

Steering Wheels	
Stainless steel silver screws	60697 Q
Stainless steel black screws	60698 T
Black cap for V32	58078 Y
White cap for V32	58079 Z
Grey cap for V32	70155 C
Black cap for V33	59763 O
White cap for V33	59764 P
Grey cap for V33	59765 Q
Black cap for V45	59061 O
White cap for V45	59002 D
Grey cap for V45	71108 Y
Black cap for V38	59061 O
White cap for V38	59002 D
Black cap for Antigua	70161 X
White cap for Antigua	70162 Z
Grey cap for Antigua	70163 B
Wood cap for V23 and V35	56384 G

B301CR - B302CR - B301B - B302B - B322 - B324	
Lever assembly with black knob	40897 F
Lever assembly with red knob B322 - B324	40898 H
Black knob	72054 G
Red knob	72020 N
Chrome rear cover B301CR	71461 R
Black painted rear cover B301B	71501 A
Gasket for B301CR - B301B	71366 X
Gasket for B302CR - B302B - B322 - B324	71516 P

Installation kit B301	40170 D
Installation kit B302	40192 P
Installation kit B322 - B324	40703 N

B501 - B502	
B501 coponents kit	43128 W
B502 components kit	43129 Y

B103 - B104	
Lever with handle	60909 N
Black knob	34830001
X55 Silver knob B103/B104	39421 V
Gasket for B103	61425 E
Gasket for B104	61426 G
Rear cover for B103	61738 C
Installation kit B103	60979 B
Installation kit B104	60804 D

B65 - B665 - B66 - B666	
B73 - B74 - B76 - B77 - B78 - B79	
Lever assembly B66 - B65 - B73 - B74	57076 R
Lever assembly B665	40915 E
Lever assembly B666	40916 G
Lever assembly with trim B76-B77-B78-B79	57459 E
Chrome rear cover	55529 Z
Black rear cover	55608 X
Installation kit B65 - B665	35147 J
Installation kit B66 - B666	30078 K
Installation kit B73	30049 F
Installation kit B74	35366 S
Installation kit B76	36134 F
Installation kit B77	30016 Q
Installation kit B78	36135 G
Installation kit B79	30017 R

B310CH - B310BR - B310B	
Lever assembly B310CH	73158 A
Lever assembly B310BR	72119 J
Lever assembly B310B	73177 E
Screw cover flange	
B310CH - B310BR - B310B	72110 P
Chrome plated external flange	
B310CH - B310BR - B310B	72108 D
Black internal flange	
B310CH - B310BR - B310B	72109 F
Installation kit B310CH - B310BR - B310B	72222 B

B183 - B184 - B85	
Lever assembly B183	70013 F
Lever assembly B184	70020 C
Cover for B183 - B184 - B85	56012 A
Flange for B183 - B184 - B85	56011 V
Installation kit B103	38947 F
Installation kit B184	38979 V
Installation kit B85	36008 C

B89 - B90	
Black lever with lock	58245 T
White lever with lock	57899 L
Installation kit B89 - B90	36168 R

B46 - B50 - B58 - B59	
Cover	57960 T
Black knob	32394 A
Red knob	32472 Q
Installation kit	35365 R

B99 - B101 - B102	
Red knob B99 - B101 - B102	58266 Y
Black knob B99 - B101 - B102	53185 V
Installation kit B99 - B101 - B102	35391 A

B14 Engine Stop Cable	
B14 Kit	59976 G

WARNING

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

HELM PUMPS

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

UC81-OBF OUTBOARD CYLINDER

Bull horn mounting bracket	42851 R
Through tube stainless steel rod	42852 T
Spacer kit	42853 V
Tiller arm connecting	42854 X
Seal kit	43060 M

UC94-OBF OUTBOARD CYLINDER

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

UC128-OBF OUTBOARD CYLINDER

Black bull horn mounting bracket	43248 G
Through tube stainless steel rod	39491 T
Spacer kit	41812 Z
Plastic cap kit	41810 V
UC128 Hardware kit (link arm)	39979 A
Tiller arm connecting kit (ultrabolt)	40822 X
Shaft screws kit	43255 D
Seal cartridge kit for UC128-OBF P. No: 39423 Z, 39966 R, 39967 T, 40106 U, 40107 W (order 2 per cylinder)	39493 X
Seal cartridge kit for UC128-OBF P. No: 43231 N, 43232 R, 43233 T, 43234 V, 43235 X	43350 X
Tool kit for UC128-OBF P. No: 43231 N, 43232 R, 43233 T, 43234 V, 43235 X	43395 W

UC130-SVS OUTBOARD CYLINDER

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

UC68-OBS OUTBOARD CYLINDER

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

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





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**HYDRAULIC
PRODUCTS****AVAILABLE
SPARE
PARTS****WARNING**

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

INBOARD CYLINDERS

Balljoint for UC69-I	40883 U
Balljoint for UC116-I	39477 Z
Balljoint for UC168-I and UC215-I	39478 B
Balljoint for UC293-I	40178 W
Balljoint for UC378-I	41310 Y

Balljoint and shim for UC69-I	40884 W
Balljoint and shim for UC116-I	39479 D
Balljoint and shim for UC168-I e UC215-I	39480 M
Balljoint and shim for UC293-I	40180 G
Balljoint and shim for UC378-I	41311 A

STERNDRIVE CYLINDERS

Extension rod connecting pin	40917 J
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NUT AND SLEEVE

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



ULTRAFLEX S.p.a.

Via Milite Ignoto 8A
16012 Busalla (GE) - Italy
T +39 010 9620310 / 266 F +39 010 9620333
uf.marine.sales@ultraflexgroup.it
www.ultraflexgroup.it



ULTRAFLEX GROUP