

# **ULTRAFLEX**

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



# 2021







NEW 21



UC95

page 53

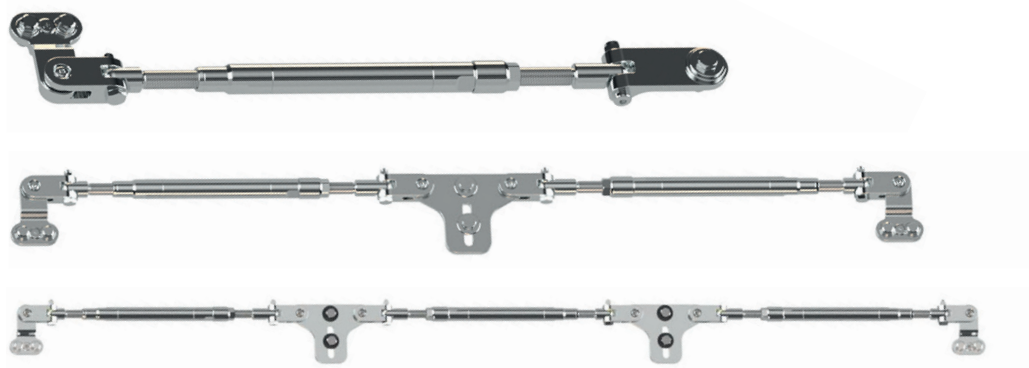
## INTEGRA EPS



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# NEW 21



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**ULTRAFLEX GROUP**  
**86 years**  
 1935-2021



## 1935 - 2021

Ultraflex Group has 86 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 2016  
Data precedente OIG/Previous CB date: 29 gennaio 2018 - 29 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 plastico  
(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), 09 dicembre 2017



ACCREDIA



Per l'Organismo di Certificazione/  
For the Certification Body

*Nicola Privato*  
Nicola Privato  
Management Representative

La validità del presente Certificato è subordinata al rispetto delle condizioni contenute nel Contratto di Certificazione/  
The validity of the present Certificate is subordinate to the conditions contained in the Certificate of Certification/  
DNV GL Business Assurance Italia S.r.l., Via Energy Park, 14 - 20121 Vimercate (MB) - Italia Tel. 039 58 59 900 - www.dnvgl.it/assurances

DNV-GL

## MANAGEMENT SYSTEM CERTIFICATE

Certificato No./Certificate No.: 249429-2017-AQ-ITA-ACCREDIA  
Data prima emissione/Initial date: 09 aprile 2017  
Data precedente OIG/Previous CB date: 20 novembre 2017 - 20 novembre 2020

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### 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



Per l'Organismo di Certificazione/  
For the Certification Body

*Nicola Privato*  
Nicola Privato  
Management Representative

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## 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.

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

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

**We inform you the ULTRAFLEX guarantee is null and void if some ULTRAFLEX components are installed on a steering system together with products of other brands, with the exception of those brands clearly specified in our catalogue on page 15.**

*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.

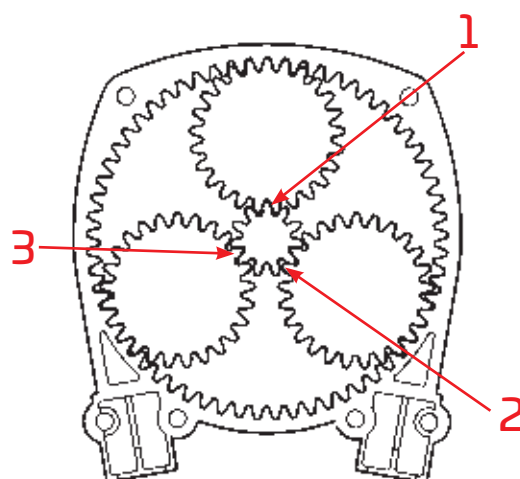
The combination of engine power, hull type and boat speed influence the correct selection of the steering system.

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**

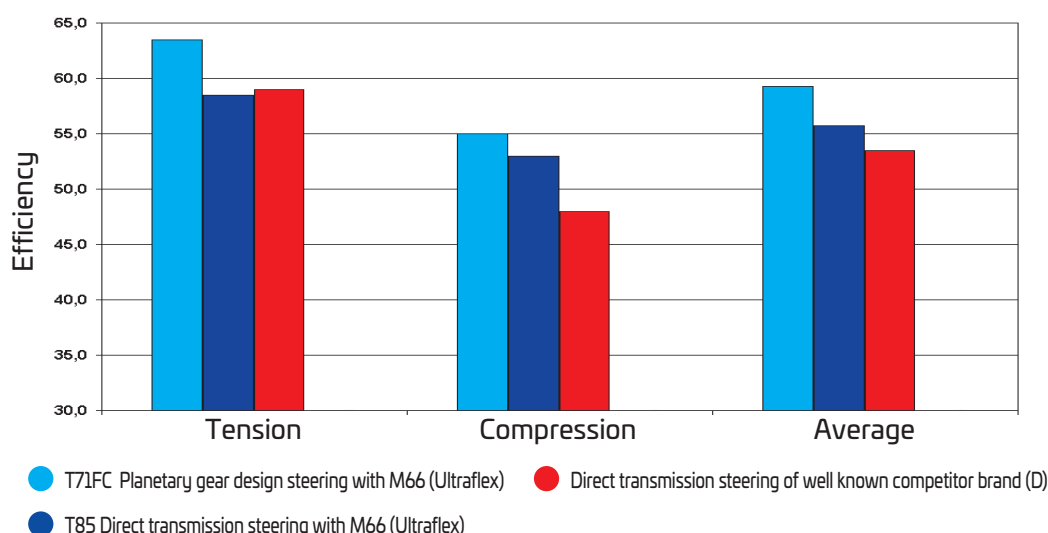


Ultraflex mechanical steering helms T71FC, T73NRFC, T91, T93ZT as well as dual cable versions and tilt wheel versions use a Planetary Gear Design. A Planetary Gear Design has three satellite gears that rotate on their axis and at the same time rotate around the central helm axis. This allows for equal 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.

## **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.

## **ATTENTION**




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







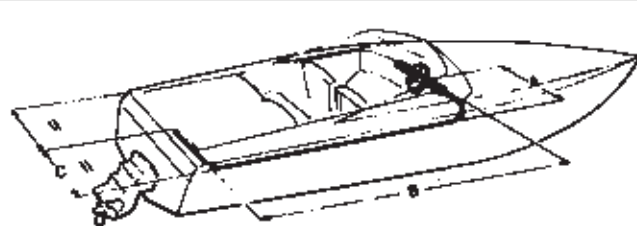
# SELECTION OF STEERING SYSTEM AND CABLE LENGTH MEASUREMENT

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		
	up to 30' (9m)	T85 - T71FC - T81FC - T73NRFC - T83NRFC - T86 - T88NR - T96 - T98NR - T91 T93ZT - T101 - T103ZT	
		Twin cable rotary steering systems	
INBOARD	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 for two 90° bends = 360 + 30,5  
 For a thru-tube installation  
 390,5 cm : 30,5 = 12,8 ft;  
 round off to 13 ft



Fig. 2

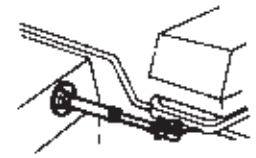

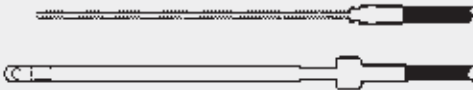
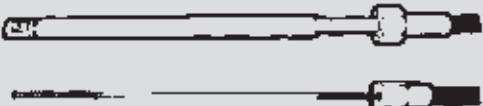
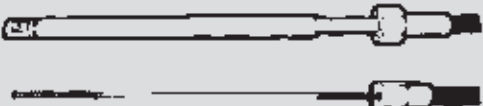

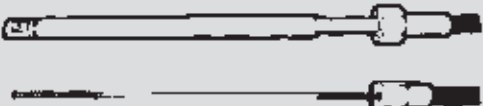
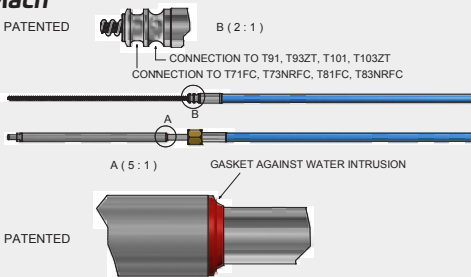



Fig. 3

**TRANSOM SUPPORT OR SPLASHWELL MOUNTING - Fig. 2-3**  
 Example (dimensions in cm):  
 A (50) + B (250) + C (80) = 380 - 20 for two 90° bends = 360:  
 30,5 = 11,8 ft; round off to 12 ft




REPLACEMENT  
STEERING  
CABLES

ULTRAFLEX REPLACEMENT CABLE	STEERING HELM	ADAPTOR REQUIRED
<b>M58</b> 	T67 Ultraflex C230/C231 Morse® Compac - T® Teleflex® 805 TX®	none*
<b>M66</b> 	T85 - T71FC - T72FC - T73NRFC - T74NRFC - T81FC - T83NRFC - Ultraflex Safe - TQC® - NFB Safe - TII® - NFB 4.2® Teleflex® - D290 Morse®	none
<b>M47 - DISCONTINUED USE M66 + K66</b> 	T71 - T72 - T73NR - T74NR - T81 - T83NR Ultraflex (discontinued)	none
	T85 - T71FC - T72FC - T73NRFC - T74NRFC - T81FC - T83NRFC Ultraflex	<b>K46</b> -35679L 
	Safe - T® - Big-T® - Teleflex®	none
<b>M90 Mach</b> 	T91 - T93ZT T101 - T103ZT T85 - T71FC - T72FC - T73NRFC - T74NRFC - T81FC - T83NRFC Ultraflex Safe - TQC® - NFB Safe TII® NFB 4.2® Teleflex® - D290 Morse®	none
<b>TM86</b> 	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:

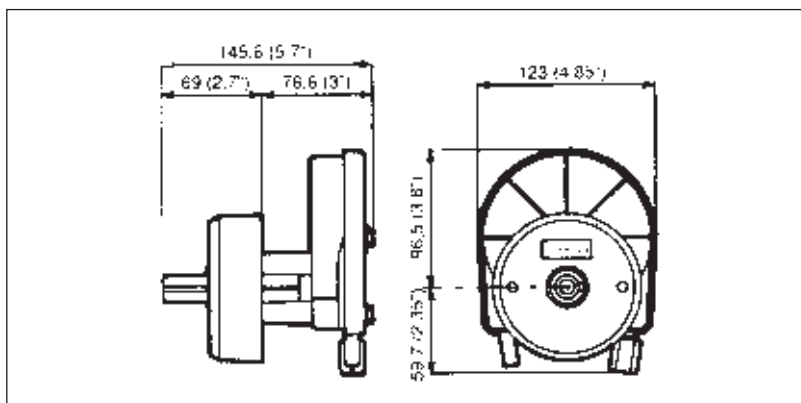
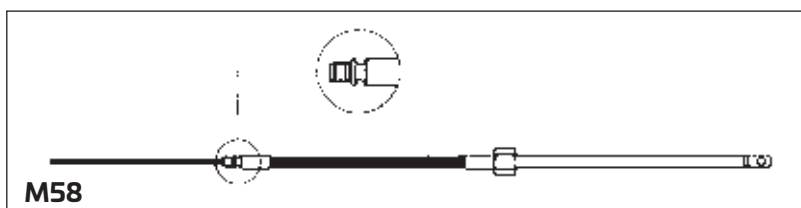
- All stainless steel output end of cable as per ABYC P17 safety standards
- Corrosion resistant materials
- Standard friction externally adjustable
- 90° bezel
- Four optional helm positions to facilitate steering cable installation
- Lock-to-lock steering wheel turns: approx. 2,5
- Stroke: 230 mm (9")
- 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



17

### 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

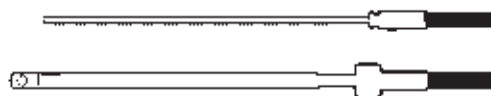


T85



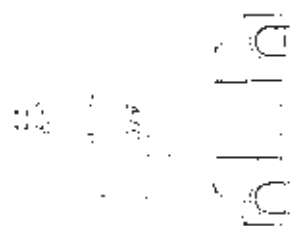
T85W

M66



T85

176 (6.9") max  
93 (3.6")





## 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

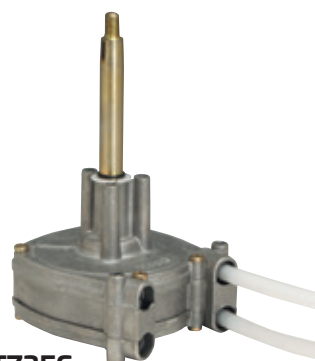
#### SPECIFICATIONS:

- Fast connect, simple installation
- All stainless steel cable output ends
- Corrosion resistant materials
- 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**

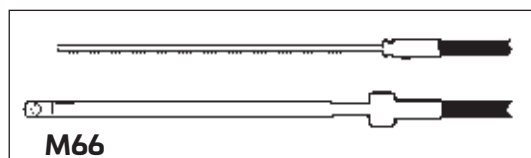


**X34W**

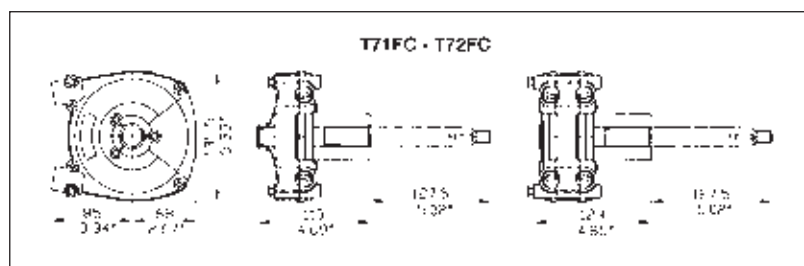
**X34**



**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:

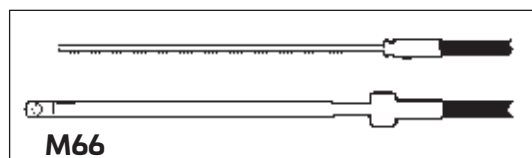
- Easy and safe steering : a **patented anti-feedback mechanism** eliminates the continuous load on the operator caused by the propeller torque
- Fast connect, simple installation
- Compact rotary helm unit: the central location of the steering shaft makes these systems the most compact in their class
- 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



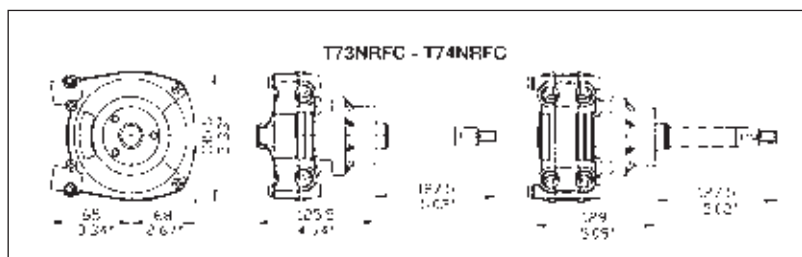
T73NRFC



T74NRFC



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

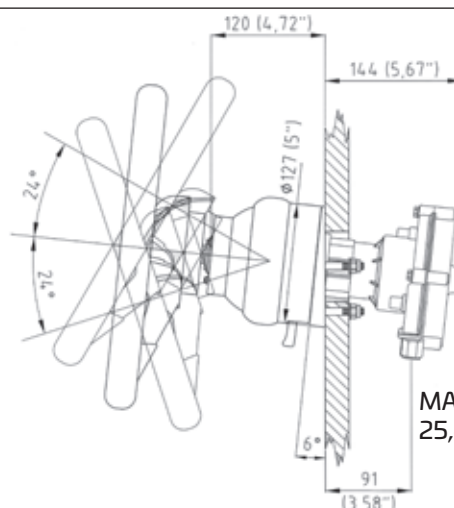
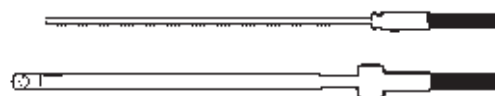


T81FC with X52



X52

M66



MAX DASH DEPTH  
25,4 mm (1")



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

## A COMPLETE STEERING SYSTEM

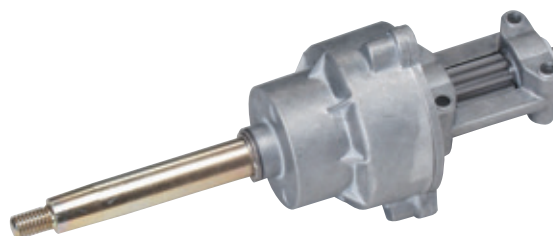
### CONSISTS OF:

- Preamsembled 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)

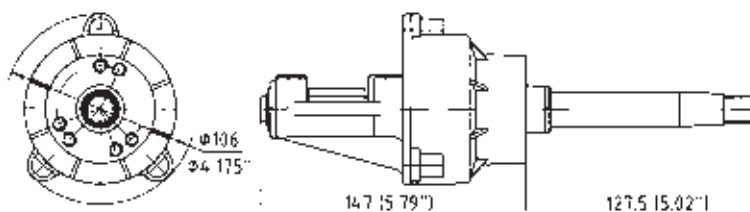
## FEATURES AND TECHNICAL

### SPECIFICATIONS:

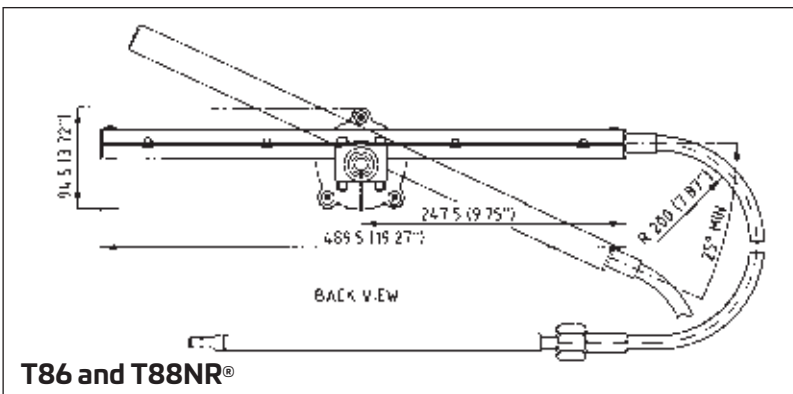
- Easy and safe steering: **patented anti-feedback G88NR helm** eliminates the continuous load on the operator caused by the propeller torque
- All stainless steel cable output ends
- Made exclusively in corrosion resistant materials
- Optional 90° or 20° installation
- Standard 3/4" tapered shaft
- 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:

- Preambled 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:

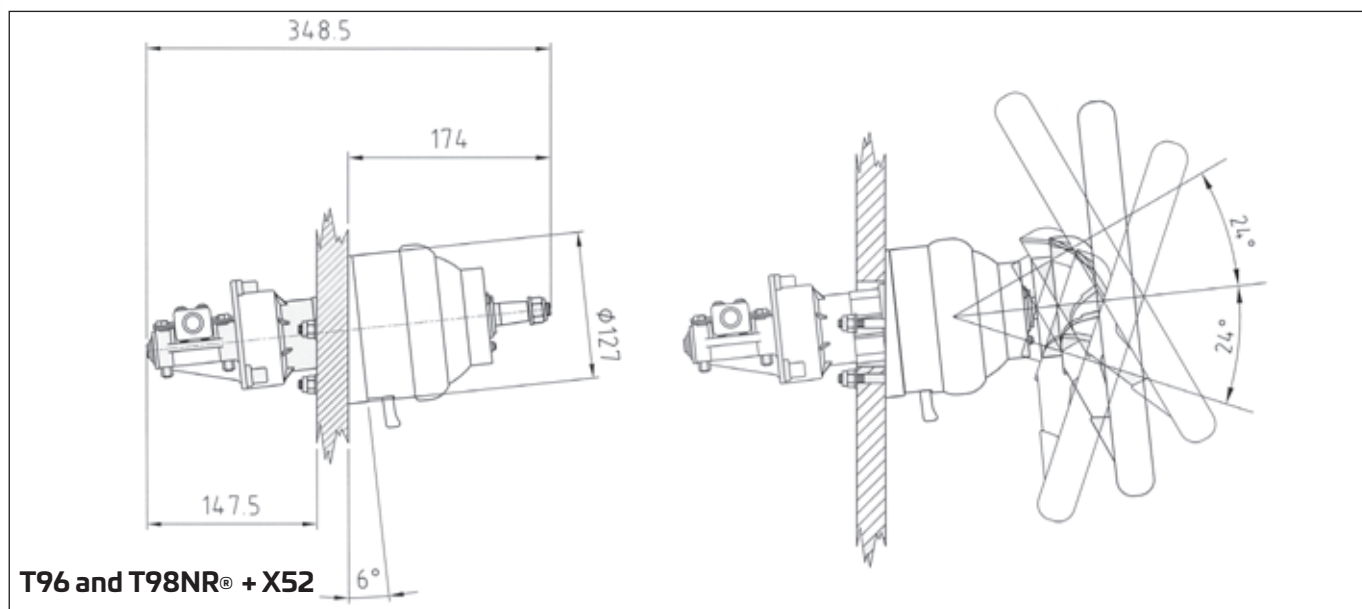
- Easy and safe steering: **the patented anti-feedback G98NR helm** eliminates the continuous load on the operator caused by the propeller torque
- Fast, simple installation
- Tilt range of 48° and five locking positions
- Tilt device eliminates underdash movement
- Standard 3/4" tapered shaft - stainless 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





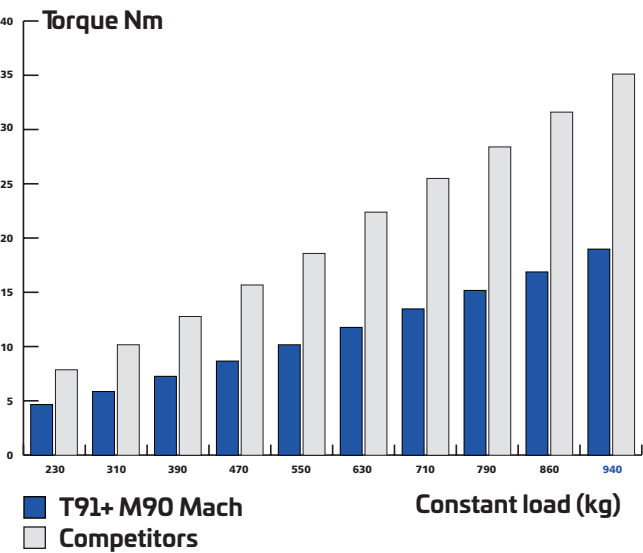
# T91 - T93ZT STEERING SYSTEMS - TORQUE COMPARISON

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

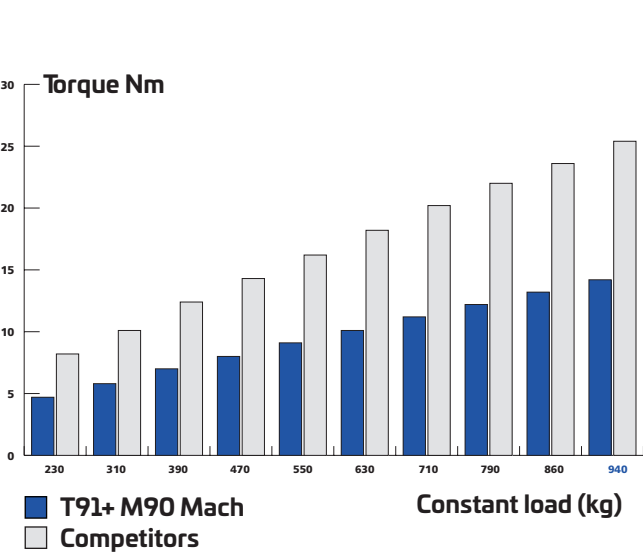
The new Ultraflex T91 and T93ZT steering systems, fitted with the M90 Mach single-cable, are the best mechanical steering systems on the market today. They combine a minimal backlash with higher efficiency and they guarantee results with very narrow cable bends.

## TORQUE COMPARISON WITH PUSH AND PULL LOAD - RADIUS 200 mm

Push load:

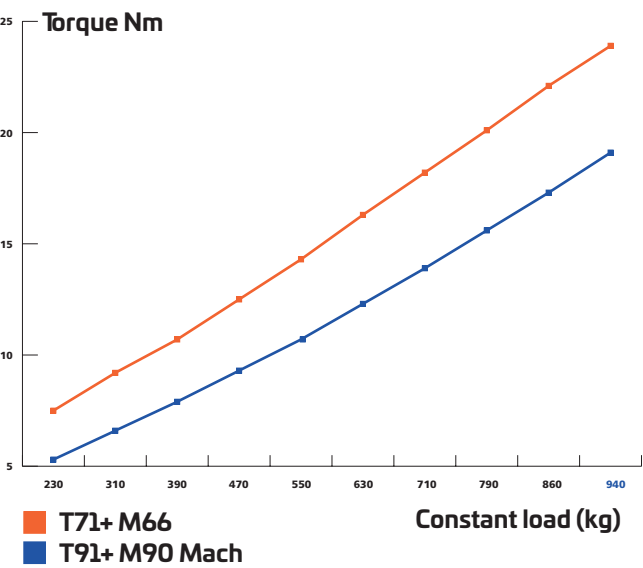


Pull load:

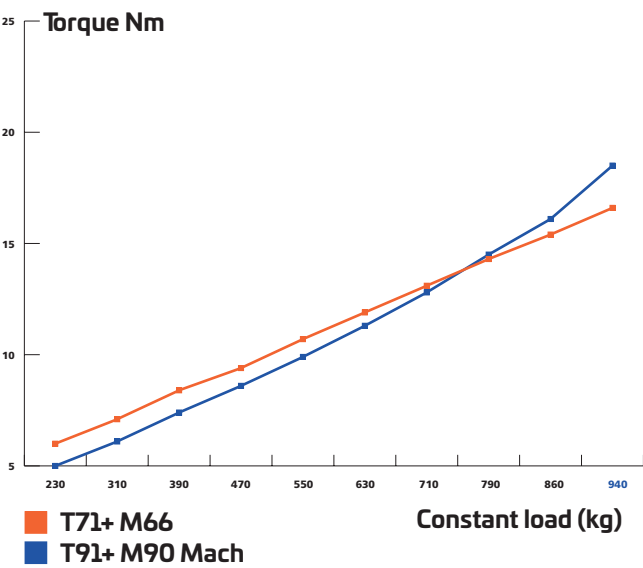


## TORQUE COMPARISON WITH PUSH AND PULL LOAD - RADIUS 100 mm

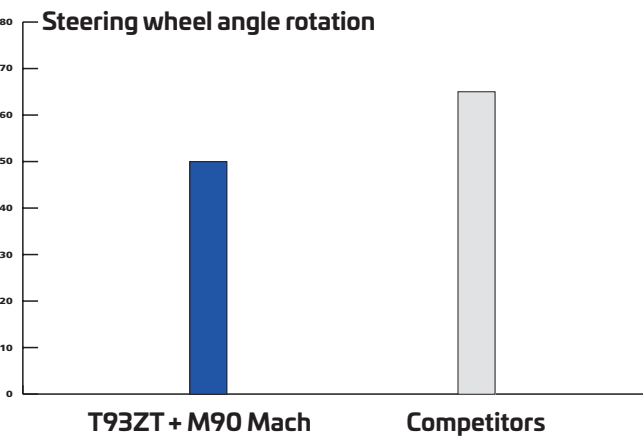
Push load:



Pull load:



## BACKLASH ON THE STEERING SYSTEM COMPARISON





## 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)



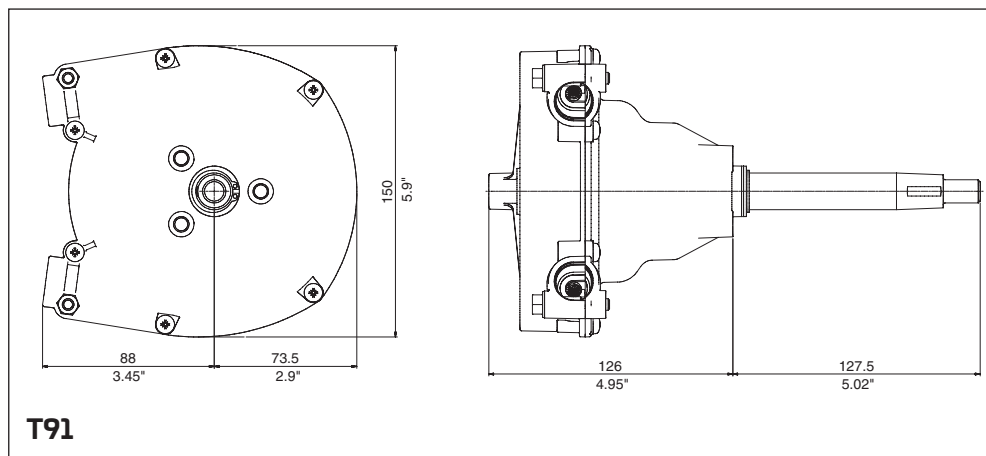
**T91 shown with X91 bezel**

### 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: **150 mm (5.9")**
- 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**



**T91**



**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)



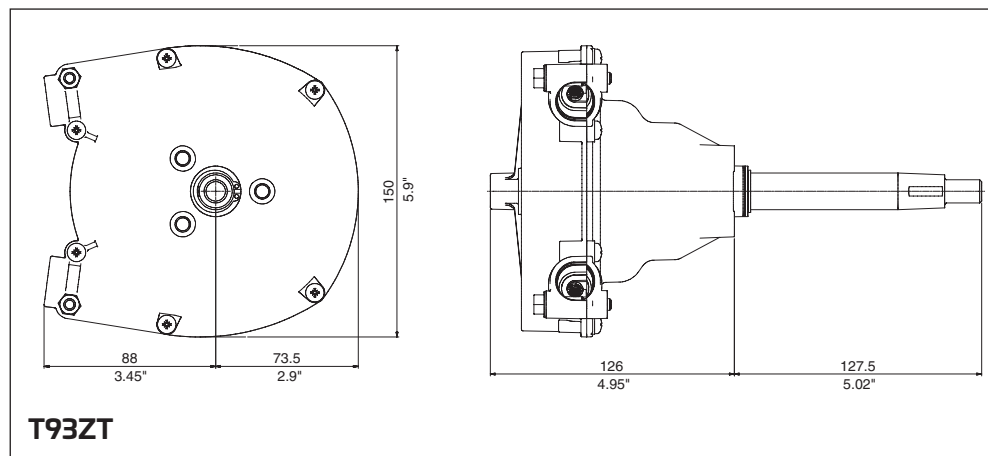
T93ZT shown with X91 bezel

## 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: **150 mm (5.9")**
- 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: **150 mm (5.9")**
- 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



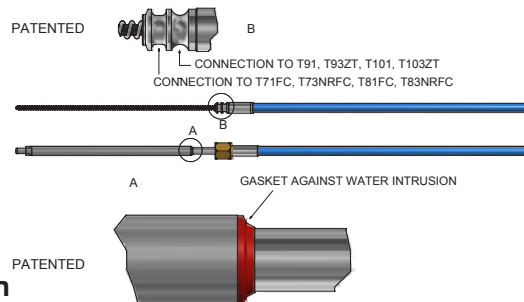
**T101 shown with X52 tilt mechanism**



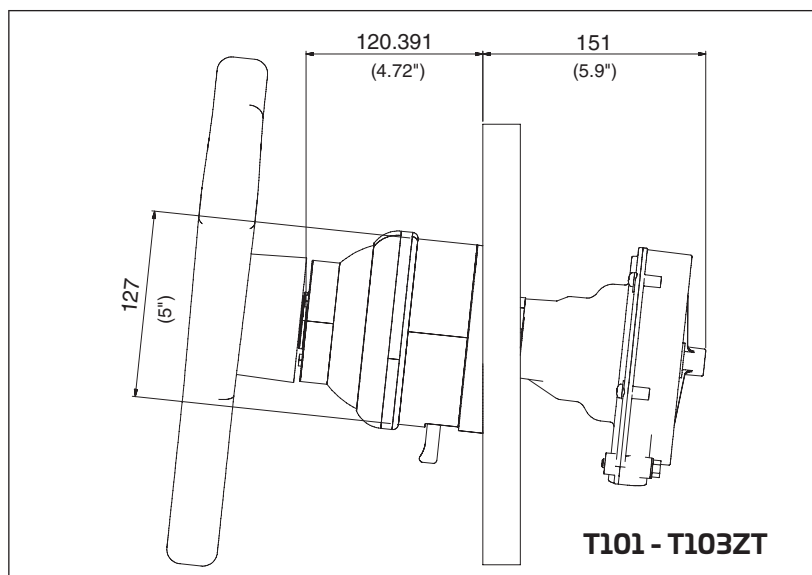
**T101 high performance**



**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:

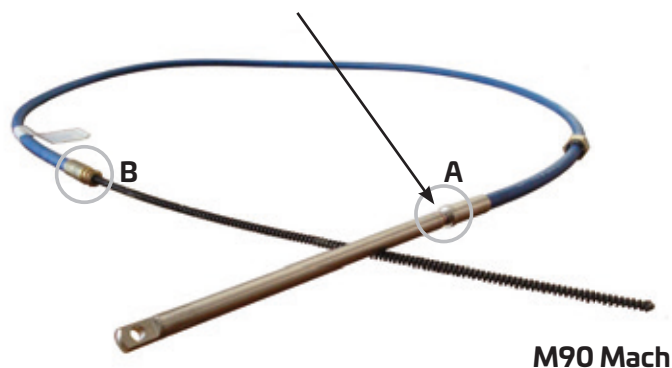
- Ideal solution for long cable runs and tight bend applications
- Corrosion resistant materials, stainless steel engine side output fitting
- Minimal feedback
- Fast connect, simple installation, patented end fitting

- 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



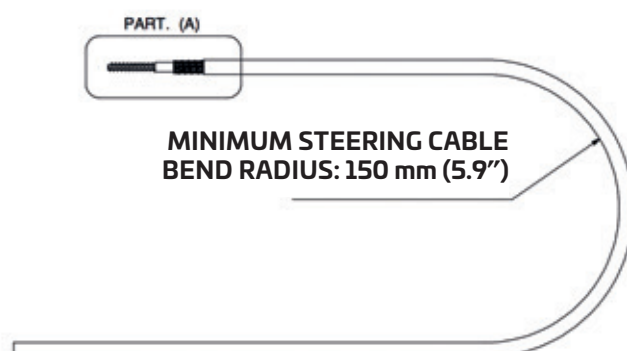
CONNECTION TO T71FC,  
T73NRFC, T81FC,  
T83NRFC

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

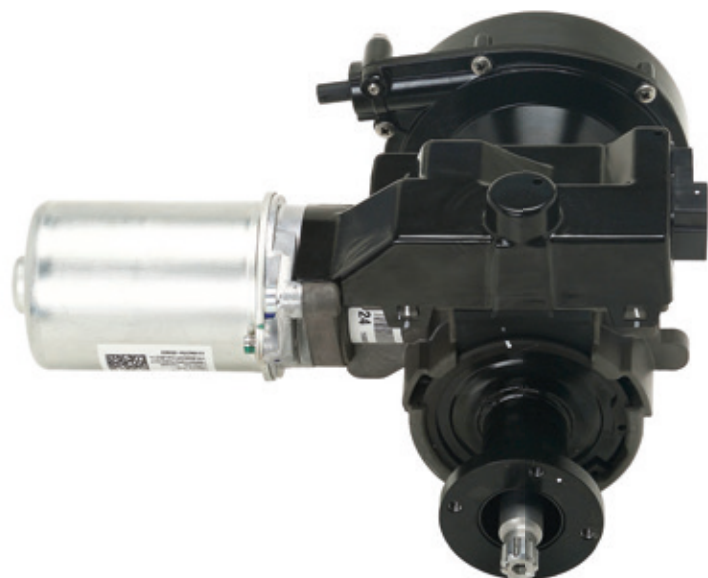
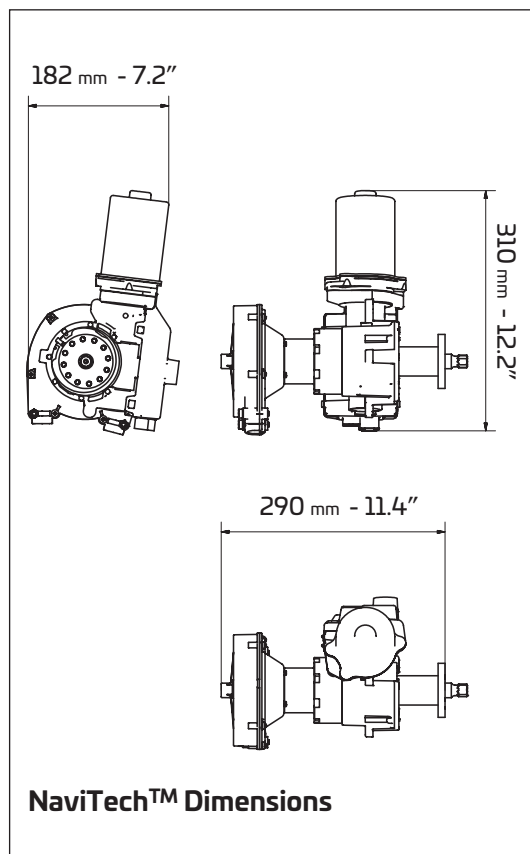
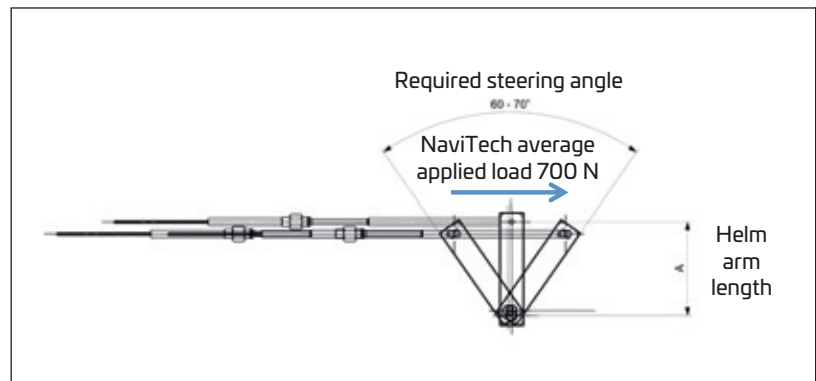


### LIMIT OF APPLICATION

#### 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, stainless steel stud and aluminum anodized tube

#### S40 - 31917 G

Corrosion resistant splashwell mount flange, aluminum tube

#### S55 - 34744 A

Corrosion resistant 90° rudder support, stainless steel flange, aluminum tube

#### 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

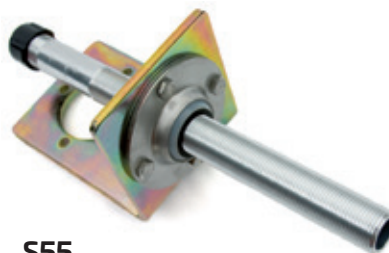
#### S40TSS - 72972 Y Stainless steel tube for S40SS



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



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

#### A75 - 34459 X Clevis

### 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)



A73SS/A74SS - INOX



A50



A75



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)

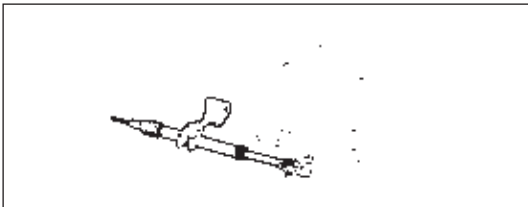


NOMINAL INTERNAL DIAMETER	PART No. 1 m length	BULK PART No. 100 m length	ROLL WEIGHT Kg
10 mm (0.39")	68146 N	68180 N	8,0
15 mm (0.59")	68147 R	20540 Y	12,16
20 mm (0.78")	68148 T	20542 C	17,8
25 mm (0.98")	68149 V	20543 E	20,2
30 mm (1.18")	68150 D	20544 G	27,0

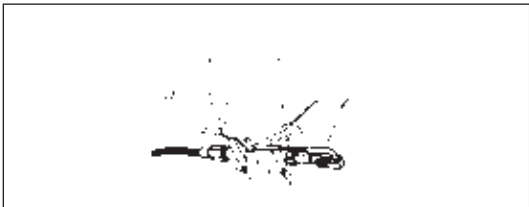
Available in UFLEX

TYPICAL INSTALLATIONS

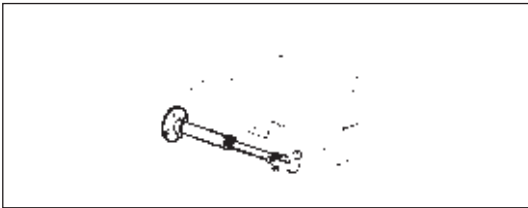
INSTALLATION	CABLE SUPPORT + ENGINE CONNECTION KIT	INSTALLATION	CABLE SUPPORT + ENGINE CONNECTION KIT
A	S39 or S61 or S62 + A75	C	A73SS or A74SS
B	S40 + A75	D	S55 + A75



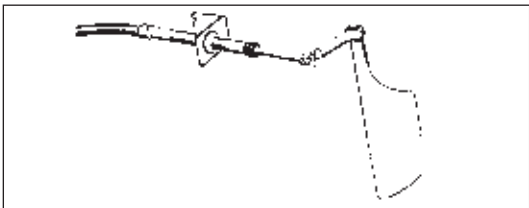
A = With clamp block



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



# OUTBOARD STEERING SYSTEMS



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HYDRAULIC, ELECTRO-HYDRAULIC AND ELECTRONIC STEERING SYSTEMS



WARNING: If 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 cause loss of steering control. Not for racing.





## 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-OBS	UP20F	UC68-OBS	KIT OB	2	3,4 / 5,0	Steering wheel  Flange X64  Thru hull R5; R5SS; R8; R9
				HYCO-I	UP20F	UC69-I	KIT OB	2	3,5	
				HYCO-OBS/M	UP20F	UC68-OBS	KIT OB/M-60 (90)	2	3,4 / 5,0	
				HYCO-I/M	UP20F	UC69-I	KIT OB/M-60 (90)	2	3,5	
			175 hp	HYTECH-OBF	UP20F	UC95-OBF	KIT OB	2	4,7	Steering wheel  Flange X64  Thru hull R5; R5SS; R8; R9
				HYTECH-OBF/M	UP20F	UC95-OBF	KIT OB/M-60 (90)	2	4,7	
			300 hp	NAUTECH-1	UP28F	UC128-OBF	KIT OB	2	4,3	Steering wheel  Flange X64; X57  Thru hull R5; R5SS; R8; R9
				NAUTECH-3	UP25F	UC128-OBF	KIT OB	2	4,8	
				NAUTECH-1/M	UP28F	UC128-OBF	KIT OB/M-60 (90, 150)	2	4,3	
				NAUTECH-3/M	UP25F	UC128-OBF	KIT OB/M-60 (90, 150)	2	4,8	
>300 hp				SilverSteer™ and MasterDrive™ steering systems are recommended						

### NOTE:

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



**GOTECH****GOTECH-OBF****GOTECH-OBS****GOTECH-I****HYCO-OBS****HYCO-I****HYCO-OBS/M****HYCO-I/M****HYTECH****HYTECH-OBF****HYTECH-OBF/M****NAUTECH-1  
NAUTECH-3****NAUTECH-1/M  
NAUTECH-3/M**

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



## 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	
ULTRAFLEX®	SEASTAR®
UP18	BayStar™ HH4311
UP20 F	BayStar™ HH4314
UP20 T	BayStar™ HH4315
UP25 F	Seastar™ 1.4 HH5269
UP25NV F	-
UP25 T	Seastar™ 1.4 HH6544
UP28 F	Seastar™ 1.7 HH5271
UP28 T	Seastar™ 1.7 HH6541
UP 28 R	Seastar™ 1.7 HH5261
UP33 F	Seastar™ 2.0 HH5273
UP33NV F	Seastar™ 2.0 HH5760
UP33 T	Seastar™ 2.0 HH6543
UP33 R	-
UP39 F	Seastar™ 2.4 HH5272
UP39 T	Seastar™ 2.4 HH6542
UP39 R	Seastar™ 2.4 HH5262
UP45 F	Seastar™ 3.0 HH5283
UP45 T	-
UP45 R	Seastar™ 3.0 HH5265
UP28 F-SVS	Seastar™ PRO - HH5779
UP28 T-SVS	Seastar™ PRO - HH6573
UP33 F-SVS	Seastar™ PRO - HH5770
UP33 T-SVS	Seastar™ PRO - HH6574
UP39 F-SVS	Seastar™ PRO - HH5772
UP39 T-SVS	Seastar™ PRO - HH6188

CYLINDRES	
ULTRAFLEX®	SEASTAR®
UC81-0BF	-
UC95-0BF	Baystar™ HC4645
UC128-0BF	Seastar™ HC5345
UC130-SVS	Seastar™ HC6345
UC68-0BS	-
UC132-0BS	Seastar™ HC5370/5328
UC69-I	Baystar™ HC4461-3
UC116-1	Seastar™ HC5312
UC168-I	Seastar™ HC5314
UC215-I	Seastar™ HC5319
UC293-I	-
UC378-I	-







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OUTBOARD HYDRAULIC STEERING SYSTEMS

## SUGGESTION AND WARNINGS WHEN SELECTING AN OUTBOARD HYDRAULIC STEERING SYSTEM

### 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
UC95-OBF	175	175	175	not applicable	not applicable
UC68-OBS	150	not applicable	not applicable	not applicable	not applicable
UC128-OBF	300	300	500	500	600
UC130-SVS	350	350	600	600	700
UC132-OBS	250	250	300	300	300

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

### STEERING WHEEL TURNS single cylinder

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

 Recommended

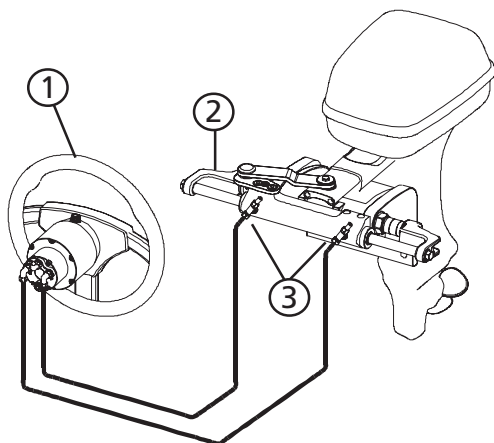
### STEERING WHEEL TURNS double cylinder

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

 Recommended

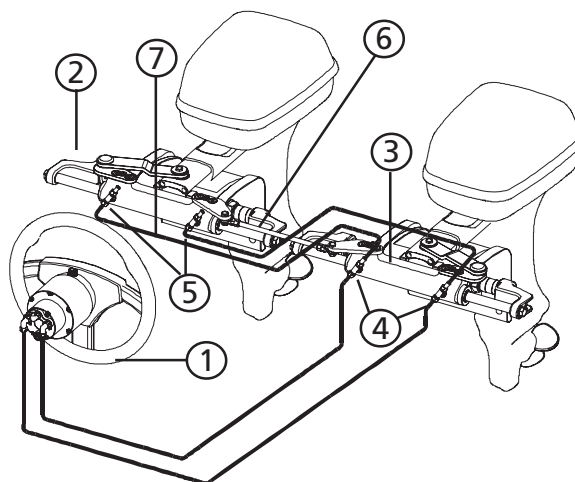


## SINGLE STATION / SINGLE ENGINE:



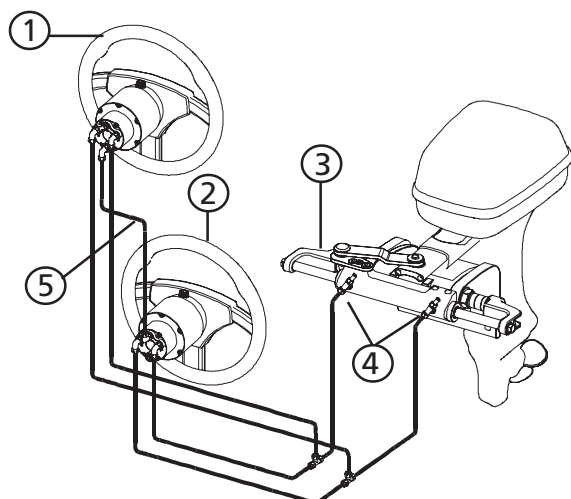
1. helm
2. starboard cylinder
3. bleed valves

## SINGLE STATION / DUAL ENGINE:



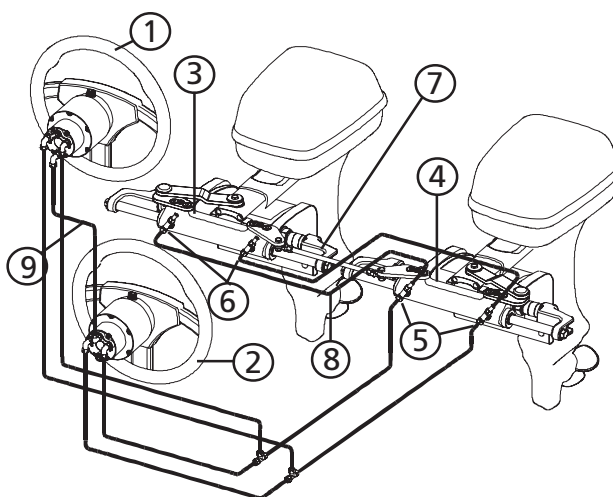
1. helm
2. starboard cylinder
3. port cylinder
4. "T" fittings
5. bleed valves
6. tie bar
7. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)

## DUAL STATION / SINGLE ENGINE



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

## DUAL STATION / DUAL ENGINE



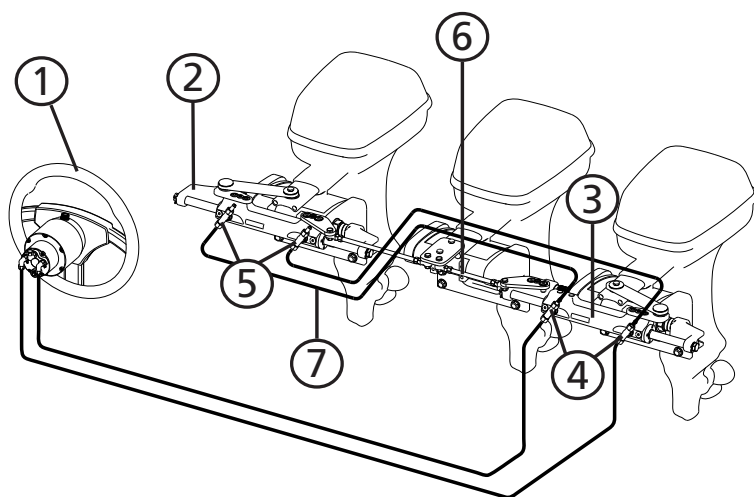
1. upper station helm
2. lower station helm
3. starboard cylinder
4. port cylinder
5. "T" fittings
6. bleed valves
7. tie bar
8. kit OB-2C (Kit OB-2C130-SVS for SilverSteer™)
9. kit OB-2S





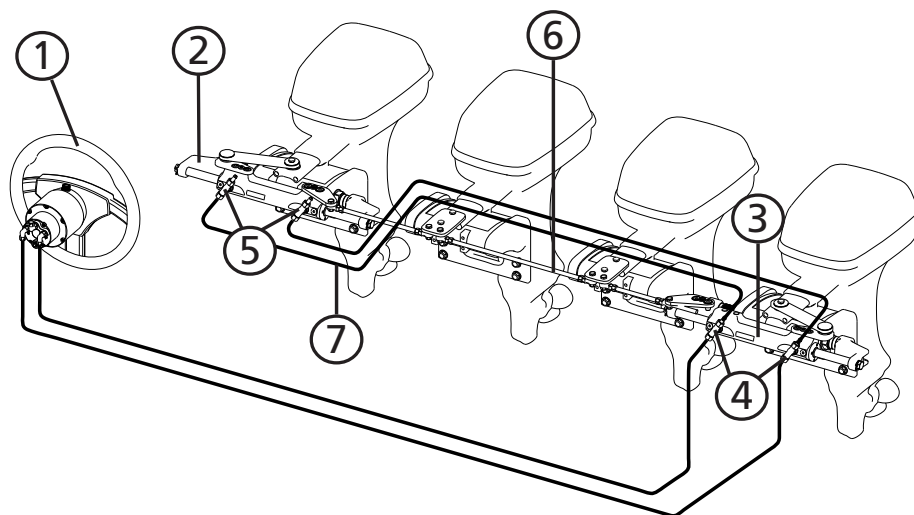
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## SINGLE STATION / THREE ENGINES



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

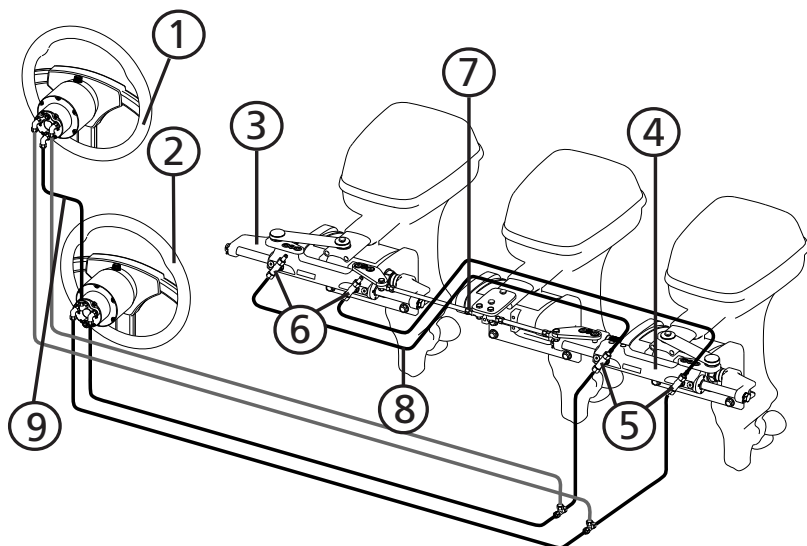
## SINGLE STATION / FOUR ENGINES



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

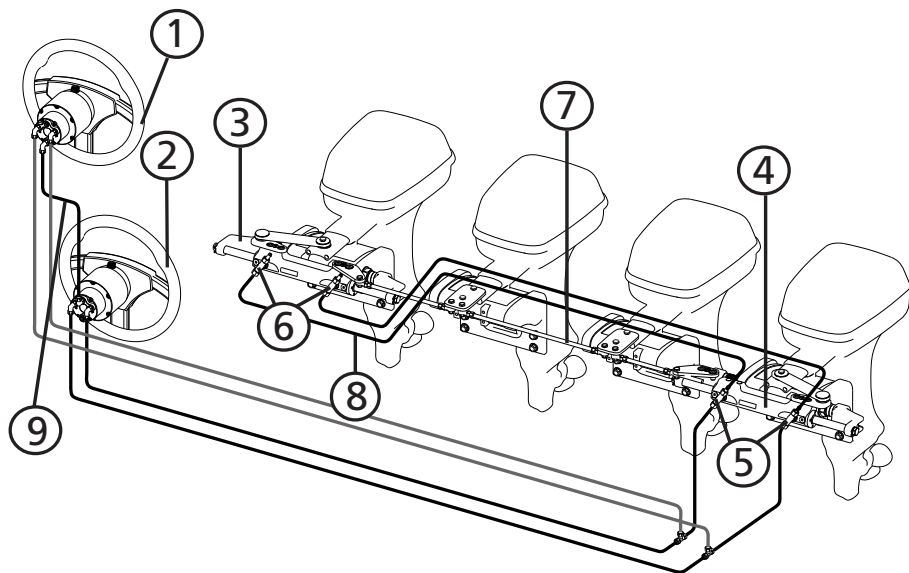


## DUAL STATION / THREE ENGINES



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

## DUAL STATION / FOUR ENGINES



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





## ADJUSTABLE STEERING WHEEL 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



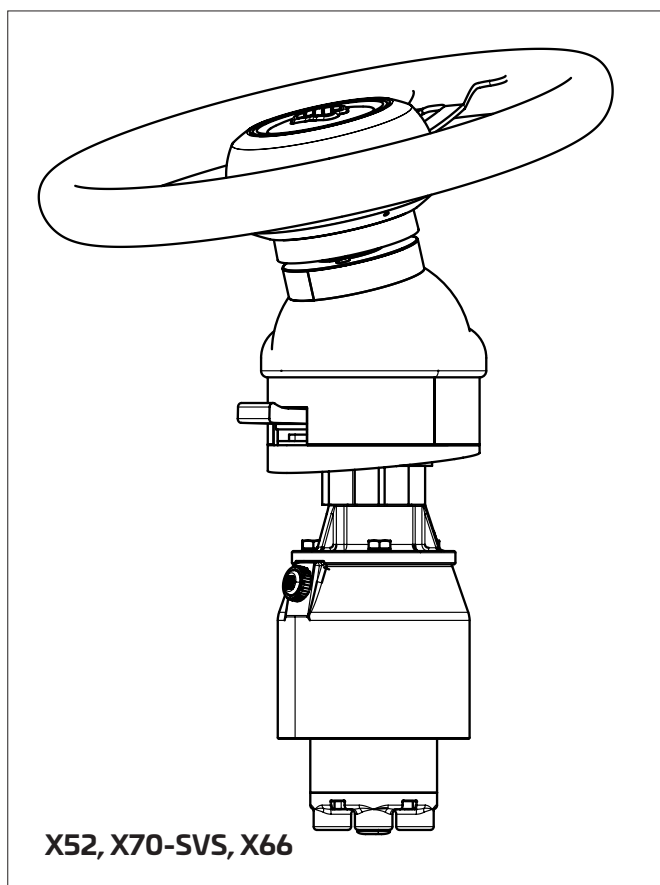
**X52**



**X66**



**X70-SVS**



**X52, X70-SVS, X66**



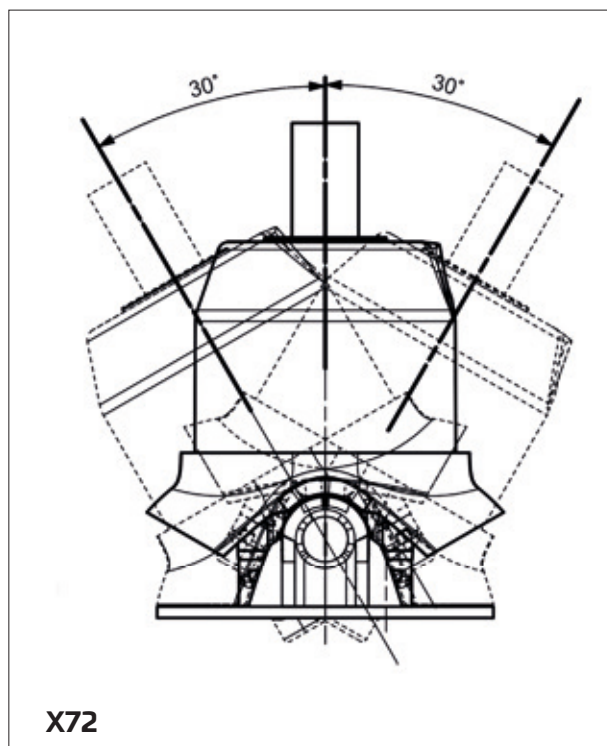
## TILT MECHANISMS SUITABLE FOR FRONT MOUNT HELMS

- 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
<b>X52</b>	39250 U	X	X	X

## TILT MECHANISM APPLICATION FOR HYDRAULIC AND ELECTRONIC STEERING SYSTEMS

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





## UP18 - INTERMEDIATE DASHBOARD POSITION MOUNT HELM PUMP

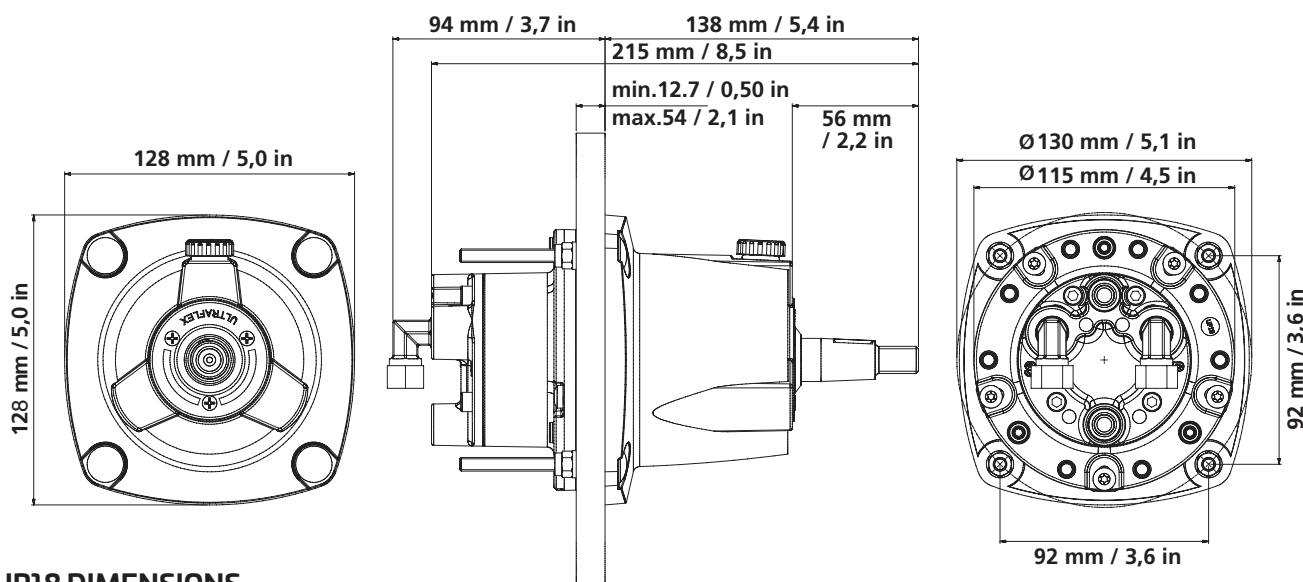
### UP18 - HELM PUMP

- 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 and **KIT OB-GT/M** hydraulic hoses 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	Intermediate	18 cc - 1.1 cu.in.	5	55 Bar - 800 PSI	508 mm - 20"	3.6 kg - 8 lbs



UP18 DIMENSIONS



**UP20F - FRONT MOUNT HELM PUMP**  
**UP20T - TILT MOUNT HELM PUMP**



## 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 UC95-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



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









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



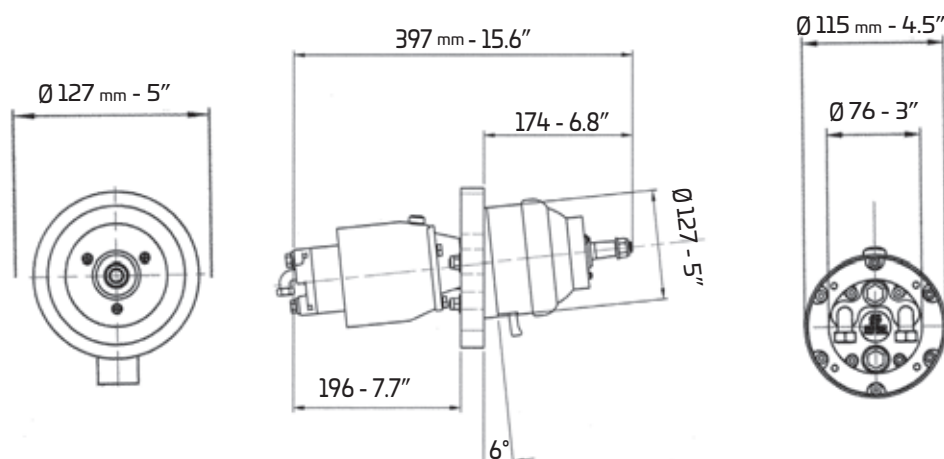
# TILT MOUNT HELM PUMPS

## 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
- 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





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REAR MOUNT HELM PUMPS

# **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)
- **UP45** and **UP39** pumps are available also for inboard applications
- **X68** (optional) - 40894 Z Chrome bezel
- **KIT F** (optional) - 39664 Y Remote fill adapter

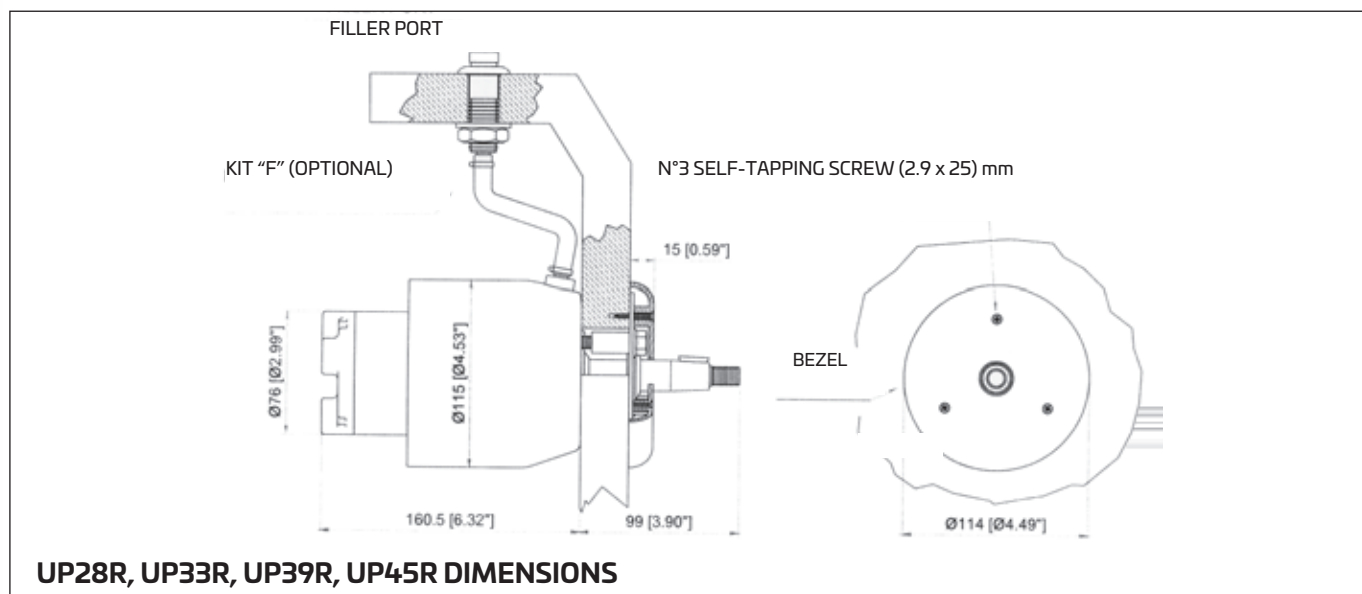


KIT F



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
UP45R	42466 M	Rear mount	45 cc - 2.7 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs





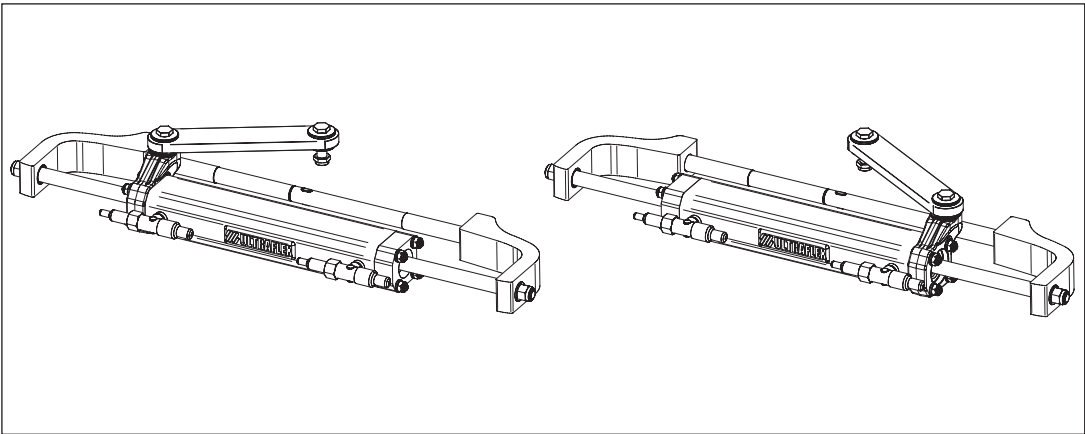


**UC81-0BF FRONT MOUNT CYLINDER FOR  
OUTBOARD ENGINES UP TO 115 HP**

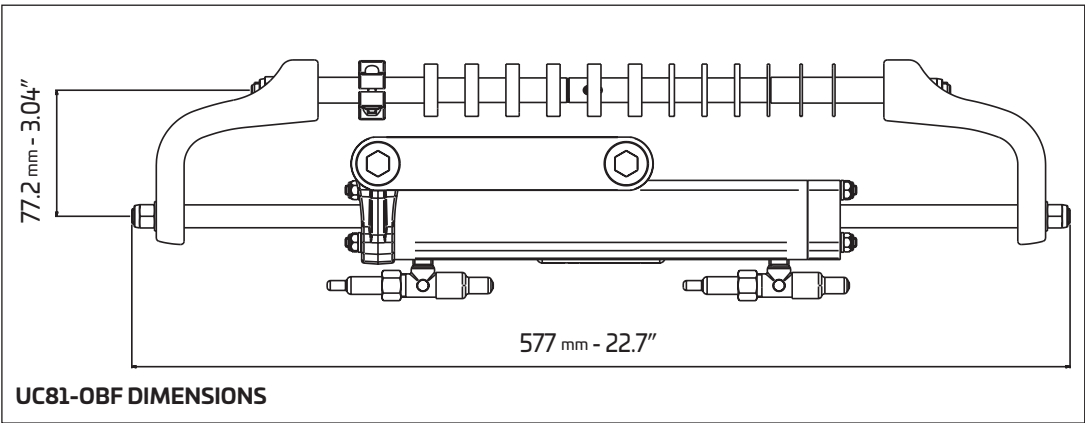


**UC81-0BF** - Balanced: the number of turns lock-to-lock is equal port to starboard and vice-versa.  
Replaceable cylinder heads

Depending on the applications on the outboard engine, the UC81-0BF can be installed port or starboard



SPECIFICATIONS	UC81-0BF - 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



**UC81-0BF DIMENSIONS**







## UC81-OBF

### CYLINDER

### APPLICATIONS

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

Not intended for use in racing applications

### WARNING

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

### \*NOTE:

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

ENGINE	POWER	YEAR
Mercury® Mariner®	50 – 75 – 90 2T 115 EFI 2T 75 – 90 – 115 Optimax 2T 40 – 50 – 60 EFI 4T 75 – 80 – 90 EFI 4T 100 – 115 EFI 4T	1990-2008 1990-2007 2004-today 2004-today 2000-today 2007-today
Evinrude®	E40-E50-E55-E60 2T E75-E90 2T E115 2T V4	2004-today 2004-today 1995-today
Yamaha®	60-70 2T 75C-90 2T 115C 2T F40G-F70 4T F30-F40-F60-F75-F80 EFI 4T F70 4S F90-F100-F115 EFI 4T F80-F100 4T F115 F40D-F50F-F60C EFI 4T	1984-2008 1998-2008 1990-2008 2010-today 1999-2007 2010-today 1999-2007 2000-today 2004-today
Honda®	BF40-50-60-75-90 4T BF115D BF115A BF90 V-TEC 4T	1995-today 1998-2009 2009-today 2008-today
Suzuki®	DF40-50-60-70-80-90 4T* DF100-115 4T* DF100-115 4T new model	1998-today 1998-2008 2008-today
Tohatsu® Nissan®	40-50-60-70-90 2T 75-115 2T 40-50TLDI 4T 70-90-115 TLDI 4T	2004-today 2004-today 2004-today 2004-today
Selva®	40XS-50 Madeira 2T 40XS-50 Bull shark 2T 40XS-60 Grey shark 2T 40XS-70 Mako Shark 2T 40XS-60 St.Tropez 2T 80 Portofino/Tigershark 2T 25 Kingfish 4T 40 Aruana 4T 40XS-40XSR-50-60 Dorado EFI 4T 40XSR EFI Murena 4T 80XS-100-100XSR EFI Marlin 4T 115-115XSR EFI Tarpon 4T 115 EFI Narwhal 4T	1995-today  2000-today
Johnson®	BJ60-70 4T BJ90-115 4T J90-115 V4 2T	2001-2007 2001-2007 1995-2007





**UC95-0BF**  
**FRONT MOUNT**  
**CYLINDER FOR**  
**OUTBOARD**  
**ENGINES**  
**UP TO 175 HP**  
**TOTAL**



**new**



**UC95-0BF/1** - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa



**new**



**UC95-0BF/2** - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa



**new**



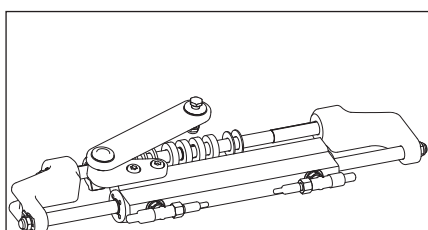
**UC95-0BF/3** - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa

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

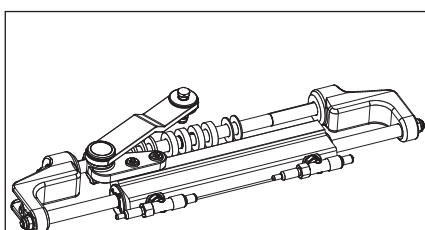
**INNOVATIVE DESIGN (PATENTED):**

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

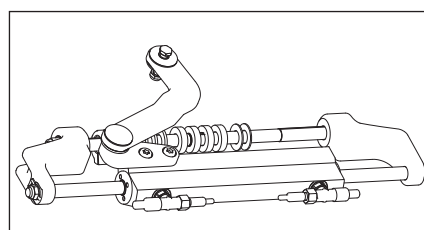
Depending on the applications on the outboard engines, the UC95-0BF cylinder is available in 3 versions:



**UC95-0BF/1 - 43515 D**

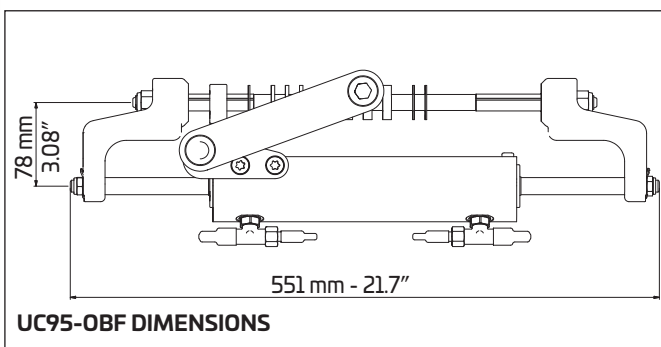


**UC95-0BF/2 - 43535 K**

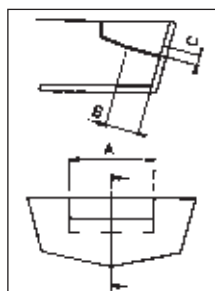


**UC95-0BF/3 - 43516 F**





SPECIFICATIONS	UC95-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



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

## UC95-OBF

## CYLINDER

## APPLICATIONS

### WARNING

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

Not intended for use in racing applications

### \*NOTE:

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

### WARNING

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

ENGINE	MODEL	YEAR	CYLINDER	P. No.
Mercury® Mariner®	80-75-90 2S	1990-2008	UC95-OBF/1	43515 D
	50-75-90 2S	1990-2008	UC95-OBF/1	43515 D
	75-90-115 Optimax 2 Stroke	2004-to date	UC95-OBF/3	43516 F
	125- 135-150 -175 Optimax 2 Stroke	1999-to date	UC95-OBF/1	43515 D
	100-115-150 EFI 2S	1999-to date	UC95-OBF/1	43515 D
	40-50-60 EFI 4S	2004-to date	UC95-OBF/1	43515 D
	75-80-90 EFI 4S	2000-to date	UC95-OBF/1	43515 D
	100-115-EFI 4 Stroke	2007-to date	UC95-OBF/1	43515 D
	175-V6 FOURSTROKE	2018-to date	UC95-OBF/1	43515 D
Evinrude®	E40-E50-E55-E60 2S	2004-to date	UC95-OBF/1*	43515 D
	E75-E90 2 Stroke	2004-to date	UC95-OBF/1*	43515 D
	E115-E130 -E135 2 Stroke V4	1995-to date	UC95-OBF/1*	43515 D
	E130-E135 2 Stroke V4	1995-to date	UC95-OBF/1*	43515 D
	E150 -175 2 Stroke V6	1995-to date	UC95-OBF/1*	43515 D
Yamaha®	60-70 2S	1984-2008	UC95-OBF/1	43515 D
	75C-90 2 Stroke	1998-2008	UC95-OBF/1*	43515 D
	115C-130B -150F 2 Stroke	1990-2008	UC95-OBF/1*	43515 D
	150-175 HPDI VMAX 2 Stroke	2000-2008	UC95-OBF/1*	43515 D
	F60-F75-F80 EFI 4S	1999-2007	UC95-OBF/1	43515 D
	F90-F100-F115 F150 EFI 4 Stroke	1999-2007	UC95-OBF/1	43515 D
	F115-F150-F175 L4 4S	2004-to date	UC95-OBF/1	43515 D
Honda®	BF75-90 4 Stroke	1995-to date	UC95-OBF/1	43515 D
	BF80-100	2013-to date	UC95-OBF/1	43515 D
	BF115D	1998-2009	UC95-OBF/3	43516 F
	BF115A	2009-to date	UC95-OBF/1	43515 D
	BF130A	1998-2005	UC95-OBF/3	43516 F
	BF135-150 4 Stroke	2005-to date	UC95-OBF/1	43515 D
	BF175-4 Stroke	2001-to date	UC95-OBF/1	43515 D
Suzuki®	DF70-80-90 4 Stroke	1998-to date	UC95-OBF/1*	43515 D
	DF100-115 -140 4 Stroke	1998-to date	UC95-OBF/1	43515 D
	DF150-175 4 Stroke	2006-to date	UC95-OBF/1	43515 D
Tohatsu® Nissan®	115-120-140 2 Stroke	2004-to date	UC95-OBF/1*	43515 D
	70-90-115 TLDI 4 Stroke	2004-to date	UC95-OBF/1	43515 D
	BFT60-75-90 4S	2015-to date	UC95-OBF/1	43515 D
	BFT80-100-115-150 4S	2015-to date	UC95-OBF/1	43515 D
	70-90-115 TLDI 4 Stroke	2004-to date	UC95-OBF/1	43515 D
	70-90-100-115 MFS 4 Stroke	2020-to date	UC95-OBF/1	43515 D
Selva®	80 Portofino/Tigershark 2 Stroke	1995-to date	UC95-OBF/1	43515 D
	150 WHITE SHARK 2S	2001-2007	UC95-OBF/1*	43515 D
	100EFI Marlin - 115 EFI Narwhal	2001-2007	UC95-OBF/1	43515 D
	150EFI Killer Whale 4 Stroke	2000-to date	UC95-OBF/1	43515 D
Johnson®	BJ90-115-140 4 Stroke	2001-2007	UC95-OBF/1	43515 D
	BJ70 4 Stroke	2001-2007	UC95-OBF/1*	43515 D
	J90-115 V4 2 Stroke	1995-2007	UC95-OBF/1*	43515 D
	J150 -175 V6 2 Stroke	1995-2007	UC95-OBF/1*	43515 D

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



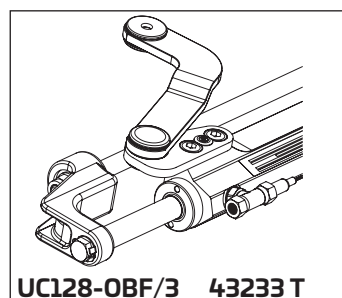
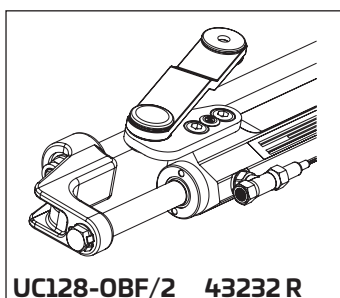
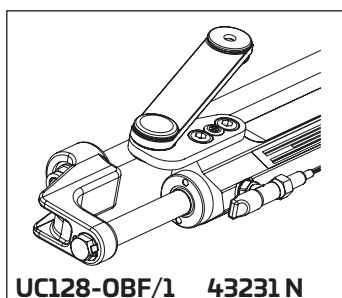
# UC128-OBF FRONT MOUNT CYLINDER



55

**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**

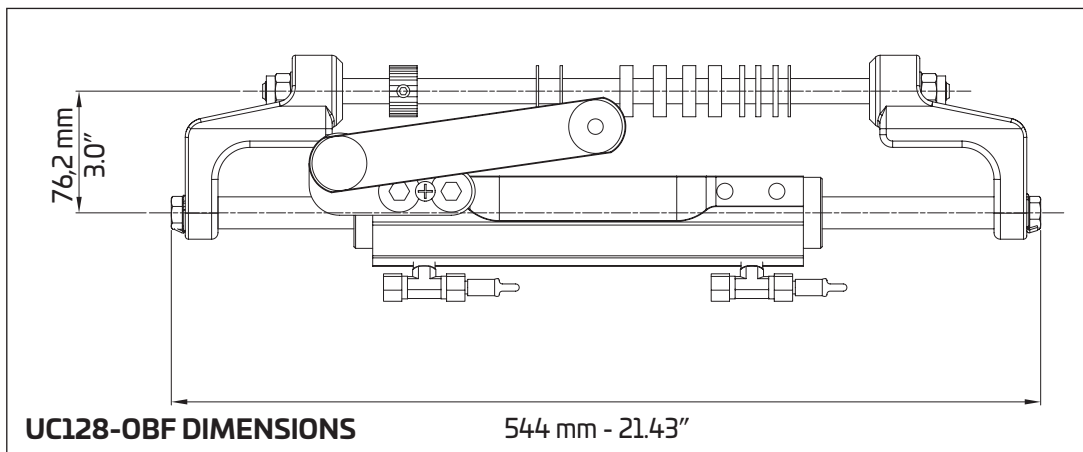
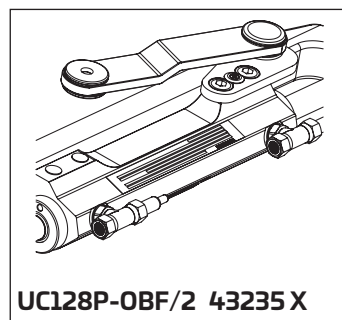
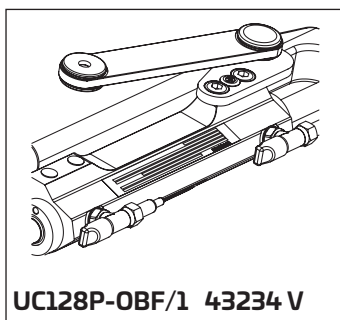
The UC128-OBF cylinder is built to last with heavy duty stainless steel cylinder rod, seals and link assemblies. Constructed of top grade materials, this cylinder is simple to install and fits almost every 2 and 4 stroke outboard engine in the market. See the application guide next page to choose the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

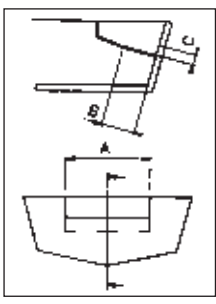






**UC128-OBF FRONT  
MOUNT CYLINDER**

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).

**"STARBOARD" LINK ARMS:**



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



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



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

**"PORT" LINK ARMS:**



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



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



**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**

SYSTEM	APPLICATION	WHEEL TURNS	COMPONENTS	MODEL	Q.TY
<b>Single engine</b> <b>Single cylinder</b> 	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**

<b>Dual engine</b> <b>Single cylinder</b> 	Up to 300 hp max (non-counter rotating engine)	4,8 (UP25)	Cylinder	UC128-OBF	1
			Helm pump	UP25 or UP28	1
			Hose Kit	KIT OB	1
	Up to 500 hp max (counter rotating engine)	4,3 (UP28)	Oil	OL 150	2
			Tie bar	A96	1
			Steering wheel	(Wheel selection)	1

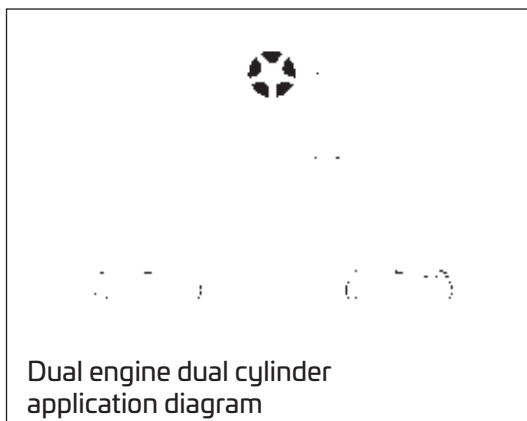
**For a second station add:**

**1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OL 150, 1 steering wheel**

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

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

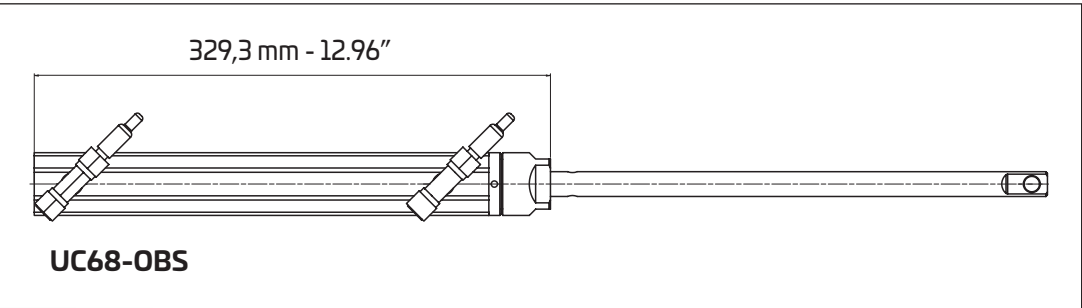


**UC68-OBS** - Unbalanced: the number of turns lock-to-lock is not equal port to starboard and vice-versa.


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
<b>Single engine Single cylinder</b> 	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



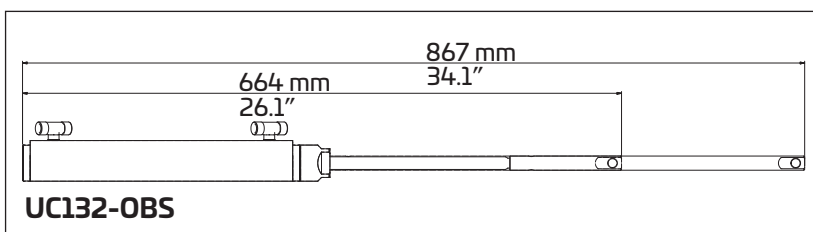
### UC132-OBS

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

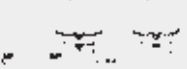
The UC132-OBS is not recommended for use in installations where the boat speed exceeds **55 mph (48 knots)** (60 mph (52 knots) for dual cylinder installations) and the power exceeds max Coast Guard recommendation for the boat.


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
<b>Single engine Single cylinder</b> 	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
			Oil	OL 150	2
	Up to 300 hp max (counter rotating engine)	4,7/5,8 (UP28)	Tie bar	A88 or A92	1
			Steering wheel	(Wheel selection)	1
For a second station add: 1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OL 150, 1 steering wheel					

	<b>Dual engine</b>	Up to 300 hp max (non-counter rotating engines)		Cylinder	UC132-OBS	2
	<b>Dual cylinder</b>		6,7/8,3 (UP39)	Helm pump	UP39 or UP45	1
				Hose Kit	KIT OB	1
		Up to 300 hp max (counter rotating engines)		Oil	OL 150	3
			5,8/7,3 (UP45)	Tie bar	A88 or A92	1
				Steering wheel	(Wheel selection)	1
				Connection Kit	KIT OB-2C	1

For a second station add:  
1 UP39 or UP45 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 2 T fittings 39502 V, 1 OL 150, 1 steering wheel

**WARNING: THIS APPLICATION REQUIRES THAT THE THREADS ON THE TILT TUBE EXTEND AT LEAST 15 mm (0.6") FROM BOTH SIDES.**



## HYDRAULIC HOSE KIT FOR GOTECH™ STEERING SYSTEMS

### ***KIT OB-GT/M: HOSE KIT WITH PREASSEMBLED FITTINGS AT ONE END FOR SINGLE STATION APPLICATION***

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

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

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

### ***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.

KIT OB-GT	LENGTH	PART No.
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/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.

KIT OB-GT/R5	LENGTH	PART No.
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 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)



**KIT OB-GT/M**



**KIT OB-GT**



**KIT OB-GT/R5**



**K18**



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## 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 fitnigs 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 OUTBOARD 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.

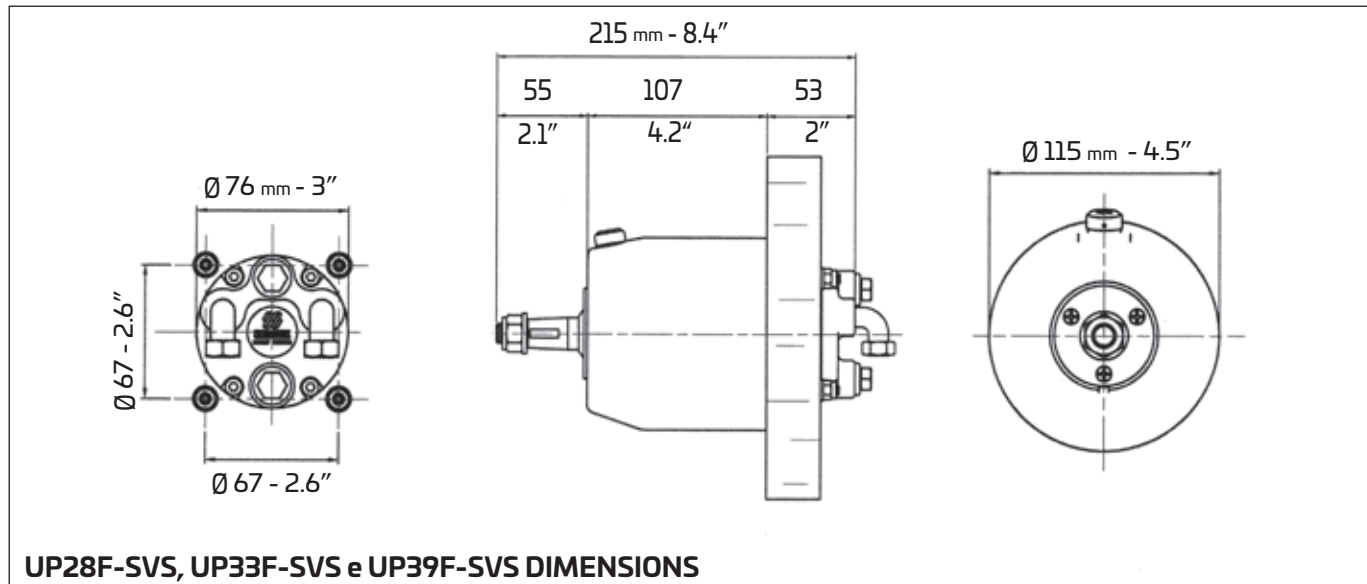


## FEATURES

- 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 - 43140 K**  
Tilt range of 60° and five locking positions. Please refer to tilt mechanism application chart.



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



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



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

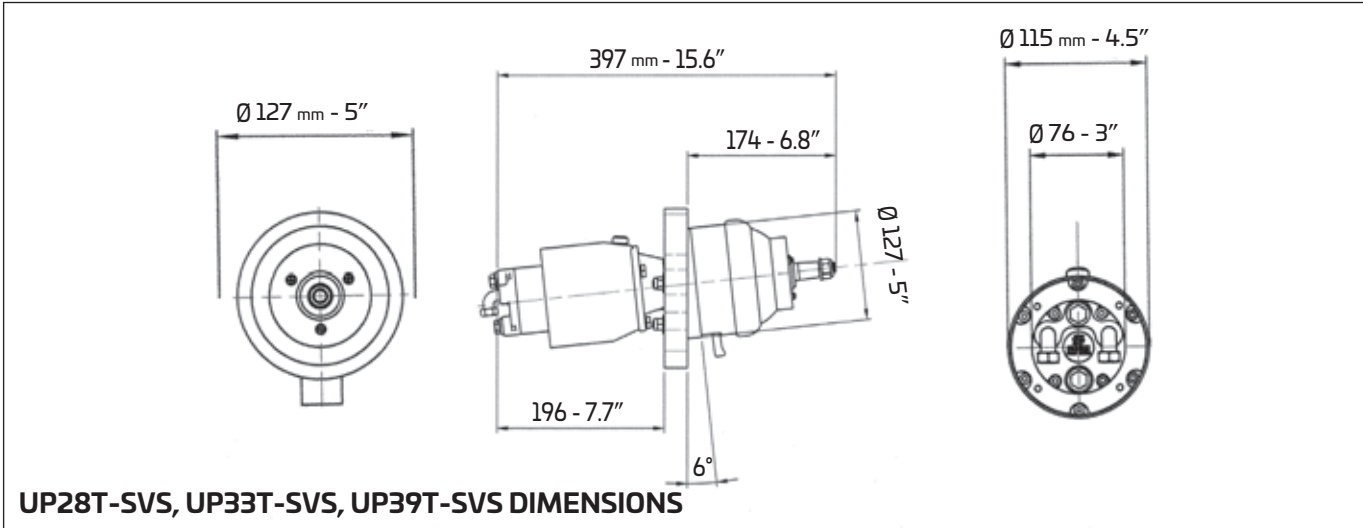
## FEATURES

- 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™ - OUTBOARD STEERING SYSTEMS

**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

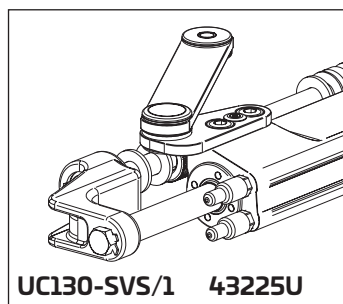
**Side fittings for easy installation**

**High resistance stainless steel connection bolt (ULTRABOLT)**

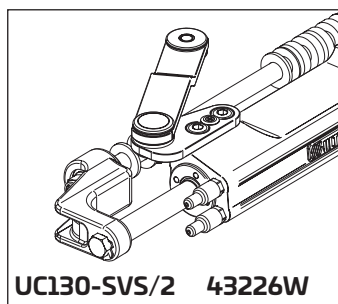
**Replaceable cylinder heads**

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.

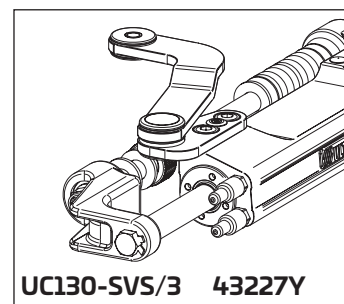
Depending on the applications on the outboard engines, the UC130-SVS is available in 3 versions:



**UC130-SVS/1 43225U**



**UC130-SVS/2 43226W**



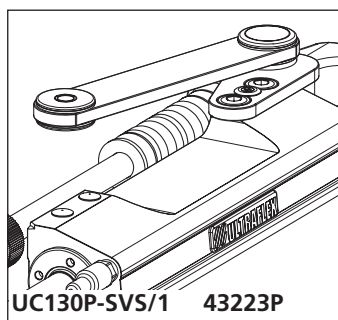
**UC130-SVS/3 43227Y**

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.

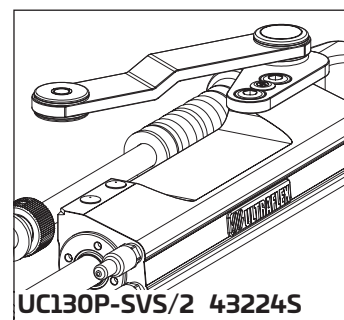
Depending on the applications on the outboard engines, the UC130P-SVS port cylinder is available in 2 versions:



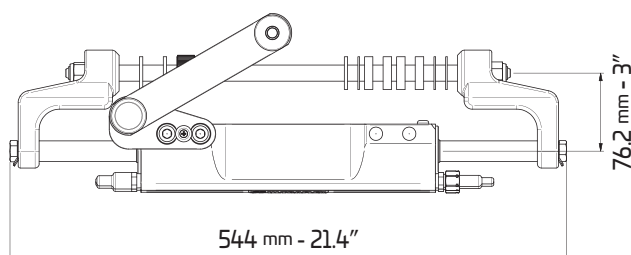
**UC130P-SVS**



**UC130P-SVS/1 43223P**



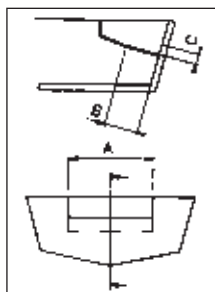
**UC130P-SVS/2 43224S**



**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	MODEL	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**

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

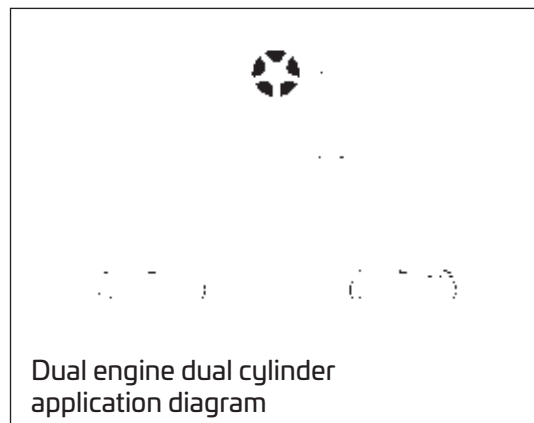
For a second station add:  
1 UP28-SVS or UP33-SVS helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB-SVS, 1 OL 150, 1 steering wheel

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

For a second station add:  
1 UP28-SVS or UP33-SVS helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB-SVS, 1 OL 150, 1 steering wheel

<div>Dual engine Dual cylinder</div> <div></div>	Up to 600 hp max (non-counter rotating engines)	6,6 (UP39)	Cylinder	UC130-SVS	1
	Up to 700 hp max (counter rotating engines)		Cylinder Port	UC130P-SVS	1
			Helm pump	UP39-SVS	1
			Hose Kit	KIT OB-SVS	1
			Oil	OL 150	3
			Tie bar	A95	1
			Steering wheel	(Wheel selection)	1
Connection Kit	KIT OB-2C130-SVS	1			

For a second station add:  
1 UP39-SVS helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB-SVS, 2 T fittings 39502 V, 1 OL 150, 1 steering wheel



**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	43587 F
KIT OB-SVS-35	3,50 m - 11.5 ft	43588 H
KIT OB-SVS-40	4,00 m - 13.2 ft	43589 K
KIT OB-SVS-45	4,50 m - 14.8 ft	43590 U
KIT OB-SVS-50	5,00 m - 16.4 ft	43591 W
KIT OB-SVS-55	5,50 m - 18.0 ft	43592 Y
KIT OB-SVS-60	6,00 m - 19.7 ft	43593 A
KIT OB-SVS-65	6,50 m - 21.3 ft	43594 C
KIT OB-SVS-70	7,00 m - 22.9 ft	43595 E
KIT OB-SVS-75	7,50 m - 24.6 ft	43596 G
KIT OB-SVS-80	8,00 m - 26.3 ft	43597 J
KIT OB-SVS-85	8,50 m - 27.8 ft	43598 L
KIT OB-SVS-90	9,00 m - 29.5 ft	43599 N

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

**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")	43615 H
KIT OB-2C130-SVS-41	686 mm (27")	407 mm (16")	43616 K
KIT OB-2C130-SVS-43	711 mm (28")	432 mm (17")	43617 M
KIT OB-2C130-SVS-45	724 mm (28.5")	445 mm (17.5")	43618 P
KIT OB-2C130-SVS-46	737 mm (29")	457 mm (18")	43619 S
KIT OB-2C130-SVS-48	762 mm (30")	483 mm (19")	43620 A
KIT OB-2C130-SVS-50	777 mm (30.5")	496 mm (19.5")	43621 C
KIT OB-2C130-SVS-51	788 mm (31")	508 mm (20")	43622 E
KIT OB-2C130-SVS-53	813 mm (32")	534 mm (21")	43623 G



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)





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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™





## 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



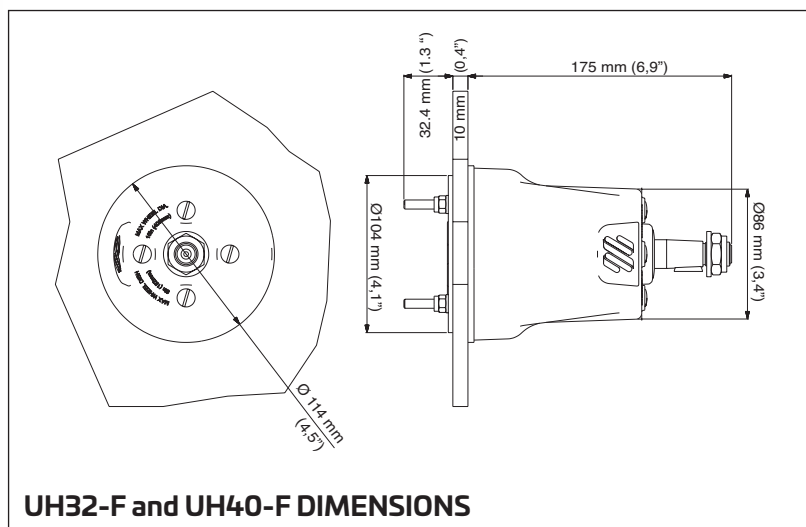
UH



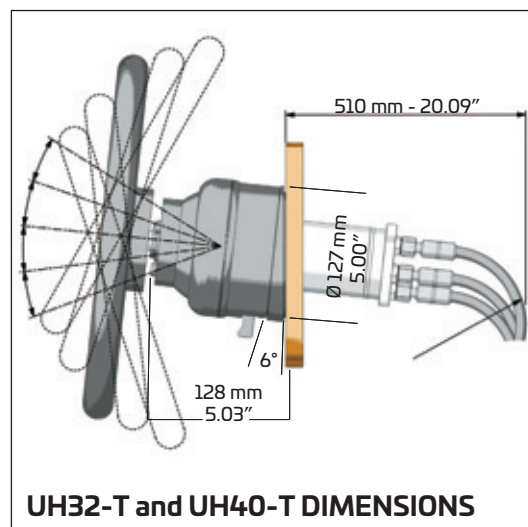
MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	APPLICATION	No. OF STATIONS	MAXIMUM WHEEL DIA.
UH32-F	42091 U	front mount	32cc - 1.95 cu.in	single cylinder	1	406 mm - 16"
UH32-T	42092 W	with X66 tilt	32cc - 1.95 cu.in	single cylinder	1	406 mm - 16"
UH40-F	42093 Y	front mount	40cc - 2.44 cu.in	dual cylinder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



UH32-F and UH40-F DIMENSIONS



UH32-T and UH40-T DIMENSIONS

## TILT MECHANISM

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

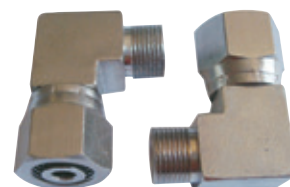
## 90° TWO FITTING KIT FOR

## 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.



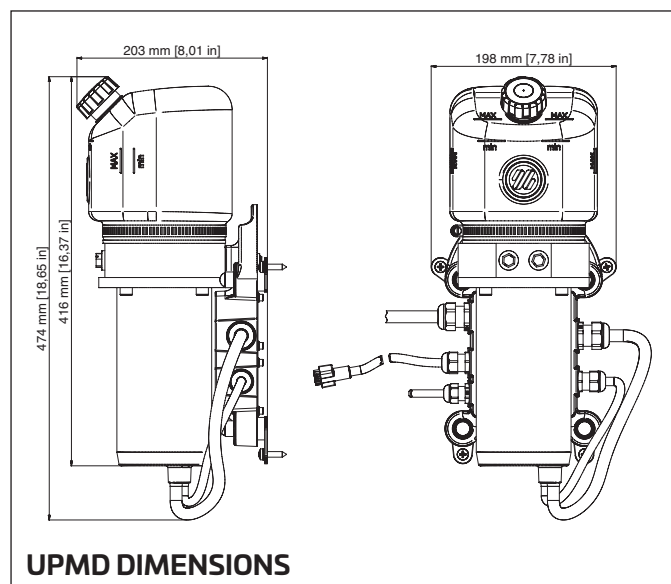
K81



K81MM

## UPMD - POWER UNIT - 42096 E

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



UPMD



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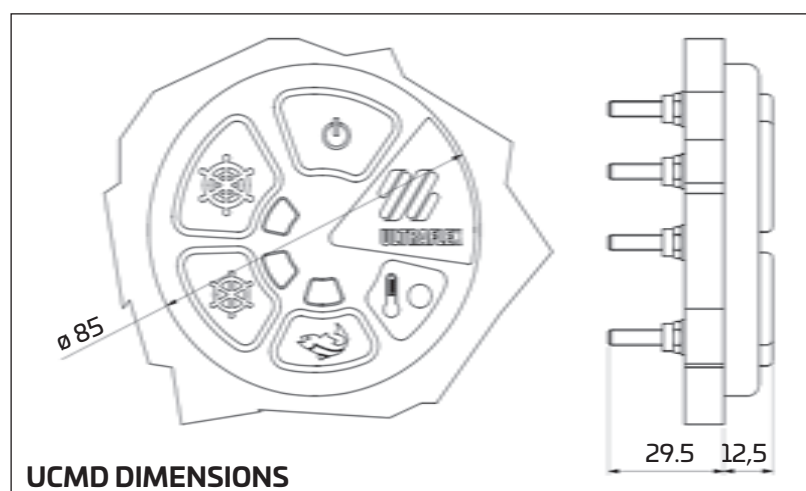


## UCMD - USER INTERFACE - 42097 G

- 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



## HOSE KITS

KIT OB-SVS	LENGTH	PART No.
KIT OB-SVS-10	1,00 m - 3.3 ft	43583 X
KIT OB-SVS-15	1,50 m - 4.9 ft	43583 B
KIT OB-SVS-20	2,00 m - 6.6 ft	43584 Z
KIT OB-SVS-25	2,50 m - 8.2 ft	43586 D
KIT OB-SVS-30	3,00 m - 9.8 ft	43587 F
KIT OB-SVS-35	3,50 m - 11.5 ft	43588 H
KIT OB-SVS-40	4,00 m - 13.1 ft	43589 K
KIT OB-SVS-45	4,50 m - 14.8 ft	43590 U
KIT OB-SVS-50	5,00 m - 16.4 ft	43591 W
KIT OB-SVS-55	5,50 m - 18.0 ft	43592 Y
KIT OB-SVS-60	6,00 m - 19.7 ft	43593 A
KIT OB-SVS-65	6,50 m - 21.3 ft	43594 C
KIT OB-SVS-70	7,00 m - 22.9 ft	43595 E
KIT OB-SVS-75	7,50 m - 24.6 ft	43596 G
KIT OB-SVS-80	8,00 m - 26.3 ft	43597 J
KIT OB-SVS-85	8,50 m - 27.8 ft	43598 L
KIT OB-SVS-90	9,00 m - 29.5 ft	43599 N

### **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")	43615 H
KIT OB-2C130-SVS-41	686 mm (27")	407 mm (16")	43616 K
KIT OB-2C130-SVS-43	711 mm (28")	432 mm (17")	43617 M
KIT OB-2C130-SVS-45	724 mm (28.5")	445 mm (17.5")	43618 P
KIT OB-2C130-SVS-46	737 mm (29")	457 mm (18")	43619 S
KIT OB-2C130-SVS-48	762 mm (30")	483 mm (19")	43620 A
KIT OB-2C130-SVS-50	777 mm (30.5")	496 mm (19.5")	43621 C
KIT OB-2C130-SVS-51	788 mm (31")	508 mm (20")	43622 E
KIT OB-2C130-SVS-53	813 mm (32")	534 mm (21")	43623 G

### **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**



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- POWER ASSISTED OUTBOARD STEERING SYSTEM





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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:

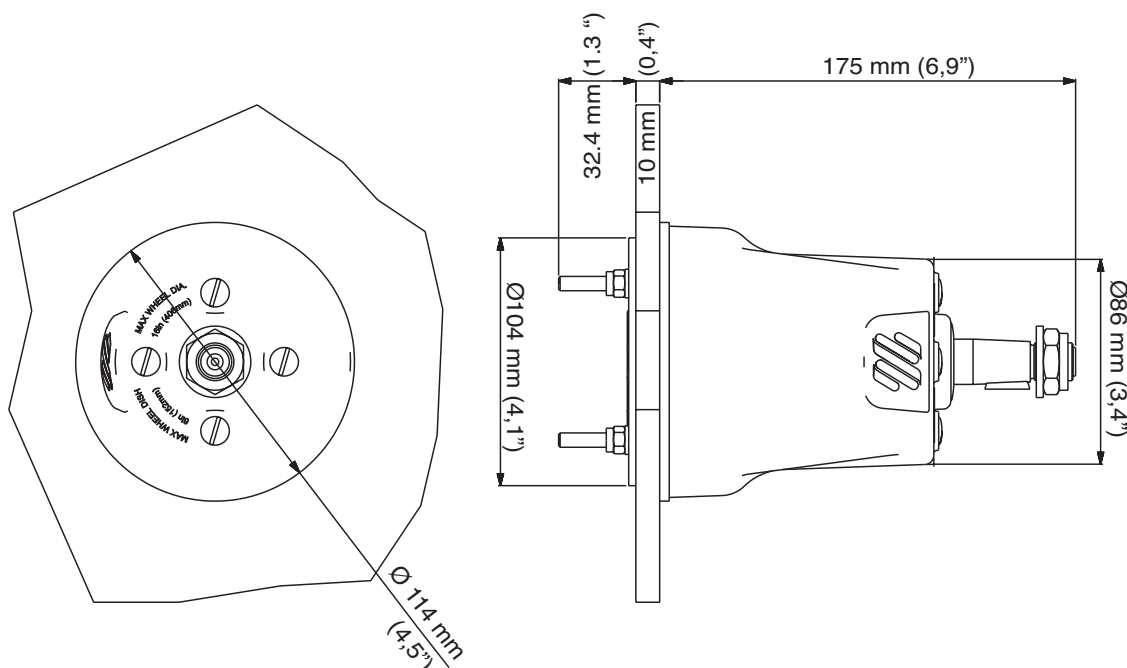
1x Kit OB-SVS with length equal to the distance between the master helm pump and the slave helm pump

2x Kits OB-SVS: select the desired length

For dual cylinder applications, order:

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

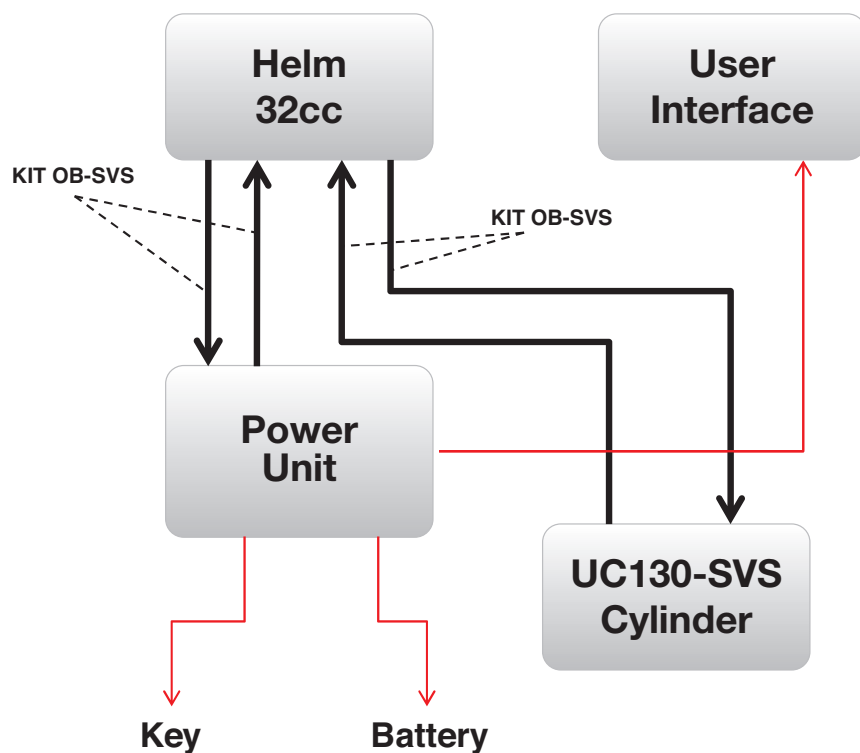
The tilt mechanism **X66** - 40613 M and the wheel are to be ordered separately.



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



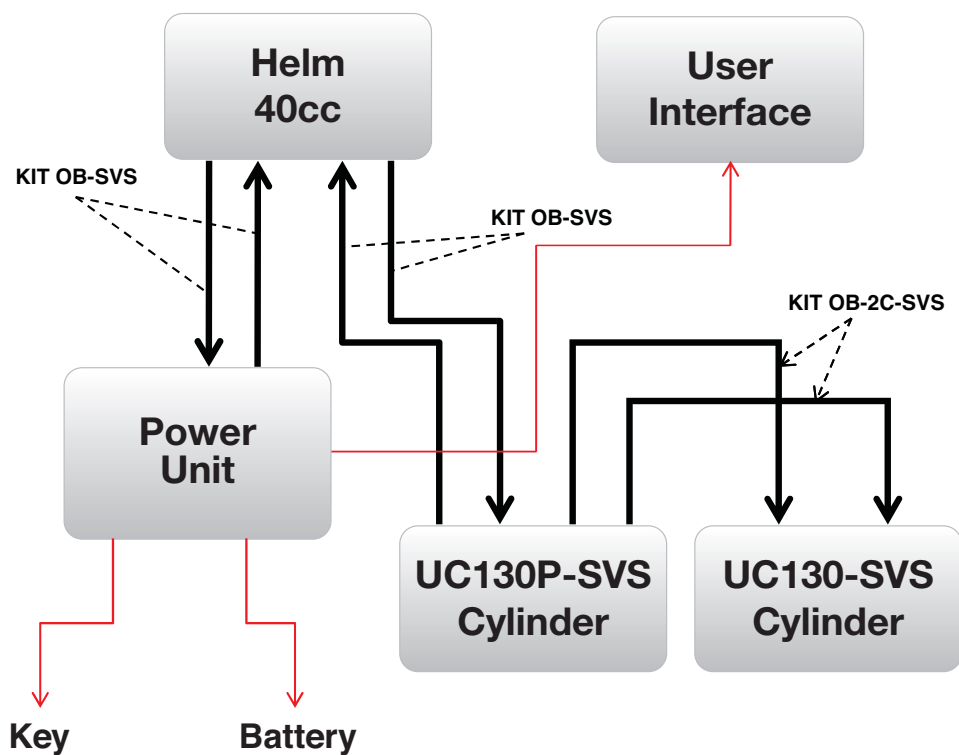
## SINGLE CYLINDER SINGLE STATION APPLICATION



— wiring harness

— high pressure hoses

## DUAL CYLINDER SINGLE STATION APPLICATION



— wiring harness

— high pressure hoses







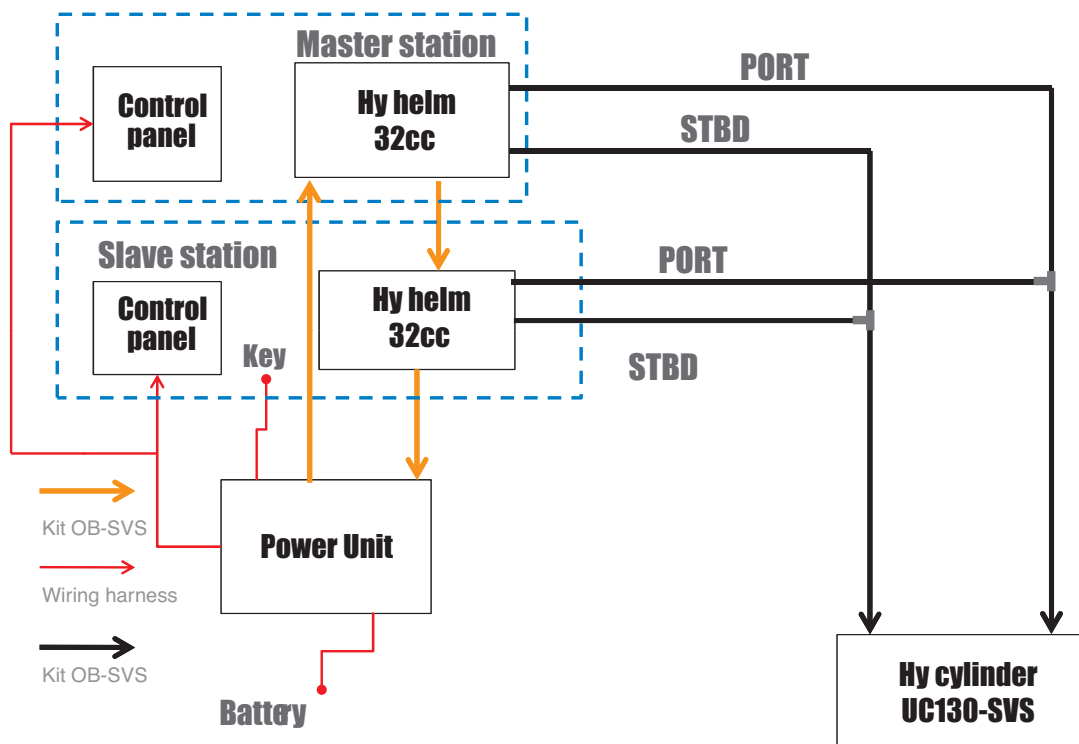
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POWER ASSISTED OUTBOARD STEERING SYSTEM

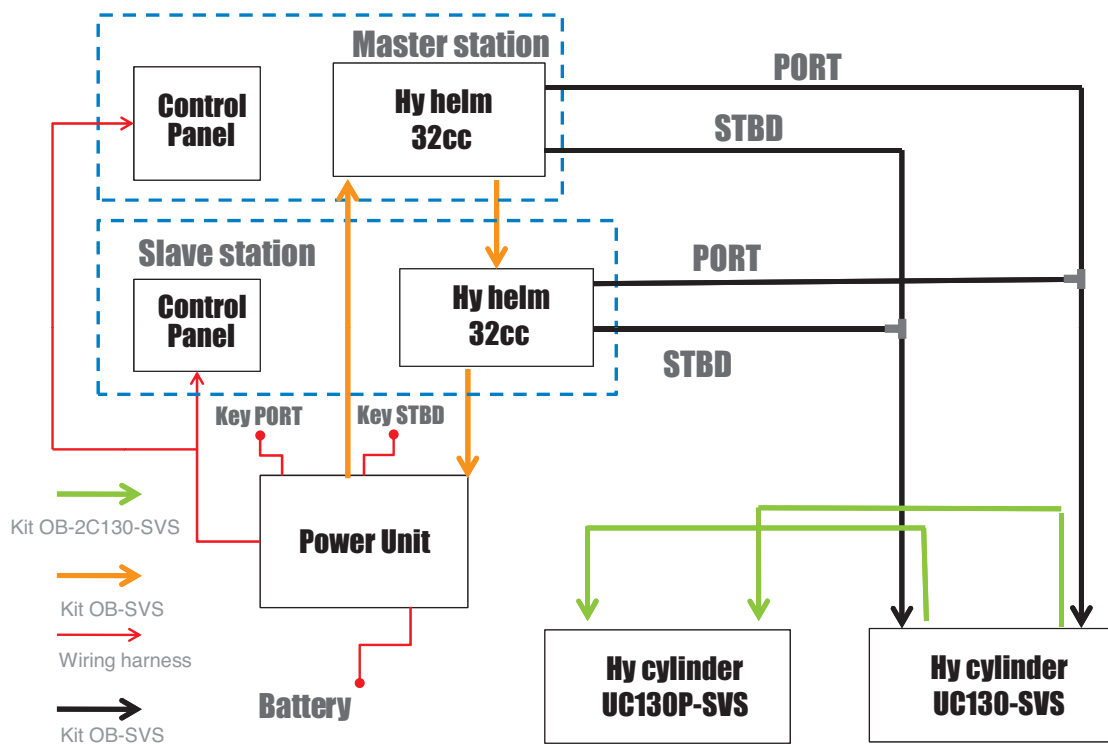
MASTERDRIVE™

MASTERDRIVE™

## SINGLE CYLINDER DUAL STATION APPLICATION



## DUAL CYLINDER DUAL STATION APPLICATION





## 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 A96 tie bar	42098 J 43225 U (43226 W) specify length wheel selection tie bar selection	1 1 1 1 1
	KIT MD32-T packaged MasterDrive™ kit includes 32cc tilt mount helm UC130/1-SVS SilverSteer™ cylinder (or UC130/2-SVS) KIT OB-SVS hydraulic hose kit X66 tilt mechanism Steering wheel A96 tie bar	42100 S 43225 U (43226 W) specify length 40613M wheel selection tie bar selection	1 1 1 1 1 1
Dual engine dual cylinder	KIT MD40-F packaged MasterDrive™ kit includes 40cc front mount helm UC130/1-SVS SilverSteer™ cylinder (or UC130/2-SVS) UC130P/1-SVS SilverSteer™ port cylinder (or UC130P/2-SVS) KIT OB-SVS hydraulic hose kit KIT OB-2C130-SVS hydraulic hose cylinder connection kit Steering wheel A95 tie bar	42102 W 43225 U (43226 W) 43223 P (43224 S) specify length specify length wheel selection tie bar selection	1 1 1 1 1 1 1
	KIT MD40-T packaged MasterDrive™ kit includes 40cc tilt mount helm UC130/1-SVS SilverSteer™ cylinder (or UC130/2-SVS) UC130P/1-SVS SilverSteer™ port cylinder (or UC130P/2-SVS) KIT OB-SVS hydraulic hose kit KIT OB-2C130-SVS hydraulic hose cylinder connection kit X66 tilt mechanism Steering wheel A95 tie bar	42104 A 43225 U (43226 W) 43223 P (43224 S) specify length specify length 40613 M wheel selection tie bar selection	1 1 1 1 1 1 1
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



# INTEGRA EPS

## OUTBOARD ELECTRONIC POWER STEERING SYSTEMS



### INTEGRA™ EPS SYSTEM FEATURES

- Redundant electronic steering system. integra eps is the reliable way to reduce steering effort on your vessel
- Designed for any application with single, dual, triple or quad outboard engines.
- Available for multiple steering stations applications
- INTEGRA EPS can handle up to 4 engines with a single electronic pump
- The pump includes the electronic board that manages a powerful brushless motor; the combination of the two gives a very high output; great efficiency and the quickest response in any situation.
- The pump includes the Automatic Power Selector that combines the power from 2 batteries to ensure always the optimal voltage
- Heavy duty steering cylinder with embedded CAN bus position sensor
- Low amperage draw- less than 1A at idle (no steering)
- Direct interface with Garmin® Reactor™ 40 Steer-by-wire autopilot and display
- Veratron VDO® color display
- Two independent NMEA 2000 connections to interface with multiple devices
- Simplified configuration with no hydraulic hoses and oil under the dash
- Easy to upgrade to INTEGRA JS (joystick) system
- INTEGRA EPS is perfectly quiet; it does not heat up, has a low amperage draw and can be fully integrated with autopilots
- The integra eps system is in conformity with the following normatives:  
ISO 25197, ISO 10592, ABYC P21, P24, P27
- Ignition protected saej 1171



**new**



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INTEGRA EPS **ELECTRONIC POWER STEERING SYSTEMS**

## TECHNICAL SPECIFICATIONS

Operating voltage	10,8 V - 14,4 V
Max current draw	60 A
Temperature range	-25°C / +77°C
Nominal voltage	12 VDC
Max flow	4,8 l/min @ 60 bar (cw and ccw) 2.14 gal/min @ 870 PSI (cw and ccw)
Relief valve	120 bar - 1740 PSI



## SYSTEM COMPONENTS

- **UIH** - Tilt mount electronic helm
- **X52** - Adjustable steering wheel tilt mechanism
- **UID** - Veratron VDO® color display
- **BCM** (Body Control Module) - CAN bus network Module
- **UIP** - Electro-hydraulic power unit
- **UC120E** - Heavy-duty cylinder with integrated sensor
- **UC120P-OBF** - Heavy-duty cylinder for twin, triple or quad outboard engines
- **Tie bar** - Please refer to INTEGRA EPS tie bars section
- **KIT OB-SVS** - Hydraulic hoses with preassembled fittings
- **CAN bus cables** - CAN bus power cables
- **KBD3** - Purging kit: twin spiralled hose with connectors (optional)
- **OL460** - 3x hydraulic oil bottles

### UIH1 - ELECTRONIC HELM part No. 43536 M

- Electronic steering helm tilt mount (X52)
- Easy to install, no oil or hydraulic hoses
- UIH1 first station electronic helm
- UIH2 - 43537 P - second station electronic helm
- UIH3 - 43538 S - third station electronic helm
- Resistant to harsh marine conditions
- Steering wheel turns can be set by the user.
- Variable steering wheel resistance according to boat speed
- Instant responsiveness
- Redundant architecture with 2 CAN bus channels



UIH1

### X52 - TILT MECHANISM part No. 39250 U

- Tilt range of 48° and 5 locking positions.



X52



**UID - VERATRON VDO® COLOR DISPLAY part No. 43539 U**

- Digital control panel, user interface
- System configuration can be set directly from the display
- Used to set the steering wheel turns and the effort on the wheel
- Shows the engine rpm and the temperature of the engine
- Rudder angle display
- Boat speed display
- Multiple station application



UID

**BCM (BODY CONTROL MODULE) - CAN BUS NETWORK MODULE part No. 43540 C**

- Waterproof CAN bus connection system
- Direct interface with Garmin® Reactor™ 40 Steer-by-wire autopilot and display
- Very compact dimensions



BCM

**UIP - MOTOR PUMP UNIT part No. 43541 E**

- 12 VDC brushless motor
- High power density: one unit can feed up to 2 cylinders
- Embedded automatic power selector to manage the power supply from 2 batteries
- Can be installed anywhere on the boat
- 90° swiveling fittings for easy hose connection
- Clear 1 litre (0.26 gal) oil tank for immediate oil level check
- Vented cap
- Marine anodized aluminum body
- Includes the main connector with 1m communication cables
- Ignition Protected SAE J1171



UIP





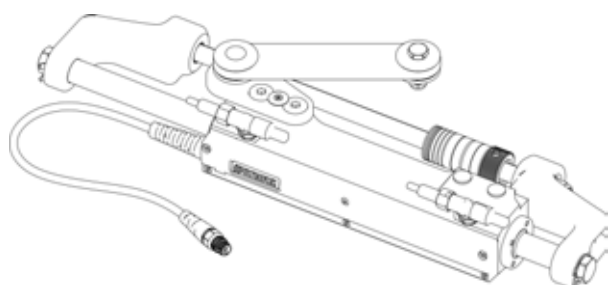
## UC120 CYLINDERS



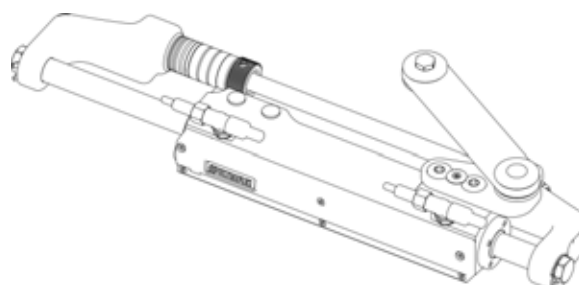
UC120E - Heavy-duty cylinder with integrated sensor



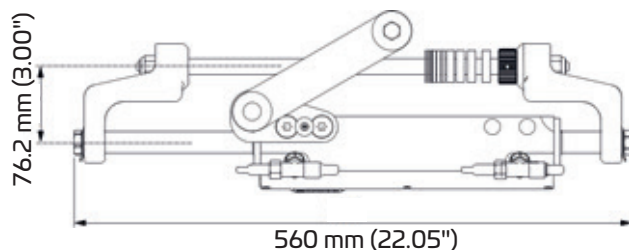
UC120P-OBF - Heavy-duty port cylinder for two, three or four outboard engine applications



UC120E - 43322 S

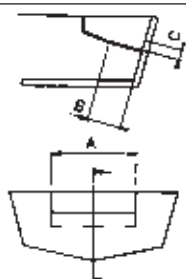


UC120P-OBF - 43434 D



UC120 DIMENSIONS

SPECIFICATIONS	UC120
Volume	120 cc - 7.3 cu. in
Output force	680 kg - 1499 lbs
Internal diameter	35 mm - 1.37"
Stroke	198 mm - 7.79"
Oil	OL460



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"



## INTEGRA EPS TIE BARS

### A96-120 TIE BAR FOR TWIN OUTBOARD ENGINE/SINGLE UC120E CYLINDER

- 2 different lengths available:  
**A96-120-29** - 43471 K - from 26" (660,4 mm) to 29" (736,6 mm) twin engine centers  
**A96-120-34.5** - 43472 M - from 29" (736,6 mm) to 34.5" (873,76 mm) twin engine centers



A96-120-29



### A95-120 TIE BAR FOR TWIN OUTBOARD ENGINE/TWO CYLINDERS UC120E AND UC120P-OBF

- 2 different lengths available:  
**A95-120-32** - 43437 K - from 26" (660,4 mm) to 32" (818,8 mm) twin engine centers  
**A95-120-37.5** - 43468 X - from 32" (818,8 mm) to 37.5" (952,5 mm) twin engine centers



A95-120-32



### A97-120 TIE BAR FOR TRIPLE OUTBOARD ENGINE/TWO CYLINDERS UC120E AND UC120P-OBF

- 2 different lengths available:  
**A97-120-30** - 43474 S - from 26" (660,4 mm) to 30" (762 mm) twin engine centers  
**A97-120-35.5** - 43475 U - from 30" (762 mm) to 35.5" (901,7 mm) twin engine centers



A97-120-30



### A98-120 TIE BAR FOR QUAD OUTBOARD ENGINE/TWO CYLINDERS UC120E AND UC120P-OBF

- **A98-120** - 43543 J



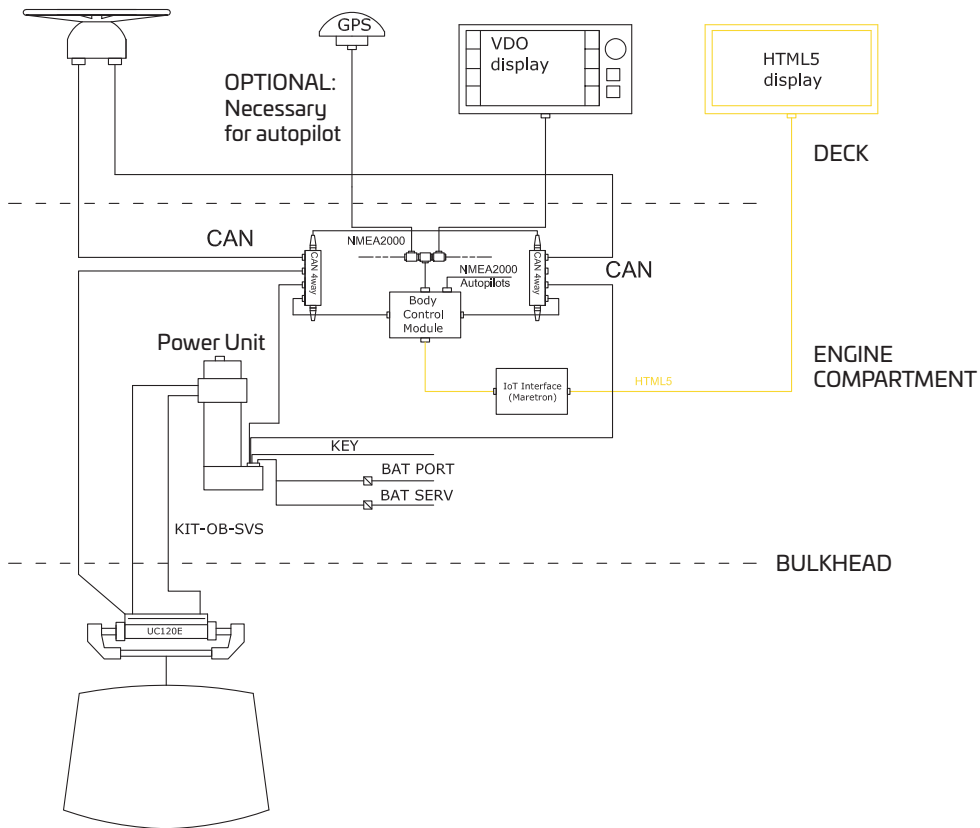
A98-120



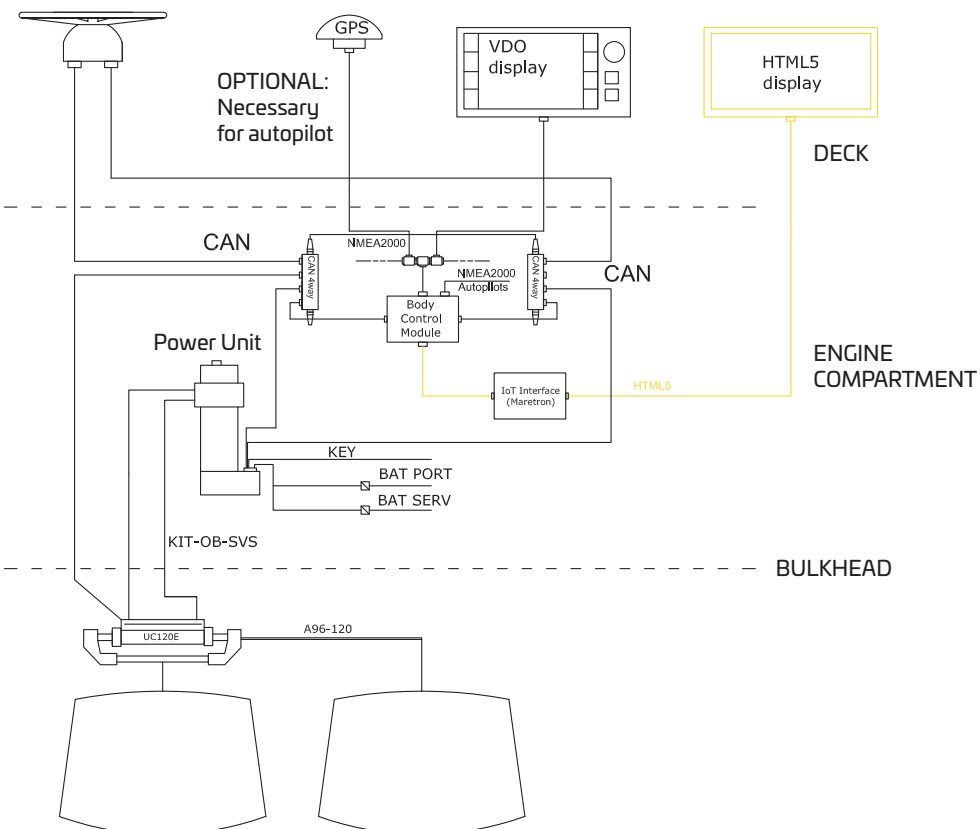


## INTEGRA EPS APPLICATION SYSTEMS

### SINGLE ENGINE SINGLE CYLINDER

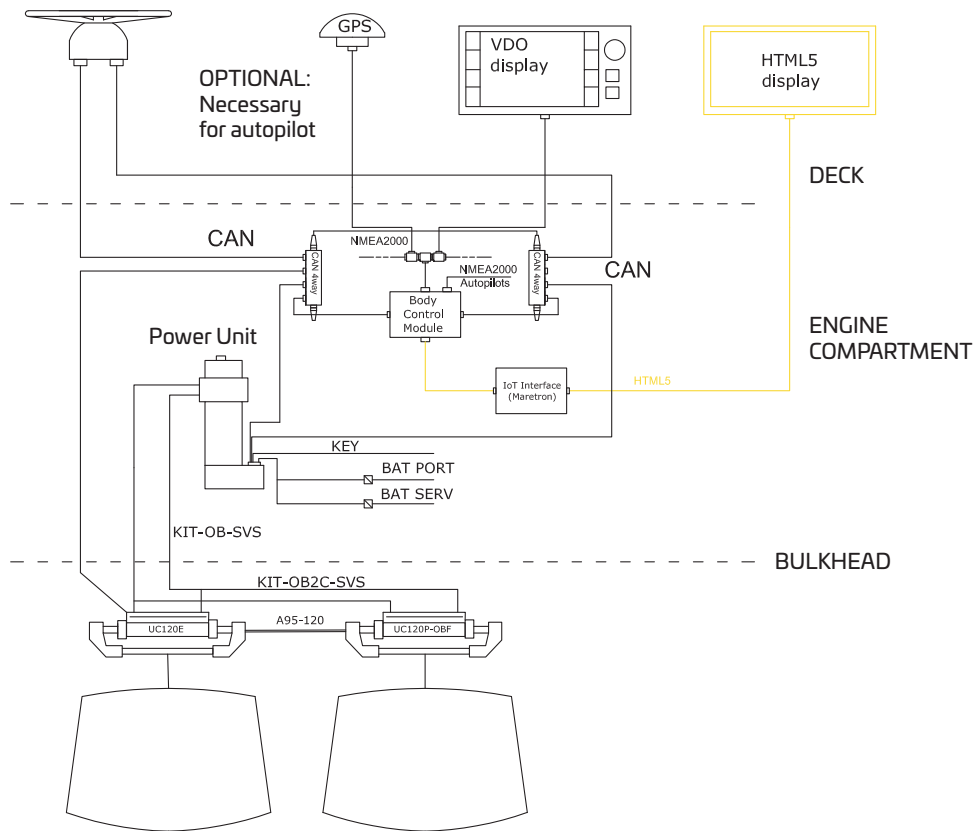


### DUAL ENGINE SINGLE CYLINDER

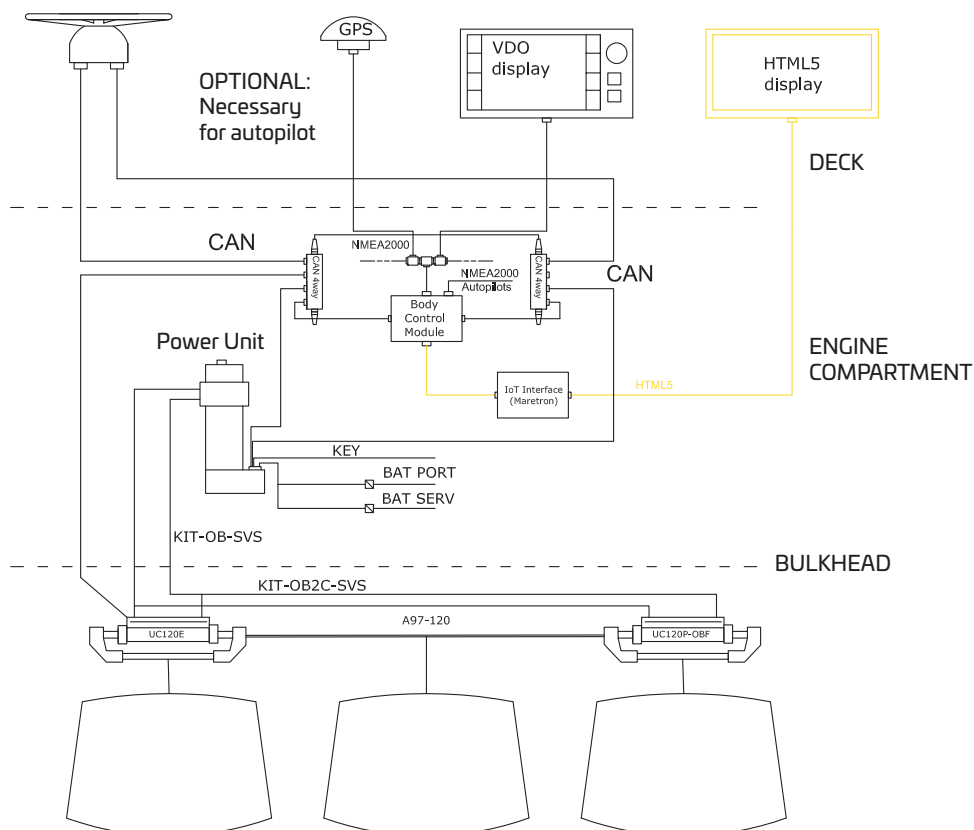




## DUAL ENGINE DUAL CYLINDER



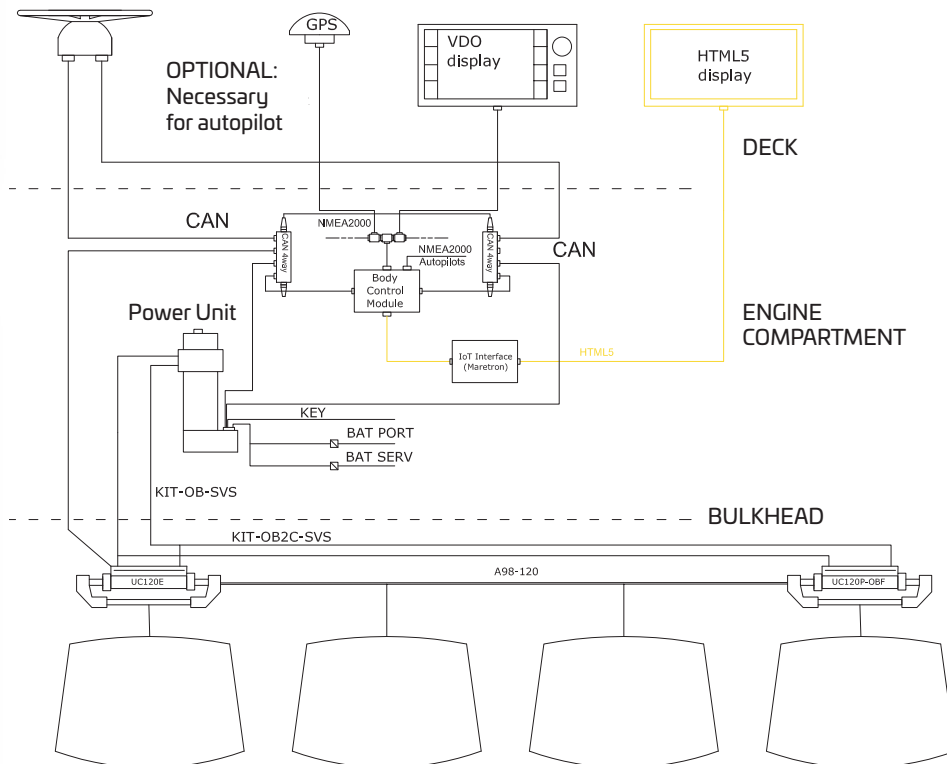
## TRIPLE ENGINE DUAL CYLINDER







## QUAD ENGINE DUAL CYLINDER



	SINGLE ENGINE SINGLE CYLINDER	DUAL ENGINE SINGLE CYLINDER	DUAL ENGINE DUAL CYLINDER	TRIPLE ENGINE DUAL CYLINDER	QUAD ENGINE DUAL CYLINDER
MAIN COMPONENTS	QUANTITY PART No.	QUANTITY PART No.	QUANTITY PART No.	QUANTITY PART No.	QUANTITY PART No.
UIH1 Electronic helm	1	1	1	1	1
X52 Tilt mechanism	1 39250 U	1 39250 U	1 39250 U	1 39250 U	1 39250 U
UID VDO display	1	1	1	1	1
BCM Body Control Module	1	1	1	1	1
UIP Power unit	1	1	1	1	1
UC120E Cylinder with sensor included	1 43322 S	1 43322 S	1 43322 S	1 43322 S	1 43322 S
CAN bus cables	8 length on request	8 length on request	8 length on request	8 length on request	8 length on request
KIT OB-SVS Hydraulic hoses	1 length on request	1 length on request	1 length on request	1 length on request	1 length on request
Steering Wheel	1 wheel selection	1 wheel selection	1 wheel selection	1 wheel selection	1 wheel selection
UC120P-OBF Port cylinder	-	-	1 43434 D	1 43434 D	1 43434 D
KIT OB-2C130-SVS Hydraulic hoses	-	-	1 length on request	1 length on request	1 length on request
A96-120 Tie bar	-	1	-	-	-
A95-120 Tie bar	-	-	1	-	-
A97-120 Tie bar	-	-	-	1	-
A98-120 Tie bar	-	-	-	-	1



## 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.

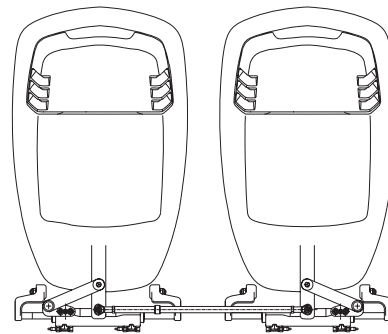
### A88 - 40128 E

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



A88



A88 application example

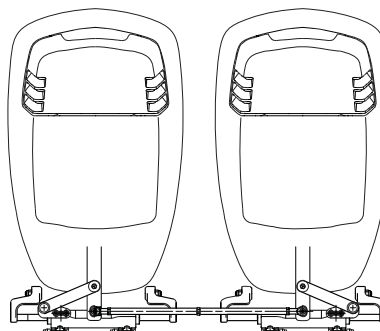
### A92/700 - 40892 V

### 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.

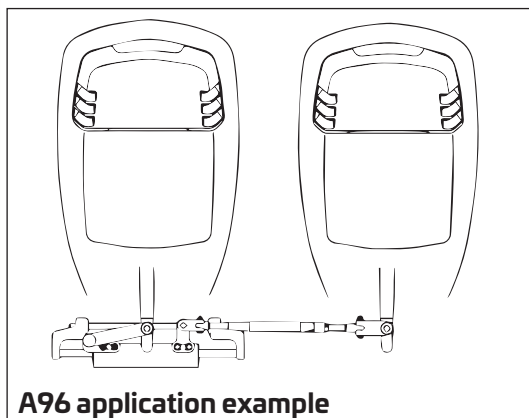
Should you need additional information, please do not hesitate to refer to our Technical Service.



**A96 TIE BAR****FOR TWIN OUTBOARD ENGINE/SINGLE UC128-OBF OR UC130-SVS CYLINDER**

- Suitable for applications with single UC128-OBF or UC130-SVS front mount cylinder
  - Allows to tilt the engines independently
  - Stainless steel components
  - Electropolished stainless steel ball joints
- 2 different lengths available:  
**A96-29** – 43496 C - from 26" (660,4 mm) to 29" (736.6 mm) twin engine centers  
**A96-34.5** – 43497 E - from 29" (736.6 mm) to 34.5" (873,76 mm) twin 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.



**A96 application example**

**A96 TIE BAR APPLICATIONS****WARNING**

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



**A96-29**



**UC128 + A96**



**UC130 + A96**

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



## A95 TIE BAR

### FOR TWIN OUTBOARD ENGINE/TWIN UC128-OBF OR UC130-SVS CYLINDERS

- 2 different lengths available::  
**A95-32** - 43409 E - from 26" (660,4 mm) to 32" (818,8 mm) twin engine centers  
**A95-37.5** - 43410 N - from 32" (818,8 mm) to 37.5" (952,5 mm) twin engine centers
- Suitable for applications with dual UC128-OBF or UC130-SVS front mount cylinder
- Allows to tilt the engines independently
- All stainless steel components
- Electropolished stainless steel ball joints

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

UC128 starboard cylinders:

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

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

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

UC128P port cylinders:

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

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

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

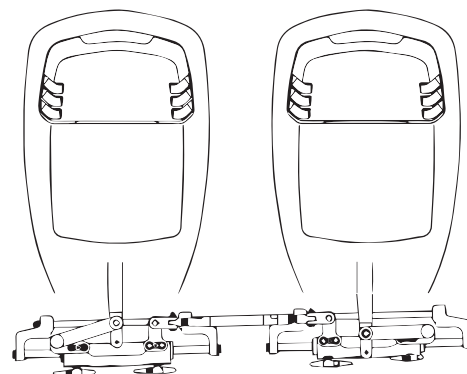


ENGINE CENTER DISTANCE:

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

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

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



A95 - 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.

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

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



UC128 + A95



UC130 + A95



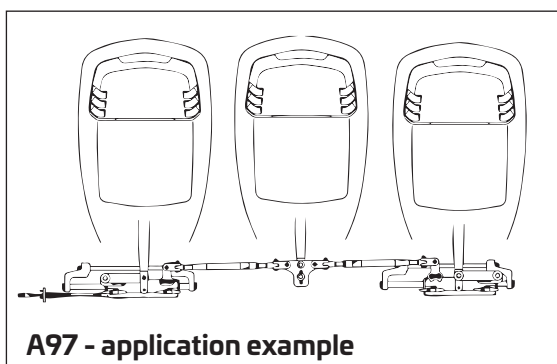


## A97 TIE BAR

### FOR TRIPLE OUTBOARD ENGINE/TWIN UC128-OBF OR UC130-SVS CYLINDERS

- Suitable for applications with triple outboard engines and dual cylinders UC128-OBF or UC130-SVS
- 2 different lengths available:  
**A97-30** - 43513 Z - from 26" (660,4 mm) to 30" (762 mm) twin engine centers  
**A97-35.5** - 43514 B - from 30" (762 mm) to 35.5" (901,7 mm) twin engine centers

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



**A97**



**UC130 + A97**

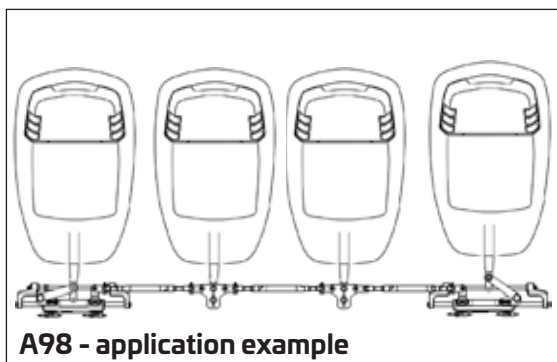
ENGINE	POWER
Mercury®	175/200/225 V6 Fourstroke 250/275/300 V8 Fourstroke OPTIMAX V6
Honda®	200/225/250 V6
Yamaha®	200/225/250/300 V6 150/175/200 L4
Evinrude®	V4 and V6 E-TEC
Suzuki®	200/225/250/300/350 V6/V8 150/175/200 L4

## A98 TIE BAR

### FOR QUAD OUTBOARD ENGINE/TWIN UC128-OBF OR UC130-SVS CYLINDERS

- Suitable for applications with quad outboard engines and dual cylinders UC128-OBF or UC130-SVS
- **A98**- 43542 G

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



**A98**



**UC128 + A98**

ENGINE	POWER
Mercury®	175/200/225 V6 Fourstroke 250/275/300 V8 Fourstroke OPTIMAX V6
Honda®	200/225/250 V6
Yamaha®	200/225/250/300 V6 150/175/200 L4
Evinrude®	V4 and V6 E-TEC
Suzuki®	200/225/250/300/350 V6/V8 150/175/200 L4

**new**

**new**



## TIE BARS FOR APPLICATIONS WITH FOUR CYLINDERS AND FOUR ENGINES

A pre-packed kit is available which includes:

- 4x pre-connected and purged cylinders
- 3x tie bars

**ATTENTION:** For more details, please contact our Technical Assistance



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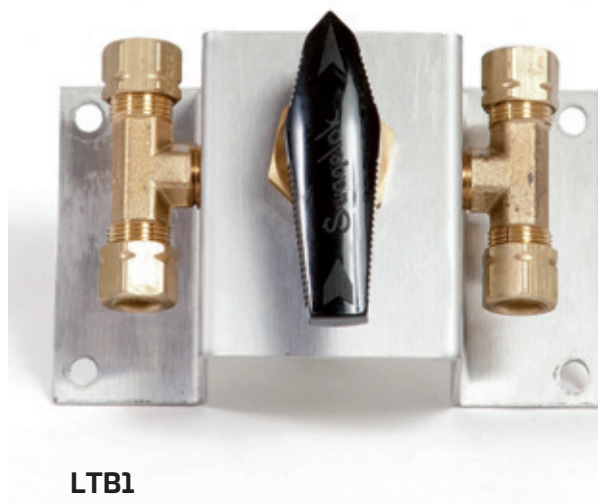
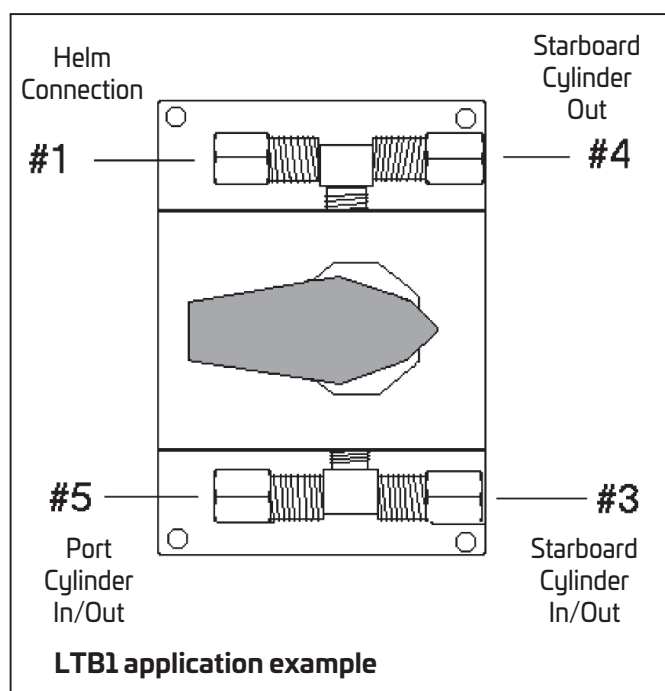
## HYDRAULIC TIE BARS

**LTB1** - 42085 Z

**LTB1N** - 43525 G

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

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



TIE BARS FOR OUTBOARD ENGINES





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# STERNDRIVE CYLINDERS



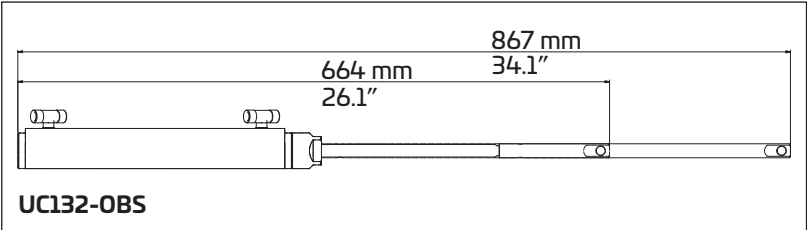
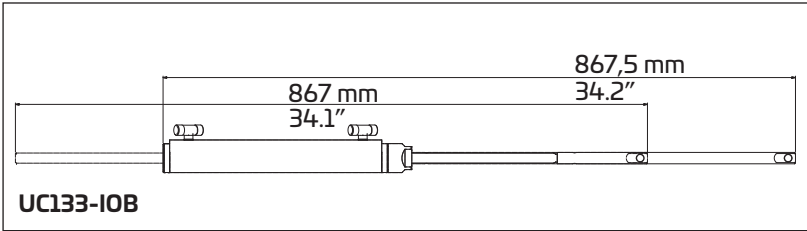
**UC133-IOB**  
Balanced cylinder: the number of turns lock to lock is equal port to starboard or vice-versa



**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 STEERING



## 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
YANMAR®	To date	ZT350	N/A		UC132-OBS	2

**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.

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

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

## ORDER GUIDE

**Turn lock to lock: Balanced 4.7 - Unbalanced 4.7/5.8**  
**Max rudder torque: 66 kgm - 5738 lbs. in**

Components	Model	Qty	For additional station add: 1 UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB hose Kit, extra OL 150, 1 steering wheel
Helm pump	UP28	1	
Cylinder	see application	1	
Hose kit	KIT OB	1	
Oil	OL 150	3	
Steering wheel	(Wheel selection)	1	

**Turn lock to lock: Balanced 4 - Unbalanced 4/5**  
**Max rudder torque: 66 kgm - 5738 lbs. in**

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

**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.



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## 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

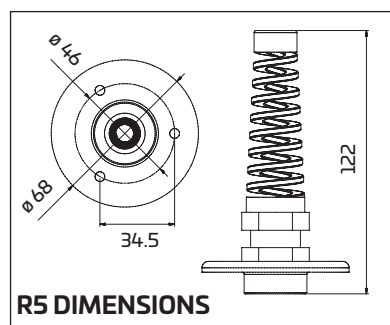
**R5SS** - 42419 C Bulkhead hose kit with stainless steel flange



R5



R5SS



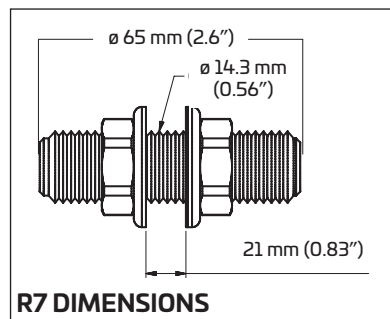
### R7 - 3/4" BULKHEAD FITTING KIT

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



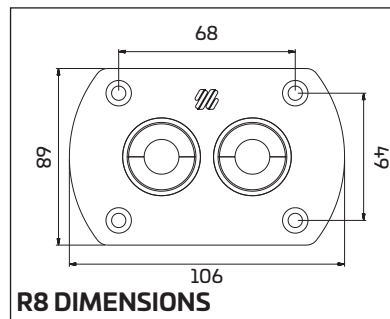
R8B



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



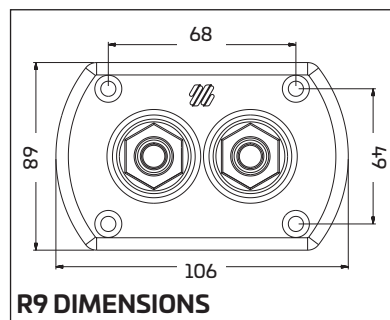
R9B



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**



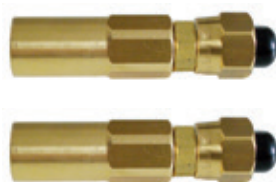


## HOSES, FITTINGS, BEND RESTRICTORS FOR FLEXIBILITY OF THE INSTALLATIONS AND INTEGRATION WITH AUTOPILOT

<b>TU1/4</b>	1/4" tubing for outboard engines applications with Gotech™ only.
<b>TU5/16</b>	5/16" nylon tubing recommended for outboard engines applications and fittings OB-F5/16
<b>OB-F1/4: 42656 T</b>	Two reusable fittings featuring turning nut for use with 1/4" hydraulic hose for Gotech™ only.
<b>OB-F5/16: 42670 L</b>	Two reusable fittings featuring turning nut for use with 5/16" hydraulic hose and connection for 3/8" fitting
<b>KIT 2M-5/16: 41822 C</b>	Kit with 2 bend restrictors 5/16"
<b>TU95: 70701 D</b>	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

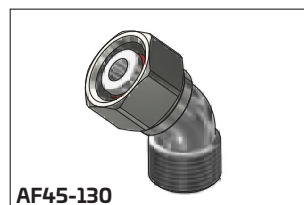
9/16" (14.3 mm) straight fitting to 1/4 NPT



61BCA



61CA



AF45-130



AF45



AF90



SF38



SF12



EF38



TF38



VF38 - VFN38



VFN038



QCFN



QCFN94



SF916



EXT-F916



SF916-14







## 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



BubbleBuster™



### 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 UC95) with old bleeders (not fast connect)

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





**ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS**

**101**



## 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.

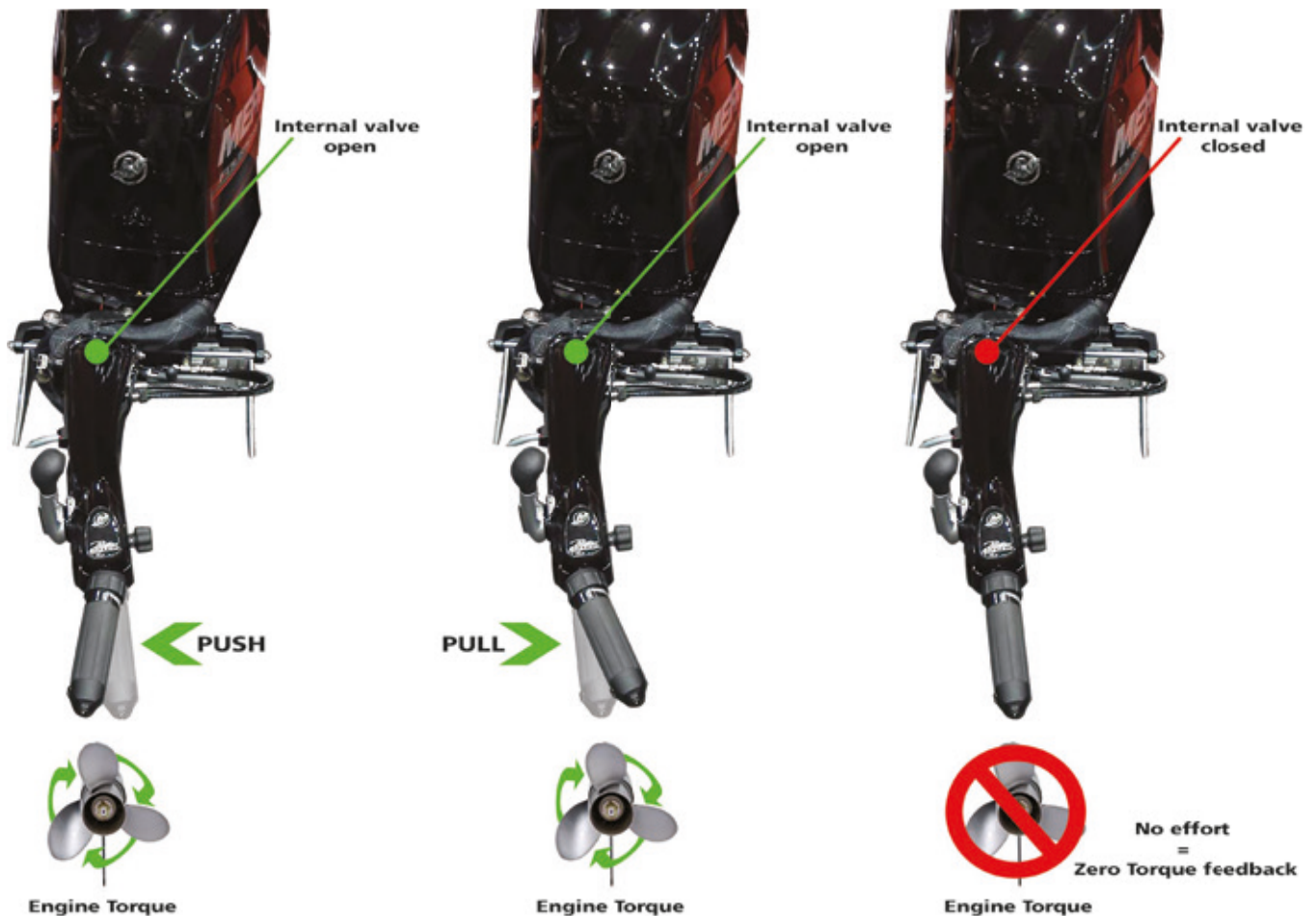
### HOW THE ZTF TILLER SYSTEM WORKS:

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

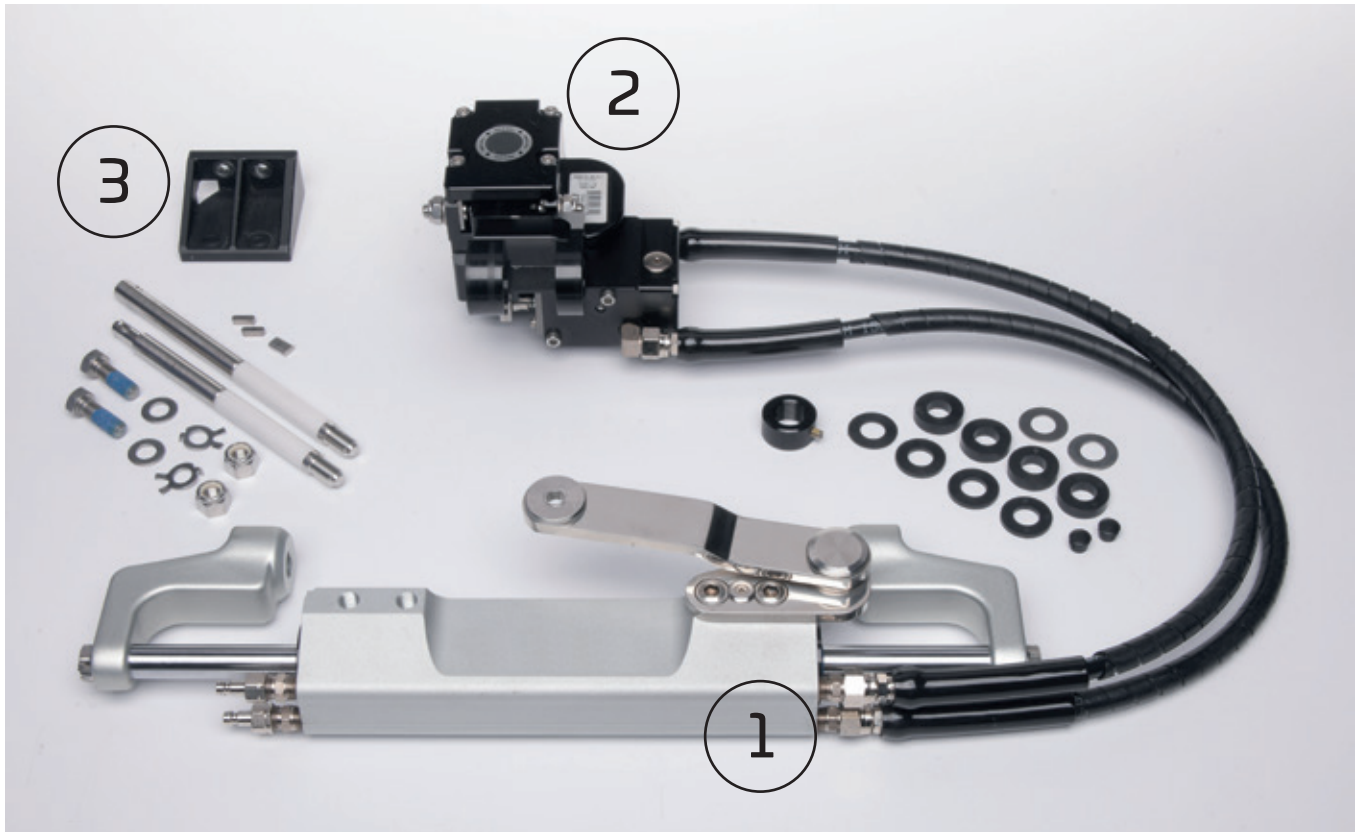
Pull on the end of the tiller handle and the valve opens allowing you to steer.

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.







- 1- UC130-ZTF + hoses (pre-filled with oil)  
2- Valve assembly including tiller arm connection bracket  
3 -Example of engine connection bracket
- 2 Ultraflex® push-pull cables for throttle and shift

## MERCURY® ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS

### MERCURY® TILLER 40-115

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



### MODELS

ZTF Tiller M2 - 43628 T

#### Application:

- For use with 40 hp to 60 hp EFI, from 2006 to date
- For use with 75 hp to 115 hp EFI 4 stroke, from 2014 to date

**Note:** For use with 115 hp Big Tiller® please contact our Technical Service



## **YAMAHA® ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS**

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



### **MODELS**

**ZTF Tiller Y2** - 43626 N - For use with Yamaha® 150 hp - 175 hp - 200 hp

**ZTF Tiller Y1** - 43625 L - For use with Yamaha® 90 hp - 115 hp - 130 hp - 2015 to date

## **SUZUKI® ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS**

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



### **MODELS**

**ZTF Tiller S2** - 43627 R - For use with Suzuki® DF150A - DF175A - DF200A



# INBOARD STEERING SYSTEMS



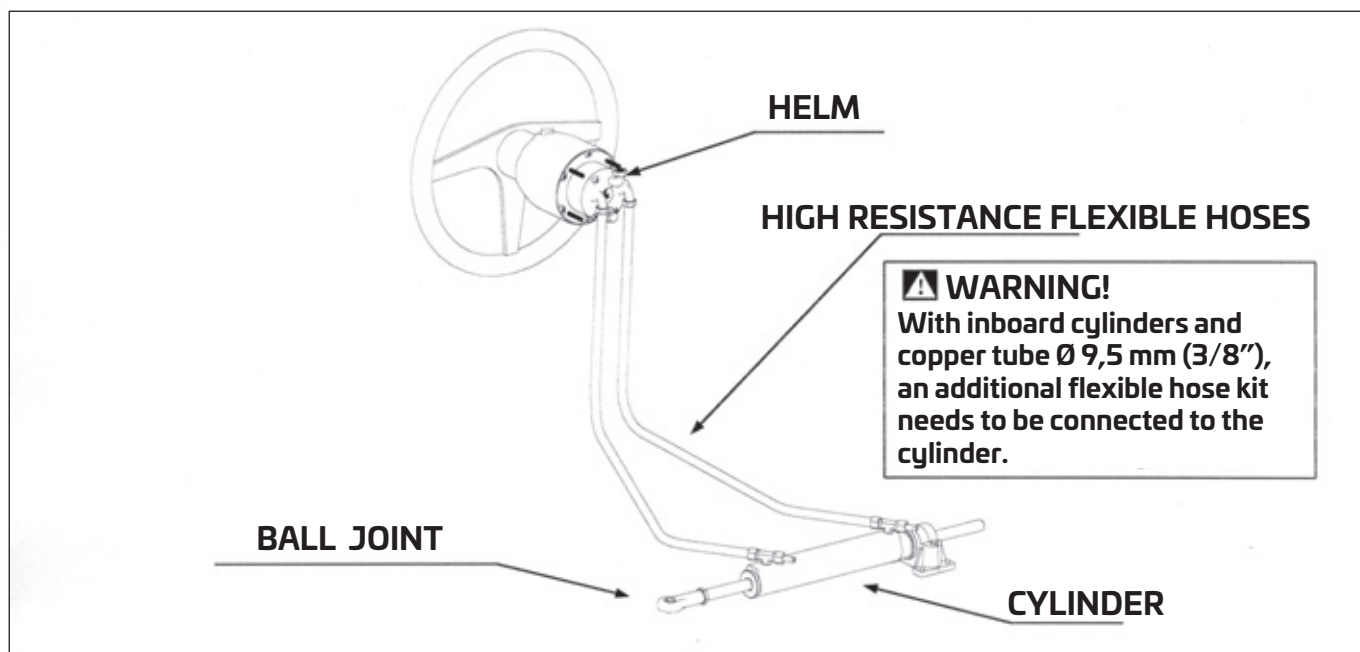
HYDRAULIC STEERING SYSTEMS

105

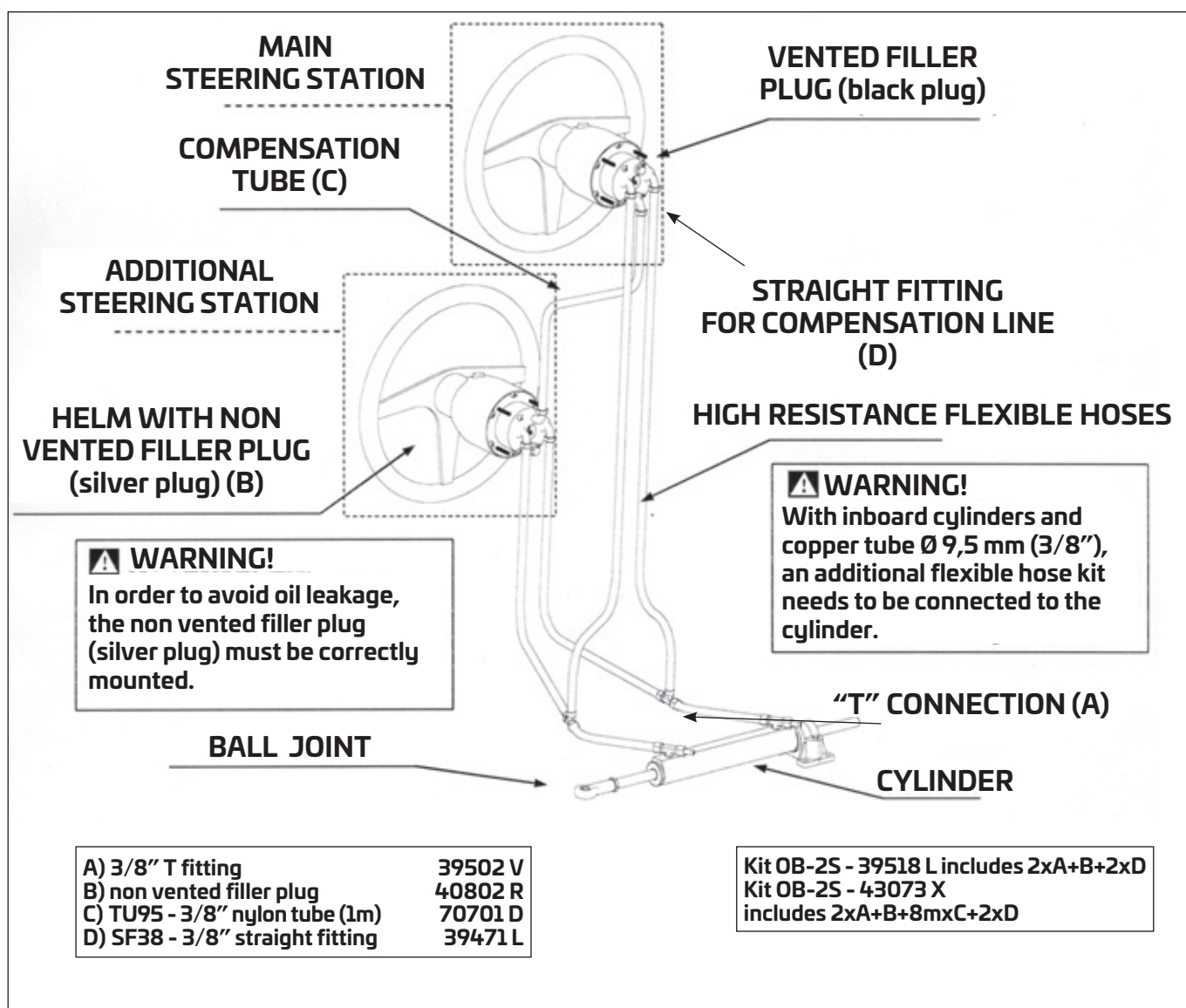




## SINGLE STEERING STATION INSTALLATION DIAGRAM




## DUAL STEERING STATION INSTALLATION DIAGRAM





## INBOARD STEERING SYSTEM APPLICATION GUIDE

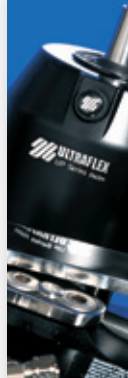
BOAT LENGTH	UP to 10 m (33')	UP to 10 m (33')	UP to 10 m (33')	10 ÷ 12 m (33' ÷ 40')	10 ÷ 12 m (33' ÷ 40')	12 ÷ 14 m (40' ÷ 46')	14 ÷ 16 m (46' ÷ 53')	16 ÷ 18 m (53' ÷ 59')	18 ÷ 20 m (59' ÷ 66')
HELM PUMP	UC69-I	UC116-I	UC168-I	UC215-I	UC293-I	UC339-I	UC378-I	UC442-I	UC530-I
UP18	3,8 N - 3/8"								
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-IR				N/A	N/A	8,6 N - R7	9,6 L - R7		
UP45					6,5 M - 3/8"	N/A	N/A		
UP45-IR						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 stainless steel shaft
- 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



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



UP20F + X74

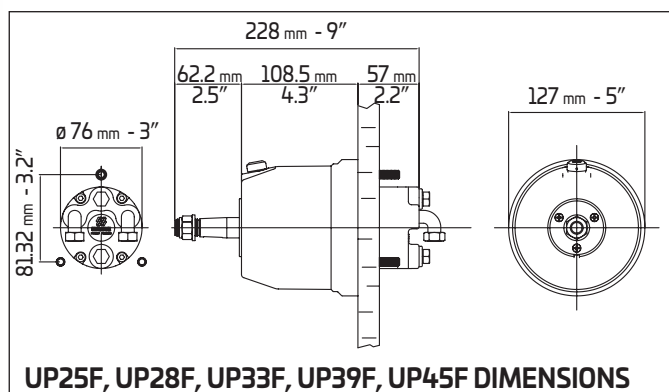


UP25F/28F/33F/39F/45F + X64

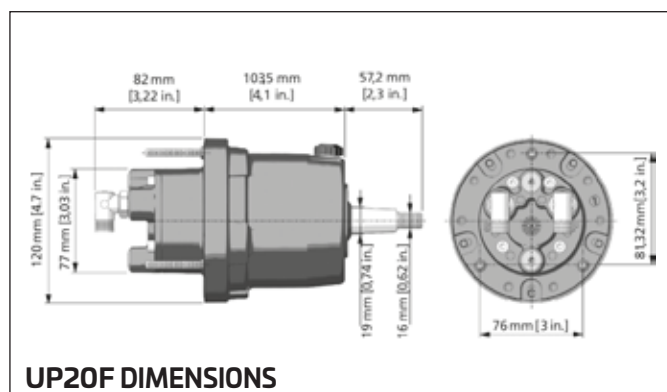


UP25F/28F/33F/39F/45F + X57

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



UP25F, UP28F, UP33F, UP39F, UP45F DIMENSIONS



UP20F DIMENSIONS





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

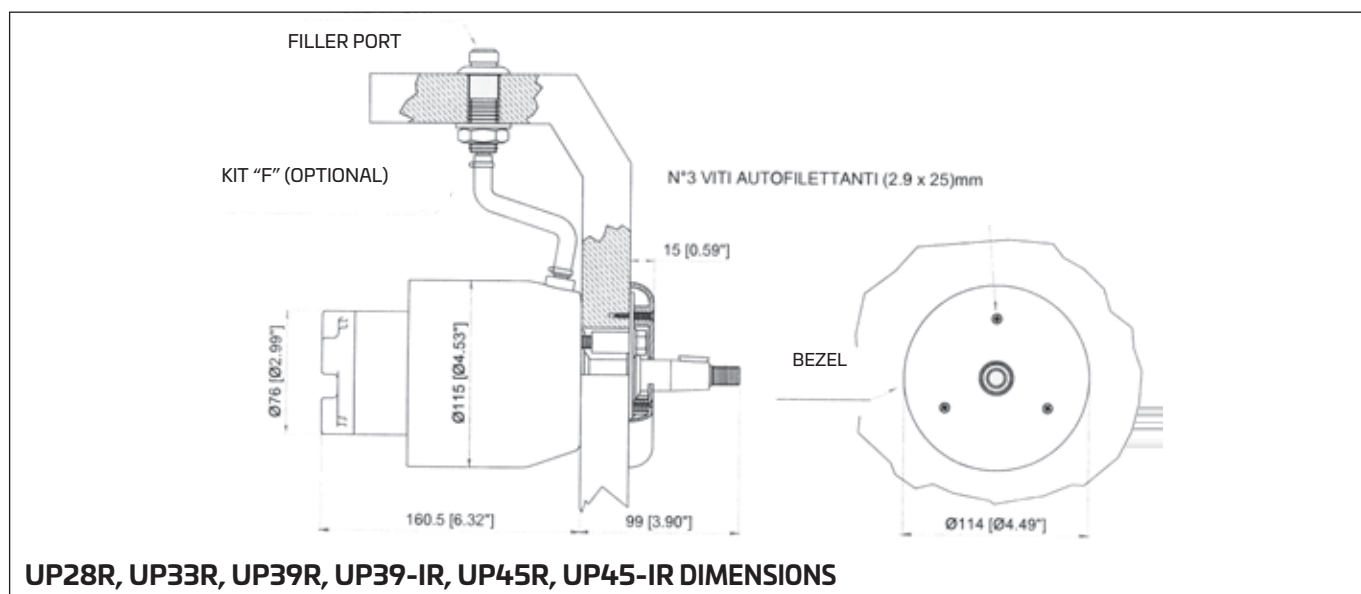


KIT F



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

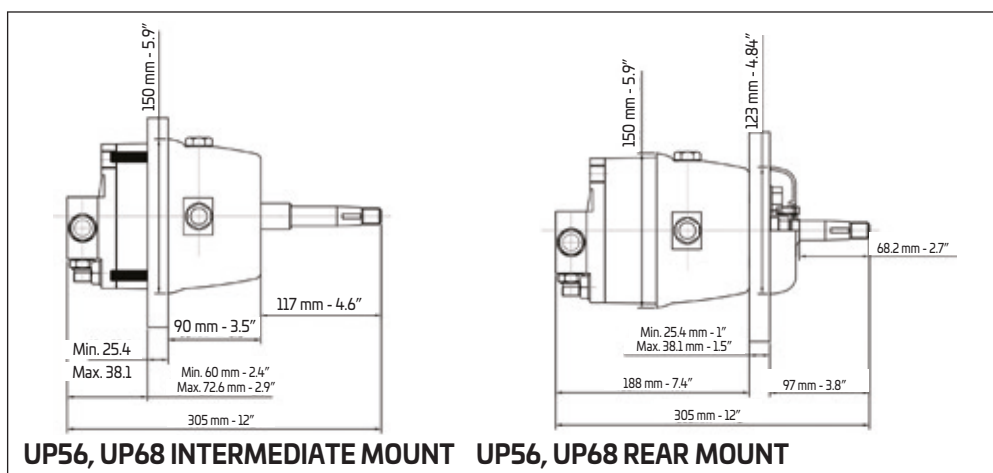
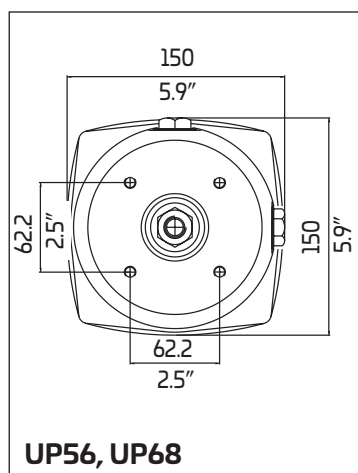
MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP56	40808 D	Rear (KR56) - Intermediate (KIM56)	56 cc - 3.4 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	7,5 kg - 16,5 lbs
UP68	42561 F	Rear (KR56) - Intermediate (KIM56)	68 cc - 4.15 cu.in	7	70 Bar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

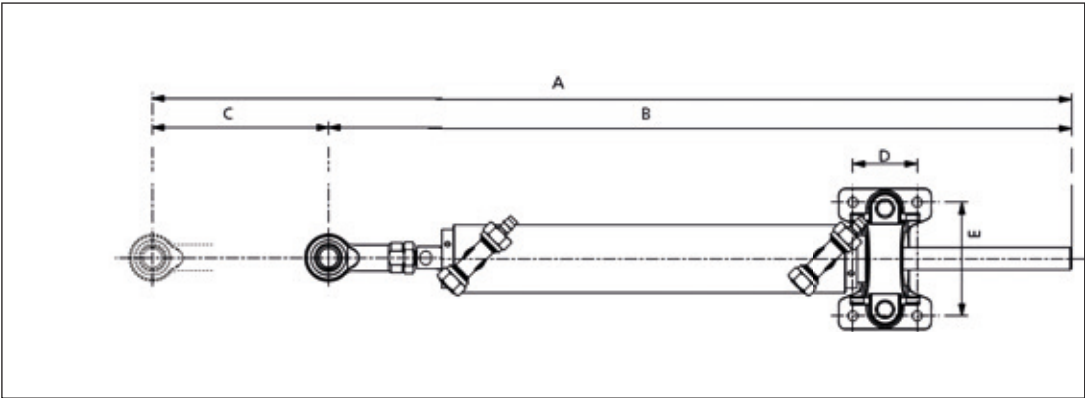


UC69-I - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



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"



111





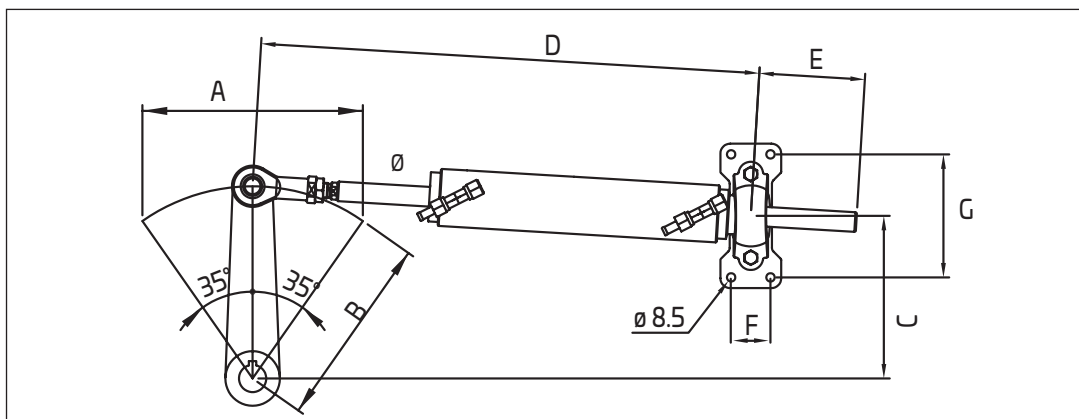
## INBOARD CYLINDERS



### UC293-I; UC378-I

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

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





UC339-I; UC442-I

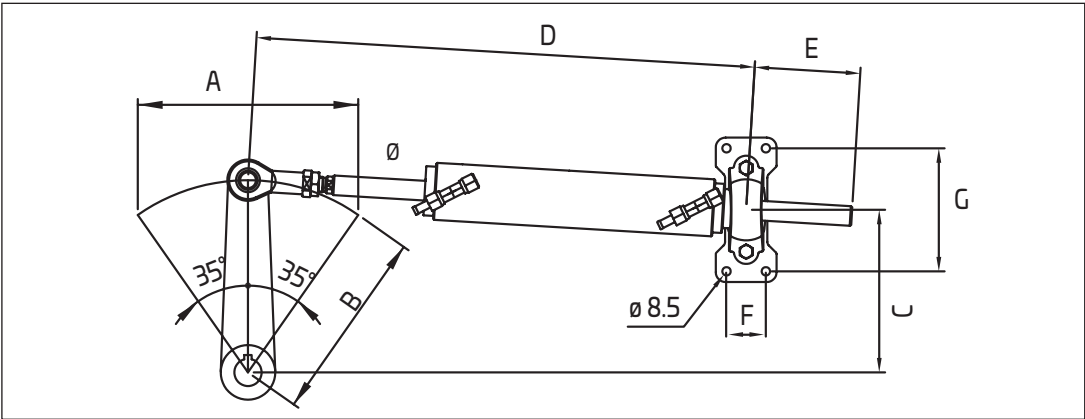
Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



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**

Fitting kit for a second steering station or for an autopilot installation 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.



BP 95



BP 56



KIT OB/M



OB-F5/16



FR7



RV70



KIT OB-2S



KIT 95 - KIT120-I



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 R	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
MD32-F - 42098 J	UC116 - 39431 Y	3,6	52 kgm 5043 lbs. in	2 kit OB-SVS (length selection)	1 steering wheel
MD32-F - 42098 J	UC168 - 39432 A	5,2	87 kgm 7565 lbs. in		
MD32-F - 42098 J	UC215 - 39433 C	6,7	111 kgm 9642 lbs. in		
MD40-F - 42102 W	UC215 - 39433 C	5,3	111 kgm 9642 lbs. in		
MD40-F - 42102 W	UC293 - 42246 L	7,3	146,5 kgm 12816 lbs. in		

### DUAL CYLINDER APPLICATION

MD32-F - 42098 J	2 UC116 - 39431 Y	7,2	52 kgm 5043 lbs. in	2 kit OB-SVS (length selection)	1 steering wheel
MD40-F - 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 MD32-F or MD40-F MasterDrive™ kit with MD32-T or MD40-T kit + tilt mechanism X66 (optional).

Wheel selection: please refer to the appropriate section.

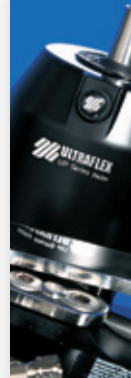
#### For a second station add:

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

#### NOTE:

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

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





## PACKAGED INBOARD STEERING SYSTEMS

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

GOTECH-I package contains:

<b>UP18</b>	Intermediate helm pump
<b>UC69-I</b>	Inboard cylinder
<b>OL 150</b>	Hydraulic oil - 2 litres
<b>KIT OB-GT/M-60</b>	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:

<b>UP20 F</b>	Front mount helm pump.
<b>UC69-I</b>	Inboard cylinder.
<b>OL 150</b>	Hydraulic oil - 2 litres.
<b>KIT OB-60</b>	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 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")



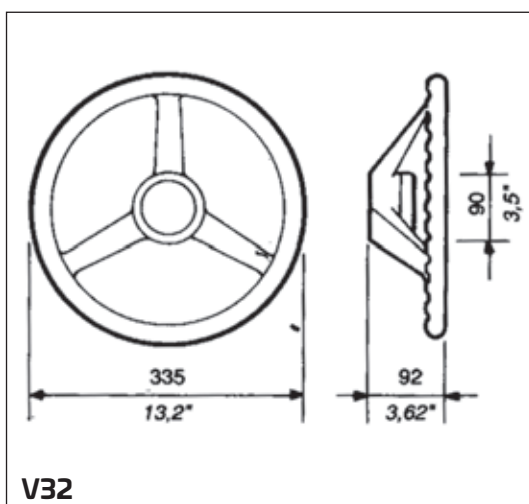
V33B Ø 342 mm (13.4")



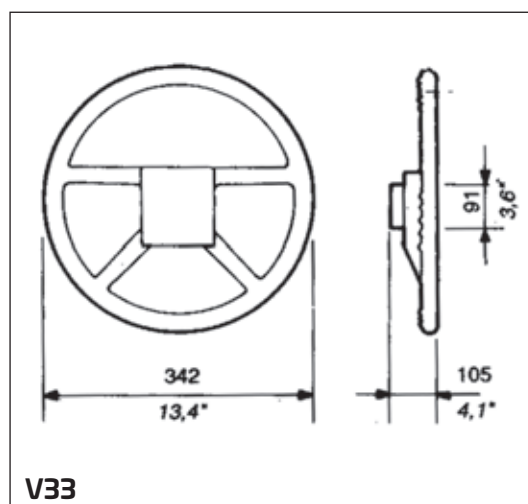
V33W Ø 342 mm (13.4")



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 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")



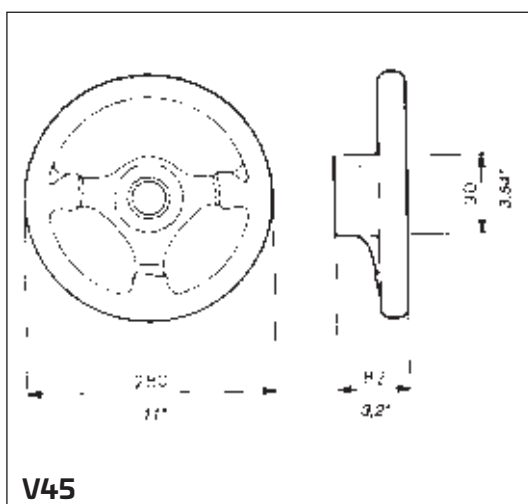
V38B Black grip - Black spokes  
Ø 350 mm (13.8")



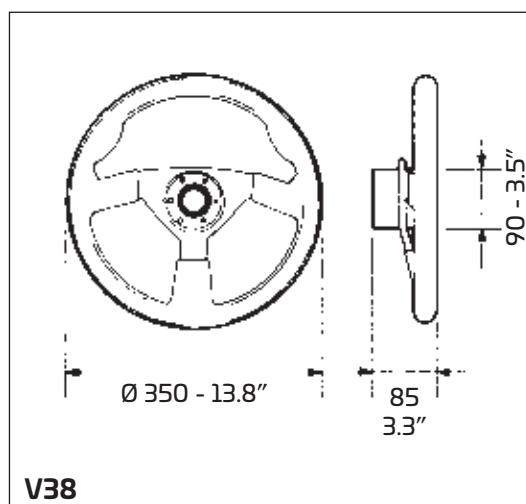
V38W White grip - White spokes  
Ø 350 mm (13.8")



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



V45



V38



## 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 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")



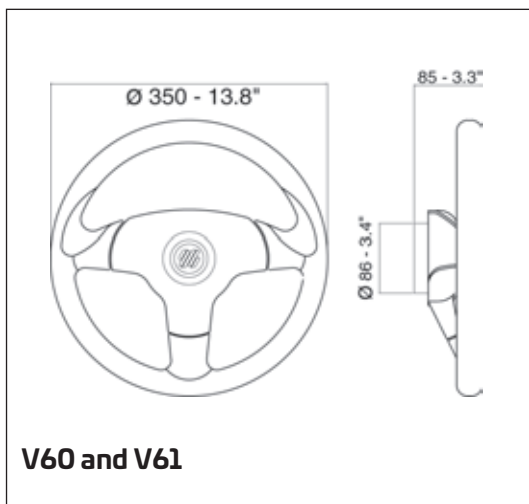
**V60W White grip - White spokes**  
Ø 350 mm (13.8")



**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.





## 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 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 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





## **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
- Meet with the EN 28848 and ABYC P22 standards
- **X63** - 40119 D hub with button (to be ordered separately)

### **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")



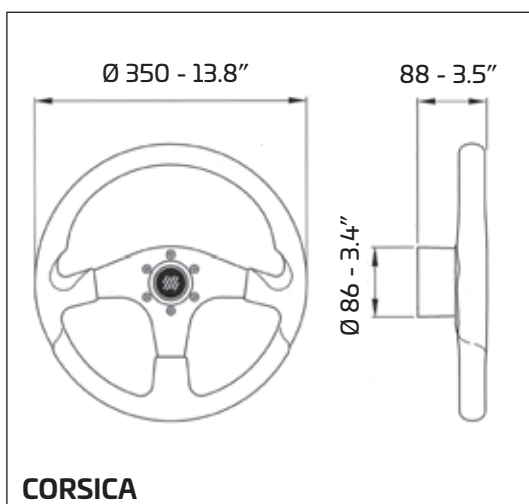
**CORSICA G/S Grey grip - Silver spokes**  
Ø 350 mm (13.8")



**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")



CORSICA



X63



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STEERING WHEELS





## POLYURETHANE 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
- Meet with the EN 28848 and ABYC P22 standards
- **X63** - 40119 D hub with button (to be ordered separately)

**NISIDA B/B** - 61812 M  
**NISIDA B/S** - 61813 P  
**PIANOSA B/S** - 22322 Y  
**PIANOSA B/B** - 22960 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")**

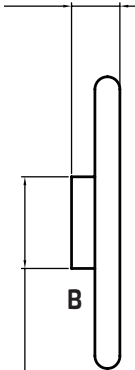


**PIANOSA B/SS Black grip - Stainless**  
**steel spokes - Ø 350 mm (13.8")**



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





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





## POLYURETHANE 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
- Meet with the EN 28848 and ABYC P22 standards
- **X63** - 40119 D hub with button (to be ordered separately)

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

### WHEELS WITH INSERTS

SANTORINI B/S - 65995 W

### REDUCED DIMENSION WHEELS

MYKONOS B/S - 68365 B  
PANTELLERIA B/S - 22232 X  
GIANNUTRI PU B/SS - 23477 P  
GIANNUTRI PU W/SS - 23476 H



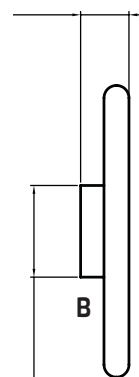
**CAPRAIA B/S Black grip**  
Silver spokes - Ø 350 mm (13.8")



**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 (")
<b>CAPRAIA</b>	84 (3.3)
<b>SANTORINI</b>	91 (3.58)
<b>PANTELLERIA</b>	90 (3.54)
<b>MYKONOS</b>	83 (3.27)
<b>GIANNUTRI</b>	69 (2.7)



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



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



**GIANNUTRI PU B/SS Black grip**  
Stainless steel spokes - Ø 280 mm (11")



**GIANNUTRI PU W/SS White grip**  
Stainless steel spokes - Ø 280 mm (11")





# **POLYURETHANE 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
- Meet with the EN 28848 and ABYC P22 standards
- **X63** - 40119 D hub with button (to be ordered separately)

**DOMINO B/B/CH** - 23897 J  
**DOMINO B/S** - 23895 E  
**DOMINO B/B** - 23896 G  
**TAVOLARA B/B/CH** - 23916 K  
**TAVOLARA B/S** - 65277 N

## **WHEELS WITH INSERTS**

**VIVARA CH/P** - 64643 G  
**BUDELLI CH/P** - 65294 N



**DOMINO B/B/CH** Black grip, Black spokes, Chrome cover - Ø 350 mm (13.8")



**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/B/CH** Black grip, Black spokes, Chrome cover - 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")

	MOD.	B mm (")
	DOMINO	88 (3.46)
	TAVOLARA	89 (3.5)
	VIVARA	88 (3.46)
	BUDELLI	94 (3.7)



## **POLYURETHANE 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
- Meet with the EN 28848 and ABYC P22 standards
- **X63** - 40119 D hub with button (to be ordered separately)



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



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



**USTICA B/B/CH Black grip, Black spokes,  
Chrome cover - Ø 330 mm (13.0")**



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

### **REDUCED DIMENSION WHEELS**

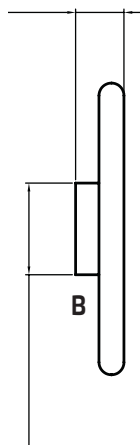
USTICA B/S - 20926 X  
USTICA B/B - 21622 F  
USTICA B/B/CH - 23589 X

### **REDUCED DIMENSIONS WHEEL WITH INSERTS**

LEVANZO B/S/CH - 20927 Z

### **SPEED KNOB FOR USTICA & LEVANZO WHEELS**

KNOB/UST - 21721 H



MOD.	B mm (")
USTICA	90 (3.54)
LEVANZO	90 (3.54)



**X63**





# **POLYURETHANE 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
- Meet with the EN 28848 and ABYC P22 standards
- **X63** - 40119 D hub with button (to be ordered separately)
- **Floating cap also available**

**MONTECRISTO B/B/CH**  
- 20351 V  
**MONTECRISTO B/SS/CH**  
- 20470 D  
**MONTECRISTO B/S/S**  
- 20350 T

**MONTECRISTO  
WITH INSERTS**  
**MONTECRISTO B/B/  
ringP/insCH** - 23590 F



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



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

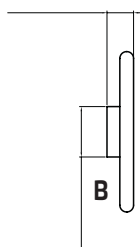


**MONTECRISTO B/S/S**  
Silver spokes - Ø 350 mm (13.8")



**MONTECRISTO B/B/ringP/insCH** Black spokes,  
Chrome inserts- Ø 350 mm (13.8")

**new**



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



**X63**





## 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
- Meet with the EN 28848 and ABYC P22 standards
- **X63** - 40119 D hub with button (to be ordered separately)
- *Floating cap available for Razzoli steering wheel*

LAMPEDUSA - 62684 L  
RAZZOLI - 23612 N

## REDUCED DIMENSION WHEEL

CAPRI - 62465 Y



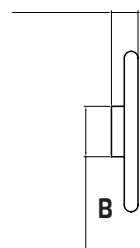
LAMPEDUSA Ø 360 mm (14.1")



RAZZOLI Ø 350 mm (13.8")



CAPRI Ø 320 mm (12.6")



MOD.	B mm (")
LAMPEDUSA	43 (1.69)
RAZZOLI	85,5 (3.37)
CAPRI	87 (3.43)





# **NON MAGNETIC STAINLESS STEEL 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 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")



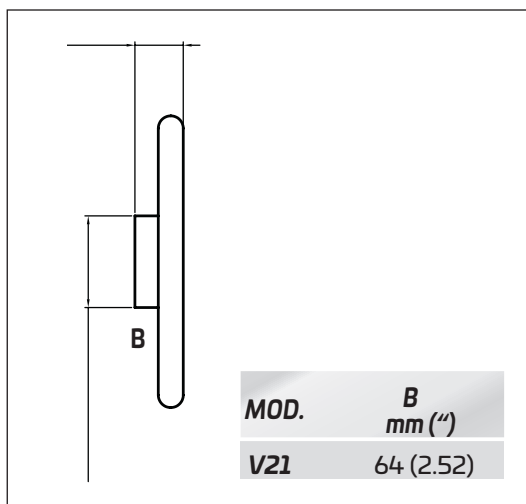
V21W Ø 350 mm (13.8")



V21TK Ø 350 mm (13.8")



**KNOB21**  
Speed knob  
for V21 wheels





# **NON MAGNETIC STAINLESS STEEL WHEELS**

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 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**

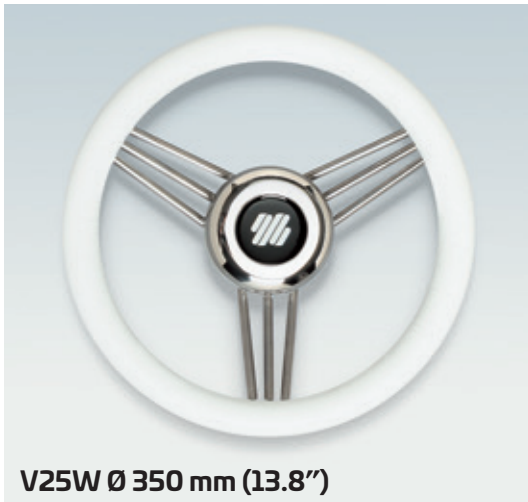
V25M - 40644 Z

## **STAINLESS STEEL GRIP**

V25SS - 40643 X



V25B Ø 350 mm (13.8")



V25W Ø 350 mm (13.8")



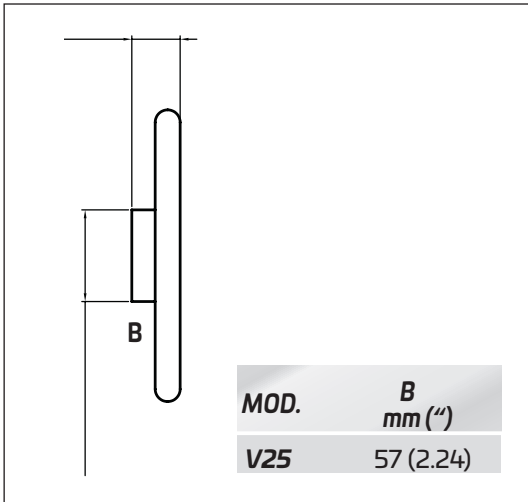
V25G Ø 350 mm (13.8")



V25M Ø 350 mm (13.8")



V25SS Ø 350 mm (13.8")





## NON MAGNETIC STAINLESS STEEL WHEELS

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 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")



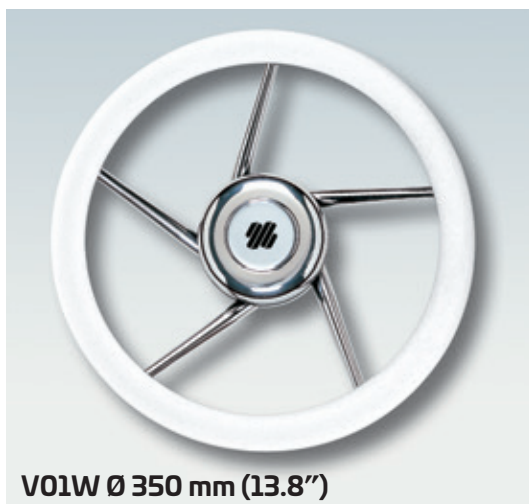
V20W Ø 350 mm (13.8")



V20G Ø 350 mm (13.8")



V01B Ø 350 mm (13.8")



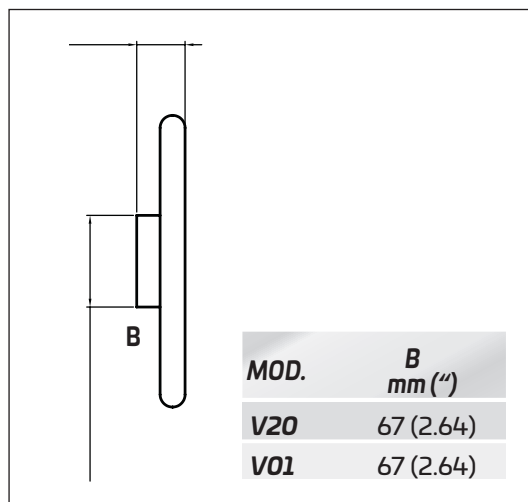
V01W Ø 350 mm (13.8")



V01G Ø 350 mm (13.8")



V01SS Ø 350 mm (13.8")





# **NON MAGNETIC STAINLESS STEEL WHEELS**

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 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")



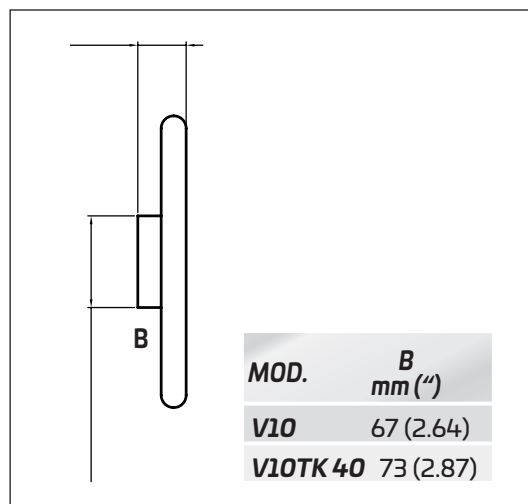
V10G Ø 350 mm (13.8")



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**

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 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")



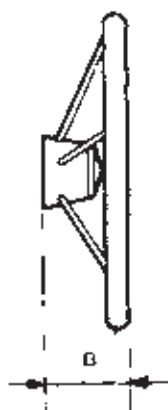
V52W Ø 320 mm (12.6")



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 included
- Meet with the EN 28848 and ABYC P22 standards

## POLYURETHANE GRIP

V56 B/CH - 21351 A  
V56 W/CH - 21406 Z  
V56 G/CH - 21407 B  
V56 SB/CH - 21408 D  
V56 B/R - 21524 F  
V56 W/W - 21596 H

KNOB V56 - 23600 F



V56 B/CH Ø 350 mm (13.8")



V56 W/CH Ø 350 mm (13.8")



V56 G/CH Ø 350 mm (13.8")



V56 SB/CH Ø 350 mm (13.8")



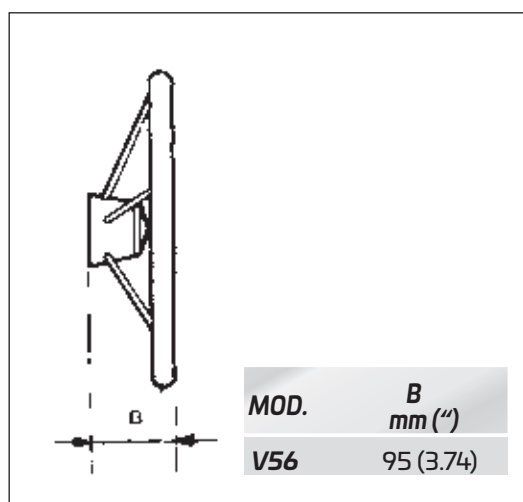
V56 B/R Ø 350 mm (13.8")



V56 W/W Ø 350 mm (13.8")



KNOB V56





# **NON MAGNETIC STAINLESS STEEL 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 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")



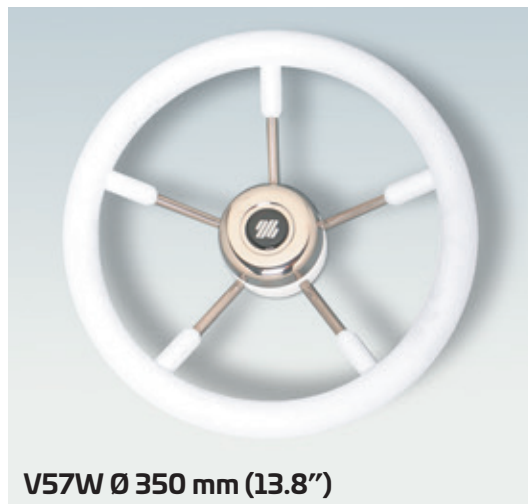
V70W Ø 350 mm (13.8")



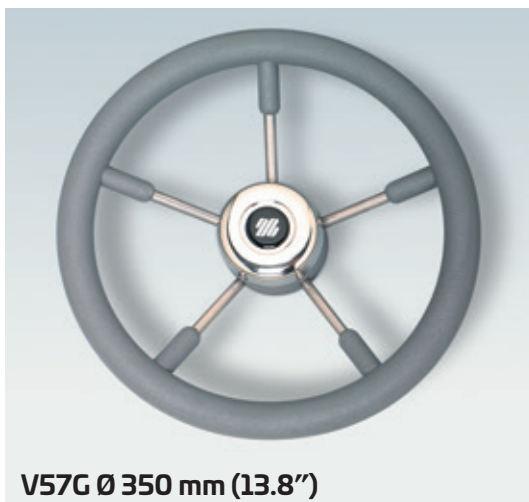
V70G Ø 350 mm (13.8")



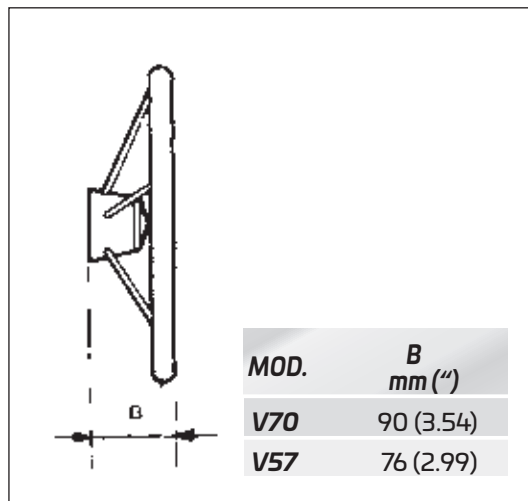
V57B Ø 350 mm (13.8")



V57W Ø 350 mm (13.8")



V57G Ø 350 mm (13.8")





# **NON MAGNETIC STAINLESS STEEL WHEELS**

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

## **POLYURETHANE GRIP**

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

V24COMMANDO - 42370 Y



V24B Ø 350 mm (13.8")



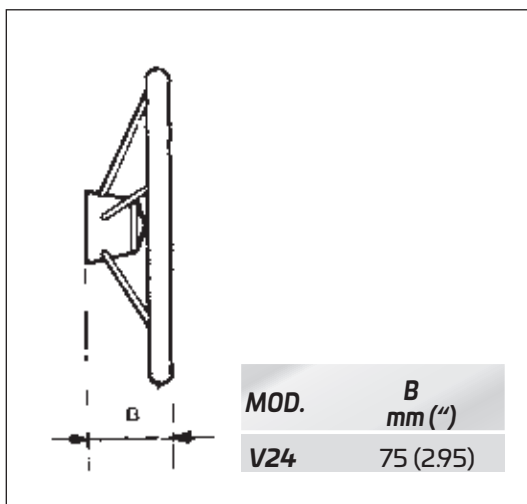
V24W Ø 350 mm (13.8")



V24G Ø 350 mm (13.8")



V24COMMANDO Ø 350 mm (13.8")







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## **NON MAGNETIC STAINLESS STEEL WHEELS**

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- Standard 3/4" taper
- Hub 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")



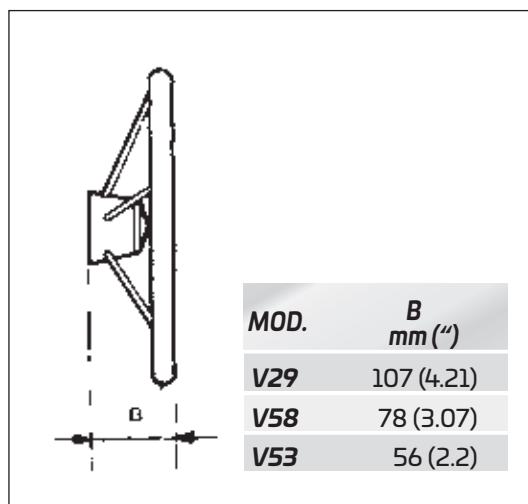
V29G Ø 350 mm (13.8")



V58G Ø 400 mm (15.7")



V53B Ø 450 mm (17.7")



STEERING WHEELS



# NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub 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")



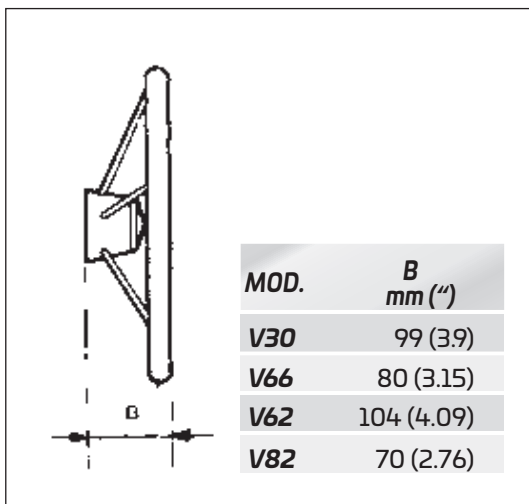
V66 Ø 350 mm (13.8")



V62 Ø 350 mm (13.8")



V82 Ø 350 mm (13.8")





## NON MAGNETIC STAINLESS STEEL 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 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")

MOD.	B mm (")
V67	100 (3.94)
V74	63 (2.48)
V77	63 (2.48)
V63	108 (4.25)
V85	69 (2.72)



**KNOB67**  
Speed knob for  
V63 and V67 wheels





## NON MAGNETIC STAINLESS STEEL WHEELS

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- Standard 3/4" taper
- Hub 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



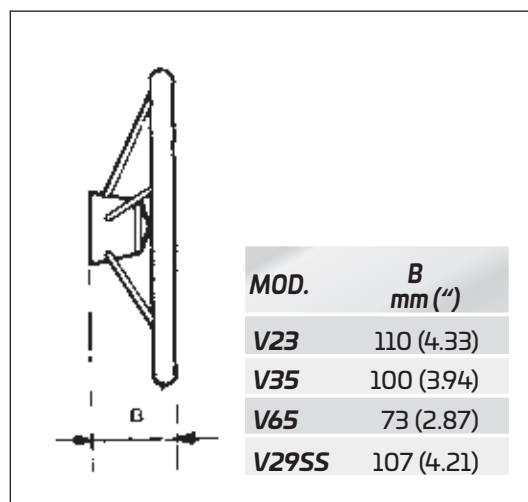
V35 Ø 345 mm (13.6")  
V23 Ø 400 mm (15.7")



V65 Ø 370 mm (14.6")



V29SS Ø 350 mm (13.8")



## CAPTAIN'S WHEELS

V89 - 40721 R

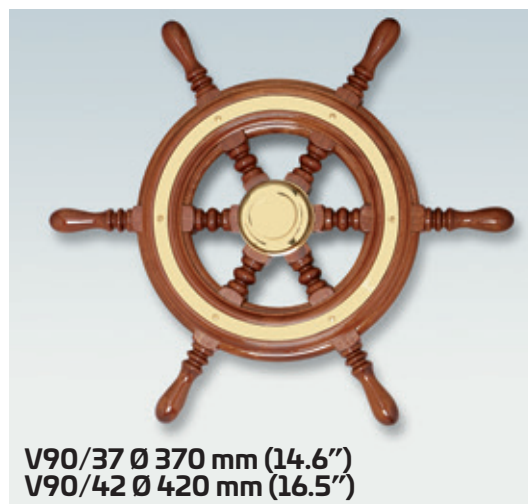
V90/37 - 39931 V  
V90/42 - 39932 X

V93 - 40645 B

KNOB93 - 40647 F



V89 Ø 500 mm (19.7")



V90/37 Ø 370 mm (14.6")  
V90/42 Ø 420 mm (16.5")



V93 Ø 460 mm (18.1")



KNOB93  
Folding knob  
for V93 wheels



# **NON MAGNETIC STEERING WHEELS**

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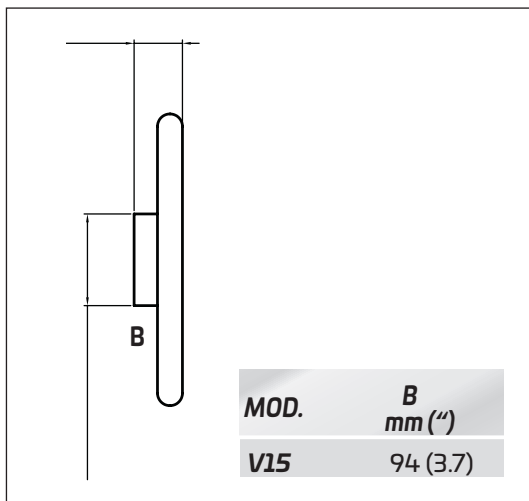
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- *Floating cap also available*

## **POLYURETHANE GRIP, ALUMINUM SPOKES**

V15 R/W/F - 22323 A

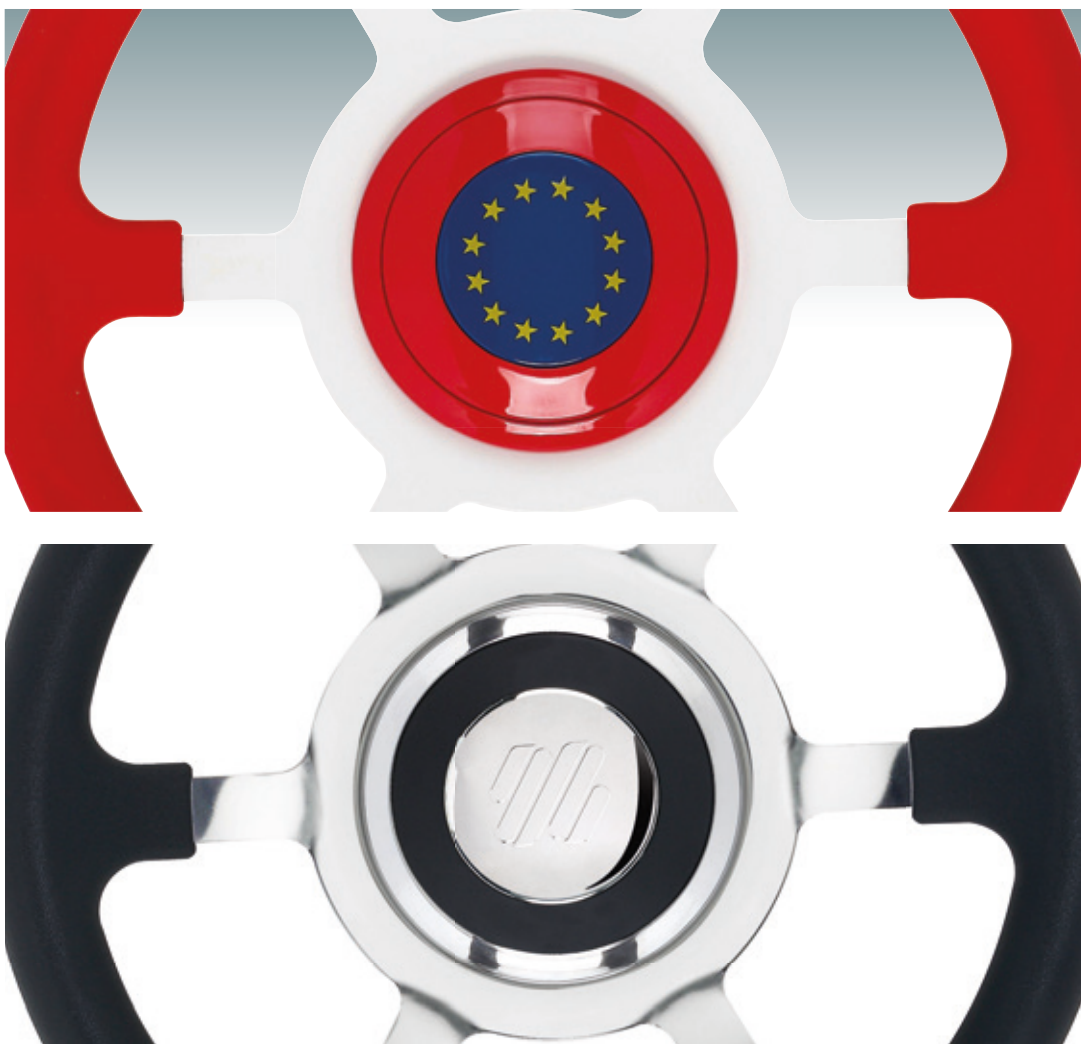
V15 R/W/F Ø 350 mm (13.8")

V15 B/SS/F Ø 350 mm (13.8")



## **POLYURETHANE GRIP, STAINLESS STEEL SPOKES**

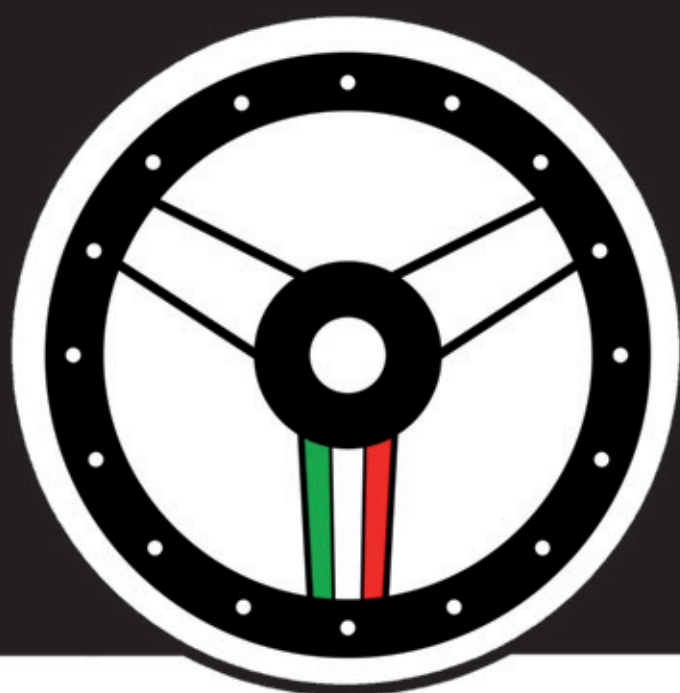
V15 B/SS/F - 22325 E







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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.

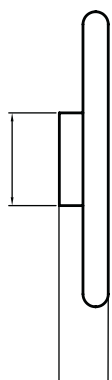
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes

### **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")**

**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**



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STEERING WHEELS



## BOCCANEGRA STEERING WHEELS

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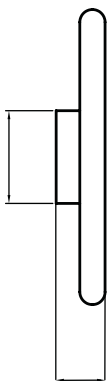
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes

### 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



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VERO VOLANTE ITALIANO



## ODERICO STEERING WHEELS

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- Standard 3/4" taper
- Hub 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



Oderico V B/SS/CH - Ø 350 mm (13.8")

### VYNIL GRIP

ODERICO V B/SS/CH -  
69563 L

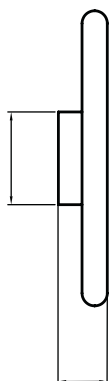
ODERICO V B/SS/B -  
69564 N



Oderico L B/SS/CH - Ø 350 mm (13.8")



Oderico L B/SS/B - Ø 350 mm (13.8")



B

B= 72 mm - 2.83"



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VERO VOLANTE ITALIANO



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STEERING WHEELS





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STEERING WHEELS

## TRON STEERING WHEELS

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

### LEATHER GRIP

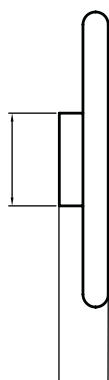
TRON L B/SS/PU -  
22125 W

### 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 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

### **VYNIL GRIP** **BRUSHED SPOKES**

SPINOLA V B/BRU -  
23899 N

### **LEATHER GRIP** **POLISHED SPOKES**

SPINOLA L B/P -  
23902 Y

### **VYNIL GRIP** **POLISHED SPOKES**

SPINOLA V B/P -  
23901 W



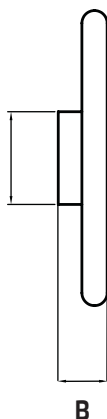
Spinola L B/P - Ø 350 mm (13.8")



Spinola L B/BRU - 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



B= 82 mm - 3.22"



VERO VOLANTE ITALIANO



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## 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 included
- Meet with the EN 28848 and ABYC P22 standards

### VYNIL GRIP, 316L STAINLESS STEEL SPOKES

IMPERIALE V B/SS/P -  
21299 B

### POLYURETHANE GRIP, ALUMINUM SPOKES

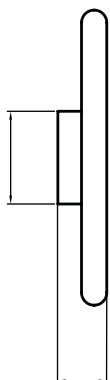
IMPERIALE PU B/S/P -  
21300 G



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"



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VERO VOLANTE ITALIANO



## **DOLFIN STEERING WHEELS**

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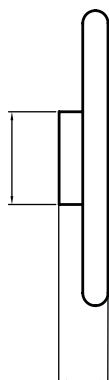
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes
- *Floating cap also available*

### **LEATHER OR VYNIL GRIP, PEWTER PAINTED BRUSHED SPOKES, BLACK INSERTS**

DOLFIN L B/Pw/B - 23592 K  
DOLFIN V B/Pw/B - 23593 M

### **LEATHER GRIP, BLACK SPOKES, PEWTER PAINTED INSERTS**

DOLFIN L B/B/Pw GREY  
brushed - 23591 H



B

B= 92 mm - 3.62"



Dolfin L B/B/Pw GREY brushed - Ø 350 mm (13.8")



Dolfin L B/Pw/B - Ø 350 mm (13.8")



Dolfin V B/Pw/B - Ø 350 mm (13.8")

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VERO VOLANTE ITALIANO



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STEERING WHEELS





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## **DOLFIN** **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 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 L B/SS/B - Ø 350 mm (13.8")



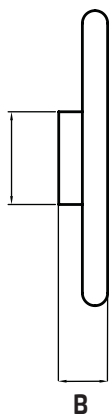
Dolfin L B/B/P - Ø 350 mm (13.8")



Dolfin V B/SS/P Ø 350 mm (13.8")



Dolfin L B/B/P - Ø 350 mm (13.8")



B

B= 92 mm - 3.62"



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VERO VOLANTE ITALIANO



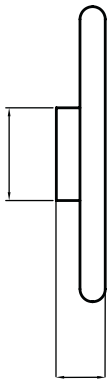
## MOROSINI STEERING WHEELS

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

### LEATHER GRIP AND HUB

MOROSINI LSB/L/L-  
67301 T



B

B= 78 mm - 3.07"

CHRISTIANGRANDE  
DesignWorks



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VERO VOLANTE ITALIANO



## **MOROSINI STEERING WHEELS**

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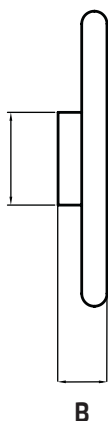
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

### **LEATHER GRIP, CHROME HUB**

MOROSINI L B/CH/L -  
67297 F

### **POLYURETHANE GRIP, CHROME HUB**

MOROSINI PU B/CH/V -  
67461 S



B

B = 78 mm - 3.07"



**Morosini VB/CH/V - Ø 350 mm (13.8")**



**CHRISTIANGRANDE**  
DesignWorks



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**VERO VOLANTE ITALIANO**



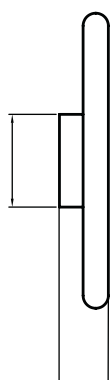
## MOROSINI STEERING WHEELS

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

### LEATHER GRIP, CHROME HUB

MOROSINI LG/CH/L -  
67300 R



B

B= 78 mm - 3.07"



Morosini V G/CH/V - Ø 350 mm (13.8")



CHRISTIANGRANDE  
DesignWorks



All UFLEX 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



## MOROSINI STEERING WHEELS

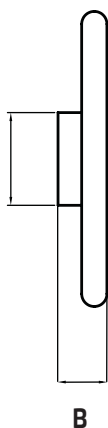
"VERO VOLANTE ITALIANO" is the registered trademark which distinguishes the steering wheels for pleasure boats produced by Ultraflex. They are conceived by Italian designers, engineered and manufactured in Italy by employing genuine Italian components and technologies according to Ultraflex quality management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

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

### LEATHER GRIP, PAINTED HUB

MOROSINI L W/P/P -  
67298 H

MOROSINI L C/P/P -  
67299 K



B

B= 78 mm - 3.07"

CHRISTIANGRANDE  
DesignWorks



Morosini L W/P/P - Ø 350 mm (13.8")



Morosini L C/P/P - Ø 350 mm (13.8")

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VERO VOLANTE ITALIANO



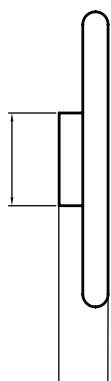
## MOROSINI STEERING WHEELS

"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 included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

### MOHOGANY GRIP, CHROME HUB

MOROSINI M/CH/BR -  
68378 L



B

B= 78 mm - 3.07"

CHRISTIANGRANDE  
DesignWorks



Morosini M/CH/BR - 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





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## **FOSCARI 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.

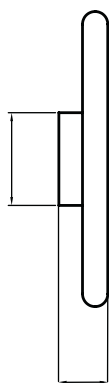
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

### **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**

STEERING WHEELS



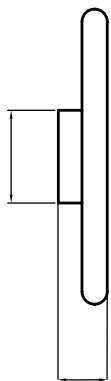
## **FOSCARI STEERING WHEELS**

"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 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"



Foscari PU W - Ø 350 mm (13.8")



Foscari PU C - 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



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STEERING WHEELS



## ADORNO 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.

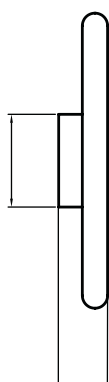
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

### 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")



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



## CONTARINI STEERING WHEEL

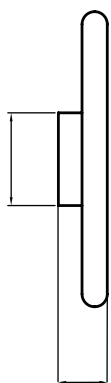
"VERO VOLANTE ITALIANO" is the registered trademark which distinguishes the steering wheels for pleasure boats produced by Ultraflex. They are conceived by Italian designers, engineered and manufactured in Italy by employing genuine Italian components and technologies according to Ultraflex quality management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

- Standard 3/4" taper
- Hub 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



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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 included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes

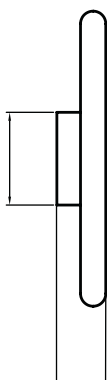
### 316L STAINLESS STEEL GRIP

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



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



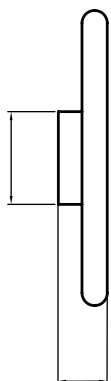
## **BALBI STEERING WHEEL**

"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 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"



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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## MANIN 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 included
- Meet with the EN 28848 and ABYC P22 standards
- *Floating cap also available*

### **POLYURETHANE GRIP, 304**

### **STAINLESS STEEL SPOKES**

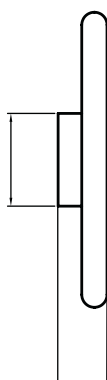
MANIN PU B/SS - 68204 A

### **POLYURETHANE GRIP**

### **ALUMINUM SPOKES**

MANIN PU B/S - 68205 C

MANIN PU B/B - 68206 E



B

B= 81 mm - 3.19"



Manin PU B/SS - Ø 350 mm (13.8")



Manin PU B/B - Ø 350 mm (13.8")



Manin PU B/S - 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



## GRIMANI 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 included
- Meet with the EN 28848 and ABYC P22 standards
- *Floating cap also available*

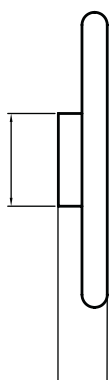
### POLYURETHANE GRIP, 304 STAINLESS STEEL SPOKES

GRIMANI PU B/SS/CH -  
69198 P

### POLYURETHANE GRIP

### ALUMINUM SPOKES

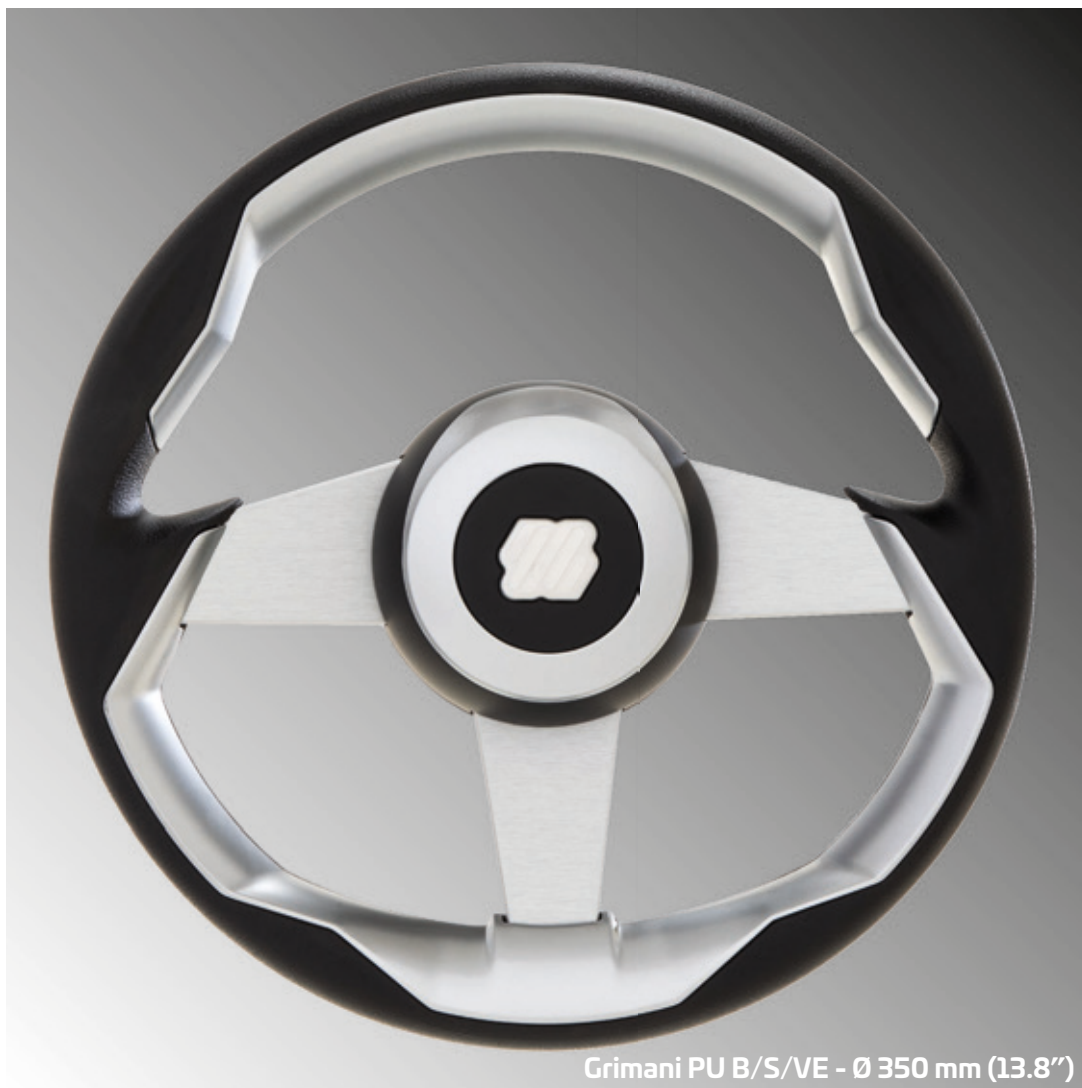
GRIMANI PU B/S/VE -  
69297 S  
GRIMANI PU B/B/CH -  
69298 U



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 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

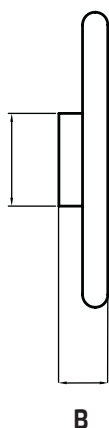
### **POLYURETHANE**

#### **GRIP**

#### **ALUMINUM SPOKES**

LOREDAN PU B/S/CH -  
69558 U

LOREDAN PU B/B/CH -  
69559 W



B

B= 92,5 mm - 3.64"



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Loredan PU B/SS/CH - Ø 350 mm (13.8")



Loredan PU B/S/CH - Ø 350 mm (13.8")



Loredan PU B/B/CH - Ø 350 mm (13.8")



VERO VOLANTE ITALIANO



## **DORIA STEERING WHEELS**

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

### **POLYURETHANE GRIP WITH INSERTS**

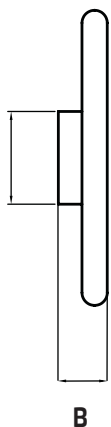
DORIA PU B/S/R - 67309 K  
DORIA PU B/CH/CH - 69706 G  
DORIA PU B/S/B - 67465 A  
DORIA PU W/S/W - 67728 G



**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**



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**STEERING WHEELS**





## 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



PADDLE TRIM  
LABELS

	ENGINE TRIM & TILT		JACKPLATE		TRIM TABS		HORN	
UP								
DOWN								

ORDER GUIDE

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







## STEERING WHEEL APPLICATION CHART - ACCESSORIES

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STEERING WHEELS

X63	KNOB/UST	KNOB21	KNOB93	KNOB V56	KNOB/SK	
CORSICA, V15, MYKONOS, SANTORINI, NISIDA, PIANOSA, PALMARIA, CAPRAIA, PANTELLERIA, DOMINO, TAVOLARA, VIVARA, BUDELLI, USTICA, LEVANZO, MONTECRISTO, LAMPEDUSA, ALICUDI, CAPRI	GIANNUTRI, DOMINO, USTICA, LEVANZO, MONTECRISTO, IMPERIALE PU	V21, V25, V20, V01, V10, V28, V52, V31, V24, V57, V35, V23, V29, V65, V58, V53, V30, V66, V62, V82, V67, V63, V74/40, V77/40, V85	V93	V56, MOROSINI PU, FOSCARI PU, ADORNO	CONTARINI, SIESTAKEY	





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





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STEERING WHEELS

## ACCESSORIES FOR STEERING WHEELS

### QDH - QUICK DISCONNECT HUB

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

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



QDH



### PROTECTION COVER

22824 Z - with Ultraflex Logo

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







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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, and provided our Technical Assistance, a programmable Trolling Valve Control and neutral Warm Up.

The stylish and ergonomically designed control makes the PowerA Mark II™ suitable for many types of applications ranging from sport boats, yachts and commercial applications.

Available with and without trim, the control has audible and visual interfaces which alert the operator to the current status of the control system.

With the ability to control up to 4 outboard engines from up to 4 different stations, the PowerA Mark II™ is a modular and flexible system with simple to install components.

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

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

**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
<b>V-Throttle</b>	42018H	Throttle with analog voltage interface	Redundant voltage input, IVS.	1 - 2	FPT, Yanmar, Mercruiser, Lombardini.
<b>V-Throttle</b>	42437 E	Throttle with analog voltage interface	Redundant voltage input, IVS.	1 - 2	Volkswagen
<b>I-Throttle</b>	42019K	Throttle with current analog interface	Current outputs.	1 - 2	4 - 20 mA throttle engines
<b>PWM-Throttle</b>	42020 U	Throttle with PWM interface	PWM outputs	1 - 2	Perkins, Caterpillar
<b>SAEJ -Throttle</b>	Personalized	Throttle with SAEJ 1939 interface	CAN DeviceNet SAEJ 1939 outputs	1 - 2	SAEJ 1939 engines
<b>NMEA -Throttle</b>	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
<b>Universal V-Throttle cable</b>	Not redundant 5V cable/1 engine	2 4	42029N 42030X	None
<b>FPT V-Throttle cable</b>	FPT engines 0 – 5 V cable (J-INV connector)	2 4	42350S 42351U	FPT, all engines with J-INV connector
<b>FPT V-Throttle cable</b>	FPT engines 0 – 5 V cable (J-D connector)	2 4	42348F 42349H	FPT, all engines with J-D connector
<b>VW V-Throttle cable (4-5-6 cylinder)</b>	VW engines 0 – 5 V cable	2 4	42033D 42034F	VW, 4, 5 and 6 cylinder
<b>Mercruiser 4.2 Black V-Throttle cable</b>	Mercruiser engines 0 – 5 V cable	2 4	42035H 42036K	Mercruiser 4.2 black engines
<b>Mercruiser QSD V-Throttle cable</b>	Mercruiser engines 0 – 5 V cable	2 4	42037M 42038P	Mercruiser QSD engines
<b>Lombardini V-Throttle cable</b>	Lombardini engines 0 – 5 V cable	2 4	42039S 42040A	180 and 240 HP Lombardini engines.
<b>Yanmar V-Throttle cable</b>	Yanmar engines 0 – 5 V cable	2 4	42041C 42042E	Yanmar BY engines
<b>Universal I/PWM-Throttle cable</b>	PWM throttle cable with no connector	2 4	42043G 42044J	Compatible with CAT electronic engines C30/C32
<b>Universal SAEJ1939-Throttle cable</b>	SAEJ1939 cable with no connector	2 4	42045L 42046N	None
<b>NMEA2000 Throttle cable</b>	NMEA2000 cable	1 3 7	42047R 42048T 42049V	DeviceNet cable Drop type for NMEA2000 connection
<b>Hyundai V-Throttle cable</b>	Hyundai engines 0 – 5 V cable	2 4	42288P 42289S	Hyundai engines
<b>Perkins PWM-Throttle cable</b>	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
<b>Main power supply cable</b>	Main power supply of the system	1 3 7 10	42052H 42053K 42054M 42055P	One each battery
<b>Power cable extension</b>	Power extension cable for modules connection	1 3 7 10	42056S 42057U 42058W 42059Y	One each mechanical actuator or shift unit
<b>Shift cable</b>	Solenoid connection cable	1 3 7 10	42060G 42061J 42062L 42063N	One each solenoid shift
<b>3 solenoid Shift cable (neutral solenoid)</b>	3 solenoid connection cable	1 3 7 10	42072P 42073S 42074U 42075W	One each 3 solenoid shift
<b>CAN cable</b>	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
<b>Universal V-Troll cable</b>	0-5 V cable with no redundancy	2 4	42068Z 42069B	None
<b>Universal I-Troll cable</b>	0.20 mA output cable, no connectors included	2 4	42070K 42071M	None

## Spare parts

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





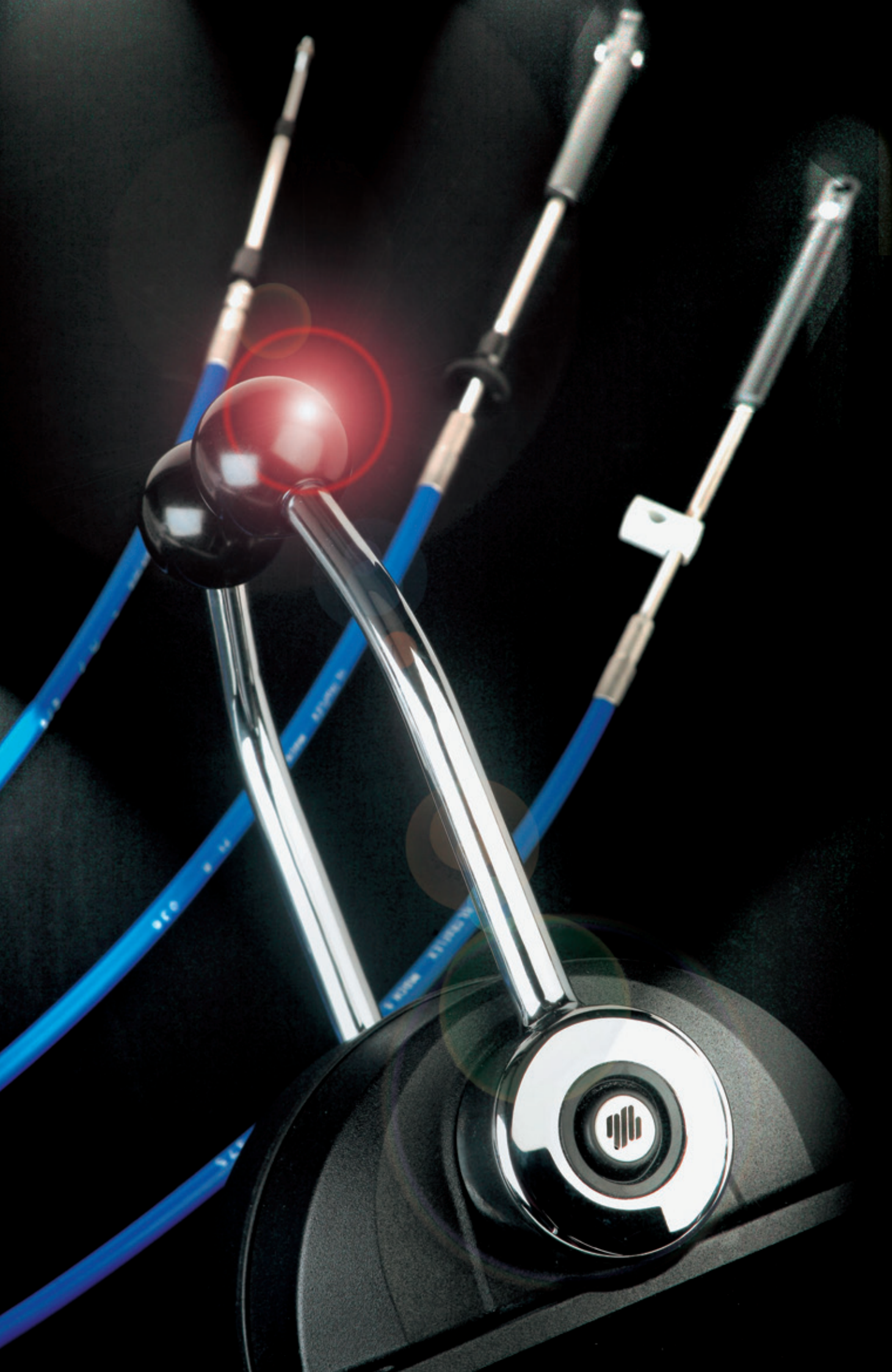
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**CHART E - Components for Trolling Valve Systems\***

ENGINE	NO. OF ENGINES	COMPONENTS	P. No.	Q.TY
<b>Mechanical trolling valve</b>	<b>Single Engine</b>	Mechanical actuator (Troll) CAN cable Power cable extension	42027J Tav. C Tav. C	1 1 1
	<b>Twin Engines</b>	Mechanical actuator Power Unit CAN cable Power supply cable (general) Power cable extension	42027J 42026G Tav. C Tav. C Tav. C	2 0 (*) 2 0 (*) 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.			
<b>Electric troll (proportional solenoid)</b>	<b>Single Engine</b>	Shift Unit CAN cable Power cable extension Cavo Shift con Troll	42023A Tav. C Tav. C Tav. C	1(**) 1(**) 1(**) 1
	<b>Twin Engines</b>	Shift Unit CAN cable Power cable extension Power Unit Power supply cable (general) Shift cable with Troll	42023A Tav. C Tav. C 42026G Tav. C Tav. C	1(**) 1(**) 1(**) 0 (*) 0 (*) 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.			
<b>Electronic Troll (0-5V, 4-20mA)</b>	<b>Single Engine</b>	E-Troll Unit CAN cable Troll cable	Custom made Chart C Chart D	1 1 1
	<b>Twin Engines</b>	E-Troll Unit CAN cable Troll cable	Custom made Chart C Chart D	1 1 2
	(**) 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.			

\*Before ordering, please contact our Technical Department





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CONTROL SYSTEMS





## ULTRAFLEX® CONTROL BOXES

All Ultraflex control boxes are made specifically for the marine environment, using materials and working processes which offer long life and safety for the most extreme conditions.

### HOW THE CONTROL BOXES WORK

A boat's steering system consists of many components, all of which are essential to ensure proper operation and safety in case of emergency manoeuvres. Among the components used to control the throttle and the boat's direction there are the Ultraflex control boxes. These are designed to have a correct and at the same time feeling between the user and the boat.

### RECOMMENDATIONS WHEN CHOOSING A CONTROL BOX

A correct selection of the control box depends on various factors such as:

- Engine communication system: Ultraflex control boxes can be mechanical (when both throttle and shift cable is present), electronic (when both throttle and shift cable are controlled by a position sensor) and hybrid (when using the throttle position sensor and inverter cable).
- Spaces onboard: the control boxes are usually "Top Mount" and "Side Mount". The "Top Mount" models are installed on the dashboard, the "Side Mount" models on one side of the boat. Attention must be paid to the space around them as the rotation of the lever must not be impeded; moreover, in the case of mechanical control boxes, it is necessary to ensure the correct way for the control cables.
- Design: Ultraflex control boxes are designed with the idea of following as much as possible the style of the boat on which they are installed.

### WARNINGS

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

It is recommended to combine Ultraflex with a "Universal Kill Switch" a safety system used to ensure the engine switch off in case of accidental movement away from the driving position.



KILL SWITCH - 76691 L

### UNIVERSAL KILL SWITCH

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



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

For ETC controls please contact our Technical Service for custom configuration.

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



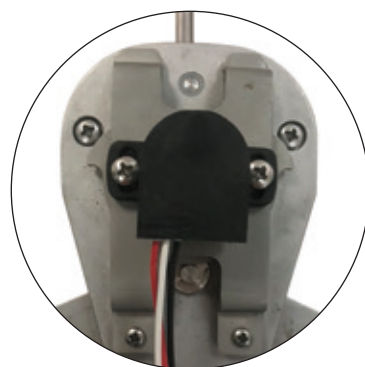
**B400**

CE



**B401-ETC**

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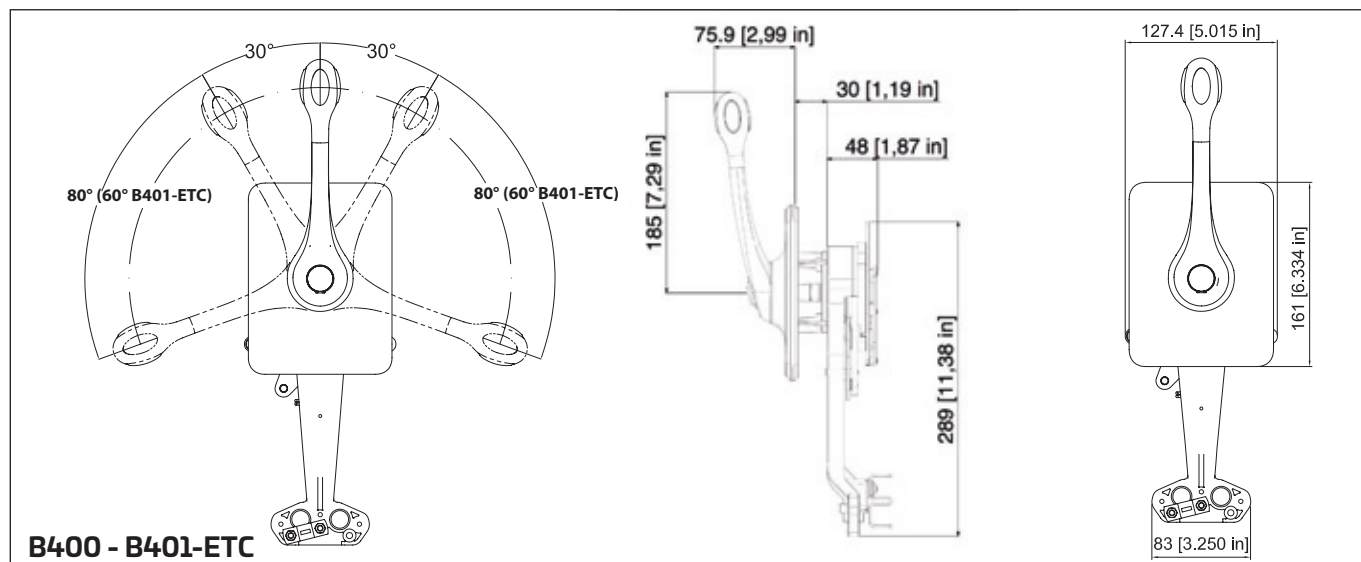


**B401-ETC - integrated sensor**

### MODELS

**B400** - 42076 Y Fully mechanical version

**B401-ETC** - 42077 A Hybrid version (machanical shift, electronic throttle)







## **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

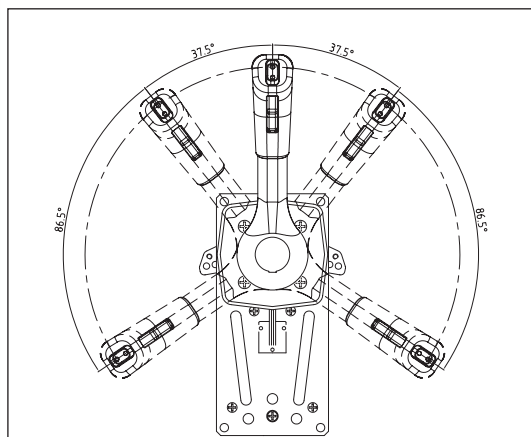
### **MODELS**

**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**



**B310CH**



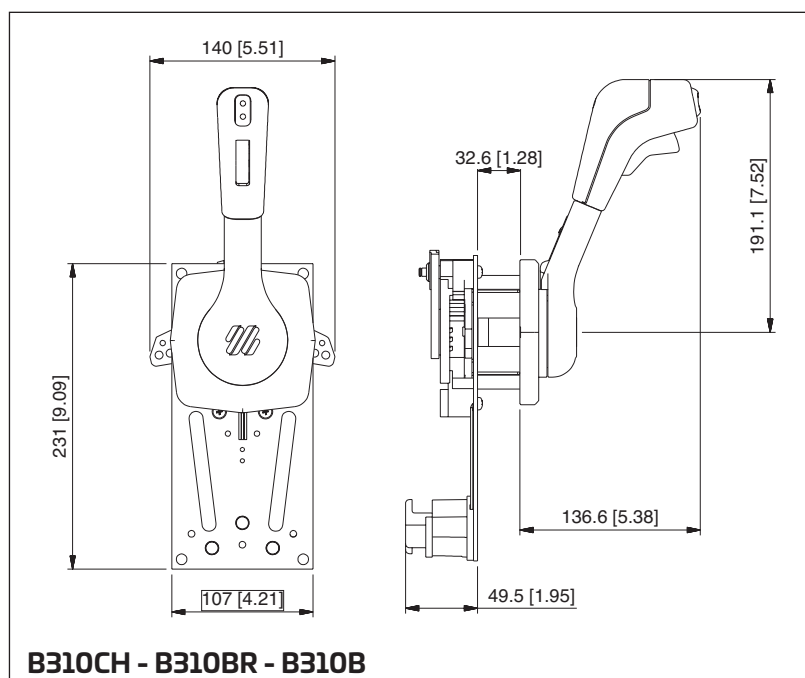
**B310BR**



**B310B**



**B310B-NT No Trim**





## 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

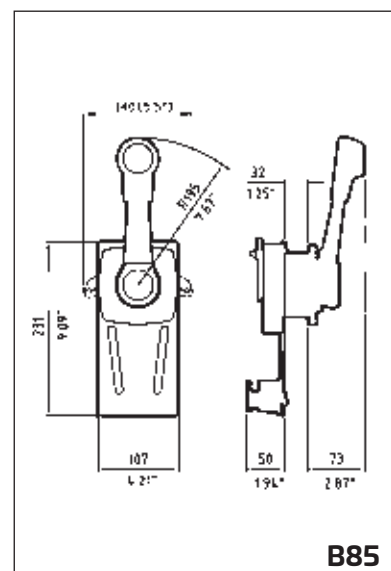
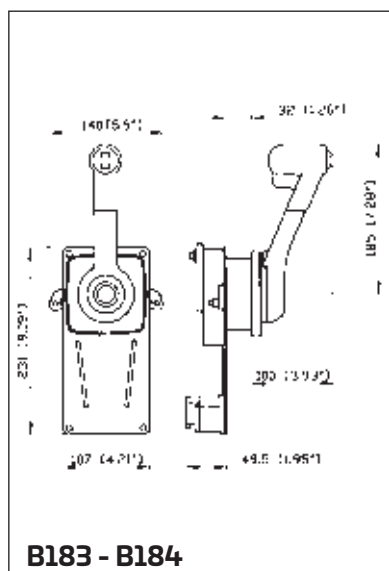
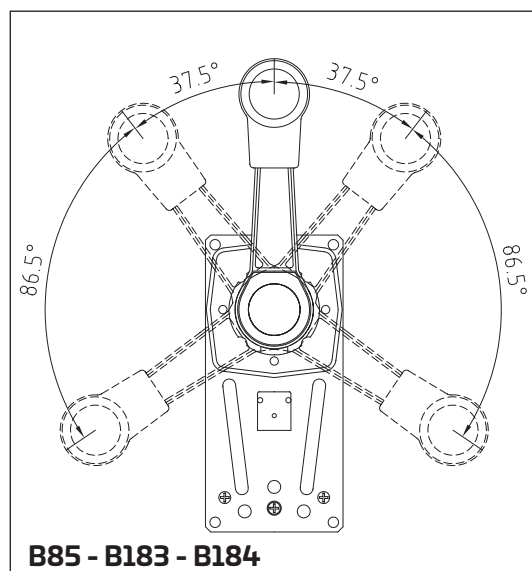
Provided with a positive lock-in neutral

#### 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 double action controls for throttle and inverter control with a modern and essential design that makes them suitable for any type of boat with outboard engine, inboard and stern drive units.

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

### **FEATURES**

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- 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 (optional) prevents in-gear starting
- Neutral safety switch **X48** - 43527 L (optional), prevents in-gear starting and at the same time it is possible to control the tilt of the engine.
- Exceeds EN ISO 11547 standards when X41 safety switch is installed
- The B110 **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.
- Provided with a lever locking device in neutral position which prevents accidental manoeuvres.
- They have a TRIM switch on the handle that allows the adjustment in outboard engines and sterndrives.
- For use with Ultraflex C2, C8, MACHZero control cables.  
To connect C5 and MACH5 cables to engine, use **K74** - 43518 K connection kit;  
to connect C36 and MACH36 cables to engine, use **K75** - 43519 M connection kit;  
to connect C14 and MACH14 cables to engine, use **K76** - 43520 W connection kit



**B110B**



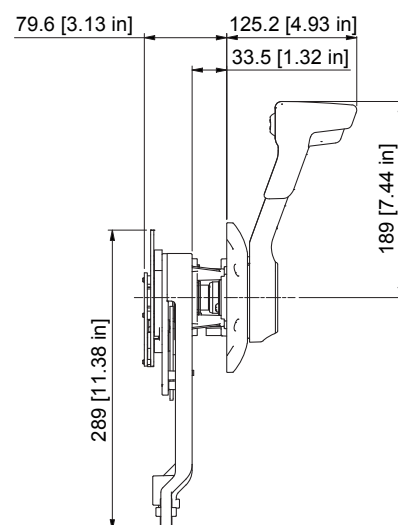
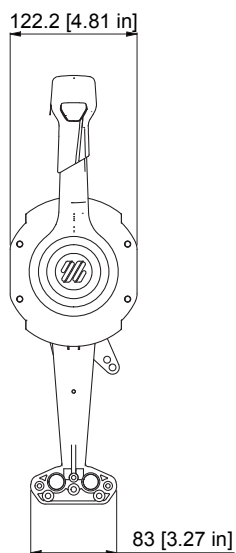
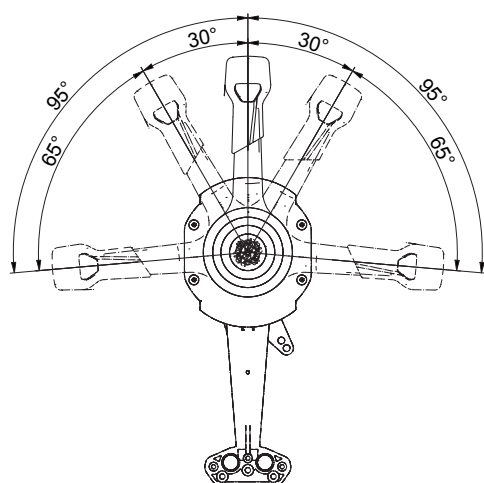
**B110W**





## MODELS

**B110B** - 39367 S - Black, without kill switch  
**B110W** - 43521 Y - White, without kill switch  
**B110B/KS** - 43522 A - Black, with kill switch  
**B110W/KS** - 43523 C - White, with kill switch



**B110**





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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
- 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**

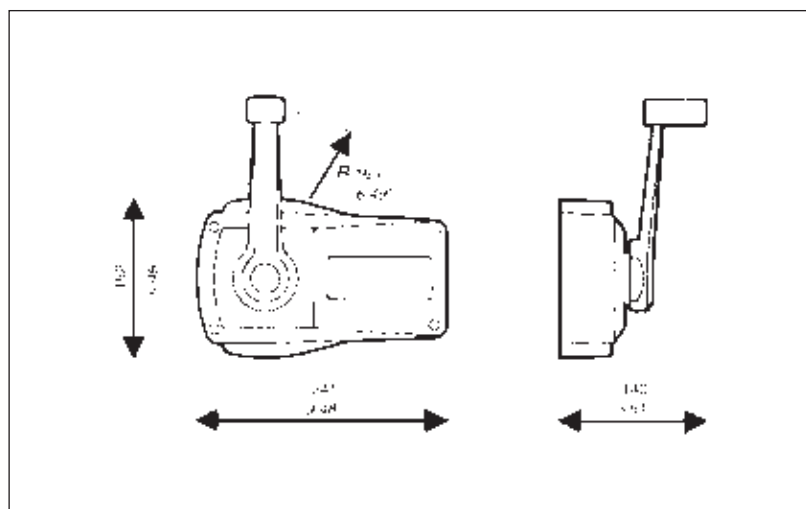


**B90**

CE



**Lock-in neutral**





## 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**



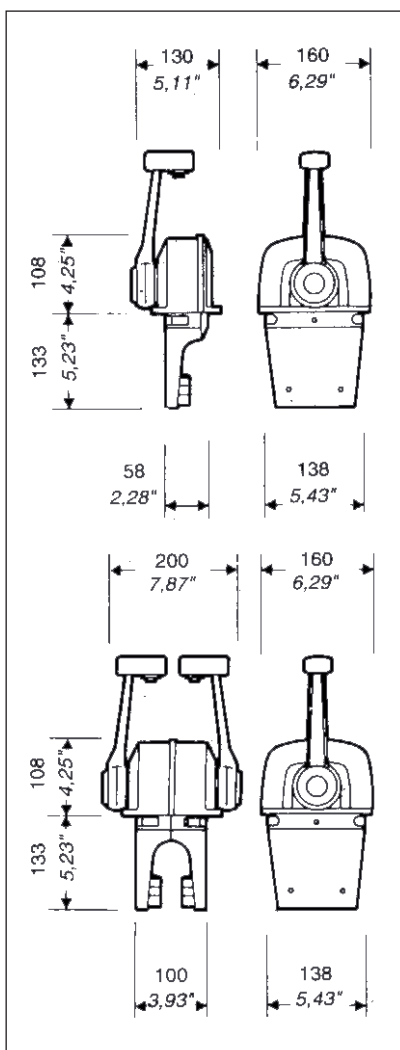
**B66**  
**B78 with trim**



**B73**  
**B77 with trim**



**B74**  
**B79 with trim**



**Handle with trim**



## **SINGLE LEVER 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**



**B502CH**



**B501BT/L**



**B502BT**





## 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

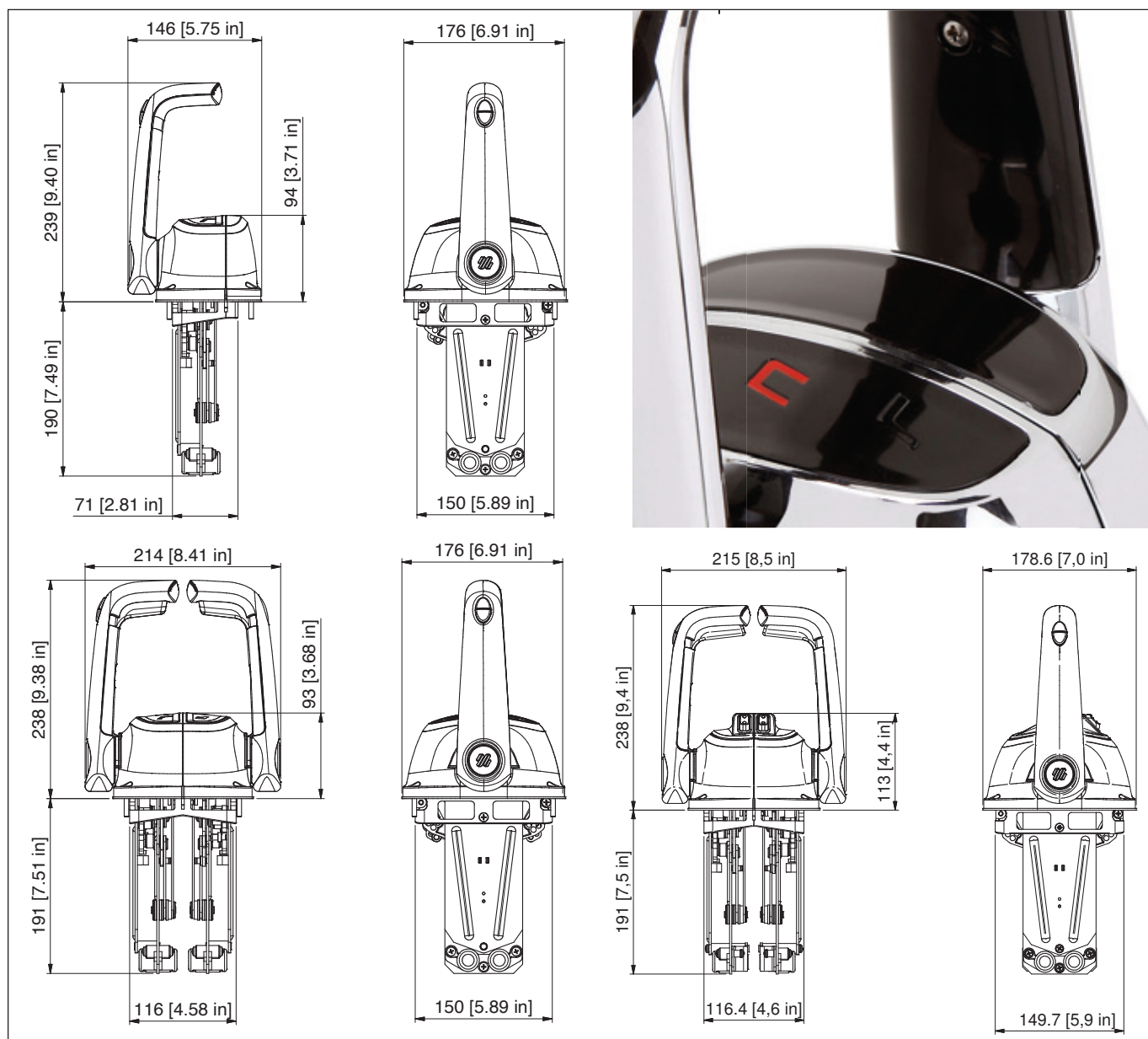
## CONTROLS WITH LOCK IN NEUTRAL

**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

CE

196

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**



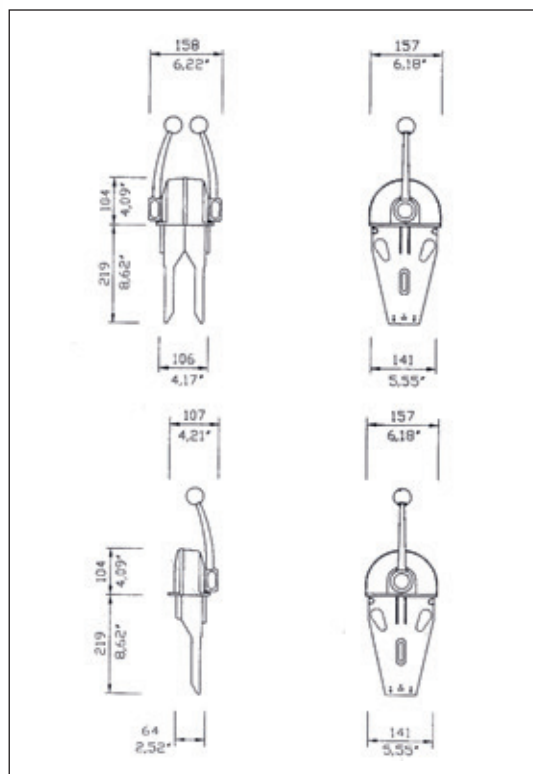
**B103**



**B104**



**2 X55 (OPTIONAL)**



**B104 + 2 X55**

CE



## **"LOW PROFILE" SINGLE LEVER TOP MOUNT CONTROLS**

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**



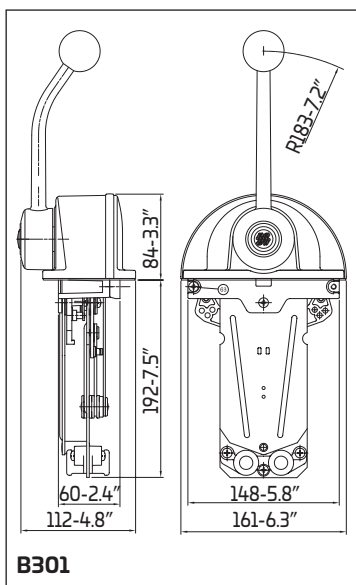
**B302CR**



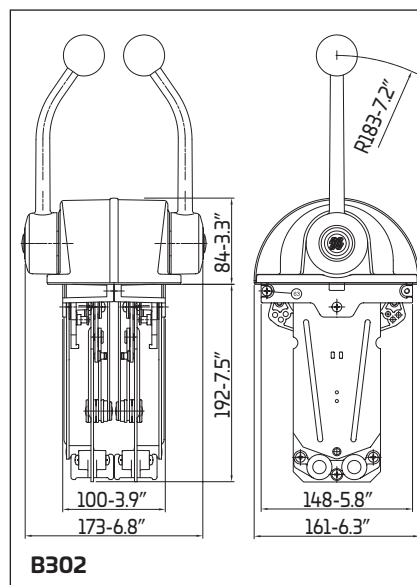
**2 X75 (OPTIONAL)**



**B302CR + 2 X75**



**B301**



**B302**





198

## "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**



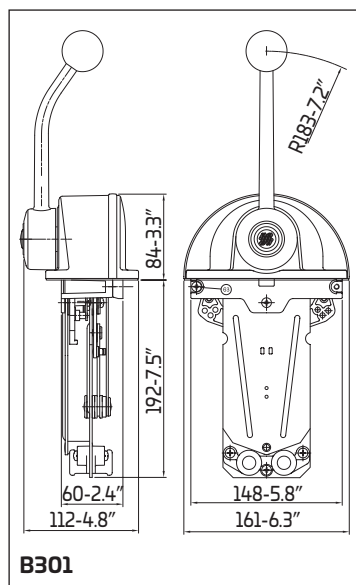
**B302B**



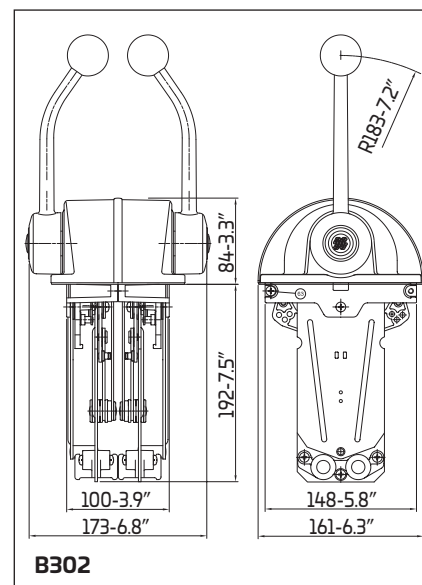
**2 X75 (OPTIONAL)**



**B302B + 2 X75**



**B301**



**B302**

CE

CE



## 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 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.

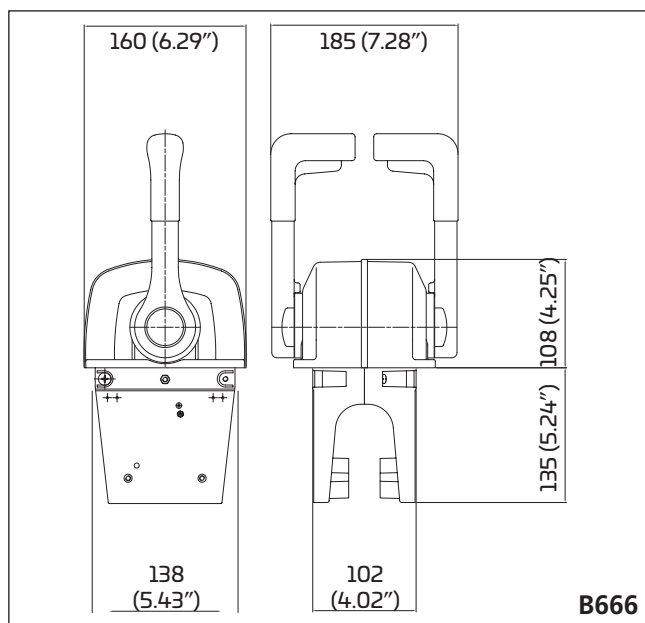
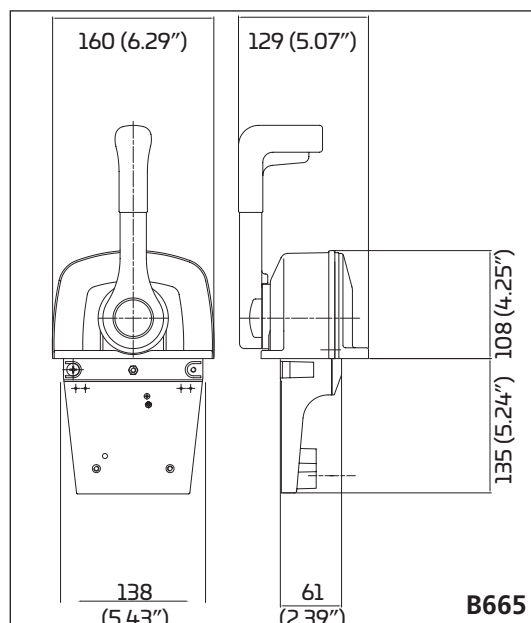
B665



B666



Lock-in  
neutral







## **B505** **ELECTRONIC SINGLE LEVER** **TOP MOUNT CONTROL**

Ergonomic and compact single lever, designed to control any type of outboard and sterndrive electronic engine.

**new**

### **FEATURES**

- Compact single lever controls offering a unique low profile style compared to other controls available on the market
- Developed to maximize the position of the controls
- Equipped with adjustable clutch to set the throttle hardness.
- Fully electronic lever; the installed position sensor output can be customized
- Equipped with 3 customizable switches
- Thermoplastic material with a soft touch grip.

### **MODELS**

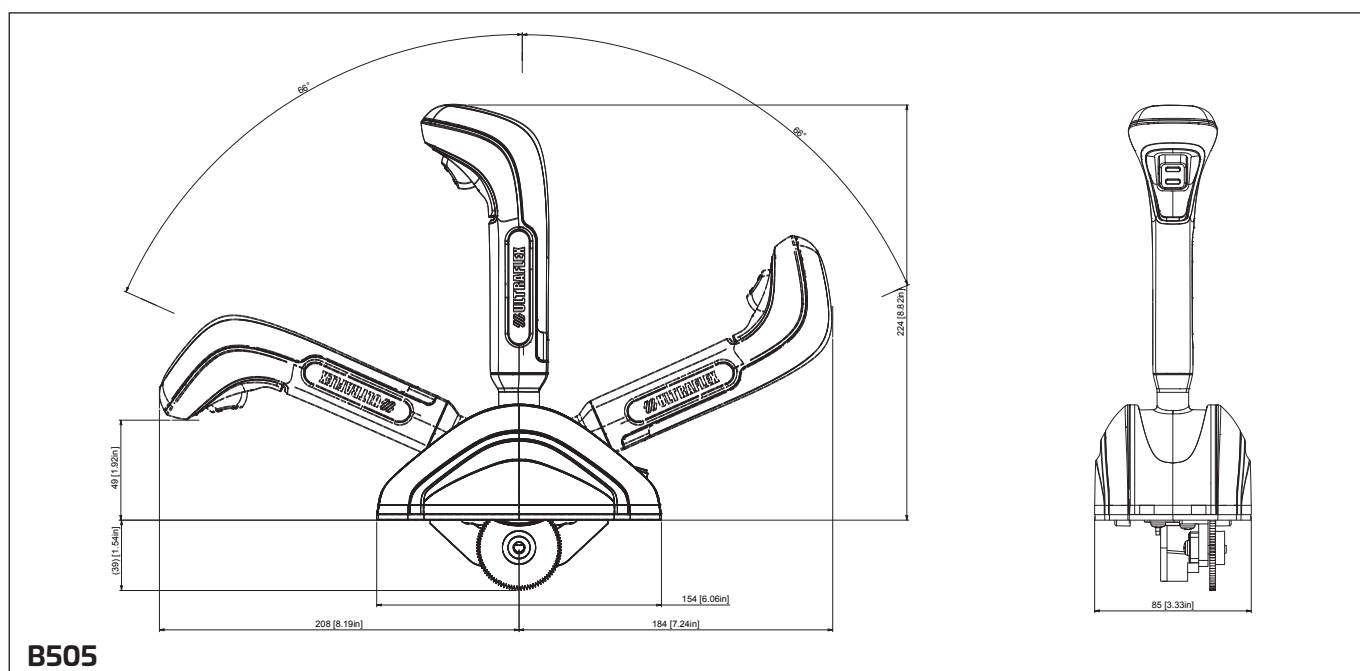
**B505** - 43581 T  
Electronic single lever control



**B505**



Customizable switches





## 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:

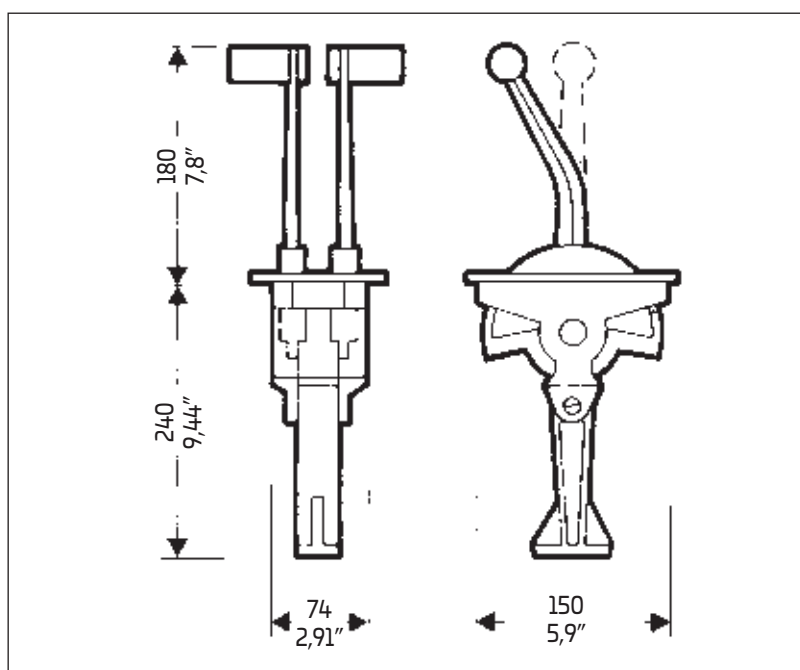
<b>B46</b> - 34461 P	Throttle and shift
<b>B46T</b> - 34462 Q	Throttle only
<b>B46S</b> - 34463 R	Shift only
<b>B58R</b> - 34570 W	Throttle and shift. With interlock. Right hand installation
<b>B58L</b> - 34716 T	Throttle and shift. With interlock. Left hand installation

#### STRAIGHT LEVERS:

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

**B46  
B58 with interlock**

**B50  
B59 with interlock**



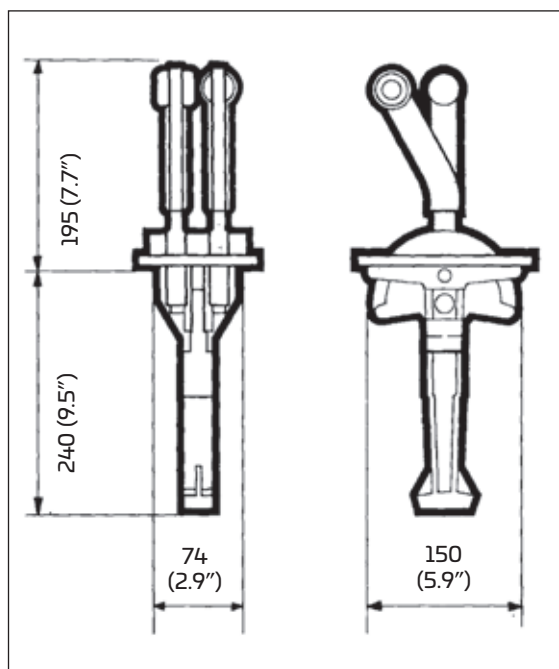


## TWO LEVER TOP MOUNT CONTROLS HYBRID OR MECHANICAL VERSIONS

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-ESTC** - 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-ESTC** - 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:

<b>B322</b> - 40669 S	Throttle and shift
<b>B322T</b> - 40670 A	Throttle only
<b>B322S</b> - 40673 G	Shift only

#### BLACK FINISH:

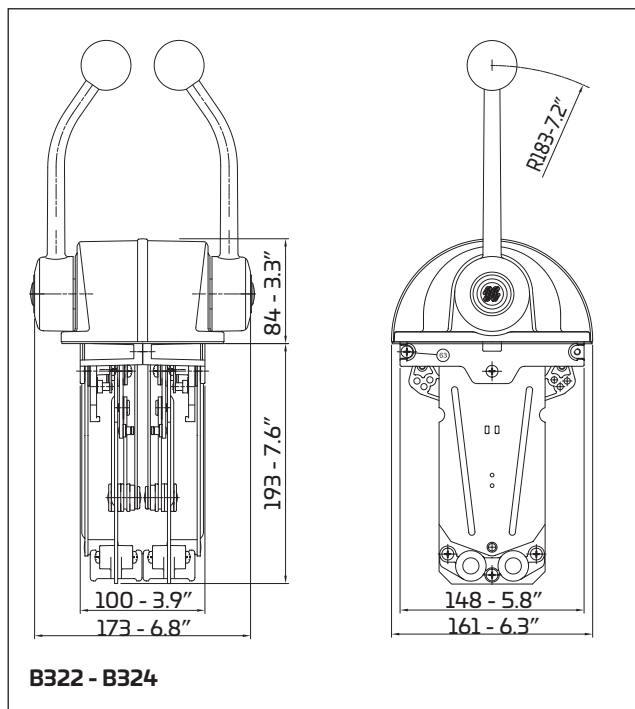
<b>B324</b> - 40674 J	Throttle and shift
<b>B324T</b> - 40675 L	Throttle only
<b>B324S</b> - 40676 N	Shift only



**B322**



**B324**





## TWO LEVER TOP MOUNT CONTROLS



204

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



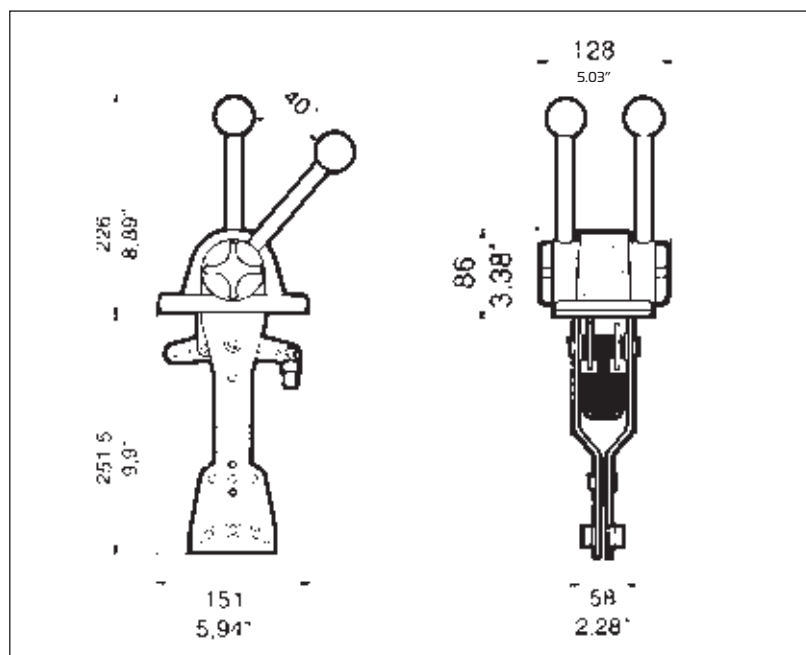
**B101**



**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

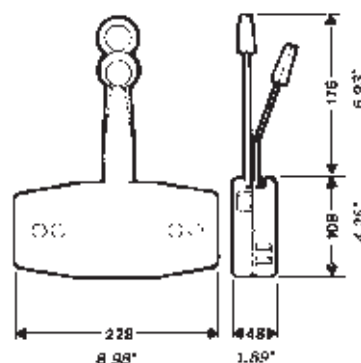
**B47** - 32770 A - Light grey finish

**B49** - 33283 S - Black finish



**B47**

**B49**



**B47 - B49**

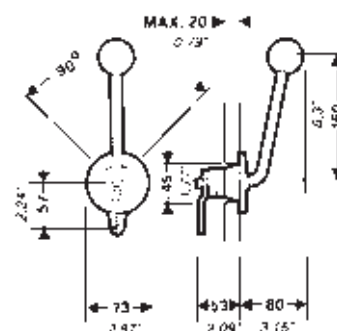
## B35 CONTROL BOX

### 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)

### **K74 - 43518 K**

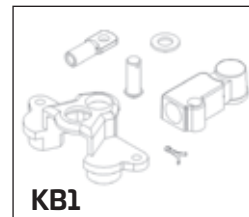
Kit to connect C5 and MACH5 cables to B110 controls

### **K75 - 43519 M**

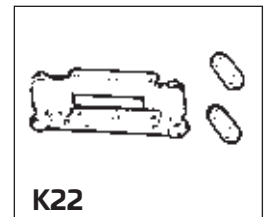
Kit to connect C36 and MACH36 cables to B110 controls

### **K76 - 43520 W**

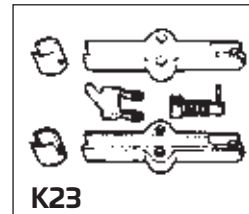
Kit to connect C14 and MACH14 cables to B110 controls



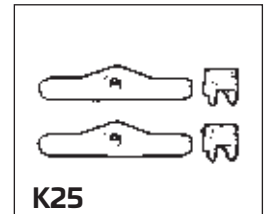
**KB1**



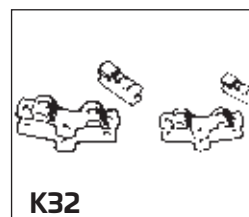
**K22**



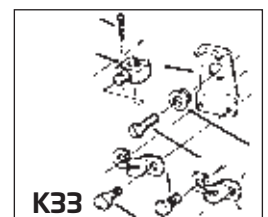
**K23**



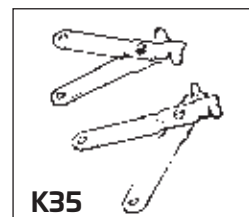
**K25**



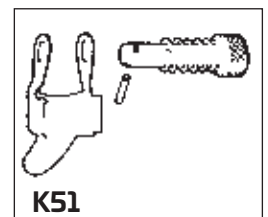
**K32**



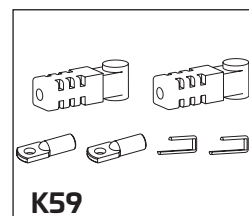
**K33**



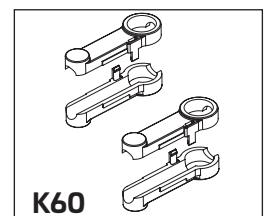
**K35**



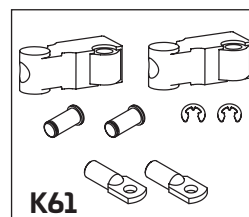
**K51**



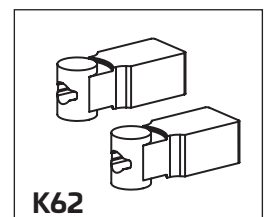
**K59**



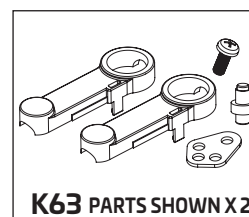
**K60**



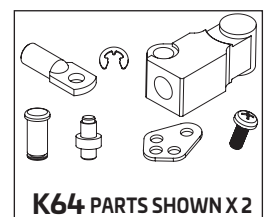
**K61**



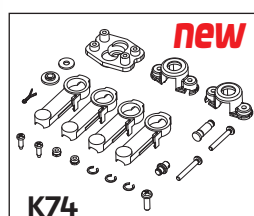
**K62**



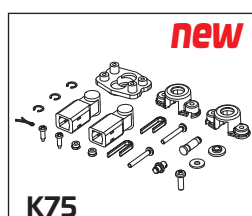
**K63 PARTS SHOWN X2**



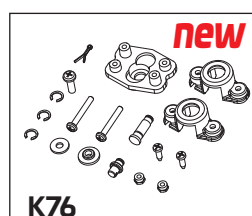
**K64 PARTS SHOWN X2**



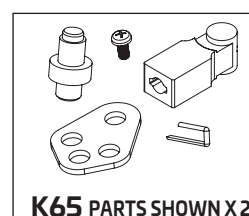
**K74**



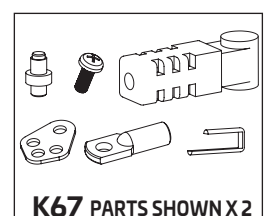
**K75**



**K76**



**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

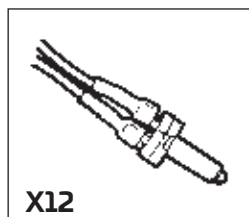
Neutral safety switch to prevent in-gear starting, suitable for B400, B110 and hybrid controls. IP67 protection.

### X43 - 38160 L

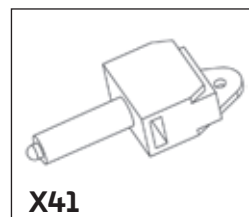
Neutral safety switch to prevent in-gear starting, suitable for B103 and B104 controls.

### X48 - 43527 L

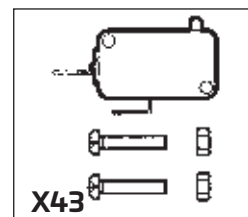
Neutral safety switch to prevent in-gear starting, suitable for B110 controls



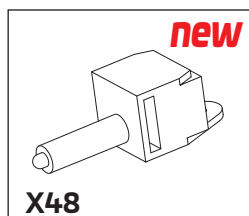
X12



X41



X43



X48

## CONTROL BOX - CONTROL CABLE APPLICATION MATRIX

### SINGLE LEVER CONTROLS

MODEL	B400	B183 - B184 - B85 B310 Series	B110	B301 - B302 B501 Series	B103	B104	B73 - B74 B77 - B79	B89 - B90
C2	X	X	X	K59*	X	X	X	X
C8	X	X	X	K59*	X	X	X	X
C14	-	X	K76	X	-	-	X	X
C5	-	K35	K74	K60	-	-	K35	K35
C36	-	-	K75	K62	-	-	-	-
C16	-	K35	-	K60	-	-	K35	K35
C22	-	-	-	K61	K33	-	-	-
MACHZero	X	X	X	K59*	X	X	X	X
MACH5	-	K35	K74	K60	-	-	K35	K35
MACH36	-	-	K75	K62	-	-	-	-
MACH14	-	X	K76	X	-	-	X	X

\*: Supplied with the control

X: No kit required

- : No connection

### TWO LEVER CONTROLS

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

\*: Supplied with the control

X: No kit required

- : No connection





## 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

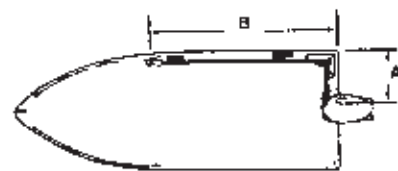
ENGINE		ULTRAFLEX ENGINE CONTROL CABLES
OUTBOARD	Mercury® and Gen. II™ Controls	C36 - MACH36
	Mercury® Mariner® over 50 hp (37kW)	C5 - MACH5
	Mariner® up to 50 hp (37kW)	C16
	Force® Selva® Yamaha® Suzuki® Tohatsu® Honda® Nissan®	C2 - C8 - MACHZero
	Johnson® - Evinrude® - BRP®	after 1979 C14-MACH14
JET	Weber®	C40 - C48
	Rotax®	C40RT - C42RS
STERNDRIVE	Mer cruiser® and Gen. II™ Controls	C36 - MACH36
	Mer cruiser®	C5 - MACH5
	OMC® - BRP®	after 1979 C14-MACH14
	Volvo Penta® Yanmar® Volkswagen®	C2 - C8 MACHZero - C22
INBOARD		C2 - C8 - MACHZero - C22

## 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

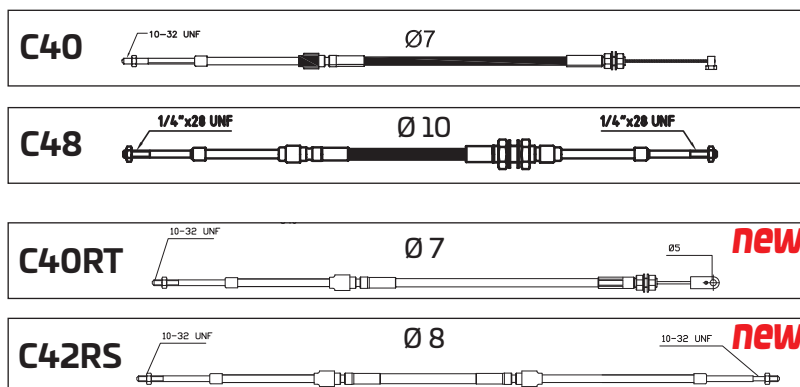
## **CONTROL CABLES FOR JET ENGINES**

**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.

**C40RT** Throttle Cable for Rotax® jet engines

**C42RS** Shift Cable for Rotax® jet engines







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## ENGINE CONTROL CABLES

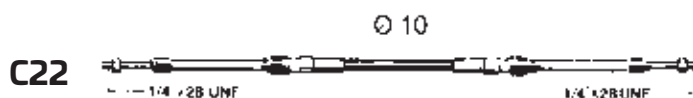
- C2** Stroke: 87 mm (3.4")  
For use with inboard, sterndrive and outboard engines with appropriate accessories.
- C8** Stroke: 87 mm (3.4")  
For use with inboard, sterndrive and outboard engines, with appropriate accessories.
- MACHZero** 87 mm (3.4")  
For use with inboard, sterndrive and outboard 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





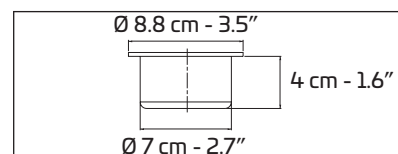
## ACCESSORIES FOR ENGINE CONTROL CABLES

### K68 - 40895 B

Recessed bulkhead support for B14 cable.



K68



### 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.

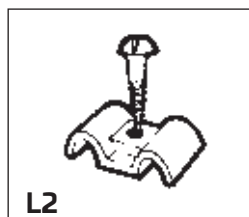
Fits C48 Jet boat cable.

### K56 - 39237 C

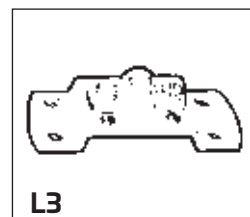
Adapts C2, C8 and MACHCZero cables for use with Mercury engines.

### K57 - 39238 E

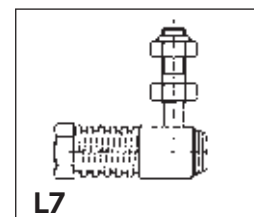
Adapts C2, C8 and MACHCZero cables for use with BRP® - Evinrude engines.



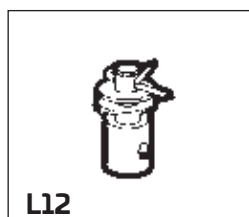
L2



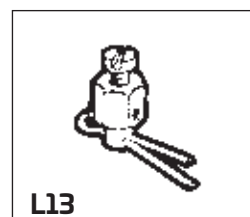
L3



L7



L12



L13



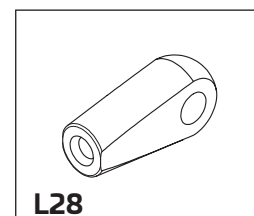
L14



L25



L26



L28



K56



K57

## 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)



RoHS

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





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## 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.

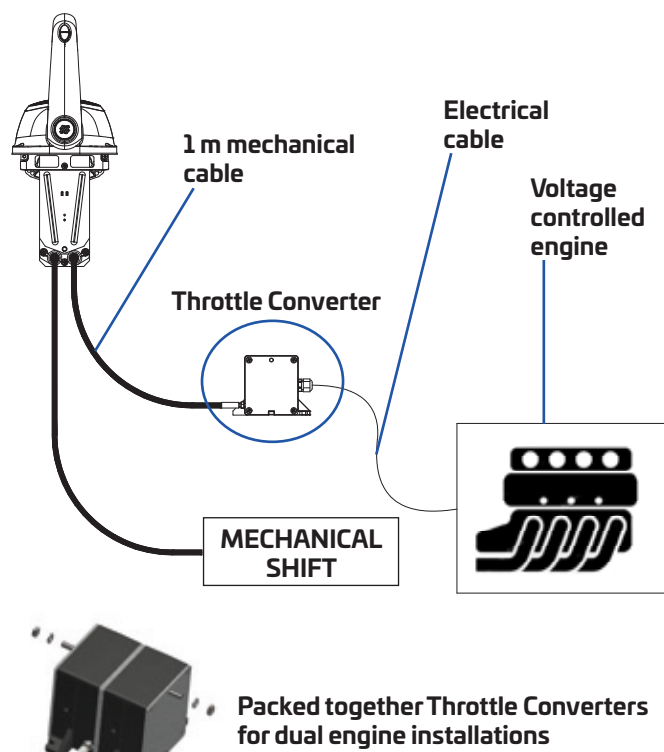
Suitable either for new installations and refitting, it allows to use an existing mechanical control and connect it to the electrical input of the new engine's throttle.

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

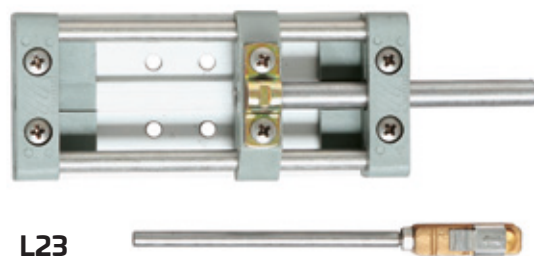


## SELECTOR UNIT FOR DUAL STATION APPLICATIONS

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

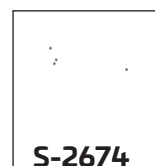
\* Minimum order quantity:  
10 pieces for part number



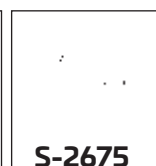
K8



K14F

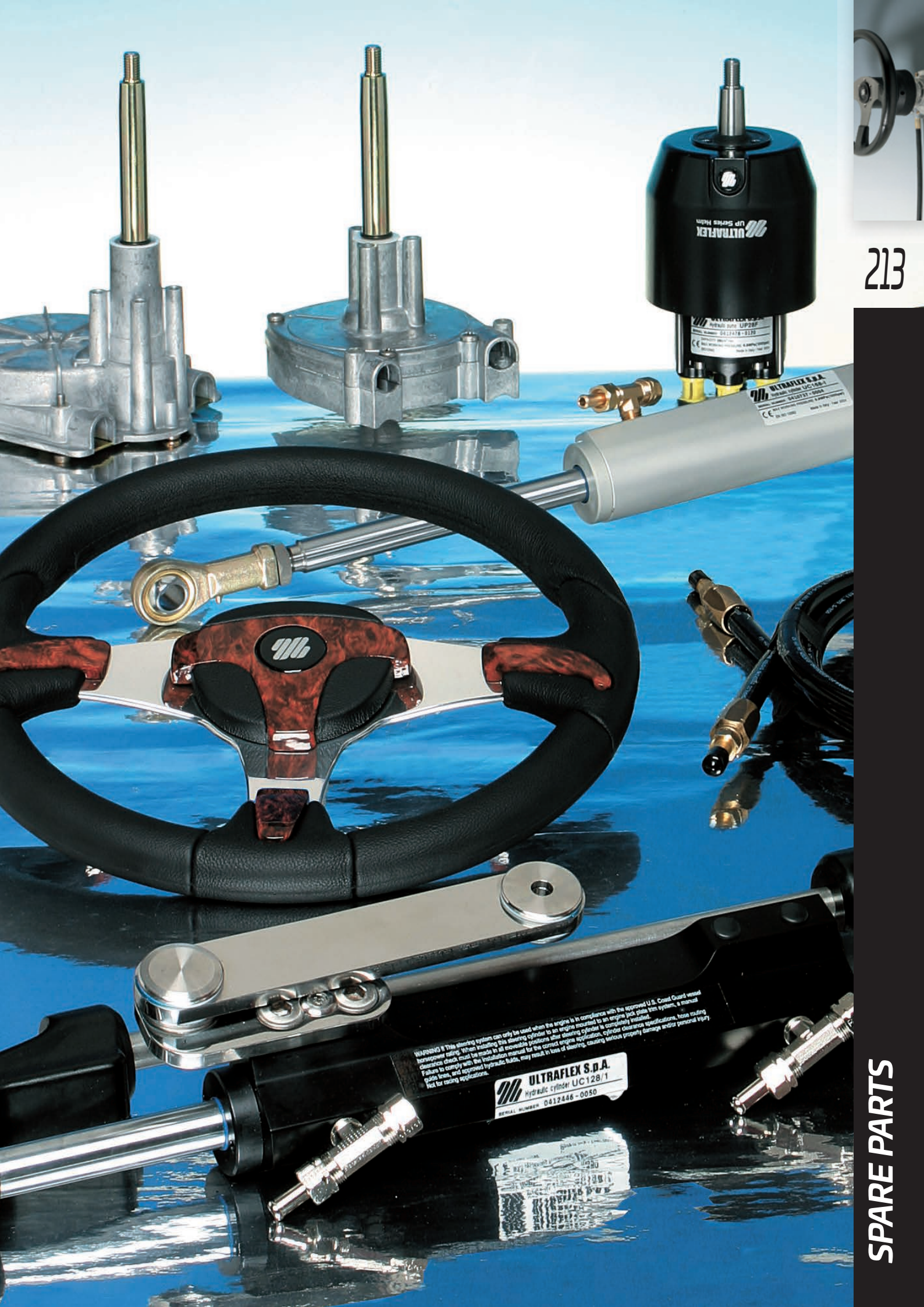


S-2674



S-2675





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SPARE PARTS

WARNING: This steering system can only be used when the engine is in compliance with the approved U.S. Coast Guard vessel horsepower rating. When installing this steering cylinder to an engine mounted to an engine jack plate system, a manual clearance check must be made in all movable positions after steering cylinder is completely installed. Failure to comply with the installation manual for the correct engine operation, cylinder clearance specifications, hose routing guide from, and approved hydraulic fluids, may result in loss of steering, causing serious property damage and/or personal injury. Not for racing applications.

**ULTRAFLEX S.p.A.**  
Hydraulic cylinder UC128/1  
SERIAL NUMBER: 0412446-0050





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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.

<b>T67</b>	
Black bezel	59336 W
White bezel	59601 U
Zinc-chrome steel bushing	56402 K
Installation kit	38070 K
Shaft kit	70550 J

<b>M58</b>	
Lock nut engine side	55170 M

<b>T85</b>	
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

<b>T71FC - T72FC - T73NRFC - T74NRFC</b>	
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

<b>T91 - T93ZT</b>	
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

<b>X52 - X66 Tilt Mechanisms</b>	
Upper cover	72297 K
Lower cover	70140 N
Gasket	70138 C

<b>T86 - T88</b>	
2 Shaft kits	71109 A

<b>Steering Wheels</b>	
Stainless steel TS silver screws	60697 Q
Stainless steel TS black screws	60698 T
Stainless steel TB silver screws	66734 W
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

<b>B301CR - B302CR - B301B - B302B - B322 - B324</b>	
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

<b>B501 - B502</b>	
B501 coponents kit	43128 W
B502 components kit	43129 Y

<b>B103 - B104</b>	
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

<b>B65 - B665 - B66 - B666</b>	
<b>B73 - B74 - B76 - B77 - B78 - B79</b>	

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

<b>B310CH - B310BR - B310B</b>	
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

<b>B183 - B184 - B85</b>	
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

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

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

<b>B99 - B101 - B102</b>	
Red knob B99 - B101 - B102	58266 Y
Black knob B99 - B101 - B102	53185 V
Installation kit B99 - B101 - B102	35391 A

<b>B14 Engine Stop Cable</b>	
B14 Kit	59976 G



## MECHANICAL PRODUCTS

## 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.

### B110

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

### B505

Seal kit	43649 B
Top and side cover kit	43650 K

### 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
Replaceable heads kit + Seal kit + Tool kit	43473 P

### 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 C	41919 U
Tool kit for UC94-OBF P. No: 40154 F, 40161 C	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

### UC95-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
Tool kit for UC95-OBF	43446 L
Replaceable heads kit for UC95-OBF	43444 G

### 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







## 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.

#### UC128-SVS OUTBOARD CYLINDER

Tiller arm connecting kit (ultrabolt)	42081 R
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#### UC130-SVS OUTBOARD CYLINDER

Tiller arm connecting kit (ultrabolt)	42081 R
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Seal cartridge kit for UC130-SVS PNo: 43225 U, 43226 W, 43227 Y	43364 J
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Tool kit for UC130-SVS PNo: 43225 U, 43226 W, 43227 Y	43386 V
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#### UC120 OUTBOARD CYLINDERS

Seal kit	43572 S
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Tool kit	43614 F
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#### 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
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Extension rod connecting pin	40917 J
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#### ZTF

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

Balljoint for UC69-I	40883 U
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Balljoint for UC116-I	39477 Z
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Balljoint for UC168-I and UC215-I	39478 B
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Balljoint for UC293-I	40178 W
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Balljoint for UC378-I	41310 Y
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Balljoint and shim for UC69-I	40884 W
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Balljoint and shim for UC116-I	39479 D
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Balljoint and shim for UC168-I e UC215-I	39480 M
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Balljoint and shim for UC293-I	40180 G
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Balljoint and shim for UC378-I	41311 A
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#### STERNDRIIVE CYLINDERS

Extension rod connecting pin	40917 J
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#### NUT AND SLEEVE

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