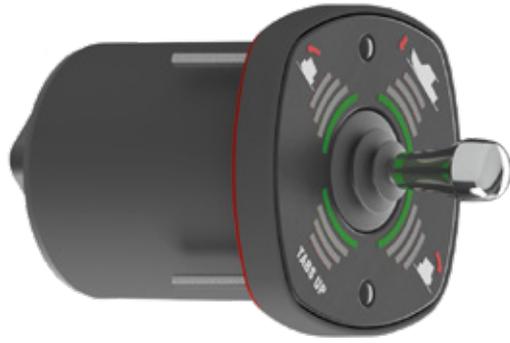


UF FLEX 20

**DRIVING
THE FUTURE
OF BOATING**



NEW20



JOYSTICK CONTROL WITH LED INDICATORS

page 185



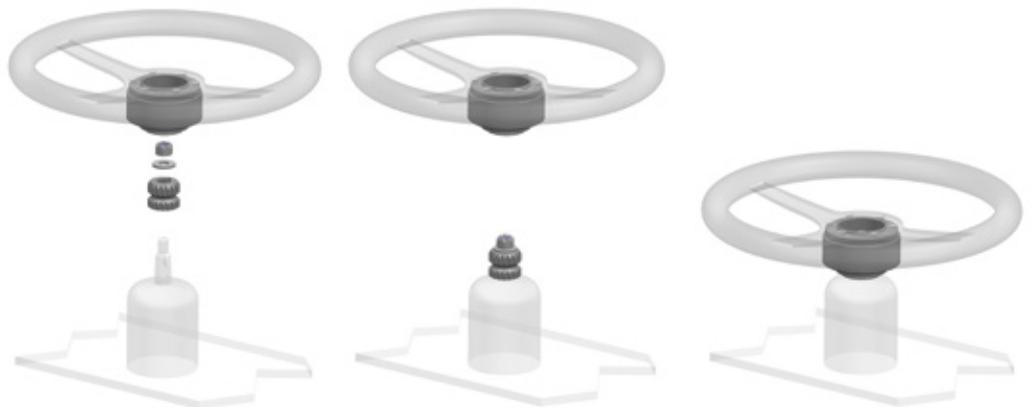
UC94

page 56



A95

page 83



HSO-K QUICK CONNECT REMOVABLE HUB

page 152

NEW20



V99 NEW MODELS

page 114



PIANOSA

page 116



CAPRAIA

page 117



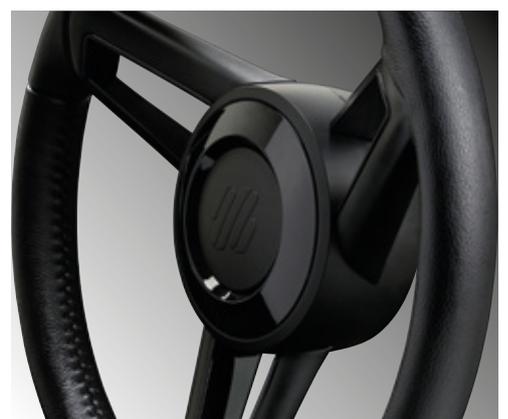
DOMINO

page 118



SPINOLA

page 135



DOLFIN L B/B/P

page 137



ULTRAFLEX GROUP
85 years
 1935-2020

2



UFLEX USA Inc
 Driving the future of boating



 **ULTRAFLEX S.p.a**
 Steering and control systems for pleasure boats.



 **UFLEX S.r.l**
 Worldwide distribution of marine accessories



 **ULTRAFLEX - Energy Division**
 Systems and accessories for alternative energy applications



 **ULTRAFLEX CONTROL SYSTEMS S.r.l**
 Window and skylight remote controls. Innovative LED sign technology.

 **INDUSTRIA di LEVI S.r.l**
 Mechanical remote controls in the industrial field



ULTRAFLEX GROUP

MANAGEMENT SYSTEM

The Ultraflex and Uflex Management Systems 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.





www.uflexusa.com

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CORPORATE INFORMATION

Established in 1989 Uflex USA is a leader in steering and control systems for the marine industry. With full manufacturing capabilities in Sarasota, Florida, Uflex USA can support all sectors of the marine industry regardless of the volume and/or product requirements. As an affiliate of the Ultraflex Group, Uflex USA has tremendous resources to draw upon for new product development in hydraulics, electronics and many other technologies.

Innovative product design and unparalleled dedication to quality, customer service and products continue to be the cornerstone of Uflex USA's growth. Today our products can be found as originally installed equipment on many of the most widely known and respected boat brands in the world. Aftermarket parts can be sourced from trained and experienced distributor network throughout North, South and Central America.

Our dedication to providing the highest quality products and service is only matched by our commitment to developing new products employing the latest materials and technology to enhance our customer's boating experience. From steering wheels to sophisticated electronic controls, Uflex USA has everything you need to make sure that your boat looks and performs it's best for many, many years.

UFLEX USA Inc.
6442 PARKLAND DRIVE
SARASOTA, FLORIDA 34243 - USA





4



UFLEX USA® LIMITED WARRANTY

page 8



Power A Mark II™

ELECTRONIC CONTROL SYSTEM

page 9 to 17



SELECTING A STEERING SYSTEM

page 18 to 20



MECHANICAL STEERING SYSTEMS AND ACCESSORIES

page 21 to 40



NAVITECH STEERING SYSTEM



page 32 to 33



OUTBOARD HYDRAULIC STEERING SYSTEMS

page 41 to 92



TILT MECHANISM SELECTION

page 46 to 47



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PACKAGED STANDARD OUTBOARD STEERING SYSTEMS

page 63



SILVERSTEER HIGH PERFORMANCE OUTBOARD STEERING SYSTEMS

page 64 to 71



MASTERDRIVE POWER ASSISTED OUTBOARD STEERING SYSTEMS

page 72 to 80



TIE BARS FOR OUTBOARD ENGINES

page 81 to 84



STERNDRIVE STEERING SYSTEMS

page 85 to 86



BULKHEAD HOSE KITS - ACCESSORIES AND FITTINGS

page 87 to 89



HYDRAULIC OUTBOARD CROSS REFERENCE GUIDE

page 90 to 91



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6



BubbleBuster™
AUTOMATIC FILLING AND PURGING SYSTEM

page 92



ZERO TORQUE FEEDBACK
TILLER STEERING SYSTEMS

page 93 to 96



INBOARD HYDRAULIC STEERING SYSTEMS

page 97 to 110



STEERING WHEELS

page 111 to 151



ACCESSORIES FOR STEERING WHEELS

page 152



PADDLE TRIM

page 153 to 154



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ENGINE CONTROLS

page 155 to 170



ENGINE CONTROL CABLES

page 171 to 174



SPARE PARTS

page 175 to 178



UIFLEX® TRIM TABS

page 179 to 188



UCS® - ELECTROMECHANICAL HATCH LIFTERS

page 189 to 192

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

ULTRAFLEX mechanical steering systems components are all marked **CE** in compliance with the **EEC Directive 2013/53/EU** and the rules **EN29775 - EN28848**.

ULTRAFLEX hydraulic steering systems 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.

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**).

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



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UFLEX USA, INC., LIMITED WARRANTY

- 1. Two Year Limited Warranty.** Uflex USA, Inc. warrants that all products manufactured by Uflex USA, Inc or Ultraflex S.p.A. and sold by Uflex USA to the retail purchaser ("Purchaser") that for two (2) years after the date of manufacture to be free from defects due to material or workmanship, subject to the exclusions below. Improper installation VOIDS this warranty. Installation should only be attempted by a trained and qualified technician.
- 2. Exclusions.** This limited warranty does not cover and does not extend to any of the following:
 - (a) Failure caused by normal wear and tear, climatic conditions, misuse, neglect, lack of proper maintenance, accident, fire or other casualty damage, racing, overloading, negligence, modification, beaching or grounding of vessel, collision, impact, towing, acts of war or hostilities;
 - (b) components not manufactured by Uflex USA, Inc., or its affiliates;
 - (c) cost of removal or reinstallation of any component (including components manufactured by Uflex USA, Inc.), or disassembly and reassembly of the unit containing the component;
 - (d) components not manufactured by Uflex USA, Inc. or Ultraflex S.p.A., whether or not warranted by the other manufacturer.
 - (e) any product which has not been properly installed.
- 3. Limitations. THE REPAIR OR REPLACEMENT OF DEFECTIVE PARTS SHALL BE PURCHASER'S SOLE AND EXCLUSIVE REMEDY AND UFLEX USA, INC.'S SOLE AND EXCLUSIVE LIABILITY UNDER THIS WARRANTY. LABOR FOR REPLACEMENT IS NOT INCLUDED.** Uflex USA, Inc.'s obligation under this warranty is limited to the repair or replacement (at Uflex USA, Inc.'s sole election) of any covered item found to be defective, when delivered by Purchaser pursuant to written authorization and instructions from Uflex USA, Inc., shipping prepaid to Uflex USA, Inc.'s, plant or other designated repair facility. Repaired or replaced items are warranted as provided herein for the unexpired portion of the applicable warranty period.
THIS WARRANTY, AND THE RIGHTS AND REMEDIES UNDER IT, IS EXCLUSIVE AND IS GIVEN IN PLACE OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, WHETHER ARISING BY LAW, CUSTOM, CONDUCT OR USAGE OF TRADE. PURCHASER'S REMEDIES SHALL BE LIMITED AS STATED HEREIN AND UFLEX USA, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR INDIRECT DAMAGES OR LOSSES RESULTING FROM DEFECTS. THE RETAIL SELLER IS NOT A CO-WARRANTOR AND IS NOT AUTHORIZED BY UFLEX USA, INC. TO AMEND OR MODIFY THIS LIMITED WARRANTY IN ANY MANNER.
- 4. Transferability of Warranty.** This limited warranty may not be transferred to subsequent purchasers.
- 5. Miscellaneous.** Uflex USA, Inc. is an affiliate of Ultraflex S.p.A. Uflex, USA, Inc., reserves the right to make changes in the design and construction of its products at any time, without notice and without any obligation to incorporate such changes into products of prior manufacture. This limited warranty applies to new components sold by Uflex USA, Inc.. This limited warranty contains the entire agreement between Uflex USA, Inc. and Purchaser and supersedes all prior agreements, discussions, negotiations, commitments and representations, whether oral or written, between them regarding Uflex USA, Inc.'s warranty. If any provision of this limited warranty, or the application of it, is determined to be invalid or unenforceable for any reason, the remainder of this limited warranty and the application of it shall not be affected.
- 6. 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.

All communications and notices from Purchaser regarding this limited warranty should be sent to:

UFLEX USA, INC.
6442 Parkland Drive
Sarasota, Florida 34243
(941) 351-2628.

RETURNS POLICY

Any product that is presumed defective should be reported to Uflex USA within 48 hours of receipt or discovery in the field. Upon notification Uflex USA will attempt to troubleshoot the problem with our customer over the phone. If we are unable to resolve the problem Uflex will issue a Return Goods Authorization number and we require that the product in question be returned to Uflex with all of its parts in its original packaging. The product should be returned freight prepaid to:

Uflex USA
RGA Department - RGA #
6442 Parkland Drive
Sarasota, Florida 34243

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

Our warranty does not cover labor, towing or other expenses. Further, it does not cover products that have been improperly installed, damaged in installation, misapplied, or misused.

Our products are not intended for use in racing applications.

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

PROP 65

Some of the products offered by Uflex may include chemicals which are subject to Prop 65 Warning. These products will have the following warning labels. For more information contact Uflex USA directly at 941.351.2628.

⚠ WARNING: Cancer -www.P65Warnings.ca.gov/product

⚠ WARNING: Reproductive Harm -www.P65Warnings.ca.gov/product

⚠ WARNING: Cancer and Reproductive Harm -www.P65Warnings.ca.gov/product



Power & Control



ELECTRONIC CONTROL SYSTEM

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

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

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

Other standard features include RPM Synchronization, which reduces engine vibration and improves fuel economy, a High Idle feature to increase RPM where higher idle is necessary for cold engine operations, a programmable Trolling Valve Control and neutral Warm Up.

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

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

With the ability to control up to 2 engines from up to 4 different stations, the PowerA Mark II is a modular and flexible system with simple to install components.

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

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



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

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

ALSO AVAILABLE INSTALLATION FOR 3 OR 4 ENGINES

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 CATALOG.

Power A Mark II

TECHNICAL FEATURES:

- Single Lever/Dual Function and Dual Lever/Dual Function for shift and throttle
- 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
- 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
- Electric shift control:
 - 2 or 3 ON/OFF or proportional solenoids
 - Shift delays fully settable

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 electronic system actuators cannot be installed in those rooms where ignition-proof devices are required.



SYSTEM CONTROL UNITS

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

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

SAEJ-Throttle



PA2-SAEJT - Customized

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

IP protection: IP65

Dim.: 8" x 4.7" (205 x 110 mm)

PWM-Throttle



PA2-PWMT - 42020 U

It supplies the electrical signals to PWM interfaces

IP protection: IP65

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

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

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

M-Actuator



PA2-MA - 42027 J

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

IP protection: IP66

Length: 12.6" (320 mm)

CHART A - E-Throttle Unit

MODEL	P. No.	DESCRIPTION	FEATURES	No. OF ENGINES	ENGINE TYPE
V-Throttle	42018H	Throttle with analog voltage interface	Redundant voltage input, IVS.	1 - 2	FPT, Volkswagen, Yanmar, Mercruiser, Lombardini.
I-Throttle	42019K	Throttle with current analog interface	Current outputs.	1 - 2	4 - 20 mA throttle engines
PWM-Throttle	42020U	Throttle with PWM interface	PWM outputs	1 - 2	Perkins, Caterpillar
SAEJ -Throttle	Custom	Throttle with SAEJ 1939 interface	CAN DeviceNet SAEJ 1939 outputs	1 - 2	SAEJ 1939 engines
NMEA -Throttle	Custom	Throttle with NMEA 2000 interface	CAN DeviceNet NMEA 2000 outputs	1 - 2	NMEA 2000 engines

CHART B - Throttle cables

MODEL	APPLICATION	LENGTH (m - ft)	P. No.	CONNECTORS
Universal V-Throttle cable	Not redundant 5V cable/1 engine	2 - 6.6 4 - 13.1	42029N 42030X	None
FPT V-Throttle cable	FPT engines 0 - 5 V cable (J-INV connector)	2 - 6.6 4 - 13.1	42350S 42351U	FPT, all engines with J-INV connector
FPT V-Throttle cable	FPT engines 0 - 5 V cable (J-D connector)	2 - 6.6 4 - 13.1	42348F 42349H	FPT, all engines with J-D connector
VW V-Throttle cable (4-5-6 cylinder)	VW engines 0 - 5 V cable	2 - 6.6 4 - 13.1	42033D 42034F	VW, 4, 5 and 6 cylinder
Mercruiser 4.2 Black V-Throttle cable	Mercruiser engines 0 - 5 V cable	2 - 6.6 4 - 13.1	42035H 42036K	Mercruiser 4.2 black engines
Mercruiser QSD V-Throttle cable	Mercruiser engines 0 - 5 V cable	2 - 6.6 4 - 13.1	42037M 42038P	Mercruiser QSD engines
Lombardini V-Throttle cable	Lombardini engines 0 - 5 V cable	2 - 6.6 4 - 13.1	42039S 42040A	180 and 240 HP Lombardini engines.
Yanmar V-Throttle cable	Yanmar engines 0 - 5 V cable	2 - 6.6 4 - 13.1	42041C 42042E	Yanmar BY engines.
Universal I/ PWM-Throttle cable	PWM throttle cable with no connector	2 - 6.6 4 - 13.1	42043G 42044J	Compatible with CAT electronic engines C30/C32
Universal SAEJ1939-Throttle cable	SAEJ1939 cable with no connector	2 - 6.6 4 - 13.1	42045L 42046N	None
NMEA2000 Throttle cable	NMEA2000 cable	1 - 3.3 3 - 9.8 7 - 22.9	42047R 42048T 42049V	DeviceNet cable Drop type for NMEA2000 connection
Hyundai V-Throttle cable	Hyundai engines 0 - 5 V cable	2 - 6.6 4 - 13.1	42288P 42289S	Hyundai engines
VM V-Throttle cable	VM engines 0 - 5 V cable	2 - 6.6 4 - 13.1	42314M 42315P	VM engines
Perkins PWM-Throttle cable	Perkins engine PWM Throttle cable	2 - 6.6 4 - 13.1	42374 G 42373 E	Perkins engines



13

CHART C - Main system cables

DESCRIPTION	APPLICATION	LENGTH (m - ft)	P. No.	CONNECTORS
Main power supply cable	Main power supply of the system	1 - 3,3 3 - 9,8 7 - 22,9 10 - 32,8	42052H 42053K 42054M 42055P	One each battery
Power cable extension	Power extension cable for modules connection	1 - 3,3 3 - 9,8 7 - 22,9 10 - 32,8	42056S 42057U 42058W 42059Y	One each mechanical actuator or shift unit
Shift cable	Solenoid connection cable	1 - 3,3 3 - 9,8 7 - 22,9 10 - 32,8	42060G 42061J 42062L 42063N	One each solenoid shift
3 solenoid Shift cable (neutral solenoid)	3 solenoid connection cable	1 - 3,3 3 - 9,8 7 - 22,9 10 - 32,8	42072P 42073S 42074U 42075W	One each 3 solenoid shift
CAN cable	Network connection cable	1 - 3,3 3 - 9,8 7 - 22,9 10 - 32,8 15 - 49,2 20 - 65,6	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

Spare parts

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



OR



ELECTRONIC SHIFT UNIT - 42023 A

- Controls up to 2 shift functions with solenoids. Required for use with direct connection to electronic shift unit on the transmission.
- IP 65 Protected
- Dimensions: 8.3" x 4.7"



MECHANICAL SHIFT OR MECHANICAL SHIFT AND THROTTLE M-ACTUATOR - 42027 J

- Electromechanical actuator for all mechanically controlled engine functions i.e. throttle or shift
- One actuator required per function per engine
- Connect to engines using 33C/Universal style mechanical control cables i.e. MachZero and C8
- IP 65 protected
- Dimensions: 4" x 12"



ELECTRONIC THROTTLE

V-THROTTLE - 42018 H

- For 0-5V engine interface.

SAEJ-THROTTLE - Customized

- Digital signal to CAN SAEJ1939 or NMEA 2000 engine interface, on request, according to customer's specifications
- IP 65 protected
- Dimensions: 8" x 4.3"



ENGINE	NO. OF ENGINES	COMPONENTS	P. No.	QTY
PwA II-EE Electronic throttle Electric shift	Single Engine	Single control with trim (or no trim)	42010R (42009G)	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		
PwA II-EM Electronic throttle Mechanical shift	Single Engine	Dual control with trim (or no trim)	42012V (42011T)	1
		Control Unit	42017F	1
		E-Throttle unit	Chart A	1
		E-Shift unit	42023A	1
		Throttle cable	Chart B	2
	Shift cable	Chart C	2	
	Power supply cable (general)	Chart C	1	
	CAN cable	Chart C	3	
	Network terminators	42028L	1	
	Power Unit (optional for second battery)	42026G	1	
Power cable extension (optional for second battery)	Chart C	1		
Power supply cable (optional for second battery)	Chart C	1		
PwA II-EM Electronic throttle Mechanical shift	Single Engine	Single control with trim (or no trim)	42010R (42009G)	1
		Control Unit	42017F	1
		E-Throttle unit	Chart A	1
		Mechanical actuator	42027J	1
		Throttle cable	Chart B	1
	CAN cable	Chart C	3	
	Power supply cable (general)	Chart C	1	
	Network terminators	42028L	1	
	Power Unit (optional for second battery)	42026G	1	
	Power cable extension (optional for second battery)	Chart C	1	
Power supply cable (optional for second battery)	Chart C	1		
PwA II-EM Electronic throttle Mechanical shift	Two Engines	Dual control with trim (or no trim)	42012V (42011T)	1
		Control Unit	42017F	1
		E-Throttle unit	Chart A	1
		Mechanical actuator	42027J	2
		Throttle cable	Chart B	2
	CAN cable	Chart C	4	
	Power supply cable (general)	Chart C	1	
	Network terminators	42028L	1	
	Power Unit	42026G	1	
	Power extension cable	Chart C	2	
Power supply cable (optional for second battery)	Chart C	1		
For each additional station add:				
Single Engine:	Single lever control station with trim (or no trim)	42010R (42009G)	1	
	CAN cable	Chart C	1	
Two Engines:	Dual lever control station with trim (or no trim)	42012V (42011T)	1	
	CAN cable	Chart C	1	



ENGINE	NO. OF ENGINES	COMPONENTS	P. No.	QTY
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
	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
		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



SELECTING A STEERING SYSTEM

Steering Torque →



Choosing the appropriate system for your application can sometimes be confusing because of the variety of steering systems available. There are 4 basic steering types: Mechanical Rotary, Mechanical Rack, Hydraulic and Power Steering that cover most of the styles of recreational powerboats. The Mechanical Rotary, Mechanical Rack and Pinion are available in standard or Zerotorque Feedback versions.

Selecting among these options is dependent upon the speed and handling characteristics of your particular boat. If your boat is an outboard or if it has a sterndrive without power steering, you need to consider steering systems that reduce the rudder torque feedback that you feel while driving your boat.

Feedback is the constant effort you have to put on the steering wheel just to go straight, and it is why it takes more effort to steer one direction than the other.

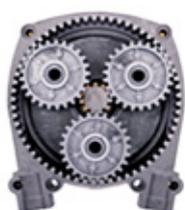
The amount of feedback depends on the boat, the propeller and the steering system in the boat. Generally speaking, the faster you are going the more amount of effort you have to put on the steering wheel to keep the boat going straight.

MECHANICAL STEERING SYSTEMS

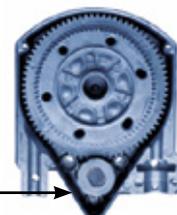
Uflex offers rotary systems featuring a "Planetary Gear Design" with 3 satellite gears which distributes steering feedback more evenly and effectively throughout the helm. The result is a reduction in the amount of effort needed to steer the boat straight or into the direction of the steering torque.

PLANETARY GEAR DESIGN:

The Uflex Planetary Gear Design also spreads the wear of the steering direction changes over a wider wear area which reduces overall wear and the correspondent lost motion.



Single Contact Point



ROTECH

The competitively priced complete system from Uflex is called the Rotech.

The Planetary Gear Design of the Rotech and FourTech contrasts conventional systems which have only one contact point between two drive gears. The single contact point of conventional systems receives all the torque from the engine, which can eventually lead to uneven gear wear and correspondent lost motion in the steering.

The Rotech and FourTech include helm, bezel and cable. They are a direct replacement for competing rotary systems requiring no new holes in the dash.

ACCURA

For outboard boats, sterndrives without power assist or other applications with moderate torque loads it is recommended to upgrade to system with a clutch or gears which automatically lock out the steering torque while the system is not actively being turned.

Uflex offers the Accura and FourTech-2 ZTF systems with the same Planetary Gear Design but in a ZeroTorque configuration, which does not require a constant effort on the steering wheel to keep the boat going straight or in the intended direction.

A special spring clutch holds the steering system on its intended course until the next change in the direction is initiated by the driver.

FOURTECH

Specifically designed for high performance and high efficiency applications, the Fourtech offers performance, flexibility and durability increased by top quality materials and construction.

The Fourtech-1 package includes T91 helm (PLANETARY GEAR DESIGN), bezel and highly flexible M90 Mach cable.

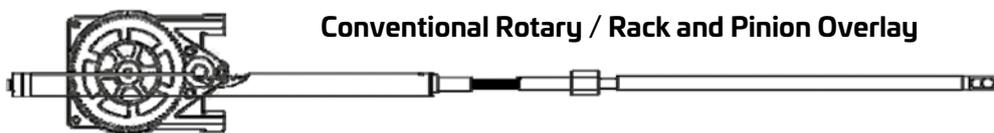
The Fourtech-2 ZTF package includes T93ZT (zero torque configuration) helm, bezel and M90 Mach cable and presents the same technical features as Fourtech-1.

RACKTECH

Rack and Pinion steering systems are generally found on boats where space between the drivers knees and the steering helm is limited. Racks were particularly common in the early 70's on ski boats where the freeboard of the boats were very small.

Today's boats generally have enough space to fit a rotary helm, making the rack systems less popular as OEM installed option.

Rack and Pinion systems have the similar design issues as conventional rotary helms. Accordingly, all the steering loads are transmitted to one contact point and there is uneven wear in the system.



ACCUTECH

For boats that do have space constraints, Uflex offers the Racktech steering package that consists of a helm, bezel and steering cable. The ZeroTorque version of the Uflex rack and pinion is the Accutech, which features a spring clutch to allow for smooth transition in and out of the ZeroTorque mode.

Both systems come with the M86 Rack Cable which has an armor wrapped stranded wire core for high efficiency and smooth steering.

If you have a boat that has the space, it is recommended to take advantage of the Planetary Gear Designed rotary helms to reduce feedback and to improve longevity of the helm.

HYDRAULIC STEERING SYSTEMS

Hydraulics are more and more popular on mid to high horsepower outboard applications. The increased application of hydraulics has a lot to do with the increase in horsepower over the years, and the added torque that is inherent with 4 stroke outboards compared to 2 strokes. The high output torque of the 4 strokes has changed the propellers resulting in higher torque loads on the steering systems. Hydraulic systems are very efficient in dealing with all torque conditions and often provide for fingertip steering effort.

Uflex offers a simple application guide to assist in selecting the appropriate model cylinder according the make and model of your engine at www.uflexusa.com. The Uflex helms are compatible with competing helms, hoses, cylinders and oil, so you can easily install a Uflex component regardless of what item you need to replace.



Outboard systems are generally broken down into three systems; one for applications below 115 hp, one for applications below 150 hp and different systems for above 150 hp.

GOTECH™

The most affordable hydraulic steering option in the market, the GoTech™, is the perfect solution for low horsepower up to 115 hp, high torque four stroke outboards. Featuring a mid-mount composite helm and anodized aluminum front mount cylinder the GoTech™ offers smooth and easy steering with 4.5 turns lock to lock. It is an ideal system for pontoon boats, rigid hulled inflatables, walleye boats and any other application where mechanical steering is the not adequate for steering loads of today's outboards.

HYCO

Uflex offers the Hyco package which has a clever mounting system that allows you to install a front mount outboard cylinder without having to remove the engine. With the split tilt tube design of the Uflex Hyco, you can simply cut the old mechanical steering cable, insert the two tilt tube pieces independently and pin them to complete the hydraulic cylinder installation.

The cylinder is suspended in front of the engine and oil directed from the hydraulic helm moves the engine correspondent to the direction of the steering wheel. Suitable up to 150 hp installatons.





PROTECH

Larger horsepower applications require a more robust steering cylinder. The Uflex Protech cylinder is designed for single, dual and triple engine applications (Please, contact our Technical Department for 3 engine installations). Featuring heavy duty seals, 304 electropolished link assemblies, and a carbon steel piston, it is built for the most demanding applications.

SILVERSTEER
MASTERDRIVE

For especially high torque applications you may want to consider using a 1500 psi helm, which has relief valves set 500 Psi higher than the standard hydraulic helms which are rated to 1000 Psi. Bass, flats and other high horsepower boats with jackplates and shallow V deadrise experience extreme torque where the helm needs to have higher relief settings.

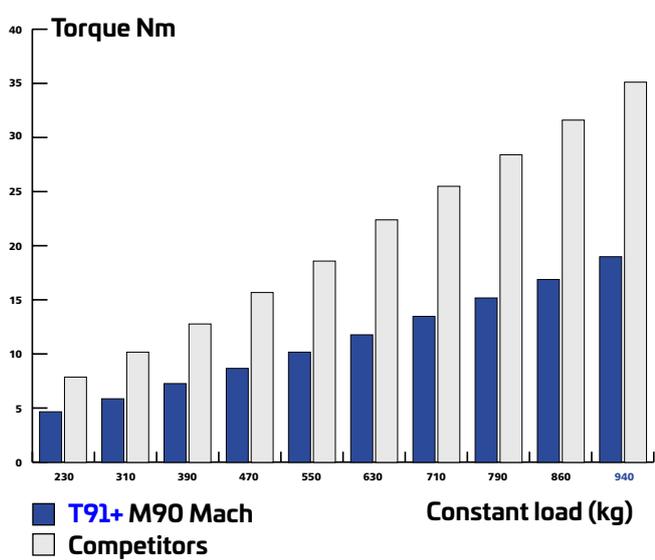
Uflex offers the Silversteer and Masterdrive helm and cylinder for these applications. With the same benefits as the Protech cylinder, the Silversteer cylinder also features a keyed bullhorn design that maximizes the rigidity of the cylinder when dealing with peak torque loads.

INBOARD

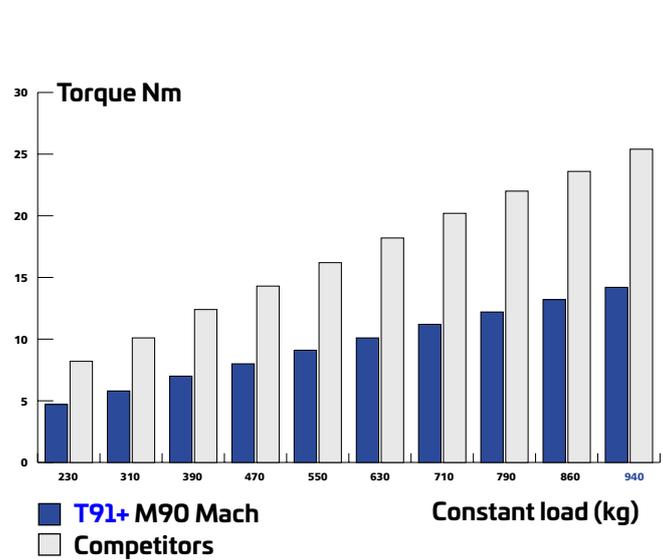
Large inboard boats with displacement hulls can generate high torque loads. Uflex offers a wide variety of hydraulic helms and cylinders that can be paired together to provide optimal steering for your application

EFFICIENCY COMPARISON TESTS

Push load:



Pull load:



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 speeds, helping to reduce system 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

Engine Interrupt Switch is highly recommended in any type of application





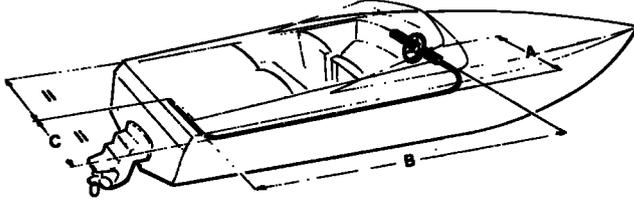
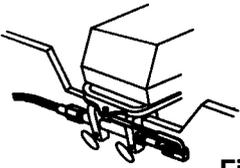
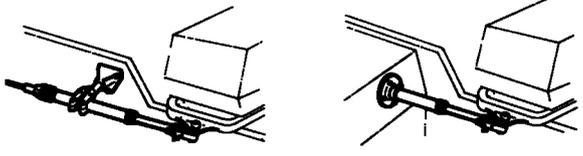
SELECTION OF STEERING SYSTEM AND CABLE LENGTH MEASUREMENT

APPLICATION	BOAT LENGTH	STEERING SYSTEM	
 OUTBOARD	up to 30' (9m)	T71FC - T81FC T73NRFC - T83NRFC T91 - T93ZT T101 - T103ZT G86 - G88NR G96 - G98NR	Ultraflex hydraulic steering systems are recommended for boats that exceed 50 mph. Always follow engine manufacturer's instructions.
 INBOARD	up to 35' (10.5m)	T71FC - T81FC T73NRFC - T83NRFC T91 - T93ZT T101 - T103ZT G86 - G88NR G96 - G98NR	
 STERNDRIVE POWER ASSISTED		T91 - T101 T71FC - T81FC G86 - G96	

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

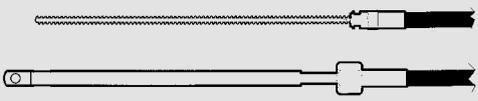
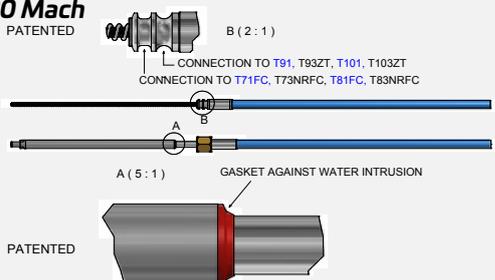




Add the lengths of A + B + C together and subtract 4" (10 cm) for each 90° bend. Add 12" (30,5 cm) for the engine tilt tube. To order in foot length, round up to the nearest whole foot.

Fig. 1
TILT TUBE MOUNTING - Fig. 1
Example:
 $A (2.5') + B (10.5') + C (3') = 16'$
 $16' - 8'' \text{ (two } 90^\circ \text{ bends)} = 15'4''$
 $15'4'' + 12'' \text{ (tilt tube)} = 16'4''$
 Round up to 17'

Fig. 2
TRANSOM SUPPORT OR SPLASHWELL MOUNTING - Fig. 2-3
Example:
 $A (2.5') + B (10.5') + C (3') = 16'$
 $16' - 8'' \text{ (two } 90^\circ \text{ bends)} = 15'4''$
 Round up to 16'

REPLACEMENT STEERING CABLES

ULTRAFLEX REPLACEMENT CABLE	STEERING HELM	ADAPTOR REQUIRED
M66 	Ultraflex T71FC - T72FC - T73NR FC - T81FC - T82FC - T83NR FC - Teleflex® Safe - TQC®/NFB® - Morse® D290	none
	Ultraflex year 2001 and prior: T71 - T72 - T73NR T74NR - T81 - T82 T83NR - T84NR	K66 - 38432Q 
M86 	Ultraflex G86 - G88NR G96 - G98NR Morse® Command 200 Teleflex® "THE RACK" SSC-124	none
NOTE: Will not work with dual cable helms		
M68 + M67 	Dual station steering systems: Ultraflex T71FC	none
M90 Mach PATENTED  <p>CONNECTION TO T91, T93ZT, T101, T103ZT CONNECTION TO T71FC, T73NRFC, T81FC, T83NRFC</p> <p>A (5:1) GASKET AGAINST WATER INTRUSION</p> <p>PATENTED</p>	T91 - T93ZT T101 - T103ZT T71FC - T72FC - T73NR- RFC - T74NRFC - T81FC - T82FC - T83NRFC Ultraflex Safe - TQC® - NFB Safe TII® NFB 4.2® Teleflex® - D290 Morse®	none

Part numbers for ordering:

- M66 XLL LL = Length of cable
- M86 XLL LL = Length of cable
- M68 XLL LL = Length of cable
- M67 XLL LL = Length of cable
- M90 XLL LL = Length of cable

HOW TO MEASURE FOR REPLACEMENT STEERING CABLES

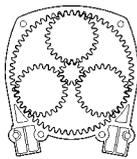
D = Conduit length



ORDER LENGTH: "D" dimension + 22" and round up to the next whole foot
Example: D= 120" + 22" = 142" (11'8"). Round up to 12 ft



T71FC AND T72FC ROTARY STEERING SYSTEMS



**FEATURING
PLANETARY GEAR
DESIGN**

24

A COMPLETE STEERING SYSTEM

CONSISTS OF:

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

FEATURES AND TECHNICAL

SPECIFICATIONS:

- Fast connect, simple installation
- All stainless steel cable output ends
- Corrosion resistant materials
- Particularly suitable where clearance is limited
- Optional 90° or 20° installation
- Standard 3/4" tapered shaft
- Lock-to-lock steering wheel turns: approx. 3.8
- Stroke: 9" (228 mm)
- Maximum allowable steering wheel diameter: 16" (406 mm)
- Minimum steering cable bend radius: 7.9" (200 mm)
- 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, which includes the **X34** bezel and M66 cable.
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards



T71FC



T72FC

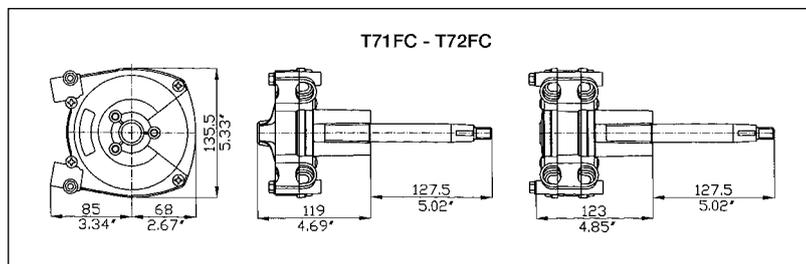
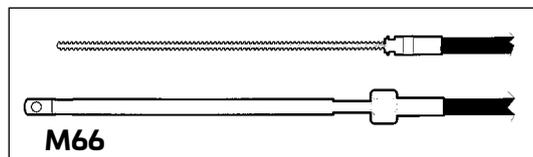


X34W

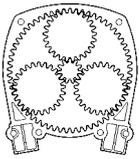
X34



X35



T73NRFC ANTI-FEEDBACK STEERING SYSTEM



FEATURING
PLANETARY GEAR
DESIGN



A COMPLETE STEERING SYSTEM

CONSISTS OF:

- Steering helm: **T73NRFC** - 38869 M anti-feedback single 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**
- Optional steering wheel (see index)
- Engine connection kits (see index)

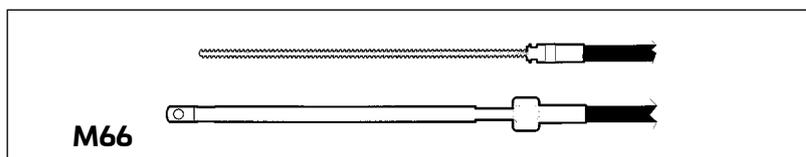
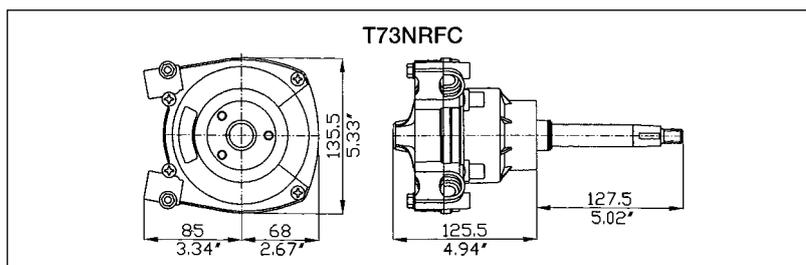
FEATURES AND TECHNICAL

SPECIFICATIONS:

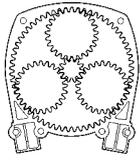
- Easy and safe steering : a **patented non-reversible mechanism** eliminates the continuous load on the operator caused by the propeller torque
- Fast connect, simple installation
- Compact rotary helm unit: the central location of the steering shaft makes these systems the most compact in their class
- 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: 9" (228 mm)
- Maximum allowable steering wheel diameter: 16" (406 mm)
- Minimum steering cable bend radius: 7.9" (200 mm)
- T73NRFC steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Available in package including the **X34** bezel and M66 cable with ACCURA
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards



T73NR FC



T81FC - T82FC
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
T82FC - 38958 L
 dual cable steering helm
T83NRFC - 38959 N
 anti-feedback single cable steering helm
- Tilt mechanism:
X52 - 39250 U (sold separately)
NOTE: X52 tilt mechanism fits Uflex tilt mount rotary and rack and pinion steering helms as well as Uflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems
- Steering cable: M66
NOTE: two M66 are needed with the **T82FC** system
- Optional steering wheel (see index)
- Engine connection kits (see index)

FEATURES AND TECHNICAL

SPECIFICATIONS:

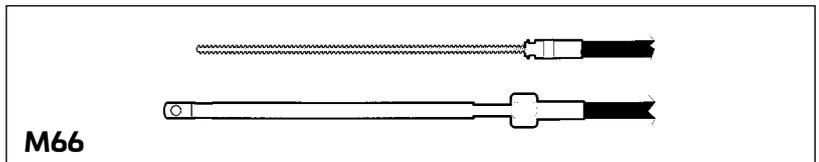
- Tilt range of 48° and five locking positions
- Fast connect, simple installation
- Tilt device eliminates underdash movement
- Standard 3/4" tapered shaft - stainless steel
- All stainless steel cable output ends
- Corrosion resistant materials
- Lock-to-lock steering wheel turns: approx. 3,8
- Stroke: 228 mm (9")
- Maximum allowable steering wheel diameter: 406 mm (16")
- Minimum steering cable bend radius: 200 mm (7.9")
- **T81FC, T82FC** 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



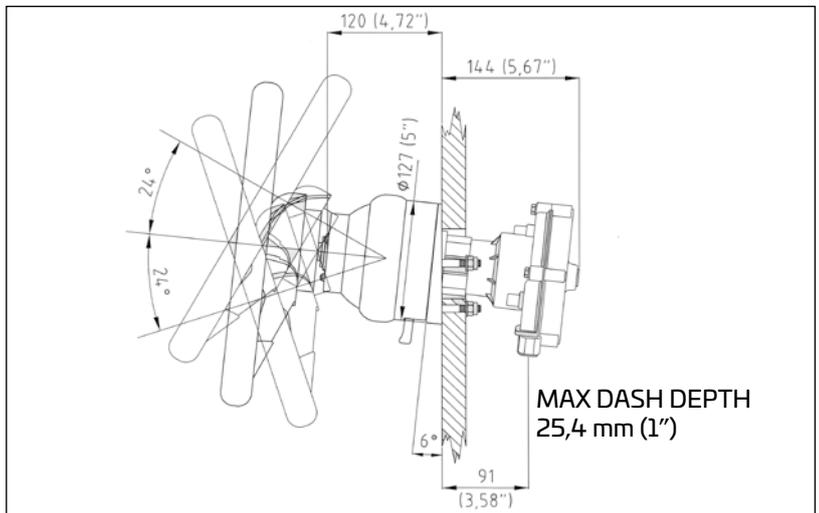
T81FC with X52



X52



M66



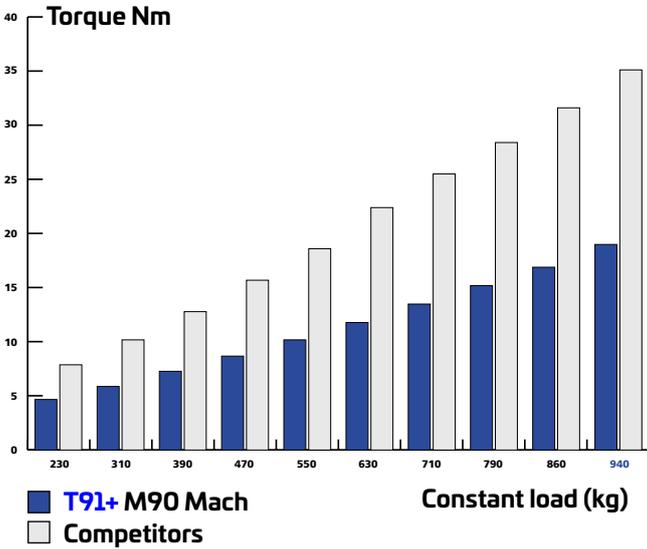
T91 - T93ZT STEERING SYSTEMS TORQUE COMPARISON

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.

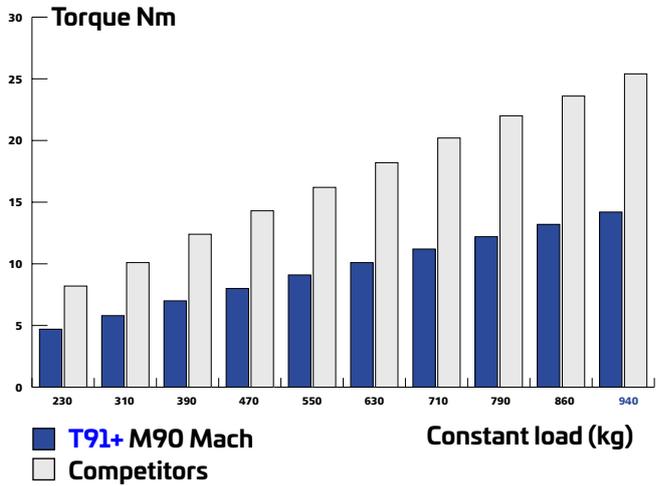
The new Uflex T91 and T93ZT steering systems, fitted with the M90 Mach single-cable, are the best mechanical steering systems on the market today. They combine a minimal backlash with higher efficiency and they guarantee results with very narrow cable bends.

TORQUE COMPARISON WITH PUSH AND PULL LOAD - RADIUS 200 mm

Push load:

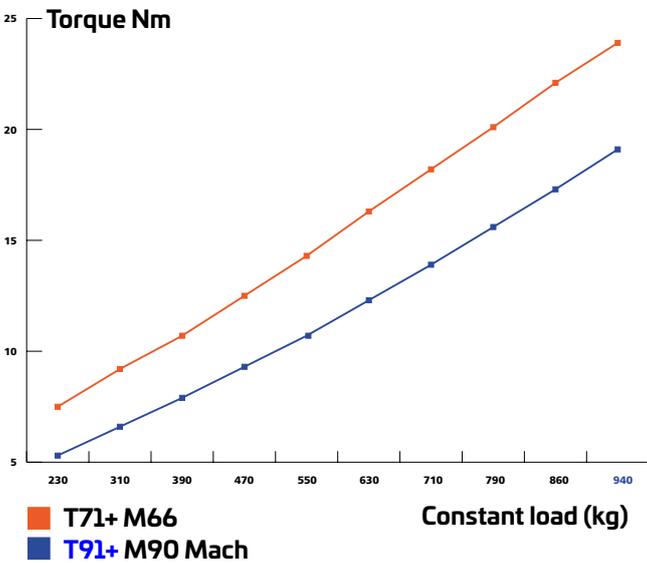


Pull load:

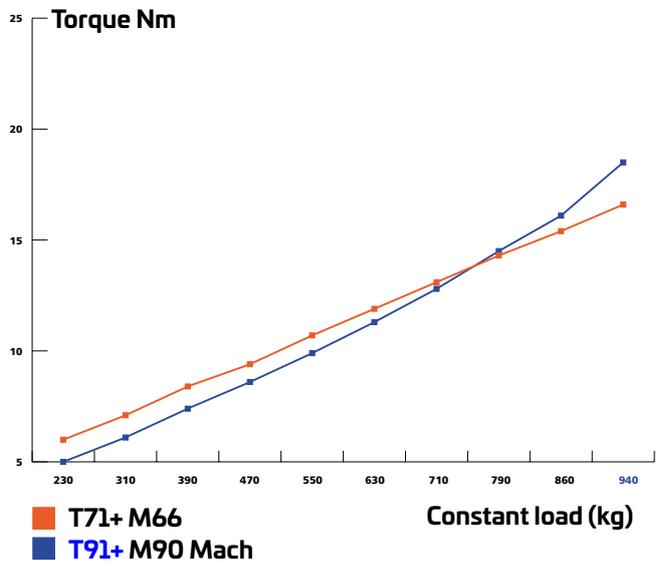


TORQUE COMPARISON WITH PUSH AND PULL LOAD - RADIUS 100 mm

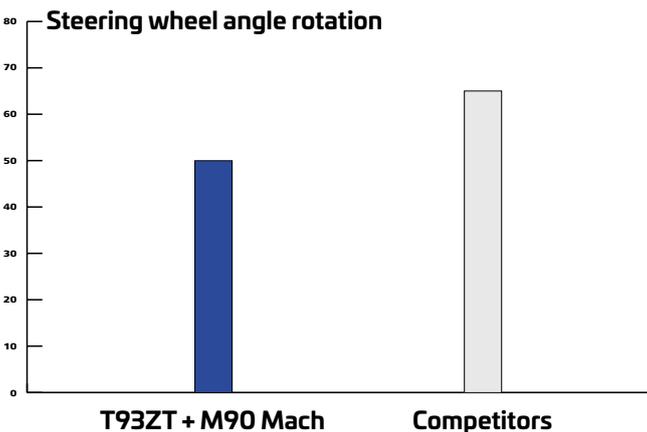
Push load:



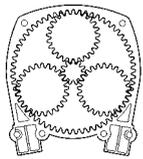
Pull load:



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 **T71FC, T72FC, T73NRFC, T81FC, T82FC, T83NRFC** Uflex steering helms. M66 will not fit the following Uflex helms: **T91, T93ZT, T101, T103ZT**.
- Optional steering wheel (see index)
- Engine connection kits (see index)



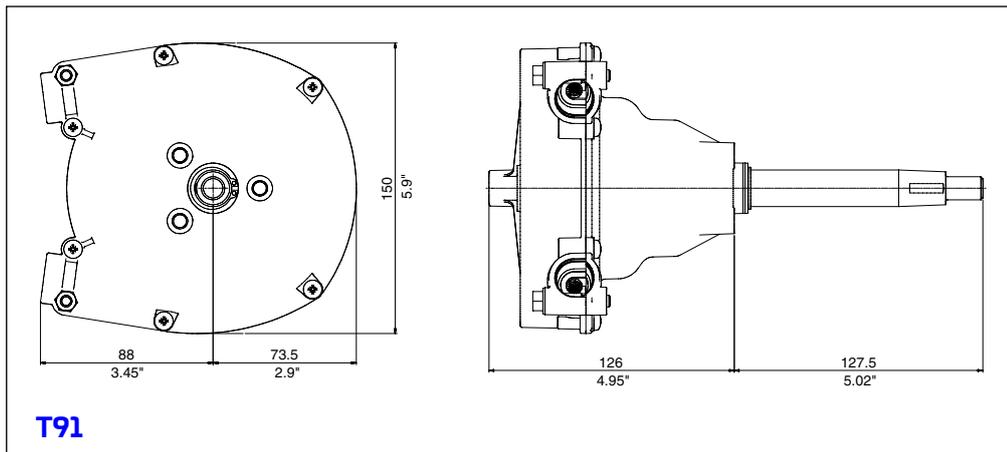
T91 shown with X91 bezel

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: 9" (228 mm)
- Maximum allowable steering wheel diameter: 16" (406 mm)
- Suggested steering cable bend radius: **7.87" (200 mm)**
- Minimum steering cable bend radius: **3.94" (100 mm)**
- Minimal feedback
- Compact for mounting
- **T91** steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- For boats faster than 50 mph our hydraulic steering systems are recommended
- **T91** is also available in package with FOURTECH-I
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards

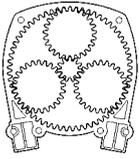


T91 high performance



M90 Mach (Patented)

T93ZT (ZERO TORQUE) HIGH PERFORMANCE ROTARY STEERING SYSTEM



**FEATURING
PLANETARY GEAR
DESIGN**

A COMPLETE STEERING SYSTEM

CONSISTS OF:

- Steering helm: **T93ZT** - 42648 U - zero torque single cable steering helm
- Mounting bezel (please refer to the mounting bezel selection):
 - X34** - 36654 B - black, 90° mounting
 - X34W** - 40654 C - white, 90° mounting
 - X91** - 42850 N - chrome - 90° mounting
 - X90** - 42646 P - chrome - 90° mounting with lock device
 - X35** - 36655 C - black, 20° mounting
- Steering cable: **M90 Mach** (patented)
ATTENTION: M90 Mach steering cable is suitable for use also with **T71FC, T72FC, T73NRFC, T81FC, T82FC, T83NRFC** Uflex steering helms. M66 will not fit the following Uflex helms: **T91, T93ZT, T101, T103ZT.**
- Optional steering wheel (see index)
- Engine connection kits (see index)



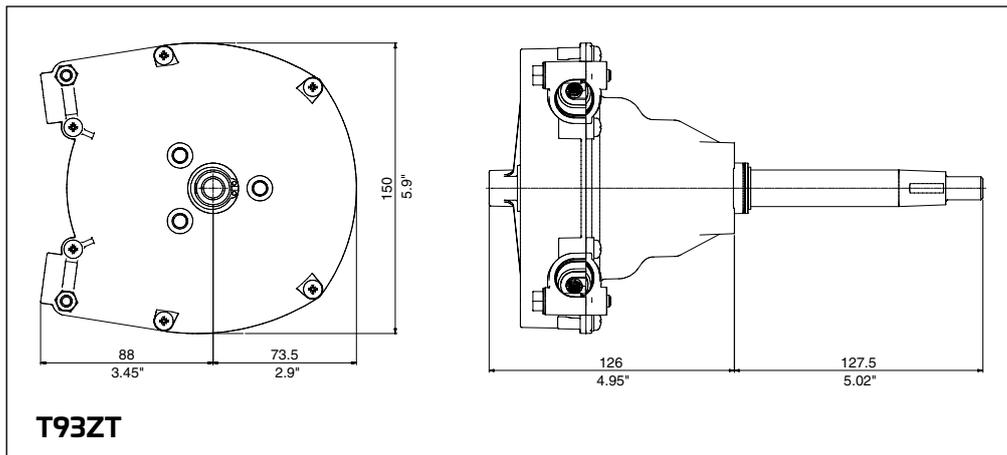
T93ZT shown with X91 bezel

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: 16" (406 mm)
- Suggested steering cable bend radius: **7.87" (200 mm)**
- Minimum steering cable bend radius: **3.94" (100 mm)**
- 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



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 and T73NRFC steering systems.

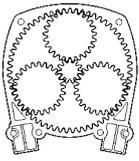


X90 - 42646 P
Chrome plated bezel with
steering lock device



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 (sold separately)
 - NOTE:** X52 tilt mechanism fits Uflex tilt mount rotary and rack and pinion steering helms as well as Uflex 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 **T71FC, T72FC, T73NRFC, T81FC, T82FC, T83NRFC** Uflex steering helms. M66 will not fit the following Uflex helms: **T91, T93ZT, T101, T103ZT.**
- 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: 9" (228 mm)
- Maximum allowable steering wheel diameter: 16" (406 mm)
- Suggested steering cable bend radius: **7.87" (200 mm)**
- Minimum steering cable bend radius: **3.94" (100 mm)**
- 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



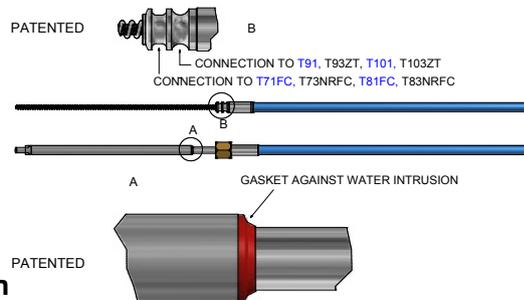
T101 shown with X52 tilt mechanism



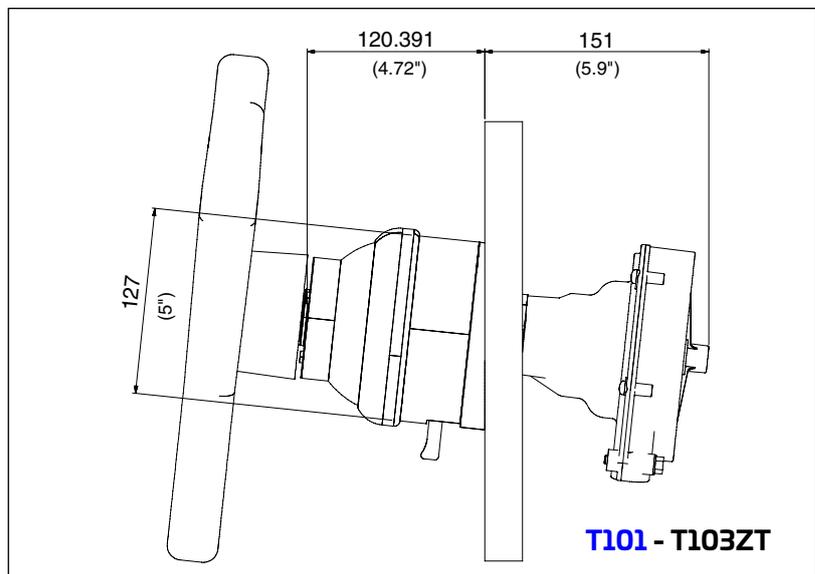
T101 high performance



T103ZT high performance



M90 Mach



T101 - T103ZT

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, Uflex 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 Uflex 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**. Uflex steering helms. M66 will not fit the following Uflex helms: **T91, T93ZT, T101, T103ZT**.
- Optional steering wheel (see index)



32

NAVITECH™ STEERING SYSTEM



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 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

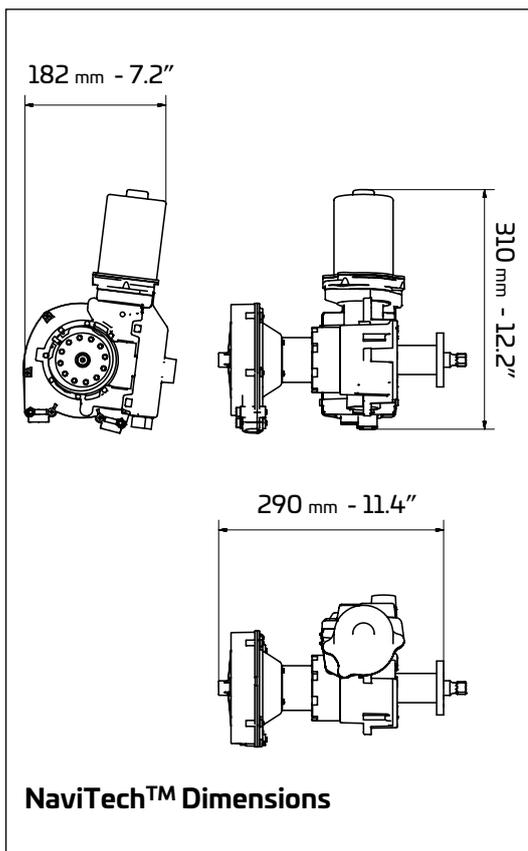
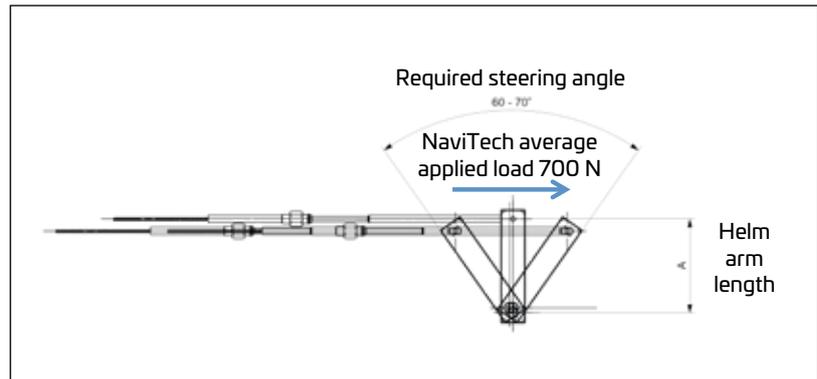


LIMIT OF APPLICATION

Outboard engines:

Up to 150 hp, maximum 50 mph, no jackplates

Inboard engines:





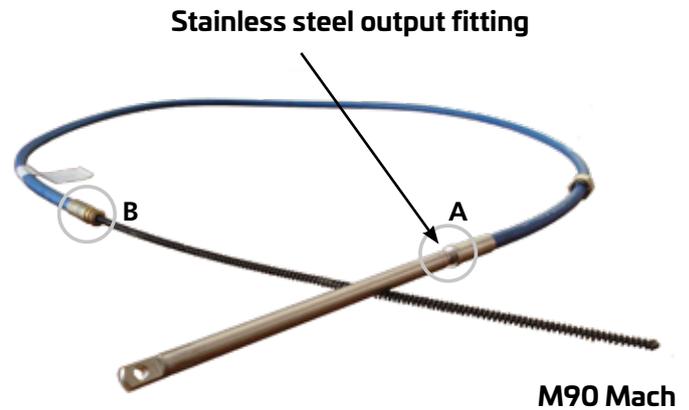
M90 MACH - HIGH EFFICIENCY AND FLEXIBILITY STEERING CABLE

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

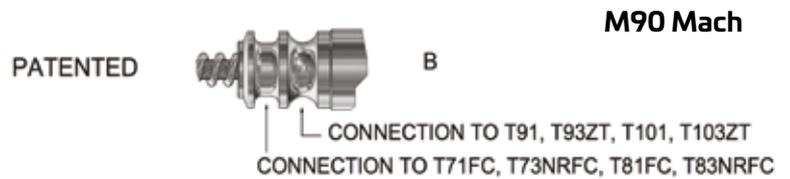
FEATURES AND TECHNICAL

SPECIFICATIONS:

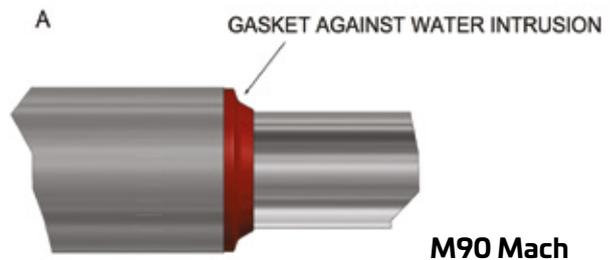
- Ideal solution for long cable runs and tight bend applications
- Corrosion resistant materials, stainless steel engine side output fitting
- Minimal feedback
- Fast connect, simple installation, end fitting



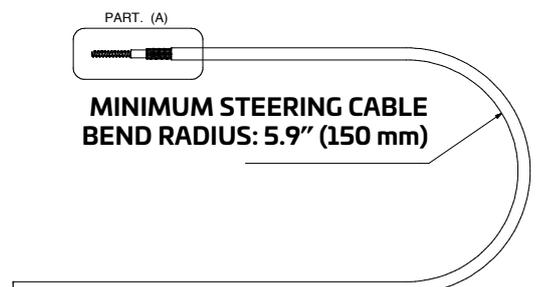
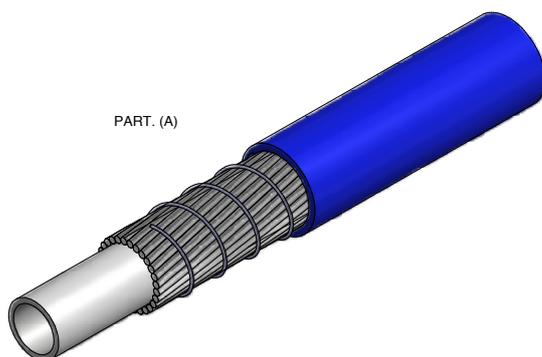
- M90 Mach steering cable is suitable for use with T91, T93ZT, T101, T103ZT, T71FC, T72FC, T73NRFC, T81FC, T82FC, T83NRFC Uflex steering helms. M66 will not fit the following Uflex helms: T91, T93ZT, T101, T103ZT.



- Stainless steel cable output end featuring protective gasket, engine side



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



G86 - G88NR (ZERO TORQUE FEEDBACK) RACK AND PINION STEERING SYSTEMS

A COMPLETE STEERING SYSTEM

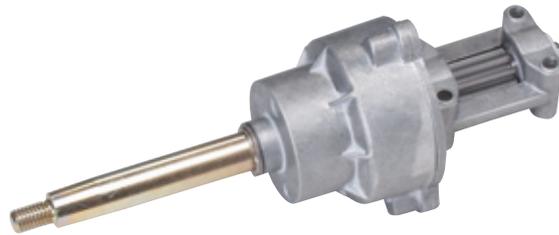
CONSISTS OF:

- Preassembled rack and steering cable: M86
- 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)

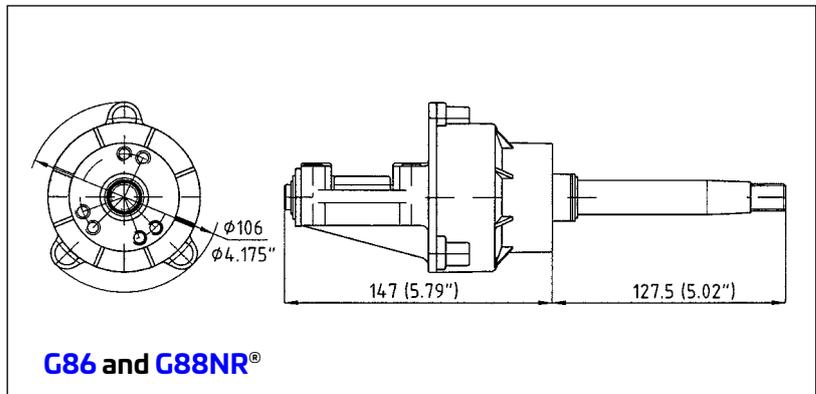
FEATURES AND TECHNICAL

SPECIFICATIONS:

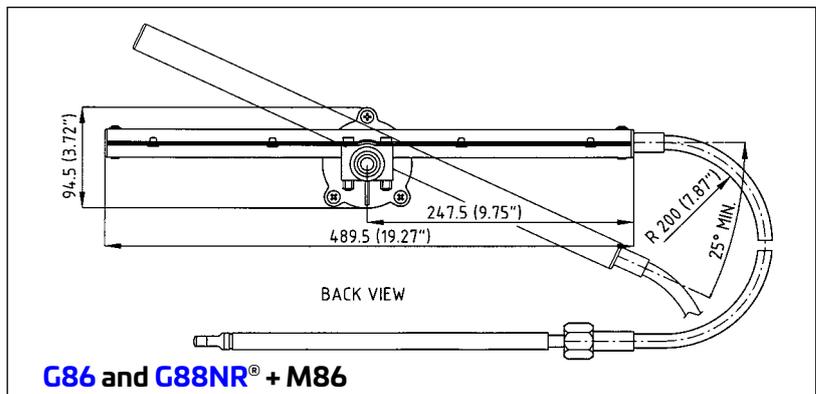
- Easy and safe steering: patented anti-feedback **G88NR** helm eliminates the continuous load on the operator caused by the propeller torque
- All stainless steel cable output ends
- Made exclusively in corrosion resistant materials
- Optional 90° or 20° installation
- Standard 3/4" tapered shaft
- Lock-to-lock steering wheel turns: 3.5
- Stroke: 8.2" (210 mm)
- Maximum allowable steering wheel diameter: 16.5" (420 mm)
- Minimum steering cable bend radius: 7.9" (200 mm)
- **G86** and **G88 NR** steering systems are not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat
- Available in package includes **X34** bezel and M66 cable with RACKTECH and ACCUTECH
- Exceeds EN 28848 safety standards
- Exceeds ABYC P17 safety standards



G86 and G88NR®



G86 and G88NR®



G86 and G88NR® + M86

G96 - G98NR (ZERO TORQUE FEEDBACK) RACK AND PINION TILT STEERING SYSTEMS

A COMPLETE STEERING SYSTEM

CONSISTS OF:

- Preassembled rack and steering cable: **M86**
- Helm assembly:
 - G96** - 39650 L standard
 - G98NR®** - 39649 C anti-feedback
- Tilt mechanism:
 - X52** - 39250 U (sold separately)
 - NOTE:** X52 tilt mechanism fits Uflex tilt mount rotary and rack and pinion steering helms as well as Uflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems
- Optional steering wheel (see index)
- Engine connection kits (see index)

FEATURES AND TECHNICAL

SPECIFICATIONS:

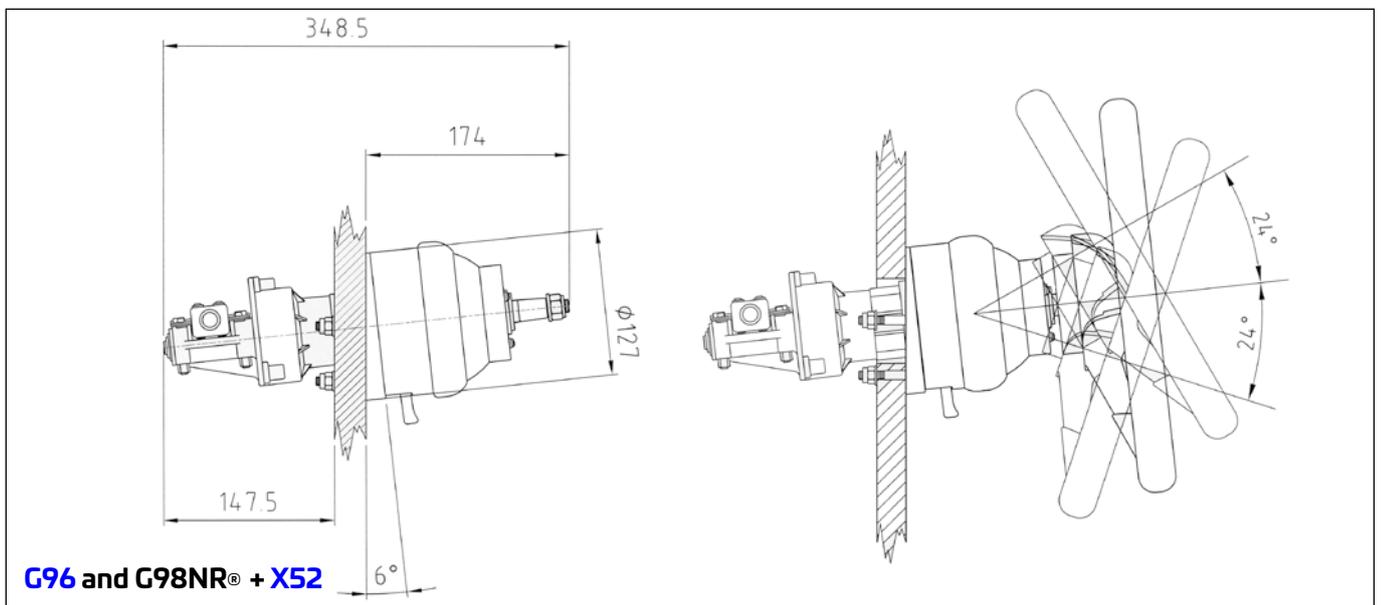
- Easy and safe steering: the patented Zero Torque Feedback G98NR helm eliminates the continuous load on the operator caused by the propeller torque
- Fast, simple installation
- Tilt range of 48° and five locking positions
- Tilt device eliminates underdash movement
- Standard 3/4" tapered shaft - stainless steel
- All stainless steel cable output ends
- Made exclusively in corrosion resistant materials
- Lock-to-lock steering wheel turns: 3.5
- Stroke: 8.2" (210 mm)
- Maximum allowable steering wheel diameter: 16.5" (420 mm)
- Minimum steering cable bend radius: 7.9" (200 mm)
- **G96** and **G98NR®** 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



G96 and G98NR®



X52



ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

STEERING CABLE SUPPORTS

S38 - 31971 M

Stringer mount clamp block in marine aluminium and stainless steel.

S39 - 31916 F

Clamp block in marine aluminum and stainless steel

S40 - 31917 G

Splashwell mounting, corrosion resistant

S55 - 34744 A

90° rudder support, corrosion resistant

OMC® TT - 39363 H

Thru transom sterndrive steering kit applicable for OMC® sterndrives manufactured from 1968-1982. Connects standard mechanical steering cable to the transom and sterndrive.

S39T - 53930 J

Aluminum steel tube only for **S39**

S40T - 53935 O

Aluminum steel tube only for **S40**



S38



S39



S40



S55



OMC-TT

Steering cable supports with stainless steel tube also available:

S39SS - 41551 X

S40SS - 41552 Z

S55SS - 41553 B

S39TSS - 72971 W Stainless steel tube for S39SS

S40TSS - 72972 Y Stainless steel tube for S40SS

ENGINE CONNECTION KITS

A73SS - 41255 T

Stainless steel tiller arm for some Mercury® engines

A74SS - 41256 V

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

A75 - 34459 X Clevis



A73SS/A74SS STAINLESS STEEL



A75



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

STEERING CABLE ADAPTORS

K46 - 35679 L

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

K66 - 38432 Q

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

1503

Adapts GEM®, EDSON® wheels to the Uflex steering shaft



K46



K66



1503





WIRE TYPE STEERING GROMMETS AND RINGS

38

ACCESSORIES FOR MECHANICAL STEERING SYSTEMS

BLACK GROMMETS

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



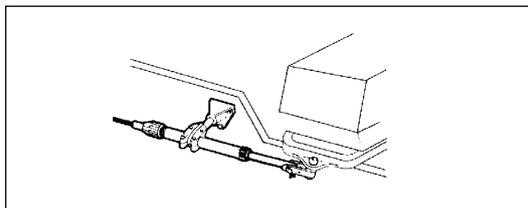
WHITE GROMMETS

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

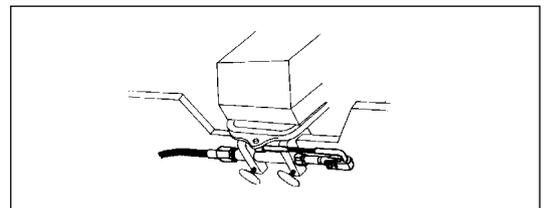


TYPICAL INSTALLATIONS

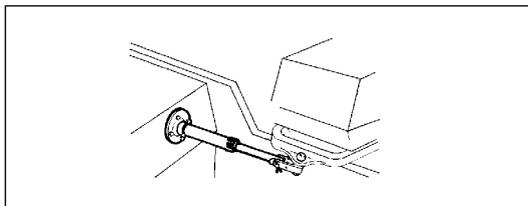
INSTALLATION	CABLE SUPPORT + ENGINE CONNECTION KIT	INSTALLATION	CABLE SUPPORT + ENGINE CONNECTION KIT
A	S39 + A75	C	A73SS or A74SS
B	S40 + A75	D	S55 + A75



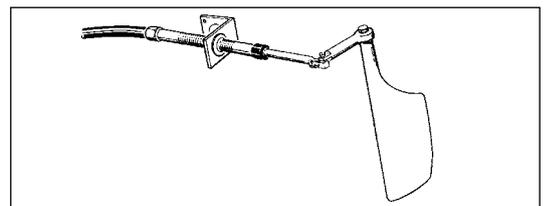
A = With clamp block



C = With tiller arm



B = With splashwell



D = With 90° rudder support

PACKAGED MECHANICAL STEERING SYSTEMS

UFLEX STEERING SYSTEMS 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 6 to 30 feet (specify cable length when ordering)

The wheel is not included

ROTECH™ STEERING SYSTEM

ROTECH - XLL - LL= Length
T71FC - helm
X34 - 90° bezel
M66 - steering cable

ROTECH - II XLL - LL= Length
T72FC - helm-dual
X34 - 90° bezel
M66 - 2 steering cables

Featuring the **T71FC** helm with a Planetary Gear Design, the Rotech reduces steering effort and delivers more balanced loads on the steering wheel. This unique design also offers a wider wear area which reduces lost motion and improves durability. 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 Rotech package also includes the M66 Universal Rotary Steering Cable with stainless steel output fittings for maximum longevity and smooth steering.



ACCURA™ STEERING SYSTEM

ACCURA - XLL - LL= Length
T73NR FC - Zero Torque Feedback helm
X34 - 90° bezel
M66 - steering cable

With a patented spring clutch the Accura eliminates continuous loads on the steering wheel while the direction of the boat is not being actively changed, which is highly recommended for outboard and stern-drives without power assist.

The T73NRF Zero Torque Feedback helm included with the Accura package also features a Planetary Gear Design for smooth and more balanced steering effort. A direct drop in replacement for competing systems, the Accura also comes with the M66 Universal Rotary Steering Cable with stainless steel output fittings for maximum longevity and smooth steering.



FOURTECH-1™ STEERING SYSTEM

FOURTECH -XLL - LL= Length
T91 - helm
X34 - 90° bezel
M90 Mach - steering cable

Featuring the **T91** high performance helm 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 **T91** helm (PLANETARY GEAR DESIGN), bezel and highly flexible M90 Mach cable (patented).



FOURTECH-2 ZTF™ STEERING SYSTEM

- FOURTECH-2 ZTF -XLL - LL= Length
- T93ZT - helm
- X34 - 90° bezel
- M90 Mach - steering cable

Featuring the T93ZT high performance Zero Torque Feedback helm 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 T93ZT (Zero Torque Feedback) helm, bezel and highly flexible M90 Mach cable (patented).



RACKTECH™ STEERING SYSTEM

- RACKTECH -XLL - LL= Length
- M86 - preassembled rack and steering cable
- G86 - helm assembly
- X34 - 90° bezel

The Racktech Rack and Pinion steering package offers a compact installation and features the M86 cable with an armor wrapped stainless steel core for maximum efficiency and minimal lost motion.

Ideal for boats with minimal clearance behind the dash, the Racktech is recommended for power assisted sterndrives and other applications with minimal rudder torque.



ACCUTECH™ STEERING SYSTEM

- ACCUTECH - XLL - LL= Length
- M86 - preassembled rack and steering cable
- G88NR® - anti-feedback helm assembly
- X34 - 90° bezel

Recommended for outboard applications or non power assisted sterndrives where there is limited space behind the dash, the Accutech features a patented spring clutch of the G88NR helm eliminates continuous loads while not actively changing direction.

The M86 cable included with the Accutech has an armor wrapped stainless steel core for maximum efficiency and minimal lost motion.



HYDRAULIC OUTBOARD STEERING SYSTEMS



 **ULTRAFLEX**
UP Series Helm

 **ULTRAFLEX**
UP Series Helm

WARNING ⚠ This steering system can only be used for steering. When installing the steering system, please refer to the installation manual. Failure to comply with the instructions may result in damage to the steering system and loss of control of the outboard motor. Do not for reusing.

HYDRAULIC AND ELECTRO-HYDRAULIC STEERING SYSTEMS

UFLEX HYDRAULIC STEERING SYSTEMS

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

HOW THE SYSTEM WORKS

A manual hydraulic steering system consists of a helm, which pumps hydraulic fluid through two hoses to a hydraulic cylinder which is mounted to an engine or rudder.

While steering, hydraulic oil is pushed through hoses into two chambers within the hydraulic cylinder. Depending upon which direction you steer, one of the two chambers is filled or relieved of oil, thereby changing the course of the boat.

While not actively steering, the torque (hydraulic pressure in the hoses) is held by a one way valve in the helm, which eliminates the transmission of the torque "feedback" to the steering wheel.

The number of turns from full lock-to-lock has a relationship to ease of steering. Generally speaking, the more number of turns lock-to-lock the easier the boat will be to steer and vice versa.

Because of the variety of applications and handling characteristics of boats, the number of turns lock to lock is often a matter of personal preference. As a general rule, the first priority should be ease of steering, then number of turns lock to lock. However, it is not recommended to have fewer than 4 turns lock to lock on high performance boats.

To calculate number of turns lock to lock simply divide the cubic inch displacement of the cylinder by the cubic inch displacement of the helm.

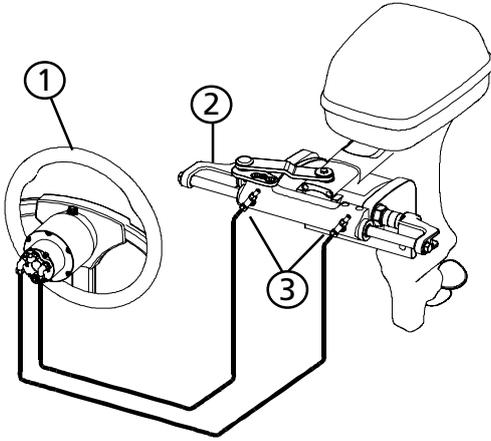
Other factors that can significantly affect the amount of effort to steer the system can be:

- Fittings introduced between the helm and cylinder that restrict fluid efficiency
- Oil viscosity
- Type of hose and inside hose diameter.
- Vessel speed
- Trim angle
- Rudder dimension, or engine power
- Propeller selection
- Hull type (displacement, planing, etc.)
- Sea conditions



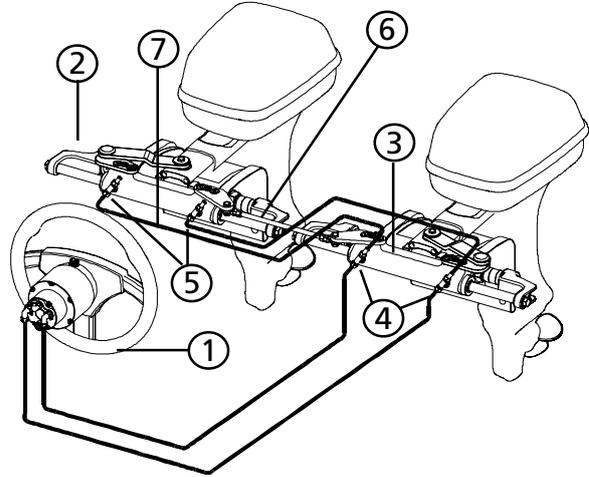


SINGLE STATION / SINGLE ENGINE:



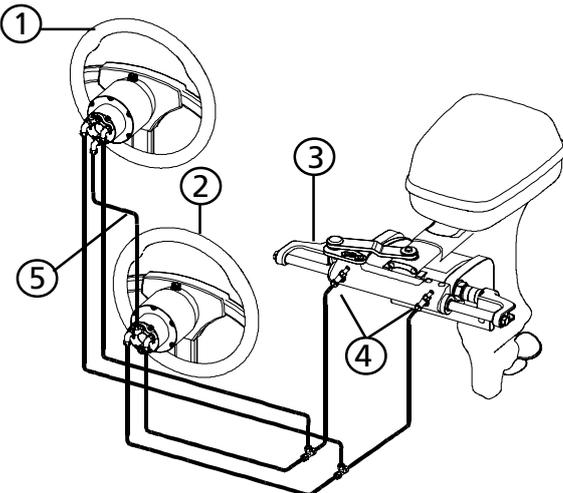
- 1. helm
- 2. starboard cylinder
- 3. bleed valves

SINGLE STATION / DUAL ENGINE:



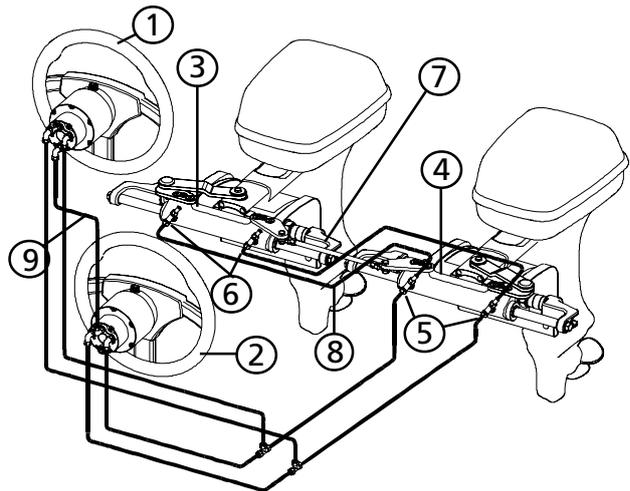
- 1. helm
- 2. starboard cylinder
- 3. port cylinder
- 4. "T" fittings
- 5. bleed valves
- 6. tie bar
- 7. kit OB-DBR (Kit OB-DBR130-SVS for SilverSteer™)

DUAL STATION / SINGLE ENGINE



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

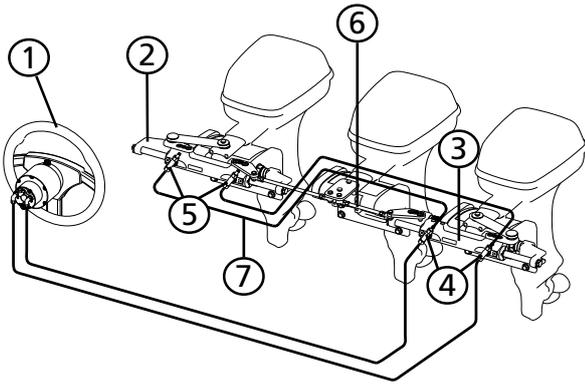
DUAL STATION / DUAL ENGINE



- 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-DBR (Kit OB-DBR130-SVS for SilverSteer™)
- 9. kit OB-2S

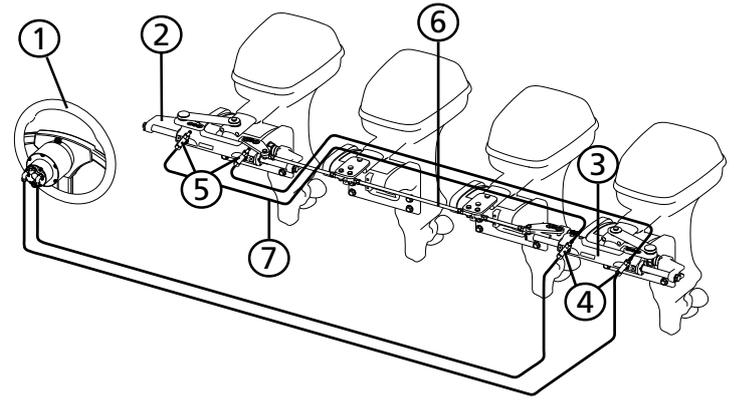


SINGLE STATION / THREE ENGINES



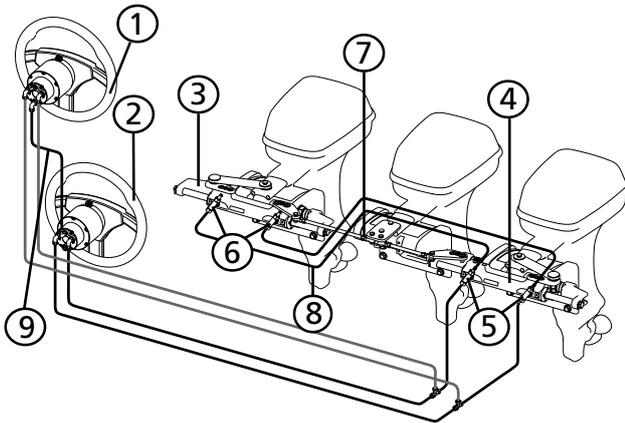
- 1. helm
- 2. starboard cylinder
- 3. port cylinder
- 4. "T" fittings
- 5. bleed valves
- 6. tie bar
- 7. kit OB-DBR (Kit OB-DBR130-SVS for SilverSteer™)

SINGLE STATION / FOUR ENGINES



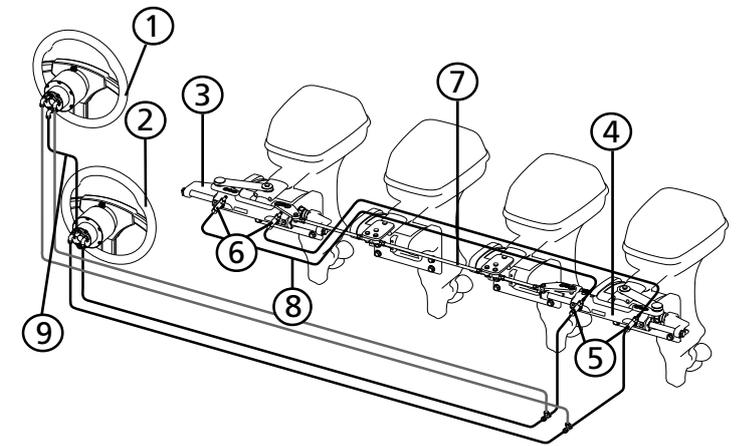
- 1. helm
- 2. starboard cylinder
- 3. port cylinder
- 4. "T" fittings
- 5. bleed valves
- 6. tie bar
- 7. kit OB-DBR (Kit OB-DBR130-SVS for SilverSteer™)

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-DBR (Kit OB-DBR130-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-DBR (Kit OB-DBR130-SVS for SilverSteer™)
- 9. kit OB-2S

SUGGESTIONS AND WARNINGS WHEN SELECTING A HYDRAULIC OUTBOARD STEERING SYSTEM

OUTBOARD CYLINDERS Maximum power rating applicable

Cylinder model	Single engine single cylinder Power max hp	Double engine single cylinder		Double engine double cylinder	
		NON counter rotating propellers	Counter rotating propellers	NON counter rotating propellers	Counter rotating propellers
		Power max hp	Power max hp	Power max hp	Power max hp
UC81-OBF	115	not applicable	not applicable	not applicable	not applicable
UC94-OBF	150	not applicable	not applicable	not applicable	not applicable
UC128-OBF	300	300	500	500	600
UC130-SVS	350	350	600	600	700
UC132-OBS	300	300	450	500	600

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

STEERING WHEEL TURNS single cylinder

	UP18 18cc	UP20 20cc	UP25 25cc	UP28 28cc	UP33 33cc	UP39 39cc	UP45 45cc	UP25-SVS 25cc	UP33-SVS 33cc	UP39-SVS 39cc
UC81-OBF	4.5*	-	-	-	-	-	-	-	-	-
UC94-OBF	-	4.7*	-	-	-	-	-	-	-	-
UC128-OBF	-	-	5.1*	4.3*	3.6*	3.1	-	-	-	-
UC130-SVS	-	-	-	-	-	-	-	5.5*	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 dual cylinder (without **LTB1**)

	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



45

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

46



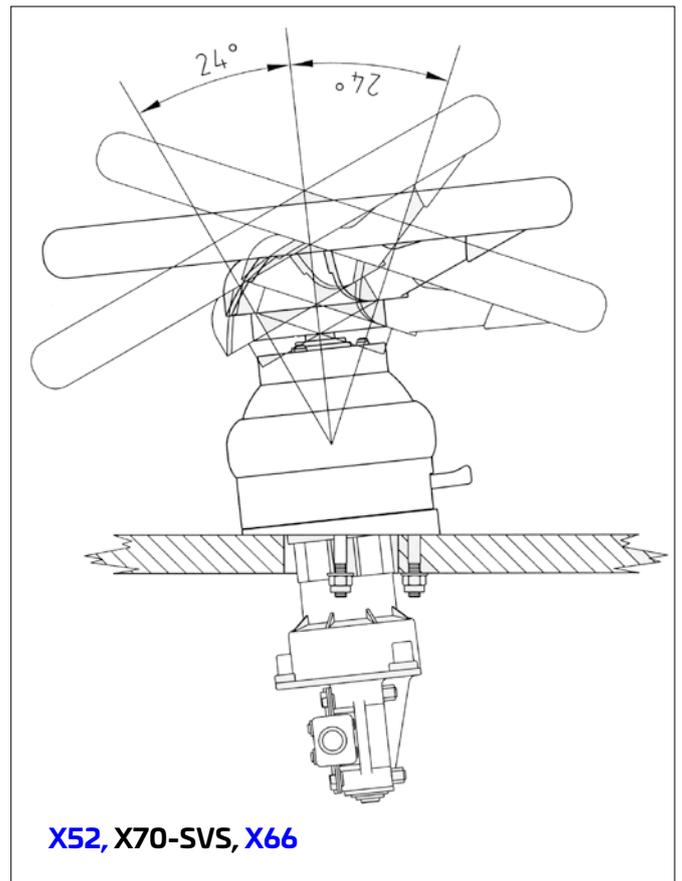
X52



X66



X70-SVS



TILT MECHANISMS

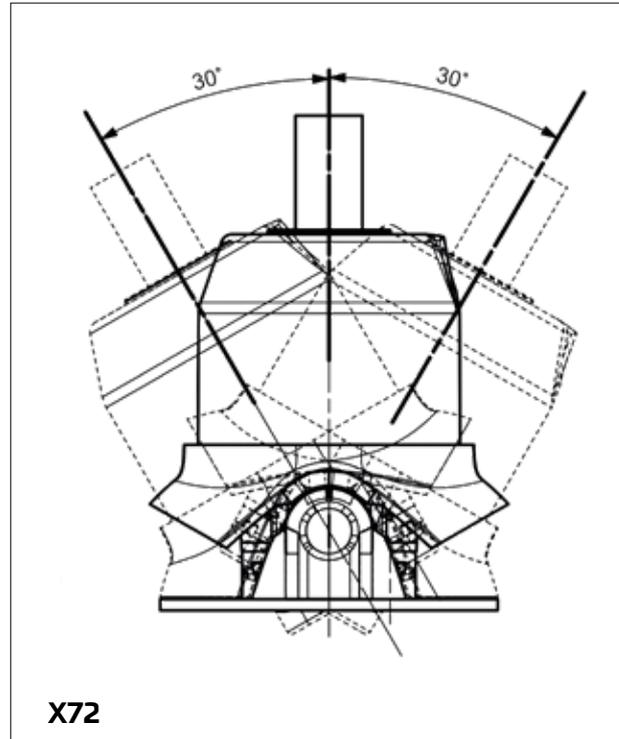
TILT MECHANISMS SUITABLE FOR FRONT MOUNT HELMS

- 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, T83NRF	T96, T98NR	T101, T103ZT
X52	39250 U	X	X	X

TILT MECHANISM APPLICATION FOR HYDRAULIC STEERING SYSTEMS

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





PACKAGED OUTBOARD STEERING SYSTEM FOR SINGLE ENGINE UP TO 115 HP

Specifically designed to fit the tight cowling clearances and space constraints of smaller horsepower engines, the GoTech is the most affordable hydraulic steering for engines under 115hp. The mid-mount UP18 helm positions the steering wheel close to the height of a mechanical steering helm.

GOTECH™ WHEEL TURNS 4,5 - 42634 G

For outboard single engine up to 115 hp

GOTECH™ package kit contains:

- UP18** Intermediate mount helm pump
- UC81-OBF** Front mount outboard cylinder
- OIL 15** Hydraulic oil – 2 quarts.
- TU95** Hose kit dia. 3/8" 30 ft length



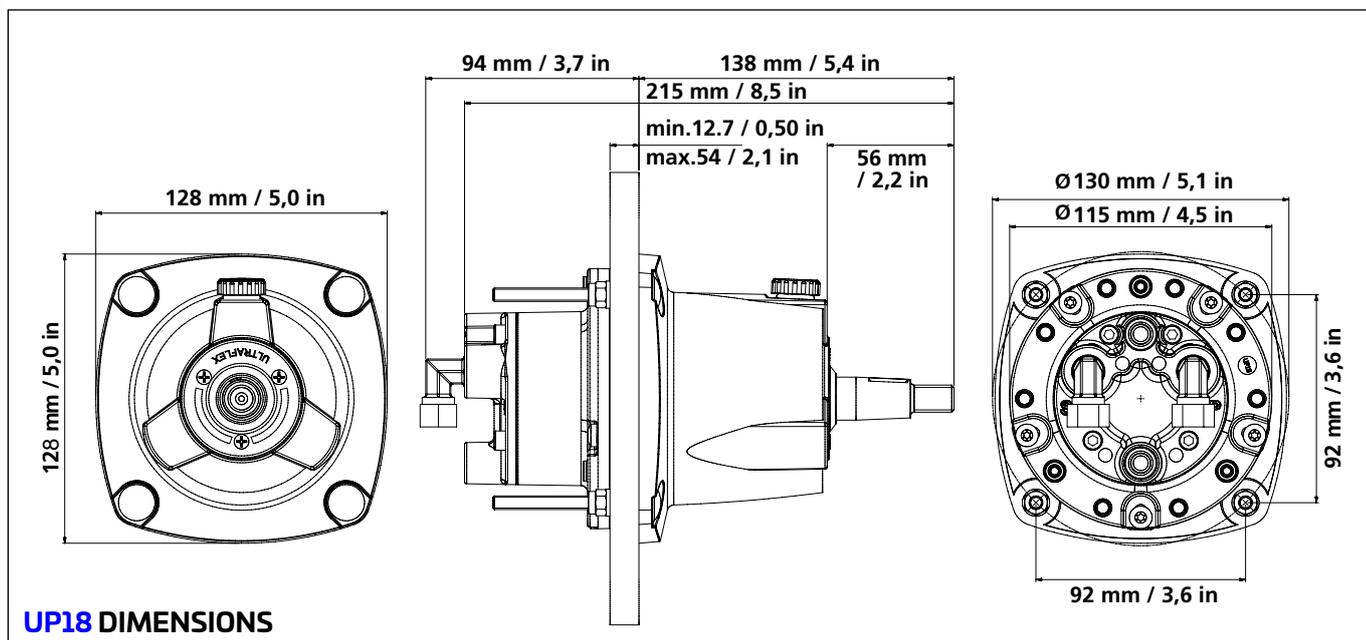
GOTECH™ - 42634 G

UP18 - HELM PUMP

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



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



48

STEERING SYSTEM FOR SINGLE ENGINE UP TO 115HP

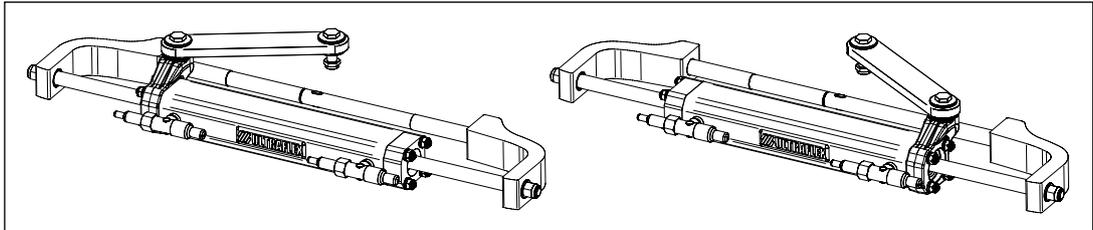


UC81-OBF
FRONT
MOUNT
CYLINDER

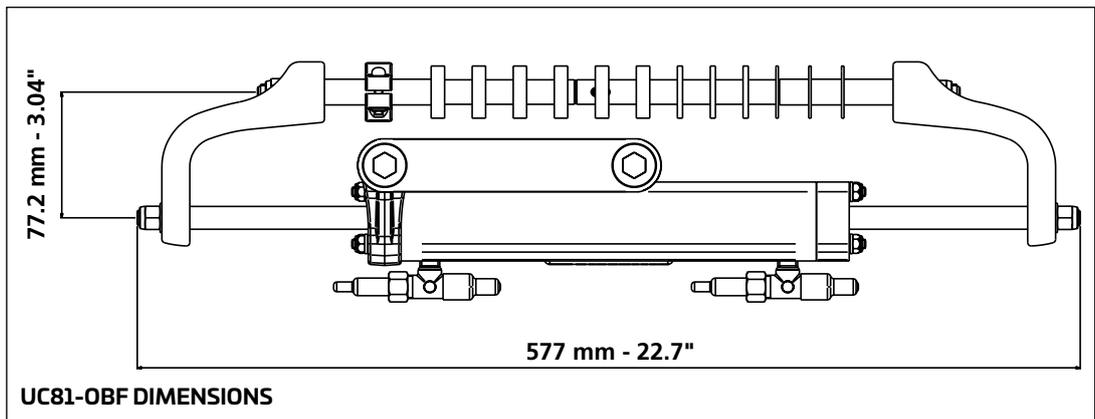


UC81-OBF - Balanced: the number of turns lock-to-lock is equal port to starboard and vice-versa.
 Depending on the applications on the outboard engine, the UC81-OBF can be installed port or starboard

49



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



KIT FOR AUTOPILOT APPLICATION WITH GOTECH™

K18 - 43414 X

Components:

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



K18

PACKAGED OUTBOARD STEERING SYSTEM UP TO 115HP





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.

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



50

PACKAGED OUTBOARD STEERING SYSTEM UP TO 115HP



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/M

KIT OB-GT: HOSE KIT WITH PREASSEMBLED FITTINGS AT BOTH ENDS

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

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

KIT OB-GT/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 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 OB-GT/R5



PACKAGED OUTBOARD STEERING SYSTEM UP TO 115HP





PUMPS FOR HYDRAULIC STEERING SYSTEMS UP TO 150HP

UP20F - UP20T HELM PUMPS



FEATURES

- Built-in lock valve for positive rudder lock
- Integral relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Corrosion proof composite housing
- Easy accessible lock valve and shaft seal for replacement
- Includes 90° **adjustable** fittings for 3/8" tube
- For use with UC94-OBF, UC116-OBF and UC128-OBF cylinders only
- Tilt mechanism **X52** - 39250 U for UP20T pump
Tilt range of 48° and five locking positions
- **X74** - 43048 Y square flange permits to install the UP20F pump in an intermediate dashboard position



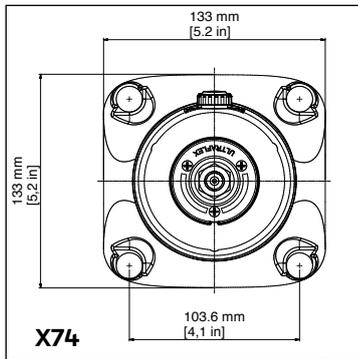
UP20F



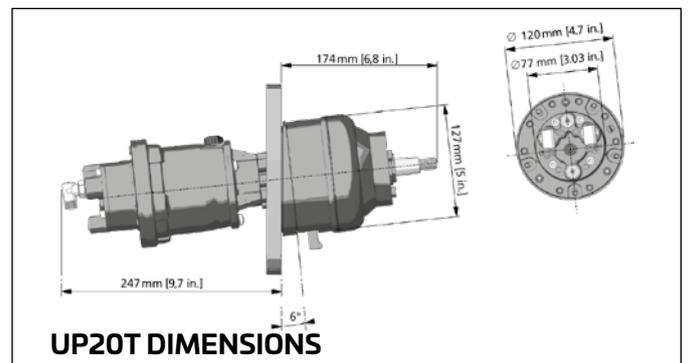
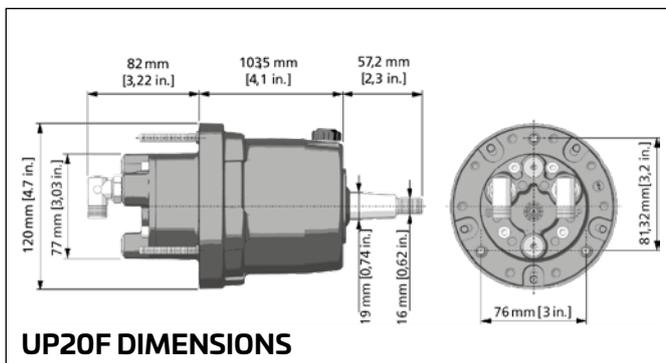
UP20T-X52



UP20F-X74



MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP20F	43180 Y	Front mount	20 cc - 1.2 cu. in	5	70 Bar - 1000 PSI	508 mm - 20"	3,6 kg - 8 lbs
UP20T-X52	43181 A + 39250 U	With X52 tilt included	20 cc - 1.2 cu. in	5	70 Bar - 1000 PSI	406 mm - 16"	3,9 kg - 8.5 lbs



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



53

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
- 3/4" tapered stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- Includes 90° adjustable fittings for 3/8" tube
- **UP45F** pump is ideal for dual cylinder applications
- Direct "drop-in" replacement for competing helms
- **X56** - 40198 C square flange or **X57** - 39464 P round flange permit to install the pumps in an intermediate dashboard position.



X56 square flange

X57 round flange



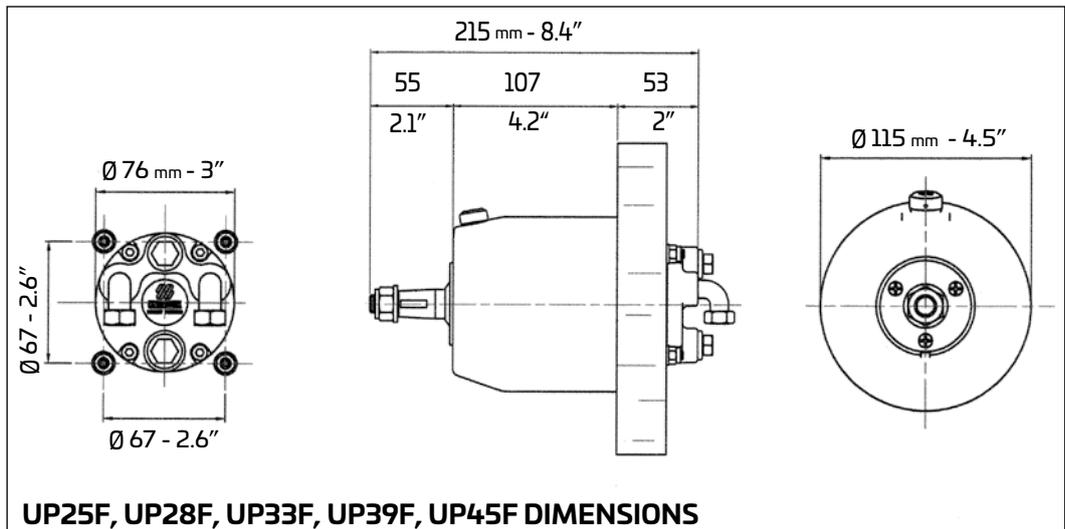
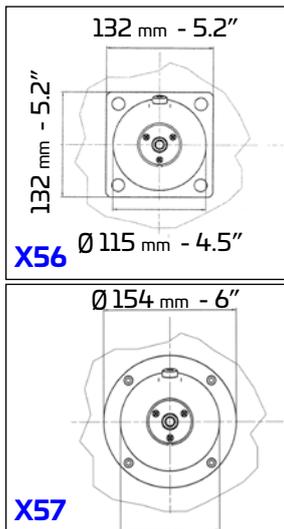
X72 with front mount helm

- Tilt mechanism for front mount helms:
X72 - 43140 K
Tilt range of 60° and five locking positions

NOTE:

Please refer to the tilt mechanism application chart

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



FRONT MOUNT HELM PUMPS

UP25T - UP28T - UP33T

UP39T - UP45T

TILT MOUNT HELM PUMPS



FEATURES

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

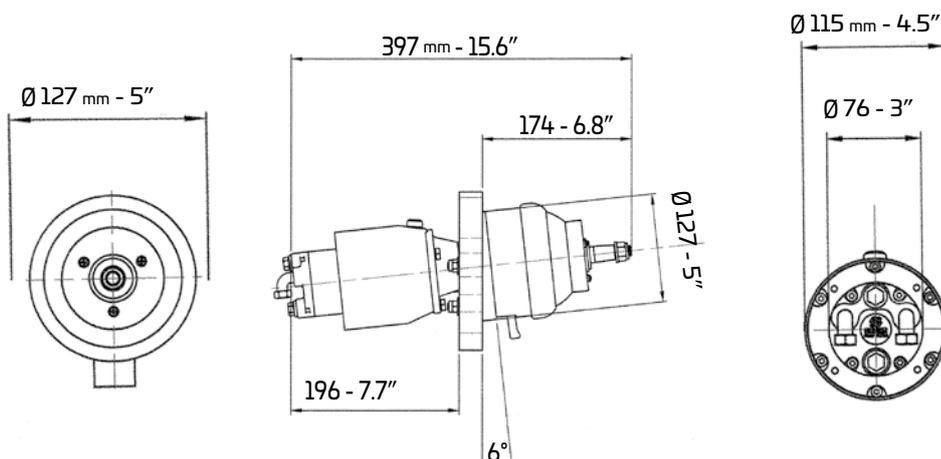


X52



X52 TILT MECHANISM INCLUDED

MODEL	PART No.	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP25T-X52	42464 H + 39250 U	25 cc - 1.5 cu.in	5	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP28T-X52	42461 B + 39250 U	28 cc - 1.7 cu.in	5	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP33T-X52	42458 N + 39250 U	33 cc - 2.0 cu.in	7	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP39T-X52	42455 G + 39250 U	39 cc - 2.4 cu.in	7	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP45T-X52	42467 P + 39250 U	45 cc - 2.7 cu.in	7	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs



UP25T, UP28T, UP33T, UP39T, UP45T DIMENSIONS

UP28R - UP33R - UP39R
UP45R
REAR MOUNT HELM PUMPS



55

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
- 1/4" NPT fitting for 3/8" tube
- Includes 90° **adjustable** fittings for 3/8" tube and white bezel
- **UP45R** pump is ideal for dual cylinder applications
- **UP45** pump is available also for inboard applications
- **X68** (optional) - 40894 Z Chrome bezel
- **KIT F** (optional) - 39664 Y Remote fill adapter

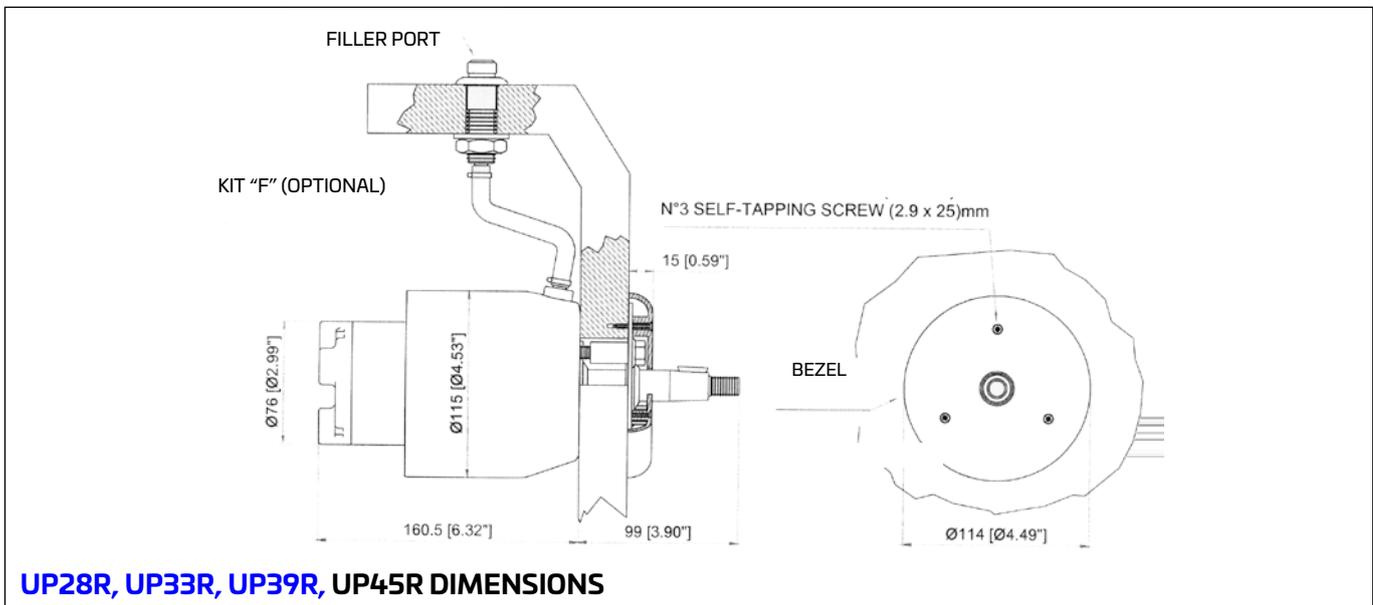


KIT F



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



UP28R, UP33R, UP39R, UP45R DIMENSIONS



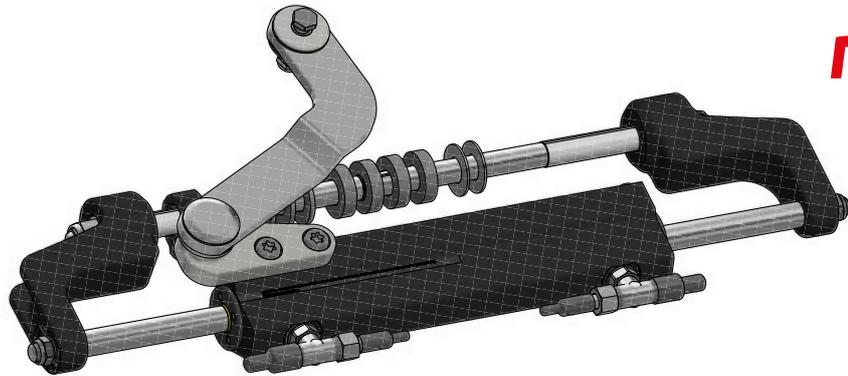
UC94-OBF
FRONT MOUNT
CYLINDER FOR
OUTBOARD
ENGINES
UP TO 150 HP
TOTAL



new



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



new



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

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

Intended for single engine applications of 150 HP and under, the UC94 cylinder is compatible with competing helms, hoses and oil, and 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 two and four stroke outboard engine in the market.

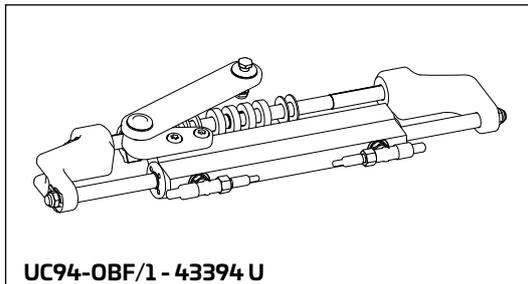
See the application guide next page to ensure compatibility with your engine.

The UC94 is recommended for use with the UP20 series helm and pre-made hose kits (Kit OB and Kit OB-BHBR).

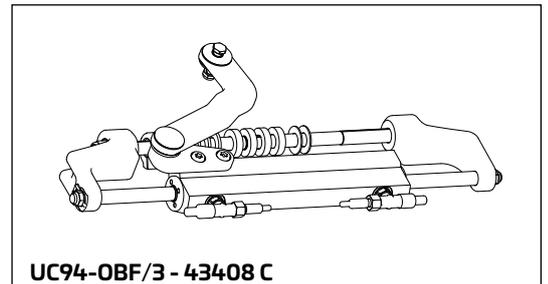
INNOVATIVE DESIGN (PATENTED):

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

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

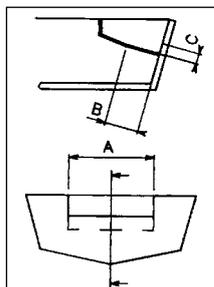


UC94-OBF/1 - 43394 U



UC94-OBF/3 - 43408 C

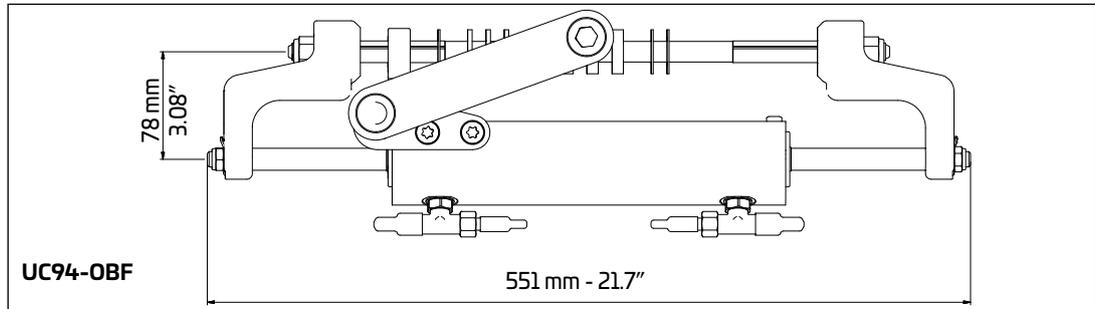
UC94-OBF FRONT
MOUNT CYLINDER



SPLASHWELL DIMENSION REQUIREMENTS

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

SPECIFICATIONS	UC94-0BF/1 -/3
Volume	94 cc - 5.7 cu. in
Output force	278 kg - 613 lbs
Inside diameter	30 mm - 1.18"
Stroke	186 mm - 7.3"
3/8" (9.5mm) Fittings	For high pressure flex hose
Bleed fittings	DN5 Quick connect



UC94-0BF
CYLINDER
APPLICATIONS

WARNING
The UC94-0BF front mount cylinder is recommended for use with outboard engines 150 hp total and less and where the boat speed does not exceed 55 mph (48 knots)

Not intended for use in racing applications.

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

ENGINE	POWER	YEAR	CYLINDER	P. No.
Mercury® Mariner®	50-75-90 2S	1990-2008	UC940BF-1	43394 U
	115-125-150 EFI 2S	1990-2007	UC940BF-1	43394 U
	75-90-115 OPTIMAX	2004-to date	UC940BF-3	43408 C
	135-150 OPTIMAX	1999-to date	UC940BF-1	43394 U
	40-50-60 EFI 4S	2004-to date	UC940BF-1	43394 U
	75-80-90 EFI 4S	2000-to date	UC940BF-1	43394 U
	100-115 EFI 4S	2007-to date	UC940BF-1	43394 U
Evinrude®	E40-E50-E55-E60 2S	2004-to date	UC940BF-1	43394 U
	E75-E90 2S	2004-to date	UC940BF-1	43394 U
	E115-E130-E135 2S V4	1995-to date	UC940BF-1	43394 U
	E150 2S V6	1995-to date	UC940BF-1	43394 U
Yamaha®	60-70 2S	1984-2008	UC940BF-1	43394 U
	75C-90 2S	1998-2008	UC940BF-1	43394 U
	115C-130B 2S	1990-2008	UC940BF-1	43394 U
	150F	1996-2007	UC940BF-1	43394 U
	150 HPDI VMAX 2S	2000-2008	UC940BF-1	43394 U
	F60-F75-F80 EFI 4S	1999-2007	UC940BF-1	43394 U
	F90-F100-F115-F150 EFI 4S	1999-2007	UC940BF-1	43394 U
	F80-F100 4S	2000-to date	UC940BF-1	43394 U
F115-F150 4S	2004-to date	UC940BF-1	43394 U	
Honda®	BF75-BF90 4S	1995-to date	UC940BF-1	43394 U
	BF80-100-115DK-130A 4S	1998-to date	UC940BF-1	43394 U
	BF115A-135-BF150 4S	2005-to date	UC940BF-1	43394 U
	BF90-BF150 V-TEC 4S	2008-to date	UC940BF-1	43394 U
Suzuki®	DF70-80-90 4S	1998-to date	UC940BF-1	43394 U
	DF100-115-140 4S	1998-to date	UC940BF-1	43394 U
	DF150 4S	2006-to date	UC940BF-1	43394 U
Tohatsu® Nissan®	50-60-70-90 2S	2004-to date	UC940BF-1	43394 U
	115-120-140 2S	2004-to date	UC940BF-1	43394 U
	40-50TLDI 4S	2004-to date	UC940BF-1	43394 U
	70-90-115 TLDI 4S	2004-to date	UC940BF-1	43394 U
Selva®	50 MADEIRA/ BULL SHARK-60 GREY SHARK/ST.TROPEZ	1995-2008 2001-2007	UC940BF-1	43394 U
	70 MAKO SHARK 2S		UC940BF-1	43394 U
	80 PORTOFINO/TIGERSHARK 2S		UC940BF-1	43394 U
	150 WHITE SHARK 2S	2000-to date	UC940BF-1	43394 U
	50-60 DORADO EFI 4S		UC940BF-1	43394 U
100EFI MARLIN -115 EFI NARWHAL-150EFI KILLER WHALE 4T		UC940BF-1	43394 U	
Johnson®	BJ60-70 4S	2001-2007	UC940BF-1	43394 U
	BJ90-115-140 4S	2001-2007	UC940BF-1	43394 U
	J90-115 V4 2S	1995-2007	UC940BF-1	43394 U





UC128-OBF FRONT MOUNT CYLINDER

58

Adjustable boss style fittings for easy installation

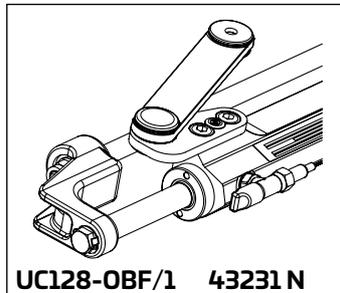
High resistance stainless steel connection bolt (ULTRABOLT)

Replaceable cylinder heads

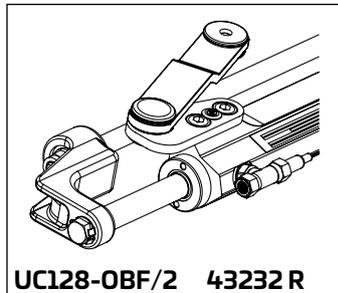


UC128-OBF - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa

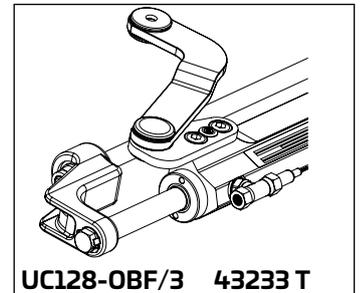
The UC128-OBF cylinder is built to last with heavy duty stainless steel cylinder rod, seals and link assemblies. Constructed of top grade materials, this cylinder is simple to install and fits almost every 2 and 4 stroke outboard engine in the market. See the application guide next page to choose the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



UC128-OBF/1 43231 N



UC128-OBF/2 43232 R

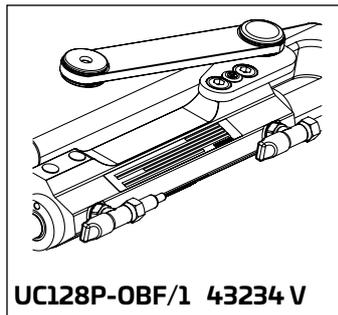


UC128-OBF/3 43233 T

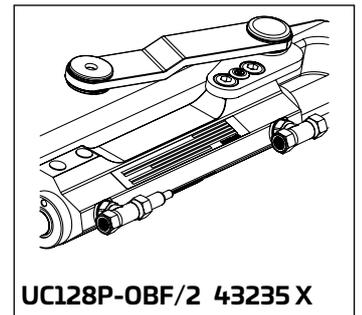
In the applications with dual UC128-OBF cylinder it is necessary to order a standard UC128-OBF cylinder (link arm attached to the starboard side of the cylinder) and a port UC128P-OBF cylinder (link arm attached to the port side of the cylinder). See appropriate section for A90 or A95 tie bars, required for dual engine/dual cylinder applications. Depending on the applications on the outboard engines, the UC128P-OBF port cylinder is available in 2 versions:



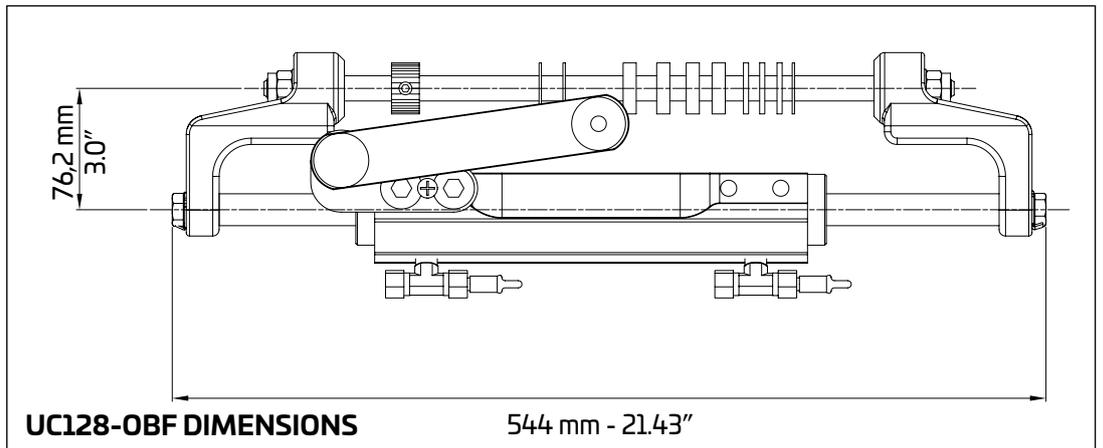
UC128P-OBF



UC128P-OBF/1 43234 V



UC128P-OBF/2 43235 X



UC128-OBF DIMENSIONS

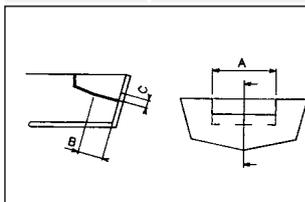
544 mm - 21.43"

UC128-0BF
FRONT MOUNT
CYLINDER

SPECIFICATIONS UC128-0BF/1 -/2 -/3	
Volume	120 cc - 7.3 cu. in
Output force	450 kg - 992 lbs
Inside diameter	35 mm - 1.37"
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 26" (650 mm)



UC128-0BF
CYLINDER
APPLICATIONS

ENGINE	MODEL	YEAR	CYLINDER	P. NO.	PACKAGED
Mercury® Mariner®	115-125-150 EFI 2S	1990-2007	UC1280BF-1	43231 N	PROTECH 1
	225-250 EFI 2S	2000-2007	UC1280BF-1	43231 N	PROTECH 1
	75-90-115 OPTIMAX	2004-to date	UC1280BF-3	43233 T	PROTECH 3
	135-150-175 OPTIMAX	1999-to date	UC1280BF-1	43231 N	PROTECH 1
	200-225-250 OPTIMAX	1999-to date	UC1280BF-1	43231 N	PROTECH 1
	RACING 300 OPTIMAX	1999-2011	UC1280BF-1	43231 N	PROTECH 1
	100-115 EFI 4T	2007-to date	UC1280BF-1	43231 N	PROTECH 1
	250 SALTWATER EFI 4S	2007-2011	UC1280BF-1	43231 N	PROTECH 1
	135-150-175-200 VERADO L4	2004-to date	UC1280BF-1	43231 N	PROTECH 1
	FOURSTROKE 175-200 V6	2018-to date	UC1280BF-1	43231 N	PROTECH 1
	FOURSTROKE 225-300 V8	2018-to date	UC1280BF-1	43231 N	PROTECH 1
Evinrude®	E75-E90 2S	2004-to date	UC1280BF-2	43232 R	PROTECH 2
	E115-E130-E135 2S V4	1995-to date	UC1280BF-2	43232 R	PROTECH 2
	E150-E175-E200-E225-E250-E300 2S V6	1995-to date	UC1280BF-2	43232 R	PROTECH 2
Yamaha®	115C-130B 2S	1990-2008	UC1280BF-2	43232 R	PROTECH 2
	75C-90 2S	1998-2008	UC1280BF-2	43232 R	PROTECH 2
	115C-130B 2S	1990-2008	UC1280BF-2	43232 R	PROTECH 2
	150F-200F-250G 2S	1996-2007	UC1280BF-2	43232 R	PROTECH 2
	150 HPDI VMAX 2S	2000-2008	UC1280BF-2	43232 R	PROTECH 2
	175-200-225-250-300 HPDI VMAX 2S	2000-2008	UC1280BF-2	43232 R	PROTECH 2
	F115-F150 EFI 4S	1999-2007	UC1280BF-1	43231 N	PROTECH 1
	F200-F225-F250 4S	2002-2007	UC1280BF-2	43232 R	PROTECH 2
	F70 4S	2010-to date	UC1280BF-1P	43234 V	PROTECH 1
	F115-F150-F175-F200 L4 4S	2004-to date	UC1280BF-1	43231 N	PROTECH 1
F200-F225-F250-F300 V6 4S	2004-to date	UC1280BF-2	43232 R	PROTECH 2	
Honda®	BF75-BF90 4S	1995-to date	UC1280BF-1	43231 N	PROTECH 1
	BF115-BF130 4S	1998-to date	UC1280BF-3	43233 T	PROTECH 3
	BF135-BF150 4S	2005-to date	UC1280BF-1	43231 N	PROTECH 1
	BF150 V-TEC 4S	2008-to date	UC1280BF-1	43231 N	PROTECH 1
	BF175-BF200-BF225- BF250 4S	2001-to date	UC1280BF-1	43231 N	PROTECH 1
Suzuki®	DF70-80-90 4T	1998-to date	UC1280BF-2	43232 R	PROTECH 2
	DF100-115-140 4S	1998-2008	UC1280BF-1*	43231 N	PROTECH 1
	DF100-115-140 4S	1998-to date	UC1280BF-1	43231 N	PROTECH 1
	DF150-175-DF200 L4 4S	2006-to date	UC1280BF-1	43231 N	PROTECH 1
	DF200-DF225-DF250-DF300-DF350 V6 4S	2004-to date	UC1280BF-2	43232 R	PROTECH 2
Tohatsu®	115-120-140 2S	2004-to date	UC1280BF-2	43232 R	PROTECH 2
	70-90-115 TLDI 4S	2004-to date	UC1280BF-1	43231 N	PROTECH 1
	BFT60-75-90 4S	2015-to date	UC1280BF-1	43231 N	PROTECH 1
	BFT80-100-115 4S	2015-to date	UC1280BF-3	43233 T	PROTECH 3
	BFT150-200-225-250 4S	2015-to date	UC1280BF-1	43231 N	PROTECH 1
Selva®	80 PORTOFINO/TIGERSHARK 2S	1995-2008	UC1280BF-1	43231 N	PROTECH 1
	150 WHITE SHARK 2S	2001-2007	UC1280BF-2	43232 R	PROTECH 2
	100EFI MARLIN -115 EFI NARWHAL-150EFI KILLER WHALE 4S	2000-to date	UC1280BF-1	43231 N	PROTECH 1
Johnson®	BJ90-115-140 4S	2001-2007	UC1280BF-1	43231 N	PROTECH 1
	J90-115 V4 2S	1995-2007	UC1280BF-2	43232 R	PROTECH 2
	J150-175 V6 2S	1995-2007	UC1280BF-2	43232 R	PROTECH 2
	J200-225 V6 4S	2004-2007	UC1280BF-2	43232 R	PROTECH 2

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.

For higher horsepower applications, high performance SilverSteer™ cylinder is recommended.



**UC128-OBF
CYLINDER**

ORDER GUIDE:

SYSTEM	APPLICATION	WHEEL TURNS	COMPONENTS	MODEL	QTY
Single engine Single cylinder 	Up to 300 hp max	4.8 (UP25)	Cylinder Helm pump Hose Kit Oil	UC128-OBF UP25 or UP28 KIT OB OIL 15	1 1 1 2
		4.3 (UP28)	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 **OIL 15**, 1 steering wheel

Dual engine Single cylinder 	Up to 300 hp max (non-counter rotating engine)	4.8 (UP25)	Cylinder Helm pump Hose Kit Oil	UC128-OBF UP25 or UP28 KIT OB OIL 15	1 1 1 2
	Up to 500 hp max (counter rotating engine)	4.3 (UP28)	Tie bar Steering wheel	A94 (Wheel selection)	1 1

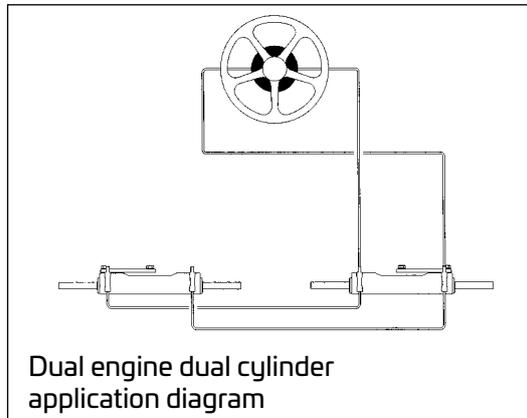
For a second station add:

1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 **OIL 15**, 1 steering wheel

Dual engine Dual cylinder 	Up to 500 hp max (non-counter rotating engines)	6.1 (UP39)	Cylinder Cylinder Port Helm pump Hose Kit Oil	UC128-OBF UC128P-OBF UP39 or UP45 KIT OB OIL 15	1 1 1 1 3
	Up to 600 hp max (counter rotating engines)	5.3 (UP45)	Tie bar Steering wheel Connection Kit	A90 or A95 (Wheel selection) KIT OB-DBR	1 1 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 **OIL 15**, 1 steering wheel



WARNING

These steering systems can only be used when the engine is in compliance with the approved U.S.

Coast Guard vessel horsepower rating. When installing UC128-OBF cylinder in conjunction with an **ENGINE JACK PLATE** trim system, a manual clearance check must be made in all moveable positions. Failure to comply with the installation manual for engine application, cylinder/hose clearance, and approved hydraulic fluids, may result in loss of steering, causing serious property damage and / or personal injury.

NOTE:

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

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

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



UC132-OBS SIDE MOUNT CYLINDER



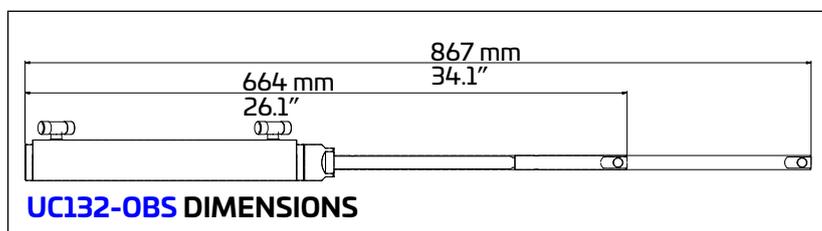
WARNING

The UC132-OBS is not intended for use with 1500 psi UP-SVS Series helms.

UC132-OBS

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

SPECIFICATIONS	UC132-OBS - 39430 W
Volume	132 / 163 cc - 8 / 9.95 cu. in
Output force	464 / 574 kg - 1023 / 1265 lbs
Inside 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 fast and easy installation to the engine tube

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

ORDER GUIDE:

SYSTEM	APPLICATION	WHEEL TURNS	COMPONENTS	MODEL	QTY	
<p>Single engine Single cylinder</p>	Up to 250 hp max	5.3/6.5 (UP25)	Cylinder Helm pump Hose Kit	UC132-OBS UP25 or UP28 KIT OB	1 1 1	
		4.7/5.8 (UP28)	Oil Steering wheel	OIL 15 (Wheel selection)	2 1	
		For a second station add:				
		1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OIL 15, 1 steering wheel				

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.

<p>Dual engine Single cylinder</p>	Up to 250 hp max (non-counter rotating engine)	5.3/6.5 (UP25)	Cylinder Helm pump Hose Kit	UC132-OBS UP25 or UP28 KIT OB	1 1 1
		4.7/5.8 (UP28)	Oil Tie bar Steering wheel	OIL 15 (Universal tiller-to-tiller tie bar) (Wheel selection)	2 1 1
	For a second station add:				
	1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OIL 15, 1 steering wheel				

<p>Dual engine Dual cylinder</p>	Up to 300 hp max (non-counter rotating engines)	6.7/8.3 (UP39)	Cylinder Helm pump Hose Kit	UC132-OBS UP39 or UP45 KIT OB	2 1 1
		5.8/7.3 (UP45)	Oil Tie bar Steering wheel Connection Kit	OIL 15 (Universal tiller-to-tiller tie bar) (Wheel selection) KIT OB-DBR	3 1 1 1
	For a second station add:				
	1 UP39 or UP45 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 2 tee fittings 39502 V, 1 OIL 15, 1 steering wheel				

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

HIGH PRESSURE FLEXIBLE HOSES

KIT OB AND KIT OB-BHBR: HYDRAULIC HOSE KITS

Two high pressure flexible hoses with pre-crimped brass fittings, bulkhead fittings (for KIT OB-BHBR only) and bend restrictors on one end. Recommended for use with all Uflex helms with 1500 psi relief valves.

KIT OB	KIT OB-BHBR	LENGTH
KIT OB-06	KIT OB-BHBR-06	6'
KIT OB-08	KIT OB-BHBR-08	8'
KIT OB-10	KIT OB-BHBR-10	10'
KIT OB-12	KIT OB-BHBR-12	12'
KIT OB-14	KIT OB-BHBR-14	14'
KIT OB-16	KIT OB-BHBR-16	16'
KIT OB-18	KIT OB-BHBR-18	18'
KIT OB-20	KIT OB-BHBR-20	20'
KIT OB-22	KIT OB-BHBR-22	22'
KIT OB-24	KIT OB-BHBR-24	24'
KIT OB-26	KIT OB-BHBR-26	26'
KIT OB-28	KIT OB-BHBR-28	28'
KIT OB-30	KIT OB-BHBR-30	30'



KIT OB



KIT OB-BHBR

KIT OB-DBR: DUAL CYLINDER/ DUAL ENGINE CONNECTION KIT

Two high pressure flexible hoses, with pre-crimped fittings and bend restrictors on both ends.
Three lengths available: 2', 3', 4'

KIT OB-DBR	LENGTH
KIT OB-DBR-02	2'
KIT OB-DBR-025	2.5'
KIT OB-DBR-03	3'
KIT OB-DBR-04	4'
KIT OB-DBR-05	5'



KIT OB-DBR

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

STANDARD OUTBOARD HYDRAULIC STEERING SYSTEMS PACKAGED IN A BOX

HYCO WHEEL TURNS 4.7

For outboard engines up to 150 hp

HYCO package kit contains:

UP20F Front mount helm pump.
UC94-OBF Front mount outboard cylinder
Specify engine type when ordering.

OIL 15 Hydraulic oil - 2 quarts.

KIT OB OPTIONAL Hose kit with preassembled fittings
Specify length required when ordering

WARNING: Depending on the applications, the UC94-OBF is available in 2 versions:

UC94-OBF/1 and UC94-OBF/3.

UC94-OBF/1 cylinder is not suitable for HONDA® BF115 and BF130 engines and Mercury® Optimax™ 75, 90, 115. For these engines UC94-OBF/3 is available.

HYCO-TU95 WHEEL TURNS 4.7

For outboard engines up to 150 hp

HYCO-TU95 package kit contains:

UP20F Front mount helm pump.
UC94-OBF Front mount outboard cylinder
Specify engine type when ordering.

OIL 15 Hydraulic oil - 2 quarts.

TU95 40 ft (12,2 m) 3/8" nylon tubing

WARNING: Depending on the applications, the UC94-OBF is available in 2 versions:

UC94-OBF/1 and UC94-OBF/3.

UC94-OBF/1 cylinder is not suitable for HONDA® BF115 and BF130 engines and Mercury® Optimax™ 75, 90, 115. For these engines UC94-OBF/3 is available.

PROTECH WHEEL TURNS 4.29

PROTECH package kit contains:

UP28F Front mount helm pump.
UC128-OBF Front mount outboard cylinder.
Specify engine type when ordering.

PROTECH 1 - with UC128-OBF/1 cylinder

PROTECH 2 - with UC128-OBF/2 cylinder

PROTECH 3 - with UC128-OBF/3 cylinder

OIL 15 Hydraulic oil - 2 quarts .

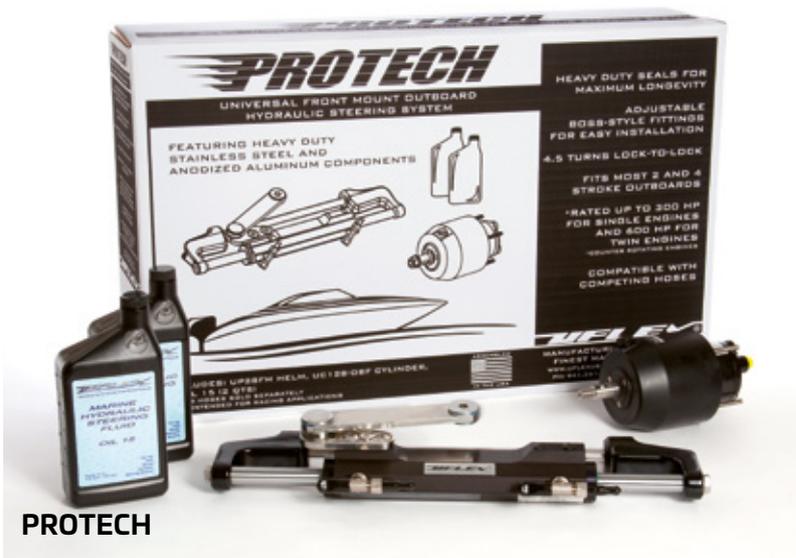
KIT OB OPTIONAL Hose kit with preassembled fittings.
Specify length required when ordering



HYCO



HYCO-TU95



PROTECH

Durability and performance define the Protech front mount outboard steering package. From the stainless steel helm shaft, heavy duty shaft seals, carbon steel piston and 304 electropolished and passivated stainless link assemblies, the Protech is built for maximum longevity and peak performance. Adjustable boss style fittings allow precise hose routing without the risk of breaking the fittings by over tightening.





SILVERSTEER™

HIGH PERFORMANCE STEERING SYSTEMS

UP25F-SVS - UP33F-SVS - UP39F-SVS FRONT MOUNT HELM PUMPS

Specifically designed for high performance and high torque applications, the SilverSteer™ features a **1500 psi** helm and keyed bullhorns on the cylinder for maximum durability and minimal lost motion.

Whether a bass boat, flats boat or tournament style offshore fishing boat, the SilverSteer™ will deliver smooth, responsive and precise steering.

Adjustable boss style fittings allow precise hose routing without the risk of breaking the fittings by over tightening.

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.

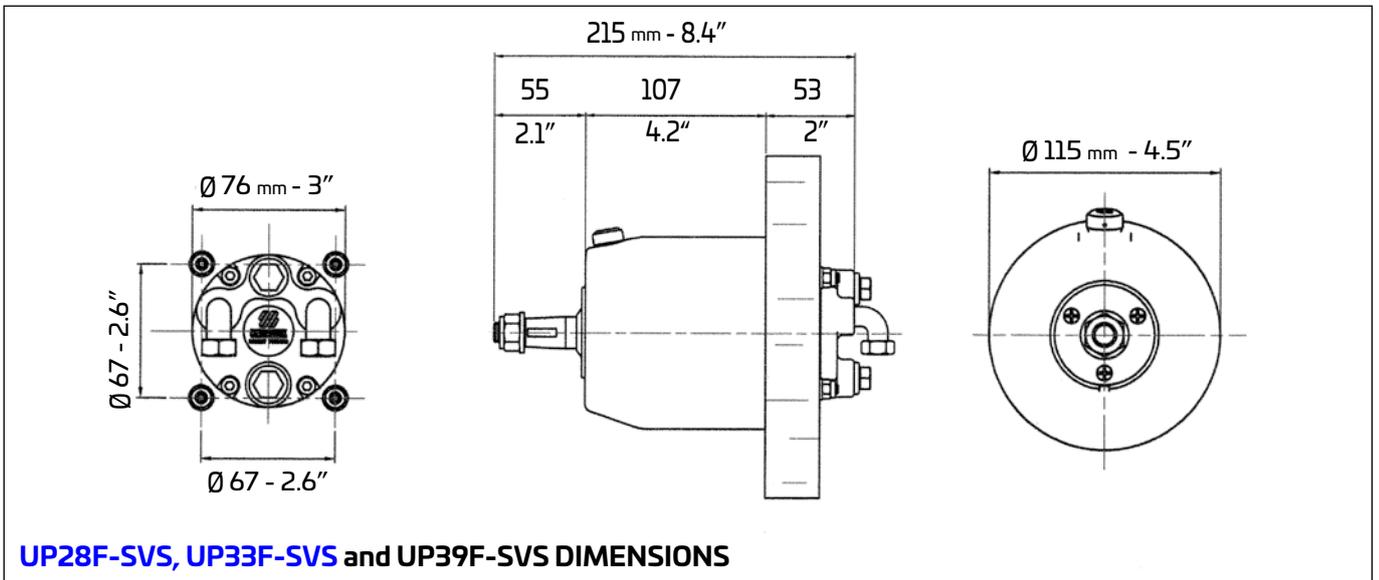


X72 shown with optional UP helm

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 for front mount helms:
X72 - 43140 K (sold separately)
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
UP25F-SVS	42841 M	Front mount	25 cc - 1.5 cu.in	5	105 bar - 1500 PSI	710 mm - 28"	5 kg - 11 lbs
UP33F-SVS	42475 N	Front mount	33 cc - 2.0 cu.in	7	105 bar - 1500 PSI	710 mm - 28"	5 kg - 11 lbs
UP39F-SVS	42474 L	Front mount	39 cc - 2.4 cu.in	7	105 bar - 1500 PSI	710 mm - 28"	5 kg - 11 lbs



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

FEATURES

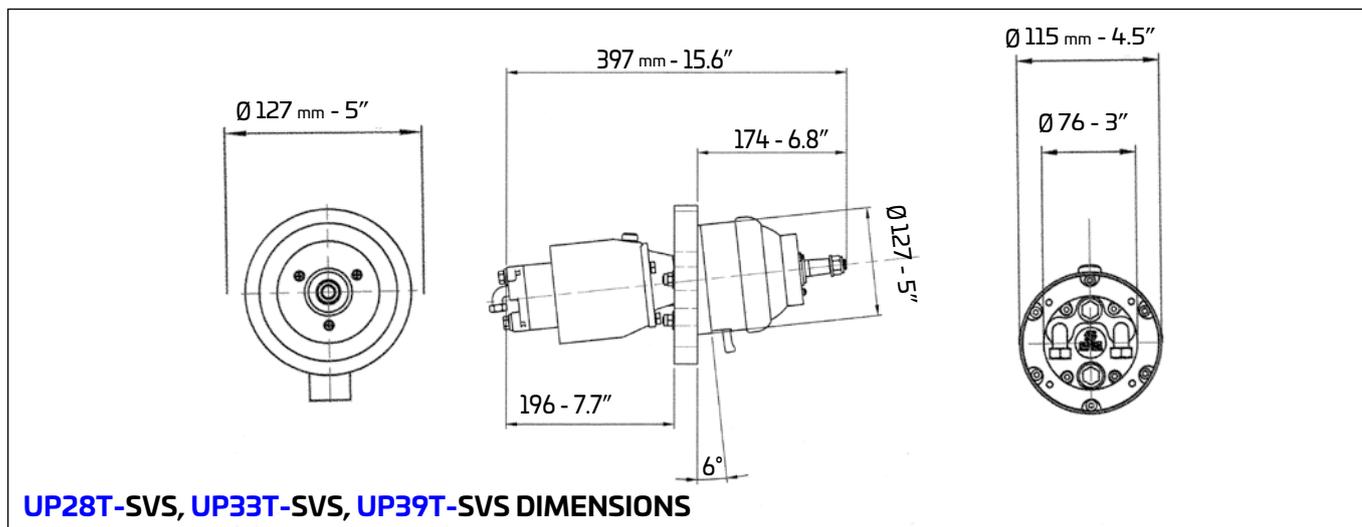
- Available in three different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock (patented)
- **Integral relief valve for over-pressure protection 105 bar (1500 psi)**
- Stainless steel shaft
- Easily accessible lock valve and shaft seal for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



X70-SVS

X70-SVS TILT MECHANISM INCLUDED

MODEL	P. No.	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP25T-SVS-X70-SVS	43159 H + 41880 T	25 cc - 1.5 cu.in	5	105 Bar - 1500 PSI	406 mm - 16"	5 kg - 11 lbs
UP33T-SVS-X70-SVS	42478 V + 41880 T	33 cc - 2.0 cu.in	7	105 Bar - 1500 PSI	406 mm - 16"	5 kg - 11 lbs
UP39T-SVS-X70-SVS	42479 X + 41880 T	39 cc - 2.4 cu.in	7	105 Bar - 1500 PSI	406 mm - 16"	5 kg - 11 lbs



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





66

SILVERSTEER - OUTBOARD STEERING SYSTEMS



HIGH PERFORMANCE OUTBOARD STEERING SYSTEMS

UC130-SVS FRONT MOUNT CYLINDER



Adjustable boss style fittings for easy installation

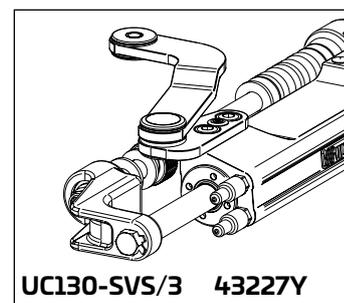
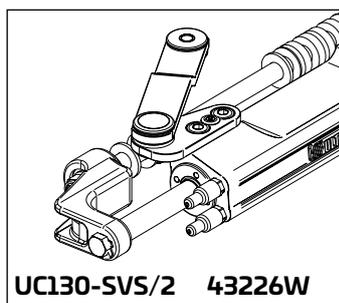
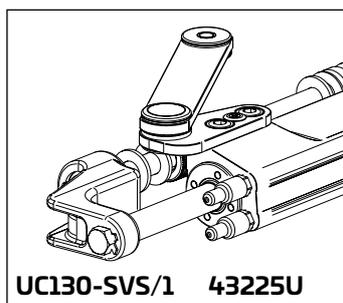
High resistance stainless steel connection bolt (ULTRABOLT)



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

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:

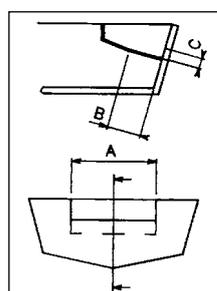
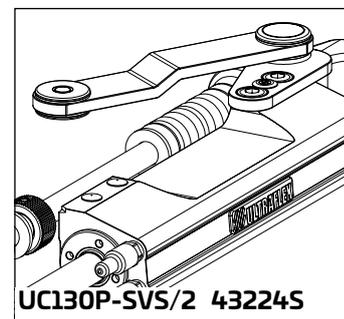
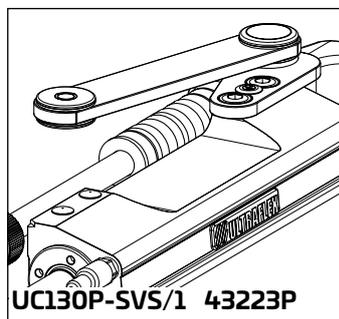


In the applications with dual UC130-SVS cylinder it is necessary to order a standard UC130-SVS cylinder (link arm attached to the starboard side of the cylinder) and a port UC130P-SVS cylinder (link arm attached to the port side of the cylinder). See appropriate section for A95 tie bar required for use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

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



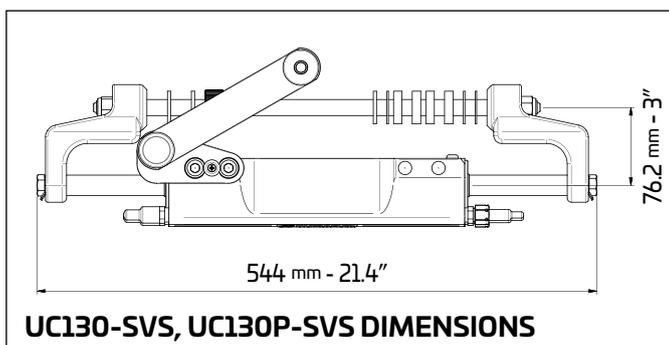
UC130P-SVS



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 26" (650 mm)



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



**UC130-SVS
CYLINDER
APPLICATIONS**

ENGINE	POWER	YEAR	CYLINDER	P. No.	PACKAGED
Mercury® Mariner®	115-125-150 EFI 2S	1990-2007	UC130SVS-1	43225 U	Silversteer 1
	225-250 EFI 2S	2000-2007	UC130SVS-1	43225 U	Silversteer 1
	135-150-175 OPTIMAX	1999-to date	UC130SVS-1	43225 U	Silversteer 1
	200-225-250 OPTIMAX	1999-to date	UC130SVS-1	43225 U	Silversteer 1
	RACING 300 OPTIMAX	1999-2011	UC130SVS-1	43225 U	Silversteer 1
	250 SALTWATER EFI 4S	2007-2011	UC130SVS-1	43225 U	Silversteer 1
	135-150-175-200 VERADO L4	2004-to date	UC130SVS-1	43225 U	Silversteer 1
	FOURSTROKE 175-200 V6	2018-to date	UC130SVS-1	43225 U	Silversteer 1
	FOURSTROKE 225-300 V8	2018-to date	UC130SVS-1	43225 U	Silversteer 1
Evinrude®	E115-E130-E135 2S V4	1995-to date	UC130SVS-2	43226 W	Silversteer 2
	E150-E175-E200-E225-E250-E300 2S V6	1995-to date	UC130SVS-2	43226 W	Silversteer 2
Yamaha®	115C-130B 2S	1990-2008	UC130SVS-2	43226 W	Silversteer 2
	150F-200F-250G 2S	1996-2007	UC130SVS-2	43226 W	Silversteer 2
	150 HPDI VMAX 2S	200-2008	UC130SVS-2	43226 W	Silversteer 2
	175-200-225-250-300 HPDI VMAX 2S	2000-2008	UC130SVS-2	43226 W	Silversteer 2
	F115-F150 EFI 4S	1999-2007	UC130SVS-1	43225 U	Silversteer 1
	F200-F225-F250 4S	2002-2007	UC130SVS-2	43226 W	Silversteer 2
	F115-F150-F175-F200 L4	2004-to date	UC130SVS-1	43225 U	Silversteer 1
	F200-F225-F250-F300 V6 4S	2004-to date	UC130SVS-2	43226 W	Silversteer 2
	F350 4S V8	2006-to date	UC130SVS-1	43225 U	Silversteer 1
Honda®	BF135-BF150 4S	2005-to date	UC130SVS-1	43225 U	Silversteer 1
	BF150 V-TEC 4S	2008-to date	UC130SVS-1	43225 U	Silversteer 1
	BF175-BF200-BF225- BF250 4S	2001-to date	UC130SVS-1	43225 U	Silversteer 1
Suzuki®	DF100-115-140 4S	2008-to date	UC130SVS-1	43225 U	Silversteer 1
	DF150-175-DF200 L4 4S	2006-to date	UC130SVS-1	43225 U	Silversteer 1
	DF200-DF225-DF250-DF300-DF350 V6 4S	2004-to date	UC130SVS-2	43226 W	Silversteer 2
Tohatsu®	115-120-140 2S	2004-to date	UC130SVS-2	43226 W	Silversteer 2
	70-90-115 TLDI 4S	2004-to date	UC130SVS-1	43225 U	Silversteer 1
	BFT60-75-90 4S	2015-to date	UC130SVS-1	43225 U	Silversteer 1
Selva®	80 PORTOFINO/TIGERSHARK 2S	1995-2008	UC130SVS-1	43225 U	Silversteer 1
	150 WHITE SHARK 2S	2001-2007	UC130SVS-2	43226 W	Silversteer 2
	100EFI MARLIN -115 EFI NARWHAL-150EFI KILLER WHALE 4S	2000-to date	UC130SVS-1	43225 U	Silversteer 1
Johnson®	BJ90-115-140 4S	2001-2007	UC130SVS-1	43225 U	Silversteer 1
	J90-115 V4 2S	1995-2007	UC130SVS-2	43226 W	Silversteer 2
	J150-175 V6 2S	1995-2007	UC130SVS-2	43226 W	Silversteer 2
	J200-225 V6 4S	2004-2007	UC130SVS-2	43226 W	Silversteer 2
OXE®	200HP DIESEL	2018-to date	UC130SVS-1	43225 U	Silversteer 1

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.



SILVERSTEER

UC130-SVS

CYLINDER

68

SILVERSTEER - OUTBOARD STEERING SYSTEMS

ORDER GUIDE:

SYSTEM	APPLICATION	WHEEL TURNS	COMPONENTS	MODEL	QTY
Single Engine Single Cylinder 	Up to 350 hp max	5.5 (UP25)	Cylinder Helm pump Hose Kit Oil Steering wheel	UC130-SVS	1
		3.9 (UP33)		UP25 or UP33-SVS	1
				KIT OB-SVS	1
				OIL 15	2
				(Wheel selection)	1

For a second station add:
 1 UP25-SVS or UP33-SVS helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB-SVS, 1 **OIL 15**, 1 steering wheel

Dual engine Single cylinder 	Up to 350 hp max (non-counter rotating engine) Up to 600 hp max (counter rotating engine)	5.5 (UP25)	Cylinder Helm pump Hose Kit Oil Tie bar Steering wheel	UC130-SVS	1
		3.9 (UP33)		UP25 or UP33-SVS	1
				KIT OB-SVS	1
				OIL 15	2
				A94	1
				(Wheel selection)	1

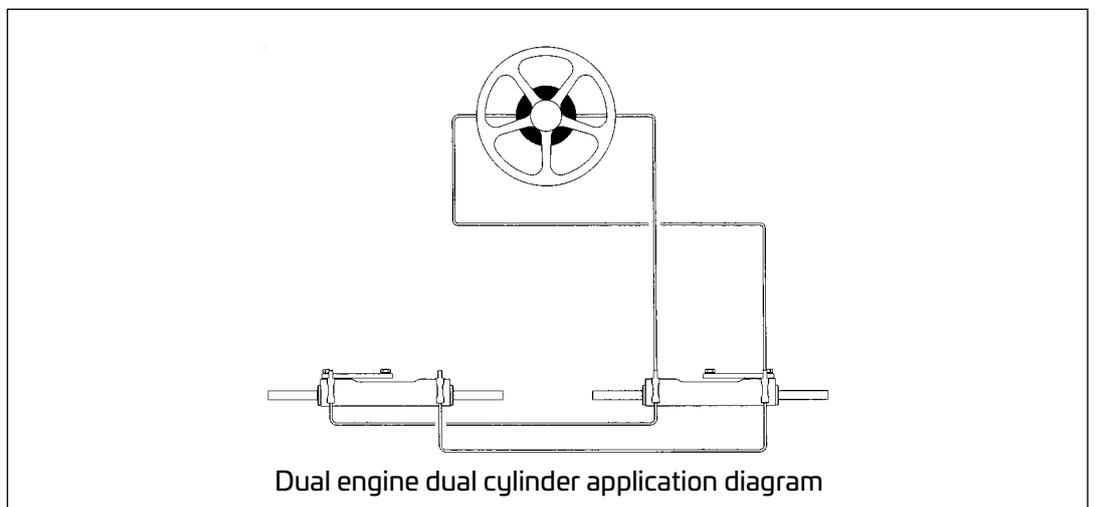
For a second station add:
 1 UP25-SVS or UP33-SVS helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB-SVS, 1 **OIL 15**, 1 steering wheel

Dual engine Dual cylinder 	Up to 600 hp max (non-counter rotating engines) Up to 700 hp max (counter rotating engines)	6.6 (UP39)	Cylinder Cylinder Port Helm pump Hose Kit Oil Tie bar Steering wheel Connection Kit	UC130-SVS	1
				UC130P-SVS	1
				UP39-SVS	1
				KIT OB-SVS	1
				OIL 15	3
				A95	1
				(Wheel selection)	1
				KIT OB-DBR130-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 **OIL 15**, 1 steering wheel

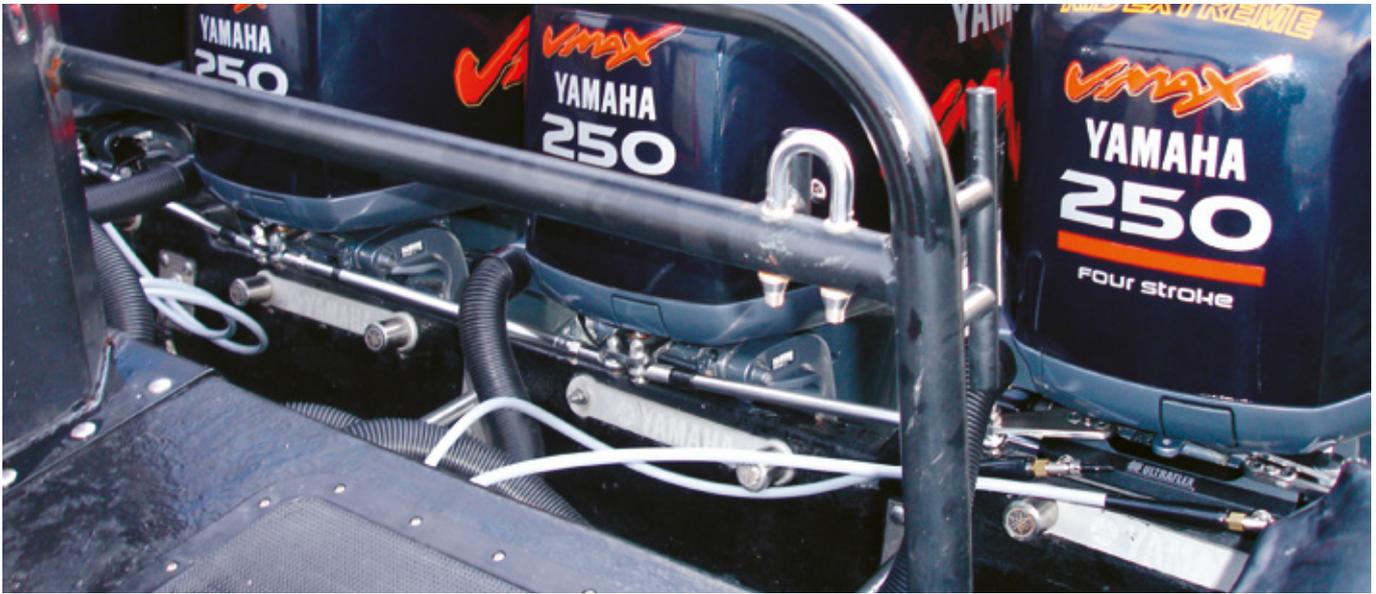
WARNING

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



ATTENTION:

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



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

For three or four outboard engines, dual cylinder applications, please refer to tie-bar section.

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

SILVERSTEER WHEEL TURNS: 4.8

SilverSteer package kit contains:

- UP25F-SVS** Front mount helm pump
- UC130-SVS** Front mount outboard cylinder.
Specify engine type when ordering.

- Silversteer 1 -** with UC130-SVS/1 cylinder
- Silversteer 2 -** with UC130-SVS/2 cylinder

- OIL 15** Hydraulic oil 2 litres (0.5 gallons).
- KIT OB-SVS** Hose kit with preassembled fittings.
Specify length required when ordering.





HIGH PERFORMANCE OUTBOARD STEERING SYSTEMS

KIT OB-SVS AND KIT OB-BHBR-SVS :

HOSE KITS FOR SINGLE STATION INSTALLATION FOR SILVERSTEER SYSTEMS

Two high pressure Kevlar stranded hoses with pre-crimped nickel plated brass fittings, bulkhead fittings (for KIT OB-BHBR-SVS only) and bend restrictors on one end. Recommended for use with all Uflex SilverSteer and MasterDrive helms with 1500 psi relief valves.

70

- OUTBOARD STEERING SYSTEMS



KIT OB-SVS



KIT OB-BHBR-SVS

KIT OB-SVS	KIT OB-BHBR-SVS	LENGTH
KIT OB-SVS-06	KIT OB-BHBR-SVS-06	6'
KIT OB-SVS-08	KIT OB-BHBR-SVS-08	8'
KIT OB-SVS-10	KIT OB-BHBR-SVS-10	10'
KIT OB-SVS-12	KIT OB-BHBR-SVS-12	12'
KIT OB-SVS-14	KIT OB-BHBR-SVS-14	14'
KIT OB-SVS-16	KIT OB-BHBR-SVS-16	16'
KIT OB-SVS-18	KIT OB-BHBR-SVS-18	18'
KIT OB-SVS-20	KIT OB-BHBR-SVS-20	20'
KIT OB-SVS-22	KIT OB-BHBR-SVS-22	22'
KIT OB-SVS-24	KIT OB-BHBR-SVS-24	24'
KIT OB-SVS-26	KIT OB-BHBR-SVS-26	26'
KIT OB-SVS-28	KIT OB-BHBR-SVS-28	28'
KIT OB-SVS-30	KIT OB-BHBR-SVS-30	30'

KIT FOR A SECOND STEERING STATION OR AUTOPILOT FOR [SILVERSTEER™](#) STEERING SYSTEMS

KIT OB-2S-SVS - 43415Z

Components:

2x T fittings

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

[TU95](#) hose x10 m (32 ft)

1x KIT OB-SVS-50 part No. 41290 V

1x non-vented cap



KIT OB-2S-SVS



71

KIT OB-DBR130-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-DBR130-SVS

<i>KIT OB-DBR130-SVS</i>	<i>ENGINE CENTERS</i>	<i>HOSE LENGTH</i>
KIT OB-DBR130-SVS-15	26"	15"
KIT OB-DBR130-SVS-16	27"	16"
KIT OB-DBR130-SVS-17	28"	17"
KIT OB-DBR130-SVS-17.5	28.5"	17.5"
KIT OB-DBR130-SVS-18	29"	18"
KIT OB-DBR130-SVS-19	30"	19"
KIT OB-DBR130-SVS-19.5	30.5"	19.5"
KIT OB-DBR130-SVS-20	31"	20"
KIT OB-DBR130-SVS-21	32"	21"

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)



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 **OIL 15** 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-DBR130-SVS**: SilverSteer high pressure hose kit complete with preassembled fittings for cylinder connection
- 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



UH - HELM

- 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



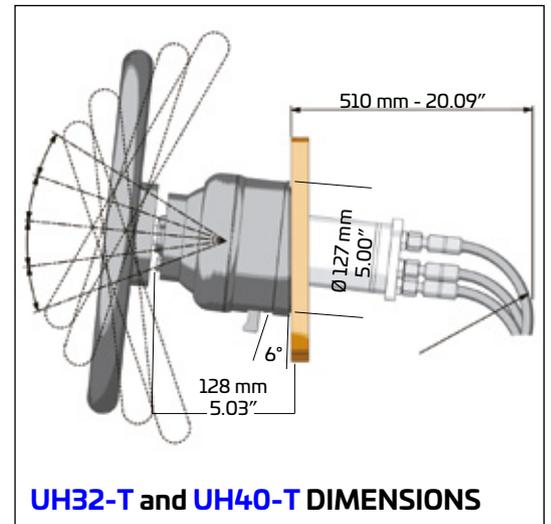
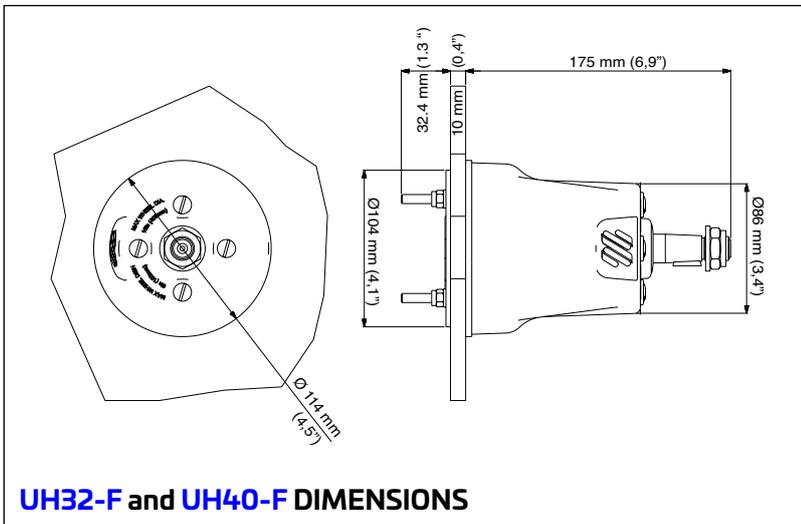
74

POWER ASSISTED OUTBOARD STEERING SYSTEM

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

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

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



TILT MECHANISM

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

90° TWO FITTING KIT FOR MASTERDRIVE HELMS (OPTIONAL)

- **MDF90** - 42821 F



X66

MDF-90

INTERMEDIATE HELM POSITION INSTALLATION KIT

(OPTIONAL)

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



K81



K81MM



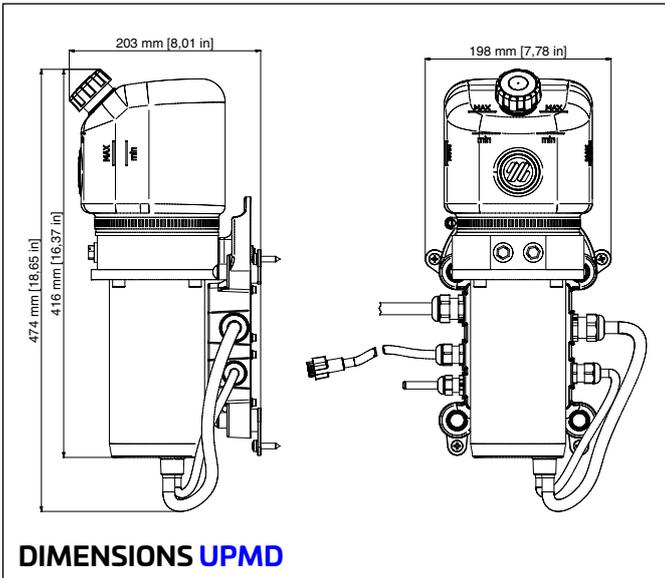
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UPMD - POWER UNIT - 42096 E

- 12VDC Motor
- 45° swiveling fittings for easy installation
- Semitransparent 0,5 litre (0.11gal) tank gives immediate oil level vision
- Vented filler plug
- Suitable for applications with autopilot
- Bulkhead or floor mount
- Black galvanized motor case, salt water resistant
- 4,5 m (15') Wiring Harness included
- IP67 waterproof
- Ignition protected (SAE J-1171 and UNI EN 28846)



UPMD



DIMENSIONS UPMD

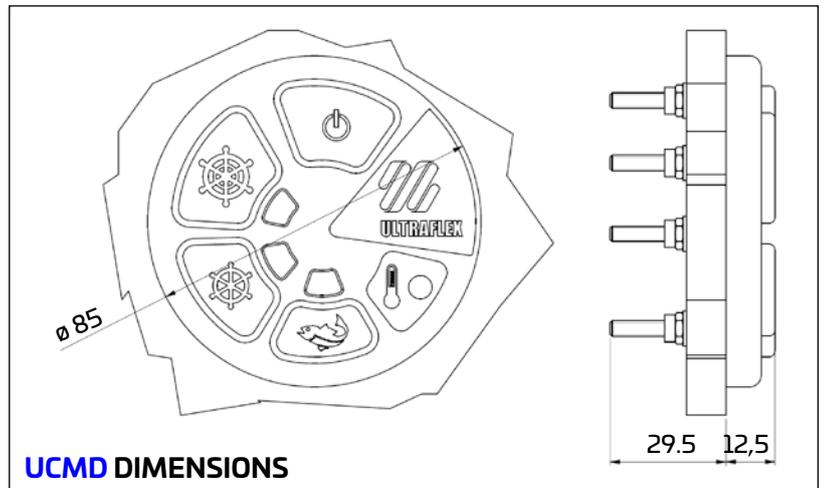


UCMD USER INTERFACE - 42097 G

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



UCMD



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 quarts **OIL 15** hydraulic oil
- Installation Manual

Depending on the helm type, different versions are available:

For more details please, refer to the kit offering selection.

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

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



MD KIT



KIT OB-SVS	LENGTH
KIT OB-SVS-3	3.0 ft
KIT OB-SVS-4	4.0 ft
KIT OB-SVS-5	5.0 ft
KIT OB-SVS-6	6.0 ft
KIT OB-SVS-8	8.0 ft
KIT OB-SVS-10	10.0 ft
KIT OB-SVS-12	12.0 ft
KIT OB-SVS-14	14.0 ft
KIT OB-SVS-16	16.0 ft
KIT OB-SVS-18	18.0 ft
KIT OB-SVS-20	20.0 ft



KIT OB-SVS

KIT OB-DBR130-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-DBR130-SVS

KIT OB-DBR130-SVS	ENGINE CENTERS	HOSE LENGTH
KIT OB-DBR130-SVS-15	26"	15"
KIT OB-DBR130-SVS-16	27"	16"
KIT OB-DBR130-SVS-17	28"	17"
KIT OB-DBR130-SVS-17.5	28.5"	17.5"
KIT OB-DBR130-SVS-18	29"	18"
KIT OB-DBR130-SVS-19	30"	19"
KIT OB-DBR130-SVS-19.5	30.5"	19.5"
KIT OB-DBR130-SVS-20	31"	20"
KIT OB-DBR130-SVS-21	32"	21"



MD2 - PACKAGED KITS FOR DUAL STATION

MasterDrive 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 communication with second station
- 1x **70957 S** - 3/8" straight fitting
- 2x **70831 T** - 3/8" T fittings
- Installation Manual

Depending on the helm type, different versions are available*:

- MD2 32-F** - 42610 S
32 cc Front Mount Helm included
- MD2 32-T** - 42611 U
32 cc Tilt Mount Helm and **X66** tilt mechanism included
- MD2 40-F** - 42520 R
40 cc Front Mount Helm included
- MD2 40-T** - 42612 W
40 cc Tilt Mount Helm and **X66** tilt mechanism included



MD2 KIT

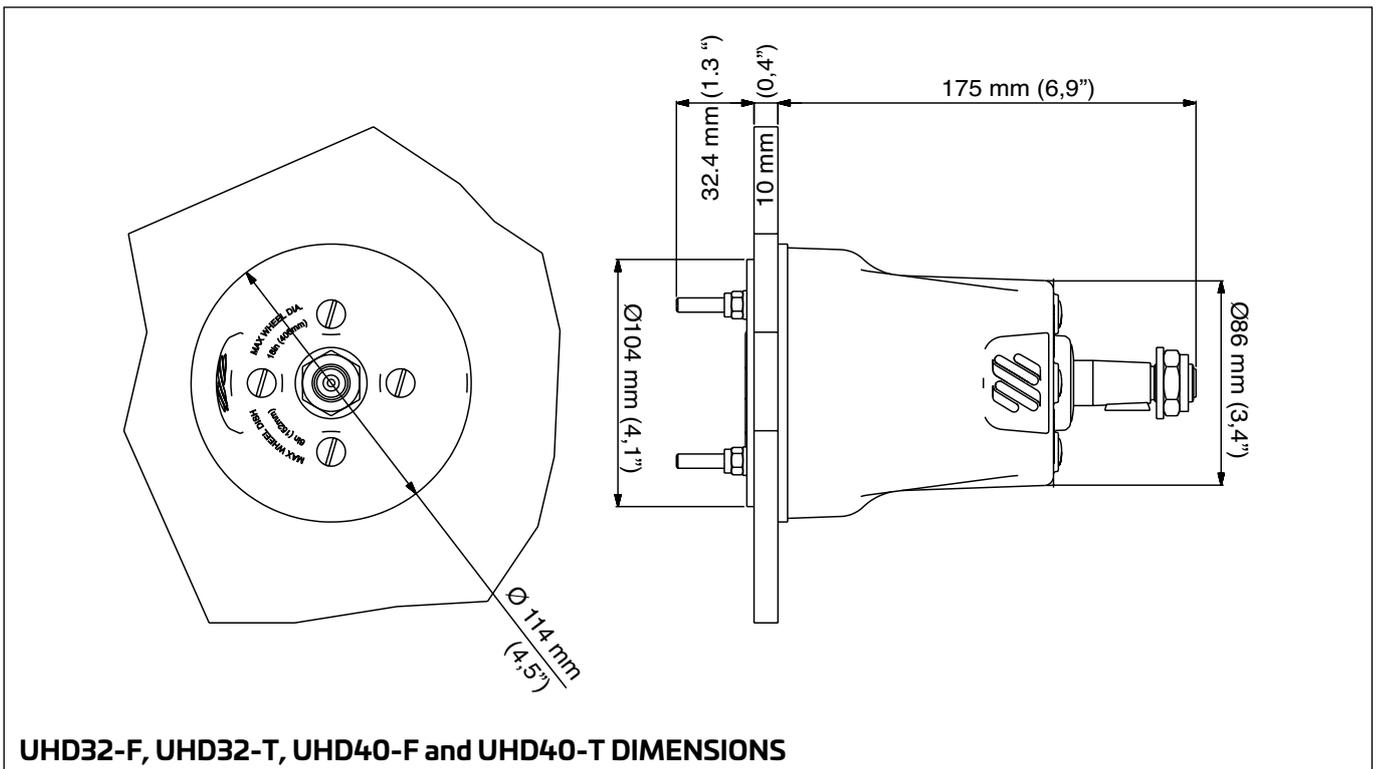
* For more details, please refer to the kit offering selection.

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 be ordered separately:

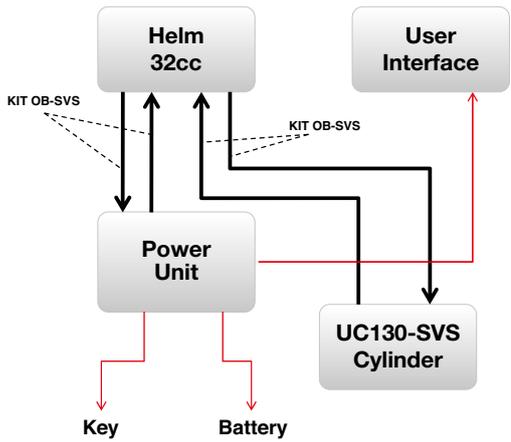
- 1x Kit OB-SVS with length equal to the distance between the master helm pump and the slave helm pump
- 2x Kits OB-SVS: select the desired length
- 1x **OIL 15** 1 liter of hydraulic oil
- 1x steering wheel (wheel selection)

For dual cylinder applications, order: n.1 KIT OB-DBR130-SVS select the desired length.

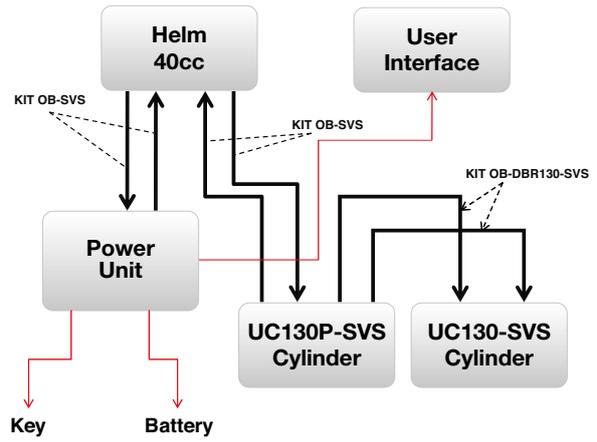




SINGLE CYLINDER SINGLE STATION APPLICATION



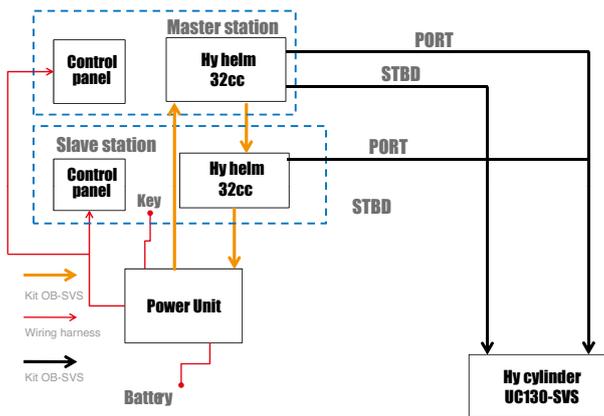
DUAL CYLINDER SINGLE STATION APPLICATION



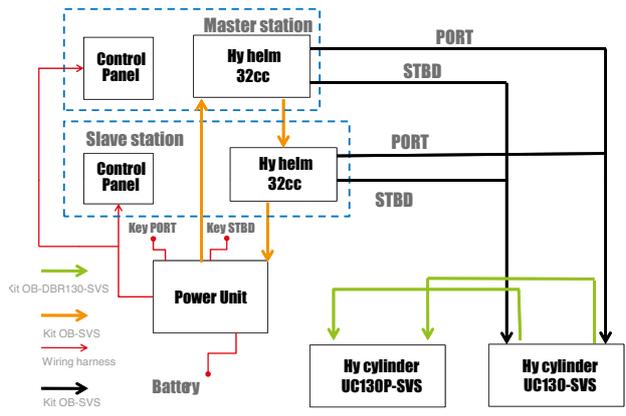
— wiring harness

— high pressure hoses

SINGLE CYLINDER DUAL STATION APPLICATION



DUAL CYLINDER DUAL STATION APPLICATION



MASTERDRIVE - POWER ASSISTED OUTBOARD STEERING SYSTEM

SINGLE STATION / SINGLE CYLINDER KITS

MD32-1F	KIT INCLUDES
UH32-F UCMD UPMD UC130-SVS 1 OIL 15	MasterDrive 32cc front mount helm MasterDrive user interface MasterDrive power unit 12V DC UC130 SilverSteer cylinder ver 1 2 quarts of OIL 15

MD32-2F	KIT INCLUDES
UH32-F UCMD UPMD UC130-SVS 2 OIL 15	MasterDrive 32cc front mount helm MasterDrive user interface MasterDrive power unit 12V DC UC130 SilverSteer cylinder ver 2 2 quarts of OIL 15

MD32-1T	KIT INCLUDES
UH32-T X66 UCMD UPMD UC130-SVS 1 OIL 15	MasterDrive 32cc tilt mount helm Tilt mechanism for power steering MasterDrive user interface MasterDrive power unit UNIT 12V DC UC130 SilverSteer cylinder ver 1 2 quarts of OIL 15

MD32-2T	KIT INCLUDES
UH32-T X66 UCMD UPMD UC130-SVS 2 OIL 15	MasterDrive 32cc tilt mount helm Tilt mechanism for power steering MasterDrive user interface MasterDrive power unit UNIT 12V DC UC130 SilverSteer cylinder ver 2 2 quarts of OIL 15

SINGLE STATION RETROFIT KITS

MD32FM	KIT INCLUDES
UH32-F UCMD UPMD	MasterDrive 32cc front mount helm MasterDrive user interface MasterDrive power unit 12V DC

MD40FM	KIT INCLUDES
UH40-F UCMD UPMD	MasterDrive 40cc front mount helm MasterDrive user interface MasterDrive power unit 12V DC

MD32T	KIT INCLUDES
UH32-T X66 UCMD UPMD	MasterDrive 32cc tilt mount helm Tilt mechanism for power steering MasterDrive user interface MasterDrive power unit UNIT 12V DC

MD40T	KIT INCLUDES
UH40-T X66 UCMD UPMD	MasterDrive 40cc tilt mount helm Tilt mechanism for power steering MasterDrive user interface MasterDrive power unit UNIT 12V DC

SINGLE STATION / TWIN CYLINDER KITS

MD40-D1F	KIT INCLUDES
UH40-F UCMD UPMD UC130-SVS 1 UC130-SVS 1P OIL 15	MasterDrive 40cc front mount helm MasterDrive user interface MasterDrive power unit 12V DC UC130 SilverSteer cylinder ver 1 UC130 SilverSteer cylinder ver 1P 2 quarts of OIL 15

MD40-D2F	KIT INCLUDES
UH40-F UCMD UPMD UC130-SVS 2 UC130-SVS 2P OIL 15	MasterDrive 40cc front mount helm MasterDrive user interface MasterDrive power unit 12V DC UC130 SilverSteer cylinder ver 2 UC130 SilverSteer cylinder verP 2 quarts of OIL 15

MD40-D1T	KIT INCLUDES
UH40-T X66 UCMD UPMD UC130-SVS 1 UC130-SVS 1P OIL 15	MasterDrive 40cc tilt mount helm Tilt mechanism for power steering MasterDrive user interface MasterDrive power unit 12V DC UC130 SilverSteer cylinder ver 1 UC130 SilverSteer cylinder ver 1P 2 quarts of OIL 15

MD40-D2T	KIT INCLUDES
UH40-T X66 UCMD UPMD UC130-SVS 2 UC130-SVS 2P OIL 15	MasterDrive 40cc tilt mount helm Tilt mechanism for power steering MasterDrive user interface MasterDrive power unit 12V DC UC130 SilverSteer cylinder ver 2 UC130 SilverSteer cylinder verP 2 quarts of OIL 15

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

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



80

POWER ASSISTED OUTBOARD STEERING SYSTEM



A94 TIE BAR

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

- Suitable for applications with single UC128-OBF or UC130-SVS front mount cylinder
NOTE: In the applications with dual cylinder use **A90** tie bar for UC128-OBF and **A95** tie bar for UC130-SVS
- Allows to tilt the engines independently
- Stainless steel components
- Electropolished stainless steel ball joints
- Not recommended for applications exceeding 500 HP
- 5 different lengths available:
 - A94 x 26** – 42448 K - 26" (660,4 mm) twin engine centers
 - A94 x 28** – 42449 M - 28" (711,2 mm) twin engine centers
 - A94 x 30** – 42450 W - 30" (762,0 mm) twin engine centers
 - A94 x 32** – 42451 Y - 32" (812,8 mm) twin engine centers
 - A94 x 34** – 42452 A - 34" (863,6 mm) twin engine centers

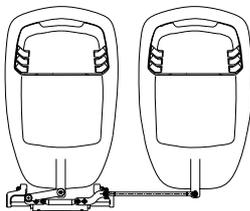
A94 – 41204 Z - adjustable from 26" to 37,4" (660 mm to 950 mm) engine centers

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

A94 TIE BAR APPLICATIONS

WARNING

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



A94 application example



A94 x 26



A94 - 41204 Z



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



UC128 + A94



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

Heavy duty twin engine/twin cylinder tie bar kit for use with UC128 and UC128P "Port" version outboard cylinders. Suitable for use with Protech and SilverSteer cylinders 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.

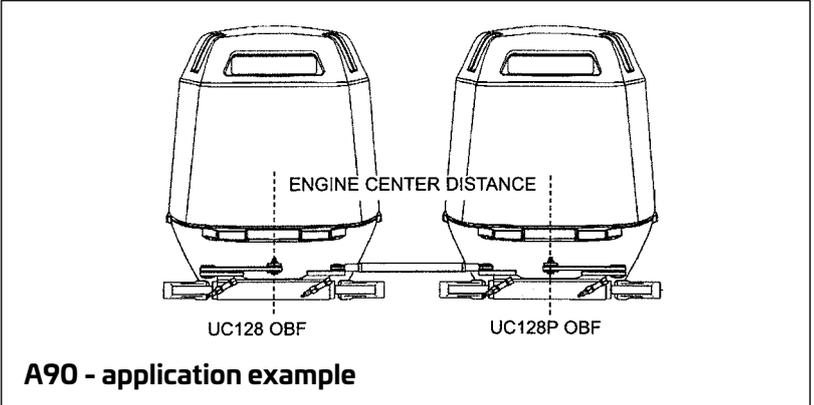
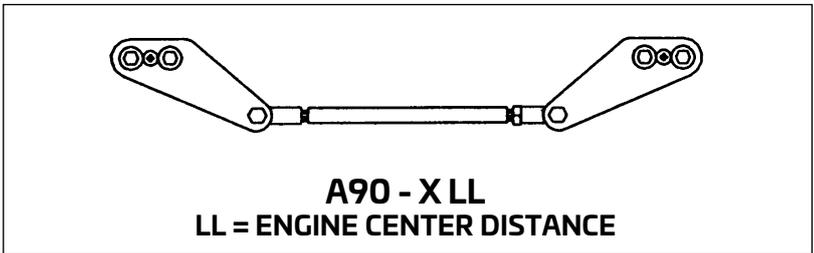
- Suitable for applications with dual UC128-OBF or UC128-SVS (not UC130-SVS) front mount cylinder
NOTE: in applications with single cylinder use **A94** tie bar
- Allows to tilt the engines independently
- Electropolished/passivated stainless steel components and ball joints
- Applicable to engine centers variable from 26" (660 mm) to 36" (914,4 mm).
- 6 different lengths available:
A90 x 26 - 42640 B - 26" (660,4 mm) twin engine centers
A90 x 28 - 42641 D - 28" (711,2 mm) twin engine centers
A90 x 30 - 42642 F - 30" (762,0 mm) twin engine centers
A90 x 32 - 42643 H - 32" (812,8 mm) twin engine centers
A90 x 34 - 42644 K - 34" (863,6 mm) twin engine centers
A90 x 36 - 42645 M - 36" (914,4 mm) twin engine centers

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

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

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

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.



A95 TIE BAR

FOR TWIN OUTBOARD ENGINE/TWIN UC130-SVS CYLINDERS

- 2 models in different lengths available:

A95-32 - 43409 E - length 26" to 32"

A95-37.5 - 43410 N - length 32" to 37.5"

- Suitable for applications with dual UC130-SVS (or UC128-OBF and UC128-SVS) front mount cylinder

NOTE: in applications with single cylinder use **A94** tie bar

- Allows to tilt the engines independently
- All stainless steel components
- Electropolished stainless steel ball joints

new



A95

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

UC130 starboard cylinders:

UC130-SVS/1 - 43225 U

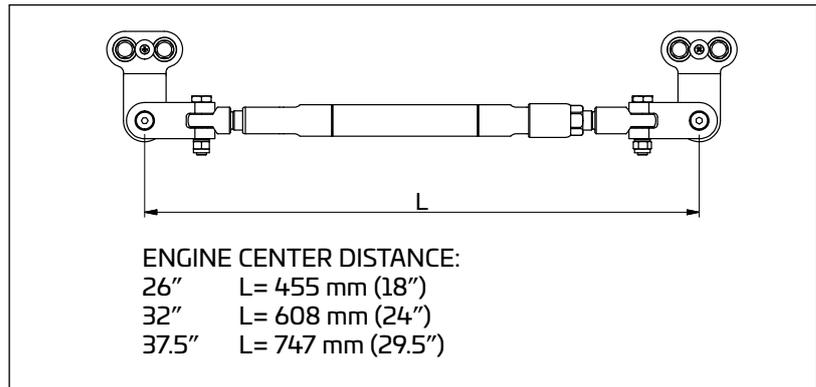
UC130-SVS/2 - 43226 W

UC130-SVS/3 - 43227 Y

UC130P port cylinders:

UC130P-SVS/1 - 43223 P

UC130P-SVS/2 - 43224 S



HYDRAULIC TIE BAR

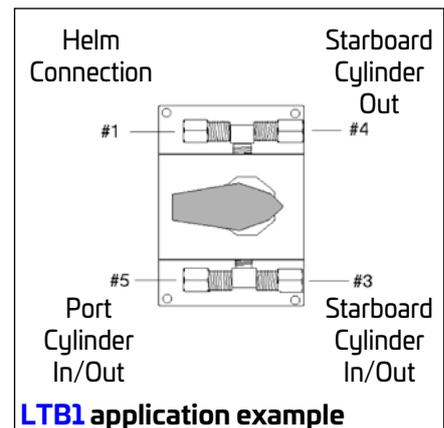
LTB1

Hydraulic Tie Bar 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. It connects using standard Kit OB or Kit OBBHBR hoses.

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



LTB1



A93 TIE BAR FOR TRIPLE OUTBOARD ENGINE/TWIN UC128-OBF CYLINDERS

- Suitable for applications with triple outboard engines and dual cylinders UC128-OBF
- 4 different lengths available:
 - A93 x 26** - 42613 Y - 26" (660,4 mm) twin engine centers
 - A93 x 27** - 42637 N - 27" (685,8 mm) twin engine centers
 - A93 x 28** - 42638 R - 28" (711,2 mm) twin engine centers
 - A93 x 30** - 42639 T - 30" (762,0 mm) twin engine centers

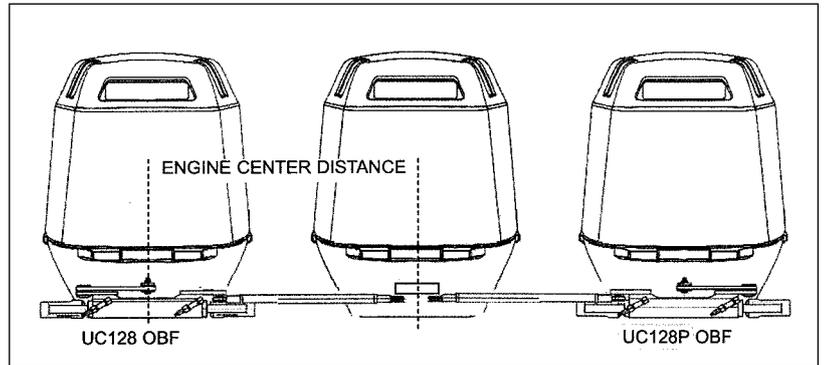
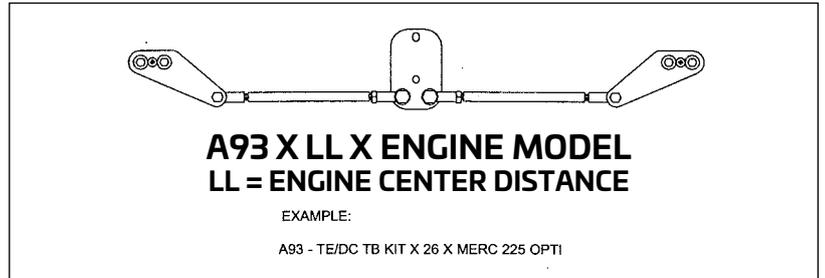
Heavy duty triple engine/twin cylinder tie bar kit for use with UC128 and UC128P "Port" version outboard cylinders. Suitable for use with Protech and UC128-SVS (previous model) cylinders these AISI 304 electropolished and passivated stainless steel tie bars are simple to install and allow for independent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

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.



A93



A93 - application example

TIE BARS FOR APPLICATIONS WITH FOUR CYLINDERS AND FOUR ENGINES

A pre-packed kit is available which includes:

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

ATTENTION: For more details, please contact our Technical Assistance



STERNDRIVE CYLINDERS



UC133-IOB

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

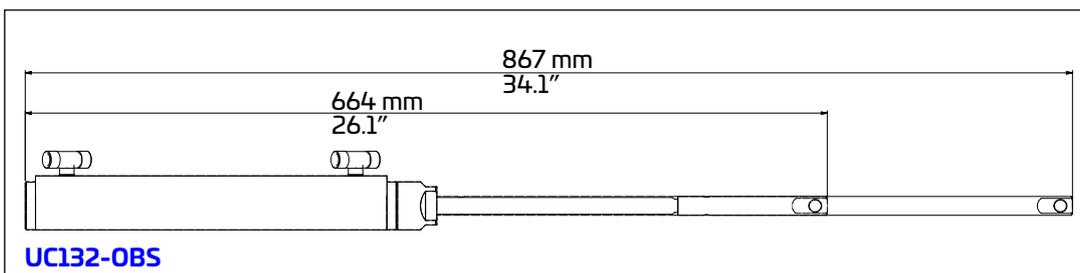
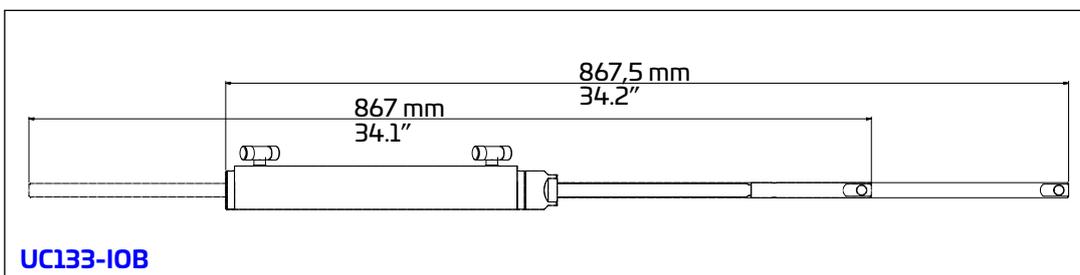


WARNING:
UC132-OBS cylinder is not intended for use with SilverSteer SVS Series helms.

UC132-OBS

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

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



85



**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	1, 3, 4	N/D	
	To date	280	UC133-IOB	1, 3, 4	UC132-OBS	2
	To date	290	UC133-IOB		UC132-OBS	2
	To date	DP-S	N/A		UC132-OBS	2

APPLICATIONS

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

- 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).**
- UFLEX hydraulic cylinder** can be installed as an alternative to a mechanical steering system only.

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

ORDER GUIDE

SYSTEM A			<i>Turn lock to lock: Balanced 4.7 - Unbalanced 4.7/5.8 Max rudder torque: 66 kgm - 5738 lbs. in</i>
Components	Model	Qty	
Helm pump	UP28	1	For an additional station add: 1 UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB hose Kit, extra OIL 15 , 1 steering wheel
Cylinder	see application	1	
Hose Kit	KIT OB	1	
Oil	OIL 15	3	
Steering wheel	(Wheel selection)	1	
SYSTEM B			<i>Turn lock to lock: Balanced 4 - Unbalanced 4/5 Max rudder torque: 66 kgm - 5738 lbs. in</i>
Components	Model	Qty	
Helm pump	UP33	1	For an additional station add: 1 UP33 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB hose Kit, extra OIL 15 , 1 steering wheel
Cylinder	see application	1	
Hose Kit	KIT OB	1	
Oil	OIL 15	3	
Steering wheel	(Wheel selection)	1	

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

KIT 95 - 39516 G:

3/8" copper tube fitting kit. It includes one 3.2 ft (1 m) nylon tubes and all necessary fittings for a single station.



KIT 95

BULKHEAD HOSE KITS

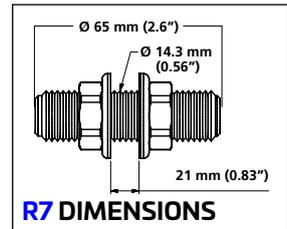
R7 - 3/4" BULKHEAD FITTING KIT

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

R7 - 40819 J



R7 KIT



R7 DIMENSIONS

R8 - DUAL THRU-HULL HOSE KIT

Connection flange available in three different colors

R8B - Black 41299 P

R8W - White 41300 V

R8CH - Chrome 41301 X



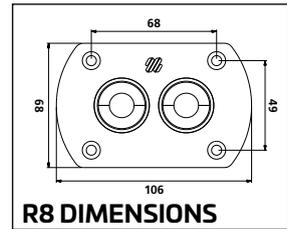
R8B



R8W



R8CH



R8 DIMENSIONS

R9 - BULKHEAD KIT FOR DUAL HOSE

WITH PREASSEMBLED FITTINGS

Connection flange available in three different colors

R9B - Black 43165 C

R9W - White 43167 G

R9CH - Chrome 43166 E



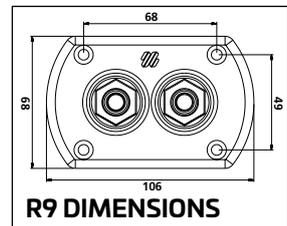
R9B



R9W



R9CH



R9 DIMENSIONS

ACCESSORIES

TU95:

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, UC128-SVS and UC130-SVS cylinders.

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" nylon or copper tube.



KIT 95-2S



OIL 15

OIL 15 - 70704 K:

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.



KIT F





88

ACCESSORIES - FITTINGS

APPLICATION CHART

Model		Description
AF45 41284A		45 DEGREE ADJUSTABLE FITTING
AF45-130 43412 T		45 DEGREE ADJUSTABLE FITTING
AF90 74144U		90 DEGREE ADJUSTABLE FITTING
71928P		BRASS PLUG W/ORING FOR PUMPS
SF38 39471L		STRAIGHT HELM FITTING 1/4 NPT
EF38 39472N		90° HELM FITTING FOR UP SERIES
71955T		BOSS STYLE T-FITTING NICKEL
T-FITTING		1/4 NPT TO 3/8 T- FITTING
VFNO38 40868Y		COMPLETE BOSS FITTING UC128-OBF
71861H		T-FITTING ASSEMBLY-ORF HOSE
VFN38 39925A		TEE FITTING WITH BLEED NIPPLE
TF38 39502V		UNION T-FITTING FOR 3/8" TUBE
61BCA 71004K		BRASS NUT W/SLEEVE #61CA-6
UNION 62CA-6		UNION 3/8 IN COMPRESSION
MD 38 NI COM FT		90° 3/8 NI PLATE COMP FITTING
Q22 898366		TAPARED HELM FITTING TO MERCURY 'O' RING
UPS 11/16 ELBOW		POWERTECH 11/16, 90 DEG ELBOW
UPS 90 DEG ELB		POWERTECH 90 DEGREE ELBOW
UPS BLKHD T-FIT		POWERTECH BULKHEAD T-FITTING
UPS T-FITTING		POWERTECH T-FITTING
UPS UNION		POWERTECH UNION FOR KIT PS/PSDS
UPS UNION OB		POWERTECH UNION FOR KIT OBPS
UPS 4-4 FLO-SS		POWERTECH MALE CONNECTOR



Typical Application	Thread
Fitting for the back of the UP series helms	"ORB, Size #6 to 3/8 COMP FITTING" Helm Side = 9/16 - 18 UNF 2A Hose Side = 9/16 - 24 UNEF 2A
Fitting for UC130-SVS cylinder	-
Fitting for the back of the UP series helms	"ORB, Size #6 to 3/8 COMP FITTING" Helm Side = 9/16 - 18 UNF 2A Hose Side = 9/16 - 24 UNEF 2A
Compensating line brass plug of the UP series helms	"1/4 NPT PLUG" Helm Side = 1/4 NPT
Fitting for the compensating line in the UP series helms or autopilot return line. Also for use with UC130-SVS	"1/4 NPT to 3/8 COMP FITTING" Helm Side = 1/4 NPT Hose Side = 9/16 - 24 UNEF 2A
Fitting for port / starboard line in the UP series helms prior to the boss fittings	"1/4 NPT to 3/8 COMP FITTING" Helm Side = 1/4 NPT Hose Side = 9/16 - 24 UNEF 2A
Fitting for back of helm in a dual station installation	"ORB, Size #6 to 3/8 COMP FITTING" Cylinder/Helm Side = 9/16 - 18 UNF 2A Hose Side = 9/16 - 24 UNEF 2A
Fitting used in the back of the previous version of the UP series helms before the boss fitting	"1/4 NPT to 3/8 COMP FITTING" Helm/Side = 1/4 NPT Hose Side = 9/16 - 24 UNEF 2A
Bleed fitting for all outboard cylinders	"ORB, Size #6 to 3/8 COMP FITTING" Cylinder Side = 9/16 - 18 UNF 2A Hose Side = 9/16 - 24 UNEF 2A
Used to replace the boss fitting in new outboard cylinders when trying to connect 'O' ring face seal hoses	"ORB, Size #6 to 3/8 COMP FITTING" Cylinder Side = 9/16 - 18 UNF 2A Hose Side = 9/16 - 24 UNEF 2A
Bleed fitting for all inboard and stern drive cylinders	"1/4 NPT to 3/8 COMP FITTING" Cylinder Side = 1/4 NPT Hose Side = 9/16 - 24 UNEF 2A
T-Fitting for 3 standard 3/8" compression thread hose fittings	"3/8 COMP FITTING" ALL Sides = 9/16 - 24 UNEF 2A
3/8" Compression Nut with ferrule for cut to length nylon tubing	"3/8 COMP NUT" Side = 9/16 - 24 UNEF 2B Hose Side = 3/8 Compression Ferrule
Used to connect 2 standard 3/8" Compression hoses	"3/8 COMP FITTING" Both Sides = 9/16 - 24 UNEF 2A
90° fitting from bulkhead fitting to 3/8" compression hose	"3/8 COMP FITTING" Fitting side = 9/16 - 24 UNEF 2B Hose Side = 9/16 - 24 UNEF 2A
Fitting for the back of the Merc UP series helms to 'O' ring face seal Hoses	1/4 NPT to ORFS Fitting Side = 1/4 NPT Hose Side = ORFS ('O' ring Face)
90° fitting for the pressure and tank line on a poertech helm	-
90° fitting for the two high pressure outlets on a powertech helm/ also used for connection from a bulkhead	-
T-Fitting used on bulkhead fittings or helm high pressure lines on powertech helm	-
3-way ORF fitting for Mercury style ORF hoses	-
11/16" union to extend a KITPS/KITPSDS hose	-
ORF to ORF union for connection of high pressure ORF style hoses	-
Used when connecting an Autopilot to Powertech System - Autopilot to ORF Hose	-

HYDRAULIC CROSS REFERENCE GUIDE



90

HYDRAULIC CROSS REFERENCE GUIDE

UFLEX® PART No.	SEASTAR® CROSS REFERENCE	DESCRIPTION
HYDRAULIC HELM UNITS - FRONT MOUNT		
UP20 F	HH5270	FRONT MOUNT HELM, 1.2 CU.IN. 3/4" ANODIZED ALUM. TAPERED SHAFT
UP25 F	HH5271	FRONT MOUNT HELM, 1.5 CU.IN. 3/4" TAPERED STAINLESS STEEL SHAFT
UP28 F	HH5271	FRONT MOUNT HELM, 1.7 CU.IN. 3/4" TAPERED STAINLESS STEEL SHAFT
UP33 F	HH5273	FRONT MOUNT HELM, 2.0 CU.IN. 3/4" TAPERED STAINLESS STEEL SHAFT
UP39 F	HH5272	FRONT MOUNT HELM, 2.4 CU.IN. 3/4" TAPERED STAINLESS STEEL SHAFT
HYDRAULIC HELM UNITS - TILT MOUNT		
UP20 T	HH5291 or HH5740 or HH4315	TILT HELM, 1.2 CU.IN. 3/4" TAPERED SS SHAFT (X52 TILT INCLUDED & KIT F OPTIONAL)
UP25 T	HH5291 or HH5741 or HH6191 or HH6491 or HH6541	TILT HELM, 1.5 CU.IN. 3/4" TAPERED SS SHAFT (X52 TILT INCLUDED & KIT F OPTIONAL)
UP28 T	HH5291 or HH5741 or HH6191 or HH6491 or HH6541	TILT HELM, 1.7 CU.IN. 3/4" TAPERED SS SHAFT (X52 TILT INCLUDED & KIT F OPTIONAL)
UP33 T	HH5290 or HH5774 or HH6145 or HH6490	TILT HELM, 2.0 CU.IN. 3/4" TAPERED SS SHAFT (X52 TILT INCLUDED & KIT F OPTIONAL)
UP39 T	HH5292 or HH5742 or HH6192 or HH6492 or HH6542	TILT HELM, 2.4 CU.IN. 3/4" TAPERED SS SHAFT (X52 TILT INCLUDED & KIT F OPTIONAL)
HYDRAULIC HELM UNITS - REAR MOUNT		
UP28 R	HH5261	BACK MOUNT 1.7 CU.IN. 3/4" TAPERED SS SHAFT *(KIT F OPTIONAL)
UP33 R	HH5262	BACK MOUNT 2.0 CU.IN. 3/4" TAPERED SS SHAFT *(KIT F OPTIONAL)
UP39 R	HH5263	BACK MOUNT 2.4 CU.IN. 3/4" TAPERED SS SHAFT *(KIT F OPTIONAL)
UP56 R	HH5263	BACK MOUNT 3.4 CU.IN. 3/4" TAPERED SS SHAFT
SILVER STEER HI PERFORMANCE 1500 PSI HYDRAULIC HELM UNITS		
UP25F-SVS	HH5770	1500 PSI-HIGH PERFORMANCE FRONT MOUNT HELM, 1.5 CU.IN. 3/4" TAPERED SS SHAFT
UP33F-SVS	HH5770	1500 PSI-HIGH PERFORMANCE FRONT MOUNT HELM, 2.0 CU.IN. 3/4" TAPERED SS SHAFT
UP39F-SVS	HH5770	1500 PSI-HIGH PERFORMANCE FRONT MOUNT HELM, 2.4 CU.IN. 3/4" TAPERED SS SHAFT
UP28T-SVS	HH5290 or HH5774 or HH6189	1500 PSI-HIGH PERFORMANCE TILT HELM, 1.7 CU.IN. TAPERED SS *(X70 TILT & KIT F OPTIONAL)
UP33T-SVS	HH5290 or HH5774 or HH6190	1500 PSI-HIGH PERFORMANCE TILT HELM, 2.0 CU.IN. TAPERED SS *(X70 TILT & KIT F OPTIONAL)
UP39T-SVS	HH5290 or HH5774 or HH6188	1500 PSI-HIGH PERFORMANCE TILT HELM, 2.0 CU.IN. TAPERED SS *(X70 TILT & KIT F OPTIONAL)
OUTBOARD APPLICATION CYLINDERS (See application chart)		
UC128-0BF/1	HC5345 or HC5358	CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - # 1 LINK ARM
UC128-0BF/2	HC5345 or HC5358	CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - # 2 LINK ARM
UC128-0BF/3	HC5345 or HC5358	CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - # 3 LINK ARM
UC128P-0BF/1	HC5345 or HC5358	CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - PORT ENGINE CYLINDER - # 1 LINK ARM
UC128P-0BF/2	HC5345 or HC5358	CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - PORT ENGINE CYLINDER - # 2 LINK ARM
SILVER STEER OUTBOARD APPLICATION CYLINDERS (See application chart)		
UC130-SVS/1	HC5345 or HC5358 or HC6750 or HC6751 or HC6752	HIGH PERFORMANCE CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - # 1 LINK ARM
UC130-SVS/2	HC5345 or HC5358 or HC6750 or HC6751 or HC6752	HIGH PERFORMANCE CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - # 2 LINK ARM
UC130P-SVS/1	HC5345 or HC5358 or HC67502 or HC6751 or HC675	HIGH PERFORMANCE CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT-PORT ENGINE CYLINDER - # 1 LINK ARM
UC130P-SVS/2	HC5345 or HC5358 or HC6750 or HC6751 or HC6752	HIGH PERFORMANCE CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT-PORT ENGINE CYLINDER - # 2 LINK ARM
LOW HP OUTBOARD APPLICATION CYLINDERS (See application chart)		
UC94-0BF/1	HC4645H or HC4647H or HC4658H	CYLINDER, 1.18" BORE, 7.3" STROKE, FRONT MOUNT (150 HORSEPOWER AND UNDER) - # 1 LINK ARM
UC94-0BF/3	HC4645H	CYLINDER, 1.18" BORE, 7.3" STROKE, FRONT MOUNT (150 HORSEPOWER AND UNDER) - # 3 LINK ARM
SIDEMOUNT OUTBOARD CYLINDER		
UC132-0BS	HC5370	CYLINDER, 1.26" BORE, 8.0" STROKE, SIDE MOUNT

HYDRAULIC CROSS REFERENCE GUIDE



91

UFLEX® PART No.	SEASTAR® CROSS REFERENCE	DESCRIPTION
GOTECH™	NOT APPLICABLE	FRONT MOUNT HYDRAULIC SYSTEM FOR UNDER 115 HP
HYCO OUTBOARD STEERING PACKAGES (See application chart)		
HYCO 10	HK4200a - BayStar®	FRONT MOUNT OUTBOARD SYSTEM FOR 150 HP AND LESS
HYCO 3.0	HK4200a - BayStar®	FRONT MOUNT HYDRAULIC SYSTEM FOR UNDER 150 HP
HYCO 1T	NOT APPLICABLE	FRONT MOUNT HYDRAULIC SYSTEM FOR UNDER 150 HP
HYCO 3T	NOT APPLICABLE	FRONT MOUNT HYDRAULIC SYSTEM FOR UNDER 150 HP
PROTECH OUTBOARD STEERING PACKAGES (See application chart)		
PROTECH 1	HK6300 or HK6400 SeaStar®	FRONT MOUNT OUTBOARD SYSTEM
PROTECH 2	HK6300 or HK6400 SeaStar®	FRONT MOUNT OUTBOARD SYSTEM
PROTECH 3	HK6300 or HK6400 SeaStar®	FRONT MOUNT OUTBOARD SYSTEM
PROTECH 1T	HK6400TC or HK6400TS or HK6500YTC SeaStar®	FRONT MOUNT OUTBOARD SYSTEM WITH TILT HELM
PROTECH 2T	HK6400TC or HK6400TS or HK6500YTC SeaStar®	FRONT MOUNT OUTBOARD SYSTEM WITH TILT HELM
PROTECH 3T	HK6400TC or HK6400TS or HK6500YTC SeaStar®	FRONT MOUNT OUTBOARD SYSTEM WITH TILT HELM
SILVER STEER OUTBOARD STEERING PACKAGES (See application chart)		
SILVER STEER 1	HK7300 or HK7400 SeaStar Pro®	1500PSI HI-PERFORMANCE FRONT MOUNT OUTBOARD SYSTEM
SILVER STEER 2	HK7300 or HK7400 SeaStar Pro®	1500PSI HI-PERFORMANCE FRONT MOUNT OUTBOARD SYSTEM
SILVER STEER 1T	HK7300 or HK7400 SeaStar Pro®	1500PSI HI-PERFORMANCE FRONT MOUNT OUTBOARD SYSTEM WITH TILT HELM
SILVER STEER 2T	HK7300 or HK7400 SeaStar Pro®	1500PSI HI-PERFORMANCE FRONT MOUNT OUTBOARD SYSTEM WITH TILT HELM
STERNDRIVE APPLICATION CYLINDERS		
UC133-10B	HC5330 or HC5332	CYLINDER, 1.26" BORE, 8" STROKE, BALANCED
UC132-OBS	HC5328	CYLINDER, 1.26" BORE, 8" STROKE, UNBALANCED
HYDRAULIC PARTS AND ACCESSORIES		
BUBBLE BUSTER	POWER PURGE®	PURGING SYSTEM FOR UFLEX HYDRAULIC STEERING SYSTEMS
KIT F	HA5450	REMOTE FILL KIT OF UP TILT HELMS AND UP REAR MOUNT HELMS
OIL 15	HA5430	UFLEX HYDRAULIC OIL, 1 QUART
X56	HA5417 or HA5418	SQUARE BEZEL FOR HYDRAULIC HELMS
X57	HA5417 or HA5419	ROUND BEZEL FOR HYDRAULIC HELMS
KIT OB-LL	H051LL	PREMADE HYDRAULIC HOSES
KIT OB-BHBR-LL	H081LL	PREMADE HYDRAULIC HOSES WITH BULKHEAD BEND RESTRICTORS
KITOB SVS-LL	H081LL	TWO FLEXIBLE HOSES SILVER STEER HIGH PERFORMANCE
TU95-LL	HT5LL	NYLON TUBE IN 1 FT. INCREMENTS (NOT RECOMMENDED FOR OUTBOARD APPLICATIONS)
KIT 95 2S	HF5501	ADDITIONAL STATION FITTING KIT FOR 3/8" NYLON OR COPPER TUBE

NOTE: This cross reference is intended to be a general guide. Some of the products may have variances that would not make them interchangeable. We recommend that you contact Technical Service for more details.



92

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

- One motor pump with safety valve , switch and 1 gal (5 litres) tank included, it allows the purging of 2 hydraulic steering systems before refilling. 12V electric motor with thermal protection.
- Current absorption 8 A
- One 13' (4m) electric harness with alligator clips for fast connection with the battery.
- One double spiralled hose to connect to helm pump- extended length: 19.6' (6m)
- One double spiralled hose to connect to cylinder – extended length: 19.6' (6m)
- One 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 49' (15 m) extension
- **KBD2**: No. 1 kit for double cylinder systems filling and purge
- **KH94**: Connection kit for UC94-OBF cylinders with old bleeders (not fast connect)
- **KH128**: Connection kit for cylinders (except UC94) with old bleeders (not fast connect)

BubbleBuster™

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



ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS

ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS

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

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

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

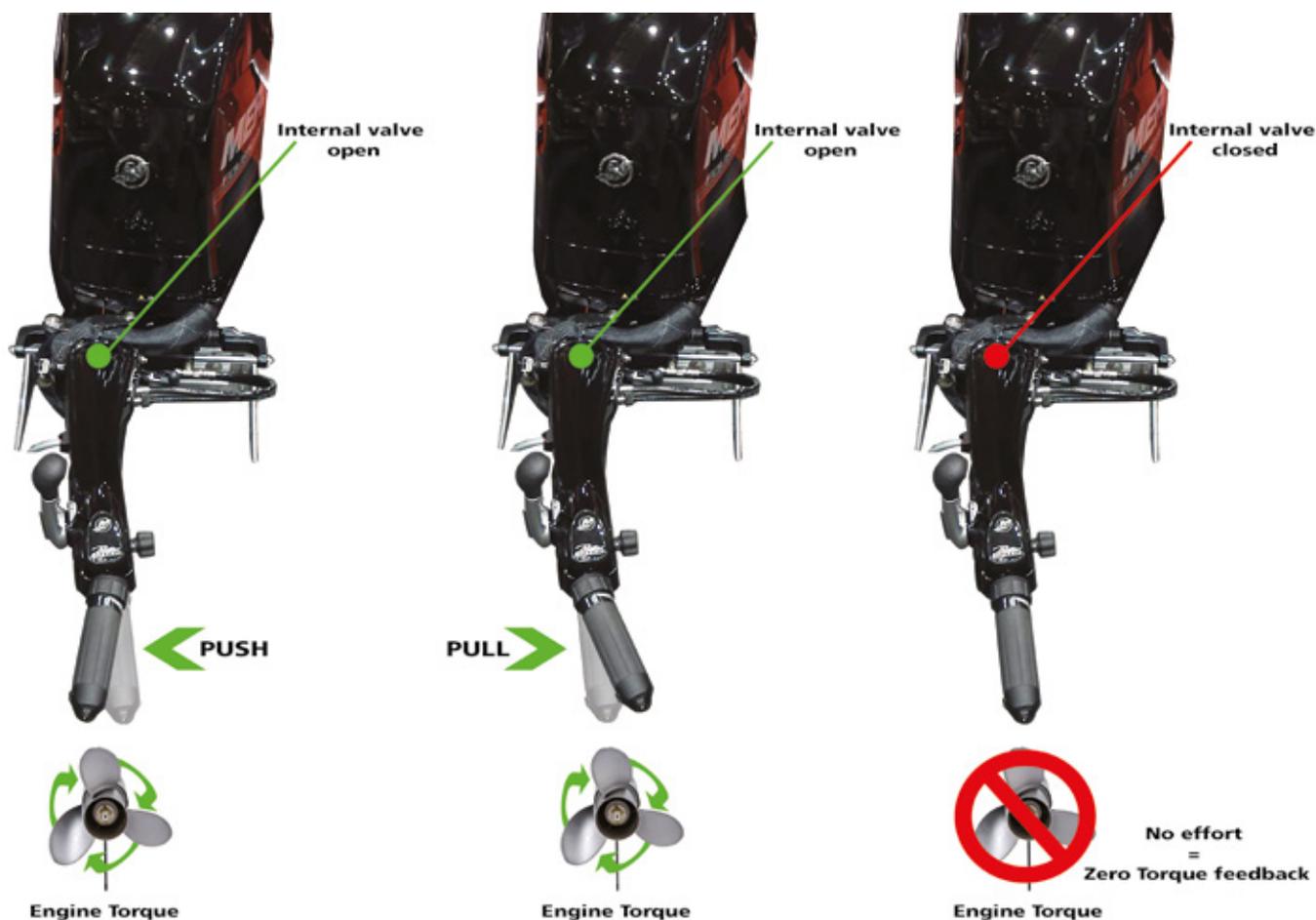
HOW THE ZTF TILLER SYSTEM WORKS:

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

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

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

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



MERCURY® ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS



MERCURY® BIG TILLER WITH INTEGRATED ZTF TILLER VALVE

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

MODELS

ZTF Tiller MIT - For use with Mercury® 150 4 Stroke Outboard from 2005 to date

ZTF Tiller MC1* - Conversion for customer supplied Mercury® Big Tiller Handle

*ZTF Tiller MC requires conversion of customer supplied Big Tiller handle at the Uflex® factory in Sarasota, Florida. See your distributor or contact Uflex® for more details.

YAMAHA® AND SUZUKI® ZERO TORQUE FEEDBACK TILLER STEERING SYSTEMS

UFLEX® ZTF TILLER SYSTEM

FOR YAMAHA® AND SUZUKI® TILLER HANDLES

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



MODELS

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

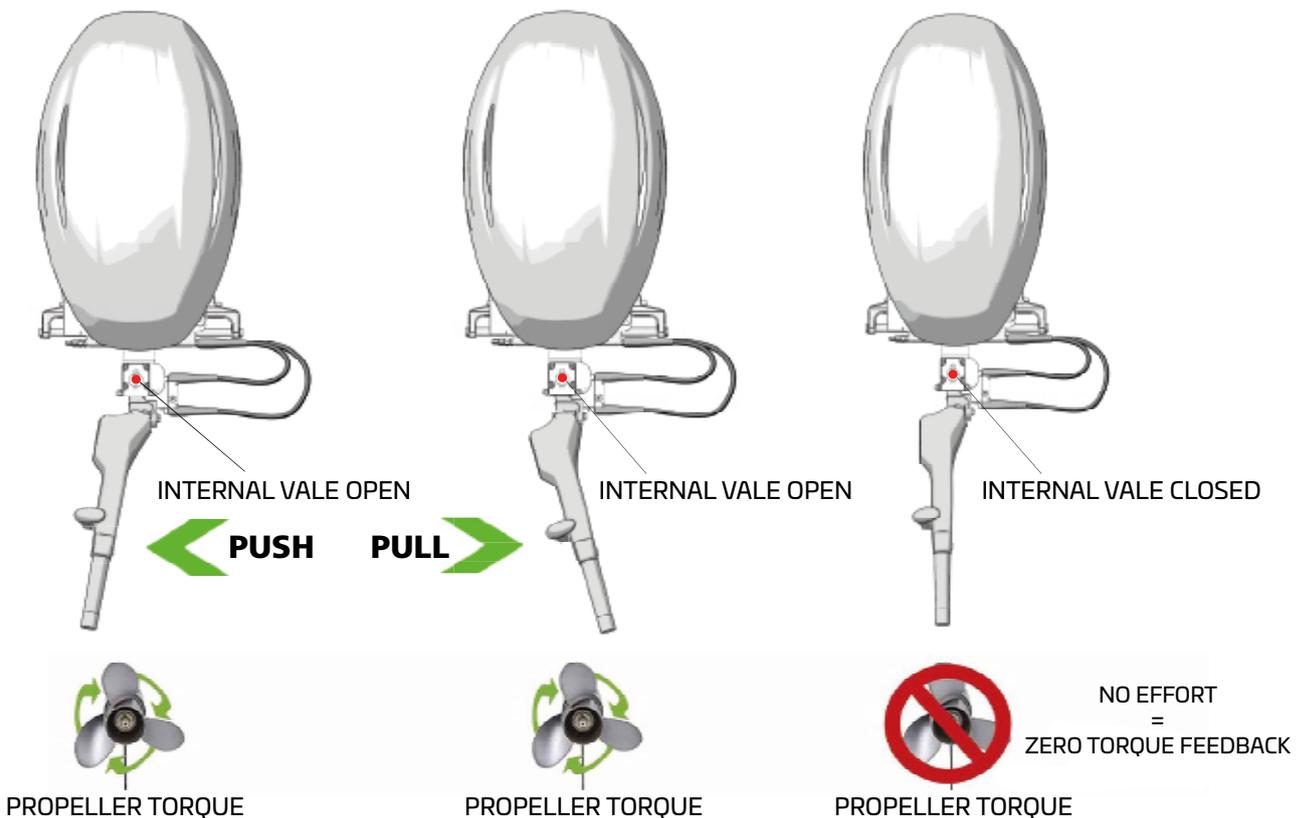
ZTF Tiller Y2 - For use with Yamaha® 150 hp - 175 hp - 200 hp

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

HOW THE SYSTEM WORKS:

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

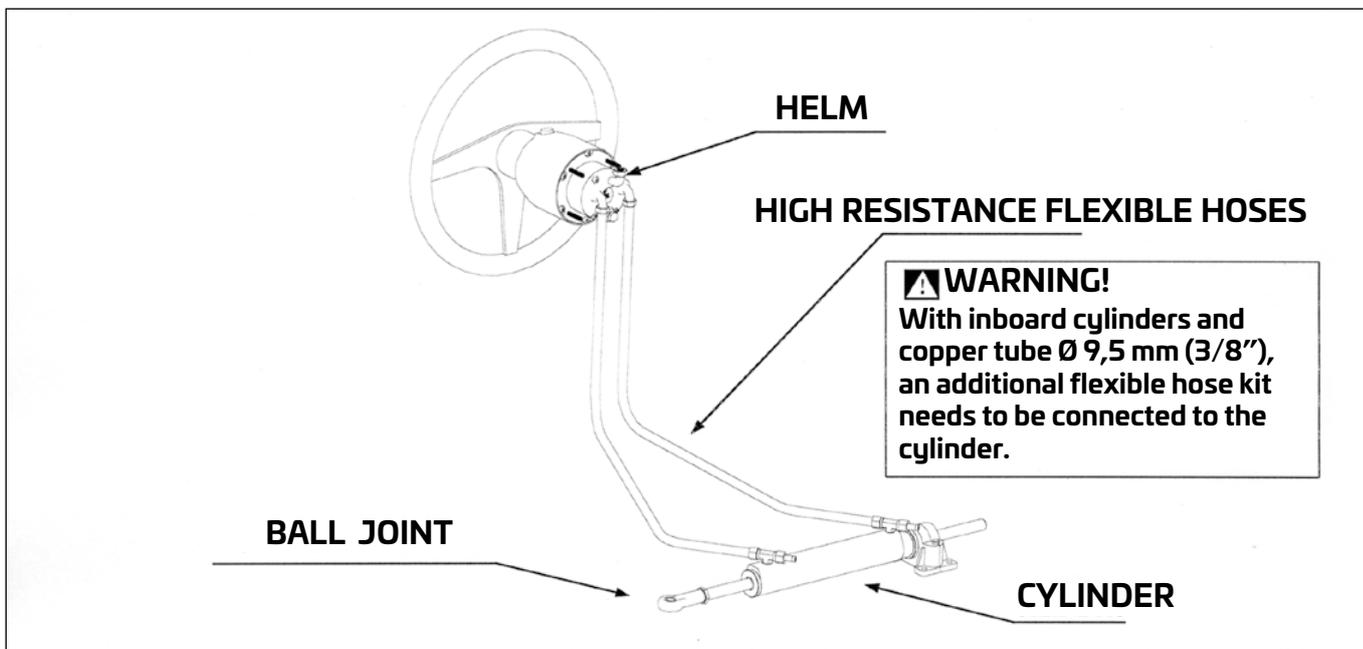
The operator **MUST** maintain a firm grip on the tiller handle under ALL operating conditions; while actively changing course or while maintaining a fixed course (with valve closed) as sea conditions, floating debris, or other conditions could change the steering course without input directly from the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



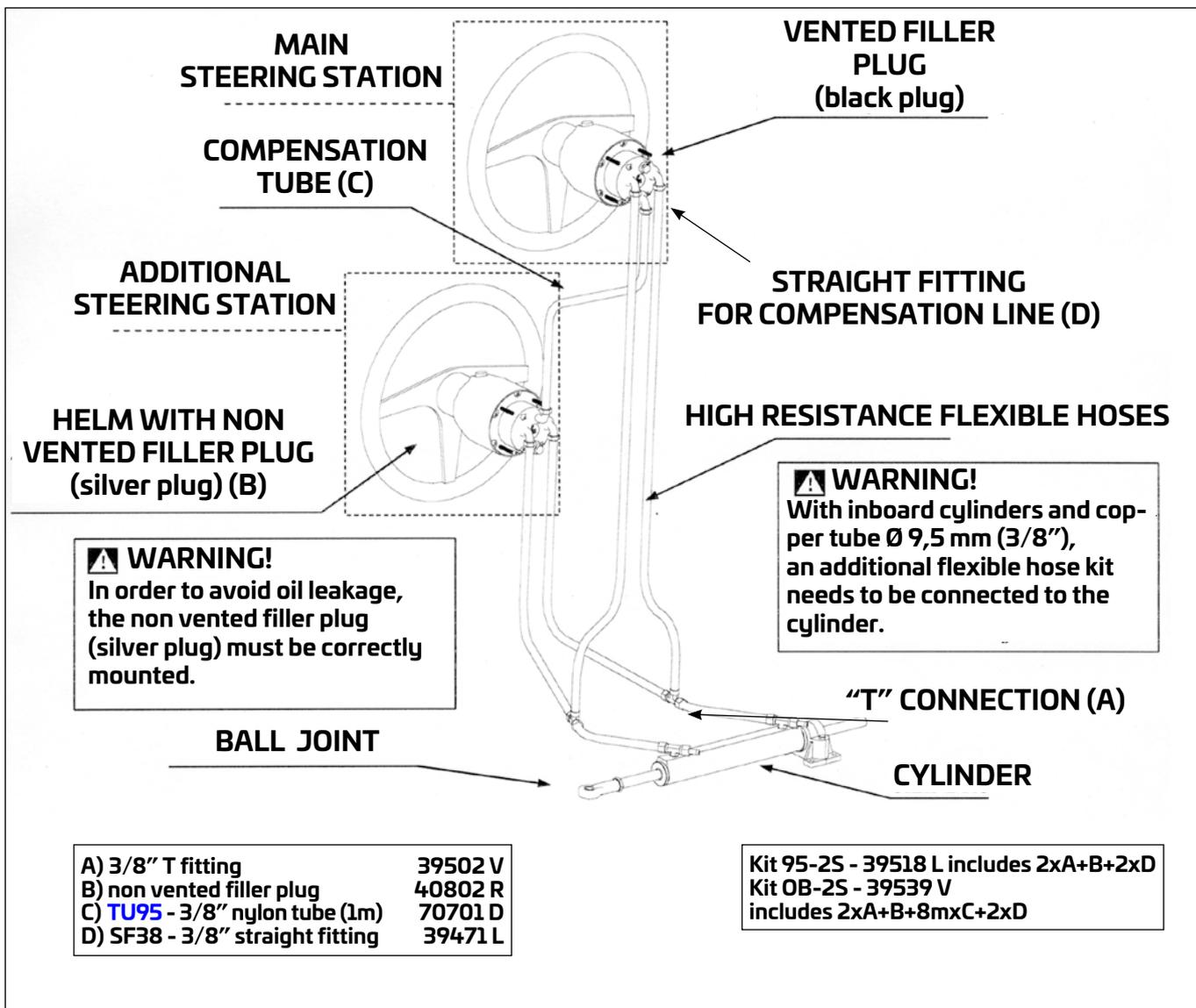
HYDRAULIC INBOARD STEERING SYSTEMS



SINGLE STEERING STATION INSTALLATION DIAGRAM



DUAL STEERING STATION INSTALLATION DIAGRAM



INBOARD STEERING SYSTEM APPLICATION GUIDE

BOAT LENGTH	UP to 33'	UP to 33'	UP to 33'	From 33' to 40'	From 33' to 40'	From 40' to 46'	From 46' to 53'	From 53' to 59'	From 59' to 66'
CYLINDER									
HELM PUMP	UC69-I	UC116-I	UC168-I	UC215-I	UC293-I	UC339-I	UC378-I	UC442-I	UC530-I
UP18	3,8 N - 3/8"								
UP20	3,5 N - 3/8"								
UP25		4,6 N - 3/8"	6,72 L - 3/8"	8,6 L - 3/8"					
UP28		4,1 M - 3/8"	6 N - 3/8"	7,6 L - 3/8"					
UP33		3,5 H - 3/8"	5,1 M - 3/8"	6,5 N - 3/8"	8,8 L - 3/8"				
UP39			4,3 H - 3/8"	5,5 M - 3/8"	7,5 N - 3/8"	N/A			
UP39-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
- **X56** - 40198 C square flange (for all models except UP20) or **X57** - 39464 P round flange (for all models except UP20) permit to install the pumps in an intermediate dashboard position.



UP20F + X74 square flange

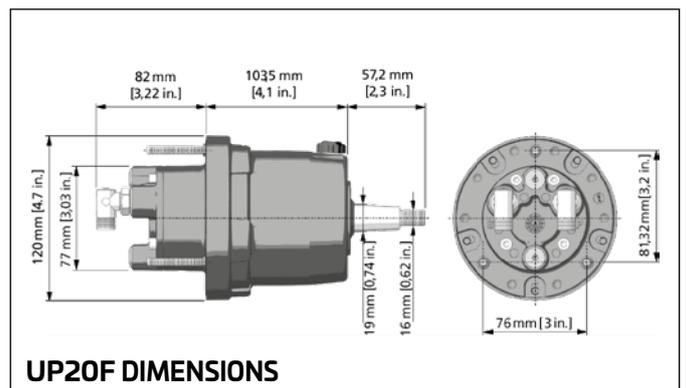
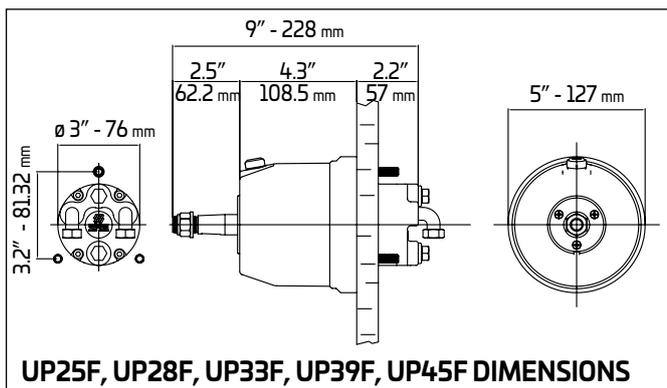


X56 square flange with front mount helm



X57 round flange with front mount helm

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



UP28R - UP33R

UP39R - UP45R

REAR MOUNT HELM PUMPS



101

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
- **X68** (optional) - 40894 Z Chrome bezel
- **KIT F** (optional) - 39664 Y Remote fill adapter

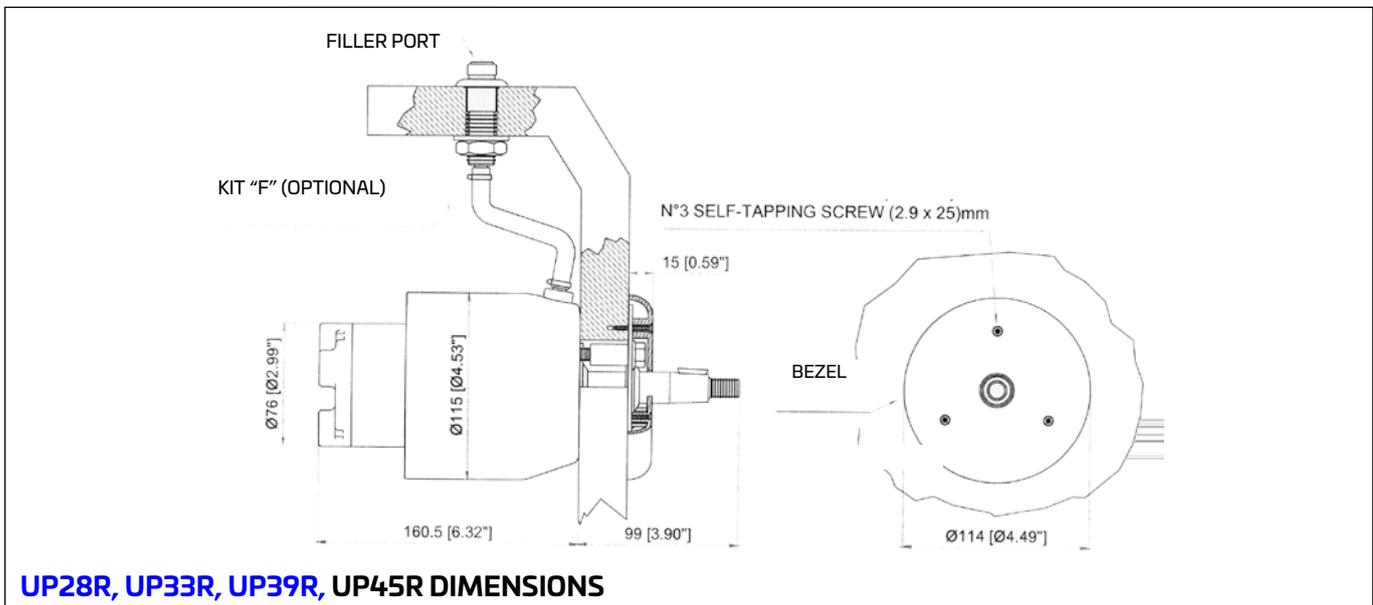


KIT F



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



UP28R, UP33R, UP39R, UP45R DIMENSIONS

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

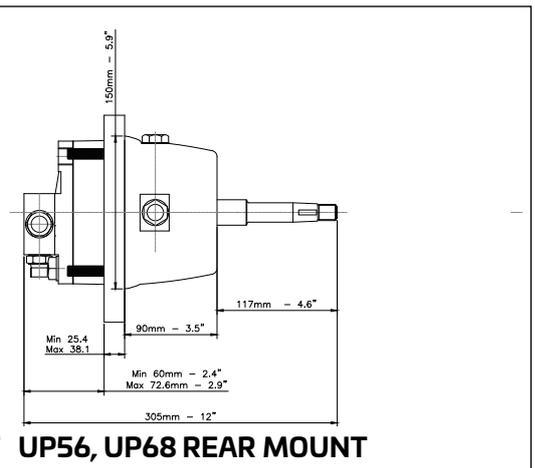
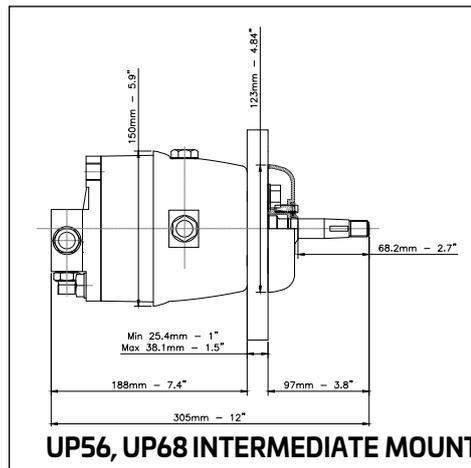
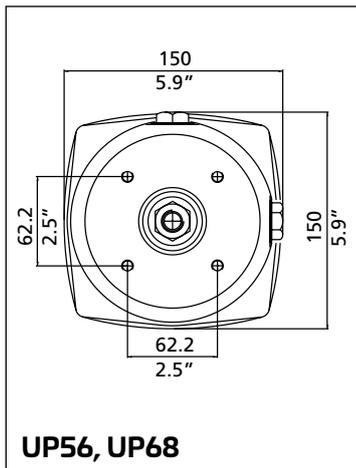
MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP56	40808 D	Rear (KR56) - Intermediate (KIM56)	56 cc - 3.4 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	7,5 kg - 16,5 lbs
UP68	42561 F	Rear (KR56) - Intermediate (KIM56)	68 cc - 4.15 cu.in	7	70 Bar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

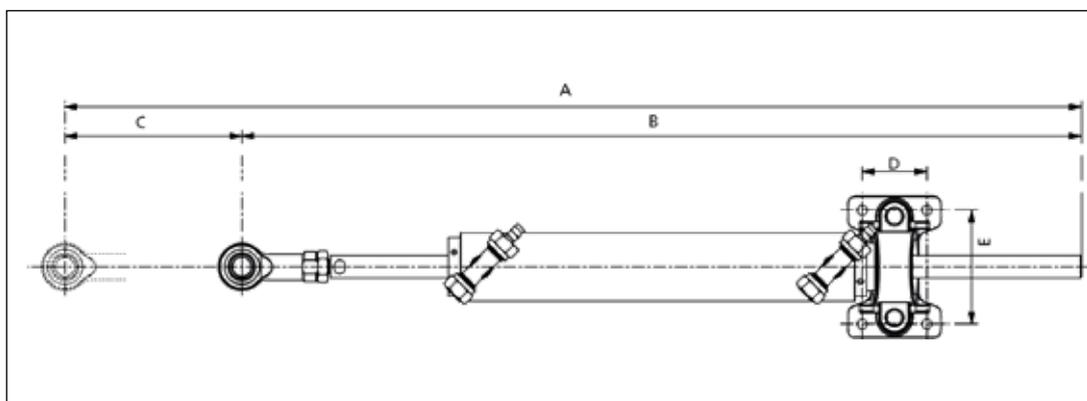


103

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 Alluminum	UC168-I - 39432 A Alluminum	UC215-I - 39433 C Alluminum
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
Inside 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			



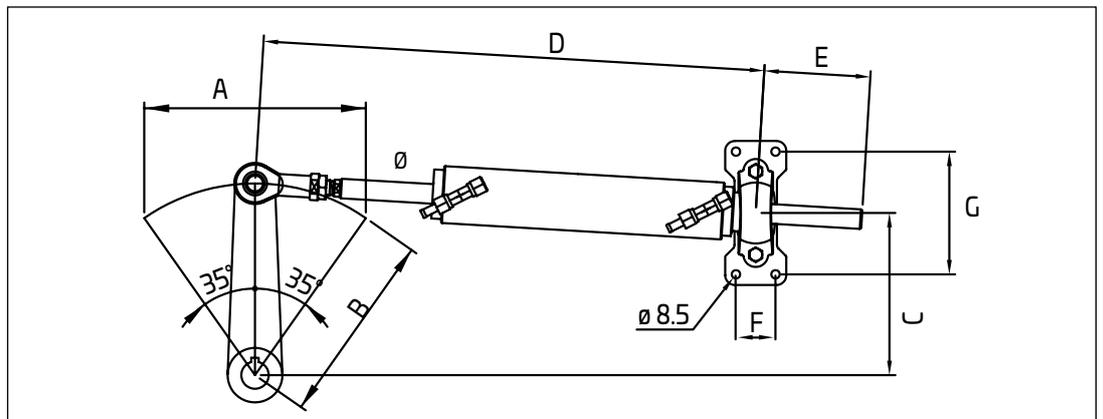
	UC69-I	UC116-I	UC168-I	UC215-I
A	644 mm - 25.33"	741 mm - 22.17"	792 mm - 31.18"	941 mm - 37.05"
B	494 mm - 19.43"	563 mm - 29.17"	614 mm - 24.17"	713 mm - 28.07"
C (stroke)	150 mm - 5.9"	178 mm - 7"	178 mm - 7"	228 mm - 8.98"
D	40 mm - 1.57"			
E	73 mm - 2.87"	73 mm - 2.87"	105 mm - 4.13"	105 mm - 4.13"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



UC293-I; UC378-I

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
Inside diameter	50 mm - 1.97"	50 mm - 1.97"
Stroke	178 mm - 7"	228 mm - 9"
Fittings	3/8" (9,5 mm) for high pressure flex hose	for (12 mm) copper tube (flexible connection hoses not included) or TUR7 high pressure flex hose



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



UC339-I; UC442-I

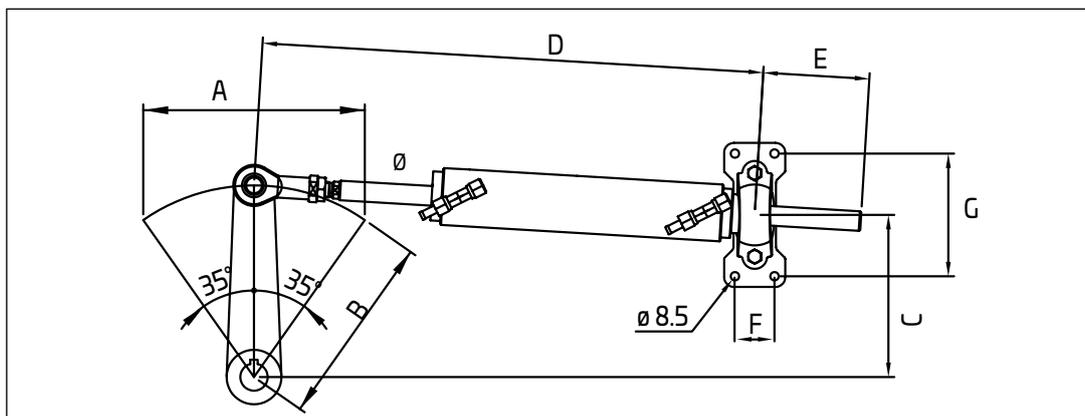
Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



UC530-I

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

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



	UC339-I	UC442-I	UC530-I
A	230 mm – 9"	300 mm – 12"	250 mm – 10"
B	200 mm – 7.9"	260 mm – 10.2"	218 mm – 8.6"
C	164 mm – 6.5"	212 mm – 8.3"	178 mm – 7.0"
D	637 mm – 25.1"	749 mm – 29.5"	723 mm – 28.5"
E	147 mm – 5.8"	183 mm – 7.2"	168 mm – 6.6"
F	70 mm – 2.8"	70 mm – 2.8"	70 mm – 2.8"
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



KIT OB/M

TU5/16 5/16" nylon tubing for OB-F5/16 fittings. Available per metre and 164 ft (50 m) coils.

OB-F5/16 - 40849U reusable fitting featuring turning nut for use with 5/16" hydraulic hose and connection for 3/8" end fitting.

OB-F5/16



TUR7 high pressure hydraulic hose for FR7 12 mm end fittings. Available per metre and 164 ft (50 m) coils.

FR7



FR7 - 42569 Y 1 reusable fitting for use with 3/8" hydraulic hose and connection with 12 mm helm and cylinder fittings.

RV70



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 26.3 ft (8 m) of 3/8" dia. nylon tube for the compensating line.



KIT OB-2S

KIT 95 - 39516 G 3/8" copper tube fitting kit. It includes one 3.2 ft (1 m) 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 3.2 ft (1 m) nylon tube and all necessary fittings for a single station application



KIT 95 - KIT 120-I

ACCESSORIES

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. It includes all necessary fittings for 12 mm flexible hose or copper tube in UP56 or UP68 applications.

OIL 15 - 70704 K: Hydraulic oil sold in 1 litre (0.26 gallons) bottle
 - hydraulic oil: 150 VG 15
 - solidification poin: < -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.



KIT 95-2S



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

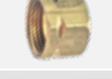


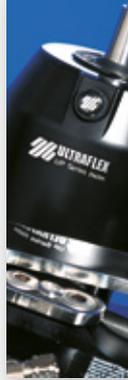
OIL 15



KIT F - KIT F56 (adapter included)

APPLICATION CHART

Model	Description	Typical Application	Thread
AF45 41284A	 45 DEGREE ADJUSTABLE FITTING	Fitting for the back of the UP series helms	"ORB, Size #6 to 3/8 COMP FITTING" Helm Side = 9/16 - 18 UNF 2A Hose Side = 9/16 - 24 UNEF 2A
AF90 74144U	 90 DEGREE ADJUSTABLE FITTING	Fitting for the back of the UP series helms	"ORB, Size #6 to 3/8 COMP FITTING" Helm Side = 9/16 - 18 UNF 2A Hose Side = 9/16 - 24 UNEF 2A
71928P	 BRASS PLUG W/ORING FOR PUMPS	Compensating line brass plug of the UP series helms	"1/4 NPT PLUG" Helm Side = 1/4 NPT
SF38 39471L	 STRAIGHT HELM FITTING 1/4 NPT	Fitting for the compensating line in the UP series helms or autopilot return line	"1/4 NPT to 3/8 COMP FITTING" Helm Side = 1/4 NPT Hose Side = 9/16 - 24 UNEF 2A
EF38 39472N	 90° HELM FITTING FOR UP SERIES	Fitting for port / starboard line in the UP series helms prior to the boss fittings	"1/4 NPT to 3/8 COMP FITTING" Helm Side = 1/4 NPT Hose Side = 9/16 - 24 UNEF 2A
71955T	 BOSS STYLE T-FITTING NICKEL	Fitting for back of helm in a dual station installation	"ORB, Size #6 to 3/8 COMP FITTING" Cylinder/Helm Side = 9/16 - 18 UNF 2A Hose Side = 9/16 - 24 UNEF 2A
T-FITTING	 1/4 NPT TO 3/8 T-FITTING	Fitting used in the back of the previous version of the UP series helms before the boss fitting	"1/4 NPT to 3/8 COMP FITTING" Helm/Side = 1/4 NPT Hose Side = 9/16 - 24 UNEF 2A
VFN038 40868Y	 COMPLETE BOSS FITTING UC1280BF	Bleed fitting for all outboard cylinders	"ORB, Size #6 to 3/8 COMP FITTING" Cylinder Side = 9/16 - 18 UNF 2A Hose Side = 9/16 - 24 UNEF 2A
71861H	 T-FITTING ASSEMBLY-ORF HOSE	Used to replace the boss fitting in new outboard cylinders when trying to connect 'O' ring face seal hoses	"ORB, Size #6 to 3/8 COMP FITTING" Cylinder Side = 9/16 - 18 UNF 2A Hose Side = 9/16 - 24 UNEF 2A
VFN38 39925A	 TEE FITTING WITH BLEED NIPPLE	Bleed fitting for all inboard and stern drive cylinders	"1/4 NPT to 3/8 COMP FITTING" Cylinder Side = 1/4 NPT Hose Side = 9/16 - 24 UNEF 2A
TF38 39502V	 UNION T-FITTING FOR 3/8" TUBE	T-Fitting for 3 standard 3/8" compression thread hose fittings	"3/8 COMP FITTING" ALL Sides = 9/16 - 24 UNEF 2A
61BCA 71004K	 BRASS NUT W/SLEEVE #61CA-6	3/8" Compression Nut with ferrule for cut to length nylon tubing	"3/8 COMP NUT" Side = 9/16 - 24 UNEF 2B Hose Side = 3/8 Compression Ferrule
UNION 62CA-6	 UNION 3/8 IN COMPRESSION	Used to connect 2 standard 3/8" Compression hoses	"3/8 COMP FITTING" Both Sides = 9/16 - 24 UNEF 2A
MD 38 NI COM FT	 90° 3/8 NI PLATE COMP FITTING	90° fitting from bulkhead fitting to 3/8" compression hose	"3/8 COMP FITTING" Fitting side = 9/16 - 24 UNEF 2B Hose Side = 9/16 - 24 UNEF 2A
Q22 898366	 TAPARED HELM FITTING TO MERCURY 'O' RING	Fitting for the back of the Merc UP series helms to 'O' ring face seal Hoses	1/4 NPT to ORFS Fitting Side = 1/4 NPT Hose Side = ORFS ('O' rin Face)
UPS 11/16 ELBOW	 POWERTECH 11/16, 90 DEG ELBOW	90° fitting for the pressure and tank line on a poertech helm	-
UPS 90 DEG ELB	 POWERTECH 90 DEGREE ELBOW	90° fitting for the two high pressure outlets on a powertech helm/also used for connecion from a bulkhead	-
UPS BLKHD T-FIT	 POWERTECH BULKHEAD T-FITTING	T-Fitting used on bulkhead fittings or helm high pressure lines on power-tech helm	-
UPS T-FITTING	 POWERTECH T-FITTING	3-wat ORF fitting for Mercury style ORF hoses	-
UPS UNION	 POWERTECH UNION FOR KITPS/PSDS	11/16" union to extend a KITPS/KITPSDS hose	-
UPS UNION OB	 POWERTECH UNION FOR KITOBPS	ORF to ORF union for connection of high pressure ORF styel hoses	-
UPS 4-4 FLO-SS	 POWERTECH MALE CONNECTOR	Used when connecting an Autopilot to Powertech System - Autopilot to ORF Hose	-



**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 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 OIL 15 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 Dual cylinder application Tie Bar: see selection
- 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 system. For more details please refer to the outboard MasterDrive section.



ORDER GUIDE

SINGLE CYLINDER APPLICATION					
MasterDrive Kit	Cylinder	Wheel turns	Max Rudder torque	Connection flex hoses	Steering wheel
MD32F - 42098 J	UC116 - 39431 Y	3,6	52 kgm 5043 lbs. in	2 kit OB-SVS (length selection)	1 steering wheel
MD32F - 42098 J	UC168 - 39432 A	5,2	87 kgm 7565 lbs. in		
MD32F - 42098 J	UC215 - 39433 C	6,7	111 kgm 9642 lbs. in		
MD40F - 42102 W	UC215 - 39433 C	5,3	111 kgm 9642 lbs. in		
MD40F - 42102 W	UC293 - 42246 L	7,3	146,5 kgm 12816 lbs. in		

DUAL CYLINDER APPLICATION					
MD32F - 42098 J	2 UC116 - 39431 Y	7,2	52 kgm 5043 lbs. in	2 kit OB-SVS (length selection)	1 steering wheel
MD40F - 42102 W	2 UC168 - 39432 A	8,4	87 kgm 7565 lbs. in	1 kit OB-DBR130-SVS (length selection)	

NOTE: On tilt applications, replace MD32F or MD40F MasterDrive kit with MD32T or MD40T kit + tilt mechanism X66 (optional).

Wheel selection: please refer to the appropriate section.

For a second station add:

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

NOTE:

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



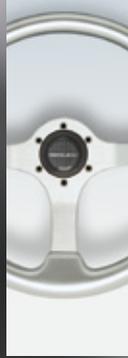
INBOARD STEERING SYSTEMS ORDER GUIDE:



110

PUMP model	CYLINDER model	Wheel turns Lock-to-lock	Max rudder torque	Flex hose or copper tube	Kit for a dual station installation
UP25F	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
UP28F or UP28R	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
UP28F or UP28R	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
UP33F or UP33R	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
UP33F or UP33R	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
UP39F or UP39R	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
UP39F or UP39R	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
UP45F or UP45R	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
UP56* with KR56 or KIM56	UC339-I	6.0	172 kgm 14958 lbs.in	12mm copper tube or TUR7 flex hose	KIT120-2S 40821V
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.



STEERING WHEELS



STEERING WHEELS

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

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

V32B - 35458 X Black
V33B - 35819 L Black

SOFT TOUCH GRIP

V45B - 37920 H Black
V45W - 38049 P White
V45G - 39291 J Grey



V32B Ø 13.2" (335 mm)



V33B Ø 13.4" (342 mm)



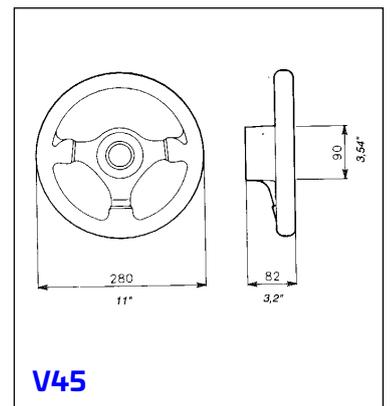
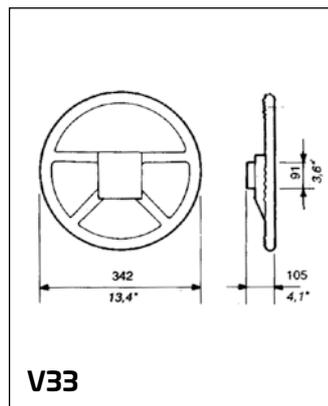
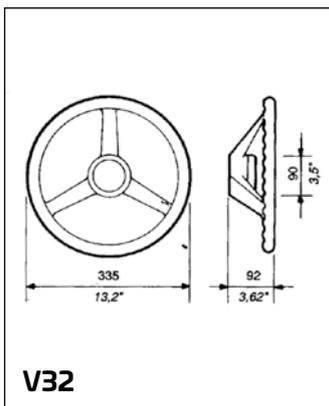
V45B Ø 11" (280 mm)



V45W Ø 11" (280 mm)



V45G Ø 11" (280 mm)



ANTIGUA STEERING WHEELS

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

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

SOFT TOUCH GRIP

V60B - 39189 U Black
V60W - 39190 C White
V60G - 39274 J Grey

WOOD LOOK GRIP

V61B - 39191 E Burl



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



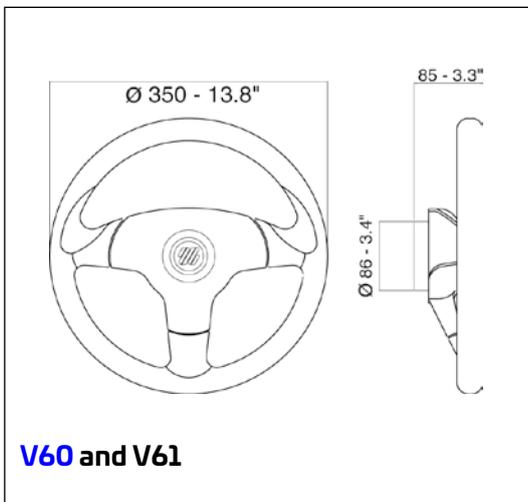
V60W White grip - White spokes
Ø 13.8" (350 mm)



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



V61B Burl wood grip
Black spokes - Ø 13.8" (350 mm)



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 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

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

SOFT TOUCH GRIP

- V99 B/B/CH - 43015 G
- V99 B/CH/CH - 43016 J
- V99 B/B/S - 43413 V
- V99 B/S/S - 43404 U
- V99 B/GB/GB - 43403 S
- V99 B/CB/CB - 43405 W



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



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



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



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



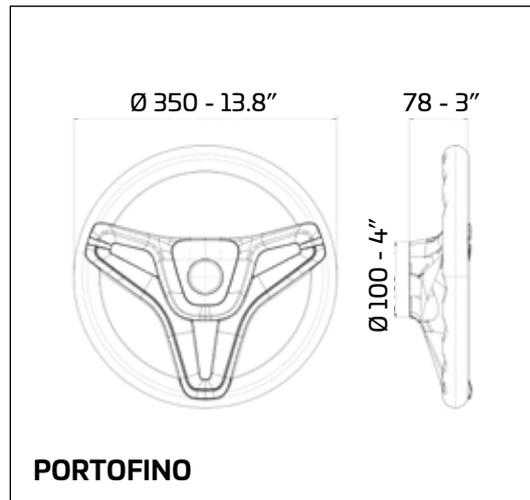
V99 B/GB/GB Ø 13.8" (350 mm)
Glossy black inserts and central cap



V99 B/CB/CB Ø 13.8" (350 mm)
Carbon 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.



CORSE

STEERING

WHEELS

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

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

SOFT TOUCH GRIP

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

CENTER RING **(OPTIONAL)**

RING S - 61820 L silver



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



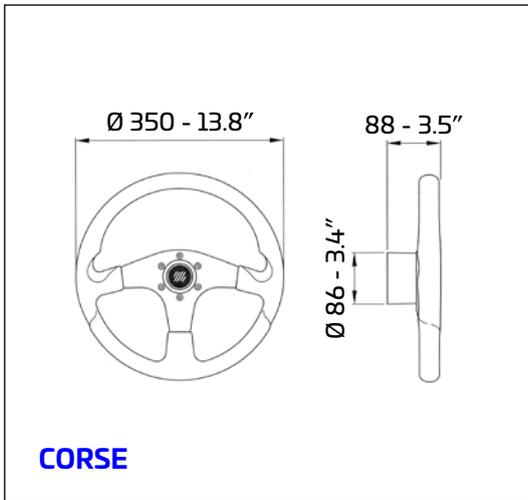
CORSE B/B Black grip - Black spokes
 Ø 13.8" (350 mm)



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



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



CORSE



X63 - 40119D
 Easy centering hub (spare part)





POLYURETHANE GRIP STEERING WHEELS

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

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

- NISIDA B/B** - 61812 M
- NISIDA B/S** - 61813 P
- PIANOSA B/S** - 23918 P
- PIANOSA B/B** - 23914 F
- PIANOSA B/SS** - 23915 H

PIANOSA CENTER RING (OPTIONAL)

- RING PS** – 23029 F silver
- RING PB** – 23030 P black



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



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



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



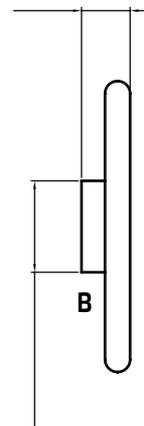
PIANOSA B/B Black grip
Black spokes - Ø 13.8" (350 mm)

new



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

new



MOD.	B mm (")
NISIDA	85 (3.35)
PIANOSA	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
- Hub and center cap included

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

PALMARIA B/B - 63727 H

WHEEL WITH INSERTS

[SANTORINI B/S](#) - 65995 W

120° THREE SPOKE WHEEL

[LINOSA S/S](#) - 64295 K

REDUCED DIMENSION WHEEL

PANTELLERIA B/S - 22232 X



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



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



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



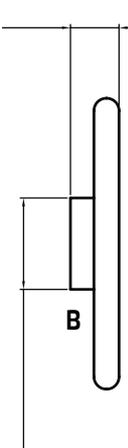
LINOSA S/S Silver inserts
Silver spokes - Ø 13.8" (350 mm)



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



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



MOD.	B mm (")
CAPRAIA	84 (3.3)
SANTORINI	91 (3.58)
LINOSA	91 (3.58)
PALMARIA	40 (1.57)
PANTELLERIA	90 (3.54)



X63 - 40119D
Easy centering hub (spare part)





POLYURETHANE GRIP STEERING WHEELS

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

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

DOMINO B/S - 23895 E
DOMINO B/B - 23896 G

WHEELS WITH INSERTS

BUDELLI CH/P - 65294 N
BUDELLI CH/S - 65293 L
VIVARA CH/P - 64643 G



new

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



new

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



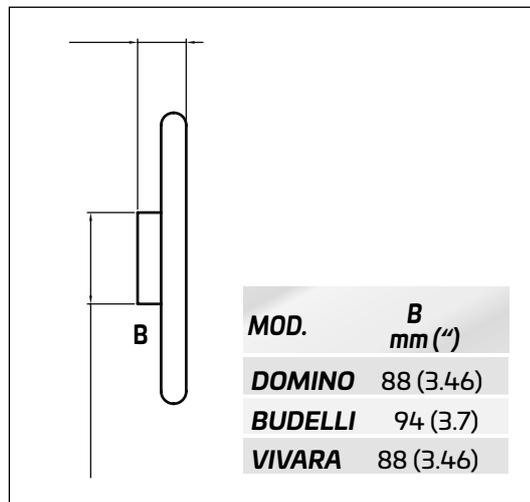
**BUDELLI CH/P Chrome inserts
Polished spokes - Ø 13.8" (350 mm)**



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



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



POLYURETHANE GRIP STEERING WHEELS

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

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



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



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



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



REDUCED DIMENSION WHEELS

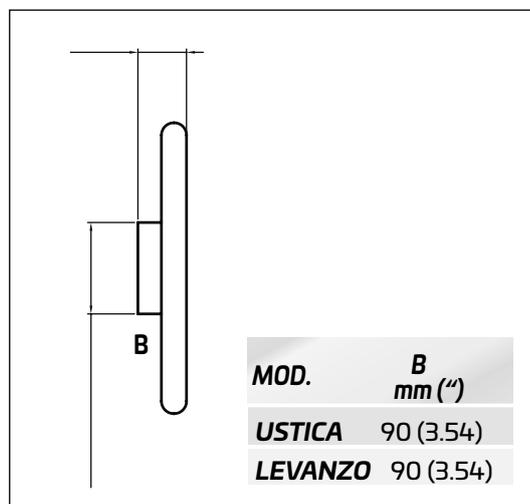
USTICA B/S - 20926 X
USTICA B/B - 21622 F

REDUCED DIMENSION WHEEL WITH INSERTS

LEVANZO B/S/CH - 20927 Z

SPEED KNOB FOR USTICA & LEVANZO WHEELS

KNOB/UST - 21721 H





120

POLYURETHANE GRIP STEERING WHEELS

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

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

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



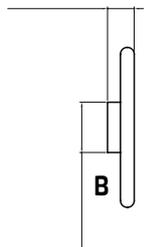
MONTECRISTO B/B/CH
Black spokes - Ø 13.8" (350 mm)



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



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



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



X63 - 40119D
Easy centering hub (spare part)



MAHOGANY GRIP STEERING WHEELS

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

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

LAMPEDUSA - 62684 L
ALICUDI - 62682 G



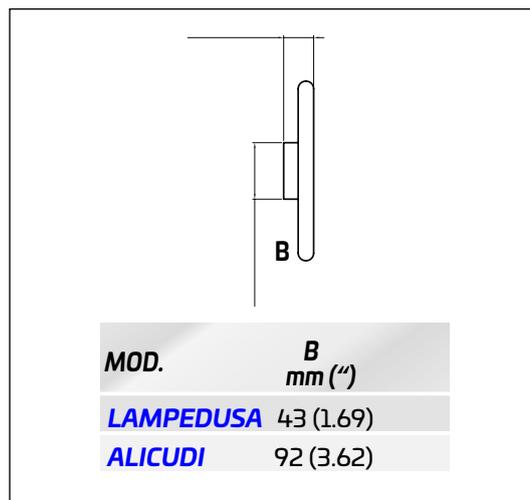
LAMPEDUSA Ø 14.1" (360 mm)



ALICUDI Ø 13.8" (350 mm)



X63 - 40119D
Easy centering hub (spare part)





NON MAGNETIC STAINLESS STEEL WHEELS

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

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

POLYURETHANE GRIP

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

MAHOGANY GRIP

V25M - 40644 Z

STAINLESS STEEL GRIP

V25SS - 40643 X



V25B Ø 13.8" (350 mm)



V25W Ø 13.8" (350 mm)



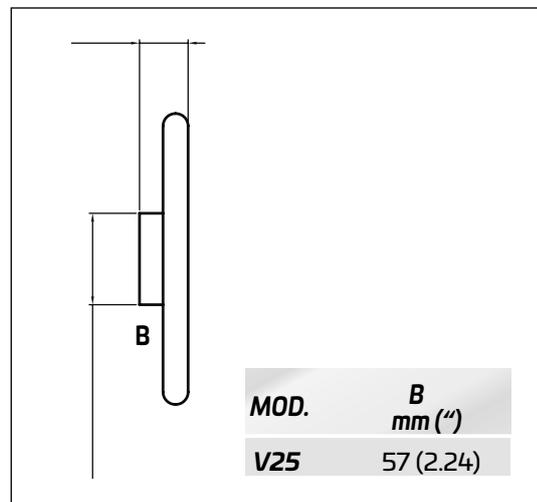
V25G Ø 13.8" (350 mm)



V25M Ø 13.8" (350 mm)



V25SS Ø 13.8" (350 mm)



**NON
MAGNETIC
STAINLESS
STEEL
WHEELS**

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

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

**POLYURETHANE
GRIP**

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

**STAINLESS STEEL
GRIP**

V01SS - 41692 S



V01B Ø 13.8" (350 mm)



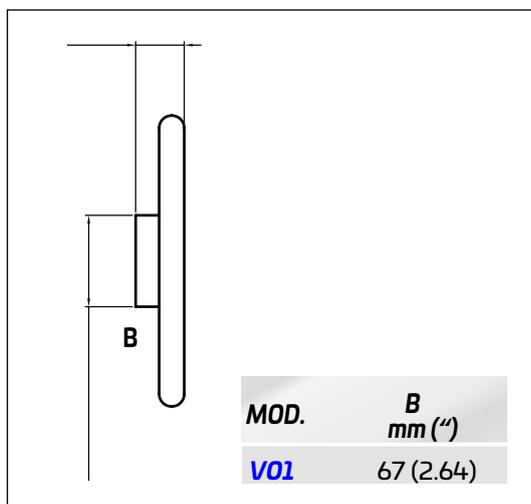
V01W Ø 13.8" (350 mm)



V01G Ø 13.8" (350 mm)



V01SS Ø 13.8" (350 mm)





NON MAGNETIC STAINLESS STEEL WHEELS

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

POLYURETHANE GRIP

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

POLISHED TEAK GRIP

- V10TK 35 - 41697 C
- V10TK 40 - 41698 E

STAINLESS STEEL GRIP

- V10SS 35 - 41699 G



V10B Ø 13.8" (350 mm)



V10W Ø 13.8" (350 mm)



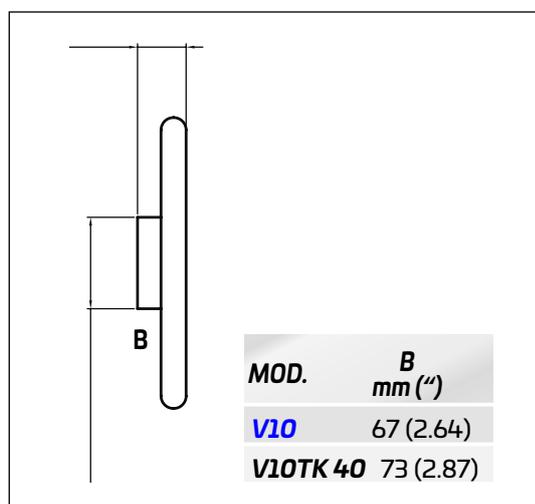
V10G Ø 13.8" (350 mm)



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



V10SS 35 Ø 13.8" (350 mm)



**NON
MAGNETIC
STAINLESS
STEEL
WHEELS**

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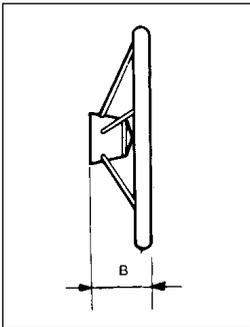
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards

**POLYURETHANE
GRIP**

- V56B/CH - 21351 A
- V56W/CH - 21406 Z
- V56G/CH - 21407 B
- V56B/R - 21524 F
- V56B/KG - 21525 H
- V56B/O - 21526 K
- V56B/BP - 21595 F
- V56B/WP - 21596 H

KIT INSERTS

- KV56-R - 21411 S
- KV56-O - 21412 U
- KV56-KG - 21413 W
- KV56-BP - 21414 Y
- KV56-WP - 21415 A



MOD.	B mm (")
V56	95 (3.74)



V56B/CH Ø 13.8" (350 mm)



V56W/CH Ø 13.8" (350 mm)



V56G/CH Ø 13.8" (350 mm)



V56B/R Ø 13.8" (350 mm)



V56B/KG Ø 13.8" (350 mm)



V56B/O Ø 13.8" (350 mm)

CUSTOMIZE V56 STEERING WHEEL WITH COLOR INSERTS



KV56-R



KV56-O



KV56-KG



KV56-BP



KV56-WP



**NON
MAGNETIC
STAINLESS
STEEL
WHEELS**

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

**EXCLUSIVE
POLYURETHANE
"FIRM GRIP"**

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

**POLYURETHANE
GRIP**

- V24W** - 42347 D
- V24B** - 42345 Z
- V24COMMANDO** - 42370 Y



V70B Ø 13.8" (350 mm)



V70W Ø 13.8" (350 mm)



V70G Ø 13.8" (350 mm)



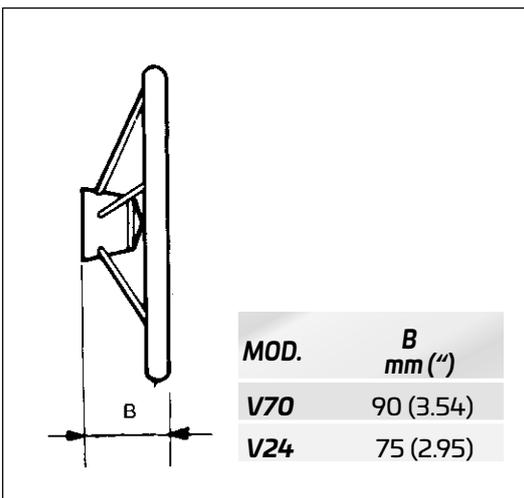
V24B Ø 13.8" (350 mm)



V24W Ø 13.8" (350 mm)



V24COMMANDO Ø 13.8" (350 mm)



**NON
MAGNETIC
STAINLESS
STEEL
WHEELS**

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

**POLYURETHANE
GRIP AND REDUCED
DIMENSION**

V52B - 40631 P black
V52W - 40633 U whitey

**POLYURETHANE
GRIP**

V58B - 38649 X black
V58G - 38650 F grey

MAHOGANY GRIP

V74/40 - 41115 A

**NATURAL TEAK
GRIP**

V77/40 - 41152 G



V52B Ø 12.6" (320 mm)



V52W Ø 12.6" (320 mm)



V58B Ø 15.7" (400 mm)



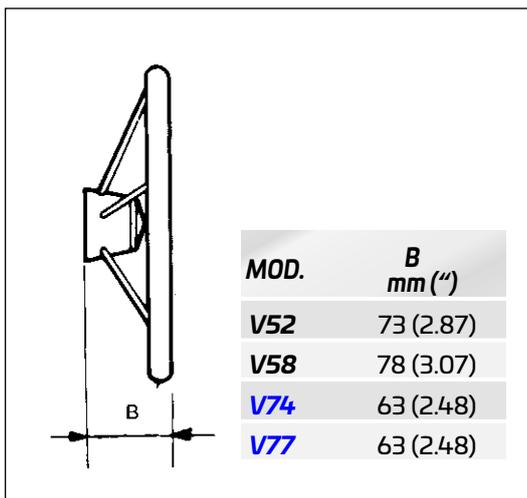
V58G Ø 15.7" (400 mm)



V74/40 Ø 15.7" (400 mm)



V77/40 Ø 15.7" (400 mm)





**NON
MAGNETIC
STEERING
WHEELS**

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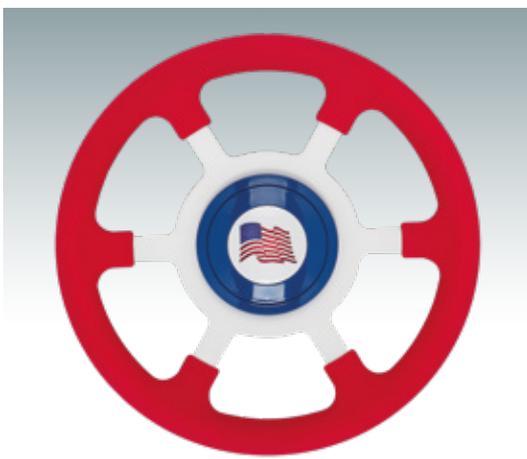
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- *Floating cap also available*

**POLYURETHANE
GRIP, PAINTED
ALUMINUM SPOKES**

V15R/W - 22323 A

**POLYURETHANE
GRIP, STAINLESS
STEEL SPOKES**

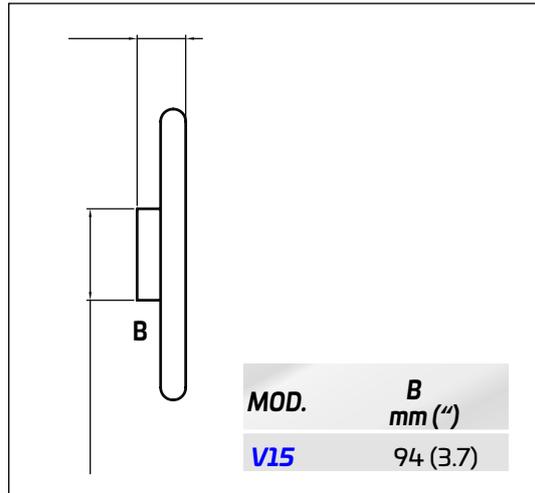
V15B/SS - 22325 E



V15R/W Ø 13.8" (350 mm)

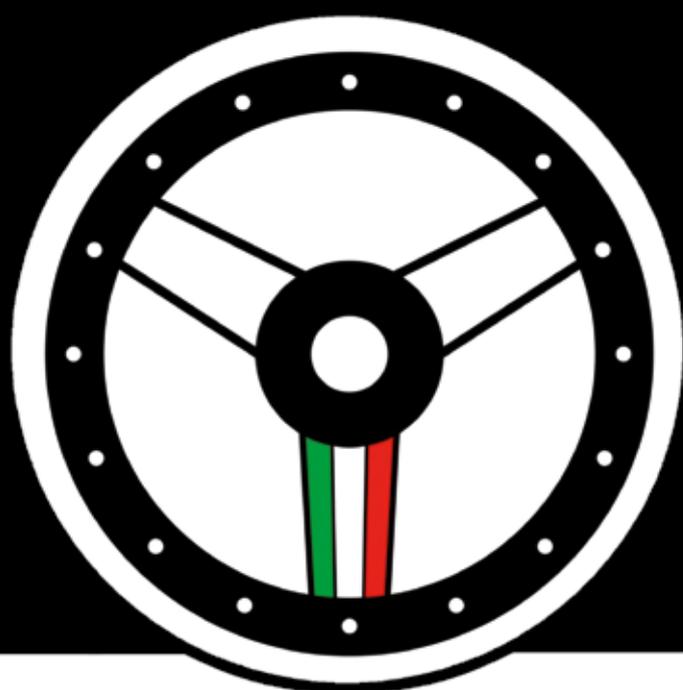


V15B/SS Ø 13.8" (350 mm)





129



"VERO VOLANTE ITALIANO"

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

VERO VOLANTE ITALIANO

STEERING WHEELS



VERO VOLANTE ITALIANO - MAINTENANCE



VERO VOLANTE ITALIANO

130

- 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



STEERING WHEELS

BOCCANEGRA STEERING WHEELS

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

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

LEATHER GRIP AND HUB

BOCCANEGRA V W/P -
68829 U white

LEATHER GRIP PAINTED HUB

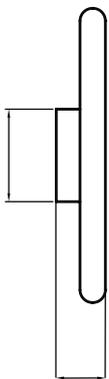
BOCCANEGRA L SB/P -
67296 D sky-blue



Boccanegra V W/P - Ø 13.8" (350 mm)



Boccanegra L SB/P - Ø 13.8" (350 mm)



B

B = 3.5" - 89 mm



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VERO VOLANTE ITALIANO

BOCCANEGRA STEERING WHEELS

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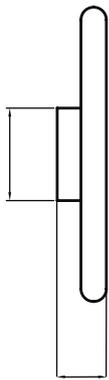
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes

LEATHER GRIP AND HUB

BOCCANEGRA V /B/P - 68714 A black

LEATHER GRIP CHROME HUB

BOCCANEGRA L B/CH - 20944 Z



B

B= 3.5" - 89 mm



Boccanegra V B/P - Ø 13.8" (350 mm)



Boccanegra B/CH - Ø 13.8" (350 mm)

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

ODERICO STEERING WHEELS

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

LEATHER GRIP

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

VYNIL GRIP

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



Oderico V/B/SS/CH - Ø 13.8" (350 mm)



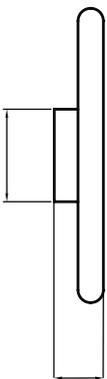
Oderico V/B/SS/B - Ø 13.8" (350 mm)



Oderico L B/SS/CH - Ø 13.8" (350 mm)



Oderico L B/SS/B - Ø 13.8" (350 mm)



B

B= 2.83" - 72 mm



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VERO VOLANTE ITALIANO



TRON STEERING WHEELS

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

LEATHER GRIP

TRON L B/SS/PU - 22125 W

VYNIL GRIP

TRON V B/SS/PU - 22321 W

POLYURETHANE GRIP

TRON PU B/SS/PU - 22124 U



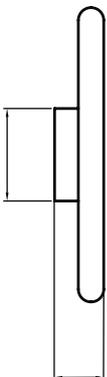
Tron L B/SS/PU - Ø 13.8" (350 mm)



Tron V B/SS/PU - Ø 13.8" (350 mm)



Tron PU B/SS/PU - Ø 13.8" (350 mm)



B

B = 3.74" - 95 mm



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VERO VOLANTE ITALIANO

SPINOLA STEERING WHEELS

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

LEATHER GRIP BRUSHED SPOKES

SPINOLA L B/BRU -
23900 U



Spinola L B/BRU - Ø 13.8" (350 mm)



Spinola L B/P - Ø 13.8" (350 mm)

VYNIL GRIP BRUSHED SPOKES

SPINOLA V B/BRU -
23899 N



Spinola V B/BRU - Ø 13.8" (350 mm)

LEATHER GRIP POLISHED SPOKES

SPINOLA L B/P -
23902 Y



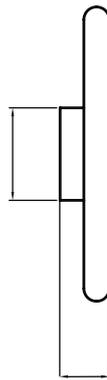
Spinola V B/P - Ø 13.8" (350 mm)

VYNIL GRIP POLISHED SPOKES

SPINOLA V B/P -
23901 W



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B

B= 3.22" - 82 mm



VERO VOLANTE ITALIANO



IMPERIALE STEERING WHEELS

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

VYNIL GRIP, 316L STAINLESS STEEL SPOKES

IMPERIALE V B/SS/P -
21299 B



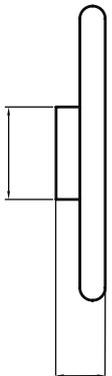
POLYURETHANE GRIP, ALUMINUM SPOKES

IMPERIALE PU B/S/S -
21300 G



Imperiale V/B/SS/P - Ø 13.8" (350 mm)

Imperiale PU B/S/P - Ø 13.8" (350 mm)



B

B = 2.62" - 66,5 mm



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VERO VOLANTE ITALIANO

DOLFIN STEERING WHEELS

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

LEATHER GRIP

DOLFIN L B/SS/P - 69562 J

VYNIL GRIP

DOLFIN V B/SS/P - 69561 G

LEATHER GRIP BRUSHED BLACK SPOKES

DOLFIN L B/B/P - 23023 T



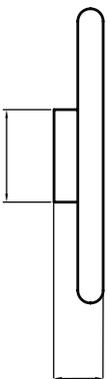
Dolfin L B/SS/P - Ø 13.8" (350 mm)



Dolfin V B/SS/P - Ø 13.8" (350 mm)



Dolfin L B/B/P - Ø 13.8" (350 mm)



B

B = 3.62" - 92 mm



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VERO VOLANTE ITALIANO



137

STEERING WHEELS

**MOROSINI
STEERING
WHEELS**

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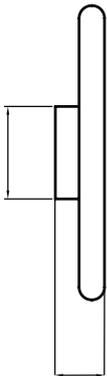
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

**VYNIL GRIP,
CHROME HUB**

MOROSINI V B/CH - 68000 H
MOROSINI V G/CH - 68830 C

**POLYURETHANE
GRIP, CHROME HUB**

MOROSINI PU B/CH - 67461 S



B

B= 3.07" - 78 mm



Morosini V B/CH - Ø 13.8" (350 mm)



Morosini V G/CH - Ø 13.8" (350 mm)

CHRISTIANGRANDE
DesignWorks



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VERO VOLANTE ITALIANO

MOROSINI STEERING WHEELS

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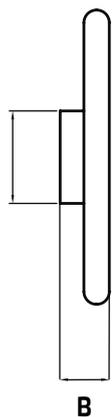
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

LEATHER GRIP, PAINTED HUB

MOROSINI L C/P -
67299 K

VYNIL GRIP, PAINTED HUB

MOROSINI V W/P -
68831 E



B

B= 3.07" - 78 mm



Morosini V W/P - Ø 13.8" (350 mm)



Morosini L C/P - Ø 13.8" (350 mm)

CHRISTIANGRANDE
DesignWorks



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VERO VOLANTE ITALIANO



139

STEERING WHEELS



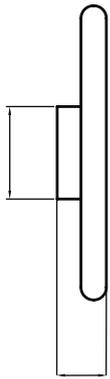
MOROSINI STEERING WHEELS

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

MAHOGANY GRIP, CHROME HUB

MOROSINI M/CH -
68378 L



B

B= 3.07" - 78 mm



Morosini M - Ø 13.8" (350 mm)

CHRISTIANGRANDE
DesignWorks



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VERO VOLANTE ITALIANO

FOSCARI STEERING WHEELS

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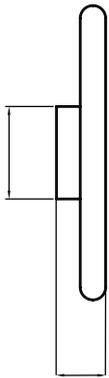
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

VYNIL GRIP

FOSCARI V B/R - 21552 L

POLYURETHANE GRIP

FOSCARI PU B - 67303 X



B

B= 3.07" - 78 mm



Foscari PU B - Ø 13.8" (350 mm)



Foscari V B/R - Ø 13.8" (350 mm)

CHRISTIANGRANDE
DesignWorks



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VERO VOLANTE ITALIANO



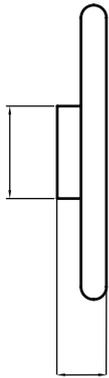
FOSCARI STEERING WHEELS

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

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

POLYURETHANE GRIP

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



B

B= 3.19" - 81 mm



Foscari PU W - Ø 13.8" (350 mm)



Foscari PU C - Ø 13.8" (350 mm)

CHRISTIANGRANDE
DesignWorks



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VERO VOLANTE ITALIANO

ADORNO STEERING WHEELS

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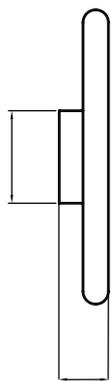
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

LEATHER GRIP

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

POLYURETHANE GRIP

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



B

B= 3.19" - 81 mm



Adorno L B/CH - Ø 13.8" (350 mm)



Adorno L B/B - Ø 13.8" (350 mm)



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VERO VOLANTE ITALIANO



143

STEERING WHEELS



CONTARINI STEERING WHEELS

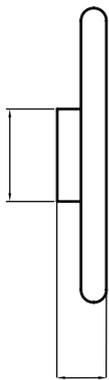
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- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes
- *Floating cap also available*

POLYURETHANE GRIP

CONTARINI TPU/SS - 69199 S

KNOB/SK - 68832 G



B

B = 3.13" - 79,5 mm



Contarini TPU/SS - Ø 13.8" (350 mm)



KNOB/SK - Speed knob for Contarini

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VERO VOLANTE ITALIANO

SIESTAKEY STEERING WHEELS

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

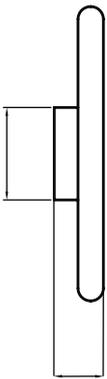
316L STAINLESS STEEL GRIP

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

KNOB/SK - 68832 G



SIESTAKEY/B - Ø 14.5" (368 mm)



B

B= 3.54" - 90 mm



SIESTAKEY/G - Ø 14.5" (368 mm)



KNOB/SK - Speed knob for Siestakey



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



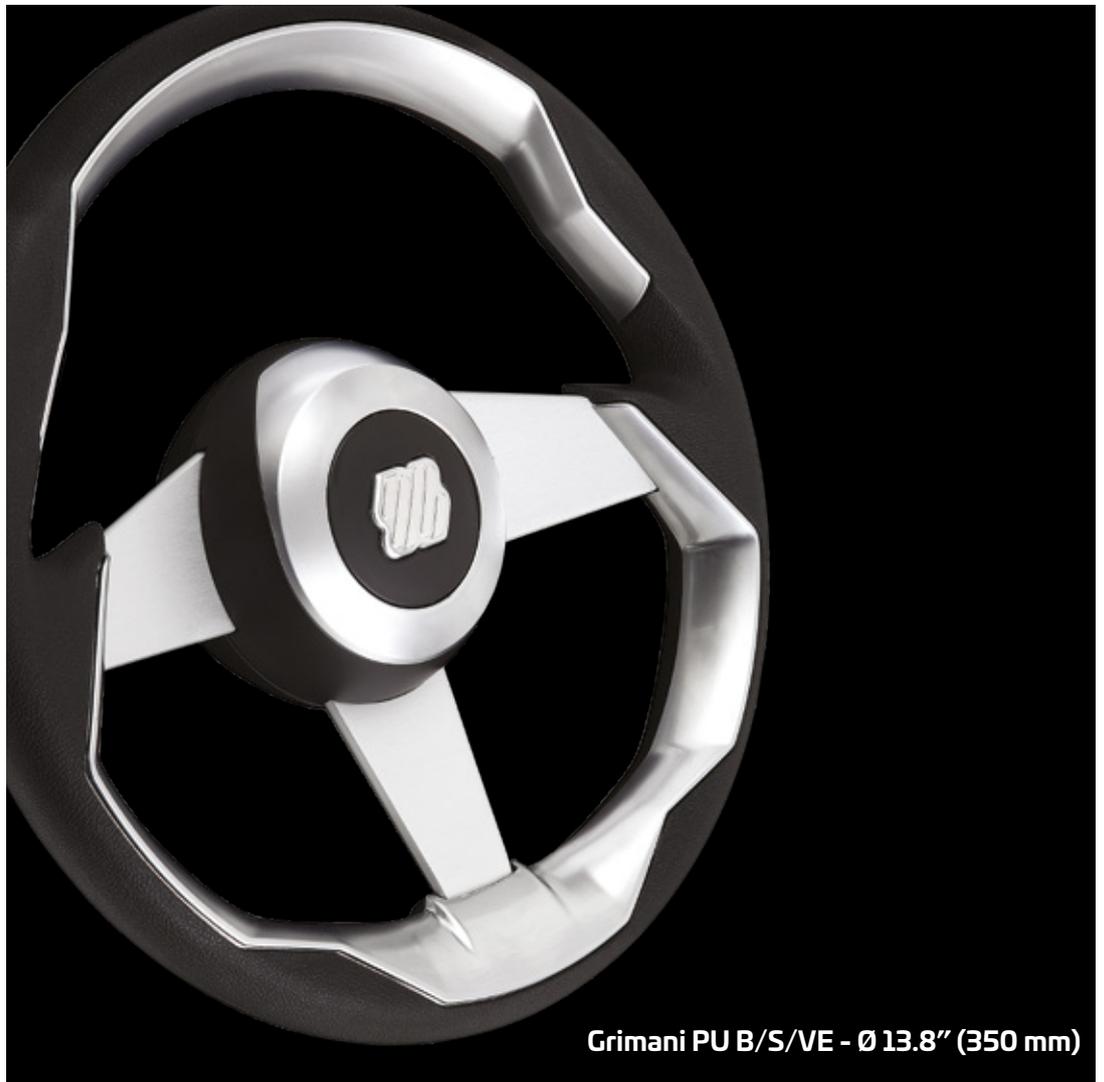
GRIMANI STEERING WHEELS

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

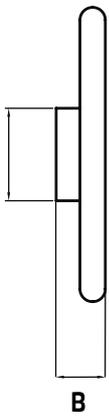
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- Aluminum spokes
- *Floating cap also available*

POLYURETHANE GRIP

GRIMANI PU B/S/VE - 69297 S



Grimani PU B/S/VE - Ø 13.8" (350 mm)



B = 3.6" - 91.5 mm



All Grimani wheels can be supplied with stainless steel spokes and/or inserts in the following colors:

Model	Color	Part No.
Grimani PU B/S/BL	Blue	69480 G
Grimani PU B/S/R	Red	69481 J
Grimani PU B/S/KG	Green	20836 W
Grimani PU B/S/PL	Purple	69483 N
Grimani PU B/S/O	Orange	20671 P
Grimani PU B/S/Y	Yellow	69482 L
Grimani PU B/S/W	White	20600 P



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



GRIMANI STEERING WHEELS

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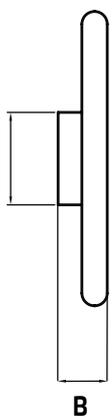
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- Aluminum spokes

POLYURETHANE GRIP, NO COVER

GRIMANI PU B/S/VE
no cover - 20940 R



Grimani PU B/S/VE no cover - Ø 13.8" (350 mm)



B

B= 3.6" - 91.5 mm



All Grimani wheels can be supplied with stainless steel spokes and/or inserts in the following colors:

Model	Color	Part No.
<i>Grimani PU B/S/BL no cover</i>	Blue	21227 Z
<i>Grimani PU B/S/R no cover</i>	Red	21228 B
<i>Grimani PU B/S/KG no cover</i>	Green	20941 T
<i>Grimani PU B/S/PL no cover</i>	Purple	69483 N
<i>Grimani PU B/S/O no cover</i>	Orange	21231 P
<i>Grimani PU B/S/Y no cover</i>	Yellow	21229 D
<i>Grimani PU B/S/W no cover</i>	White	21232 S



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



147

STEERING WHEELS



LOREDAN STEERING WHEELS

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

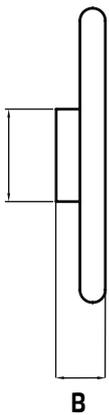
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- Aluminum spokes
- *Floating cap also available*

POLYURETHANE GRIP

LOREDAN PU B/S/CH - 69558 U



Loredan PU B/S/CH - Ø 13.8" (350 mm)



B = 3.64" - 92,5 mm

All Loredan wheels can be supplied with stainless steel spokes and/or inserts in the following colors:

Model	Color	Part No.
Loredan PU B/S/BL	Blue	20039 T
Loredan PU B/S/R	Red	20041 D
Loredan PU B/S/KG	Green	20837 Y
Loredan PU B/S/PL	Purple	20342 U
Loredan PU B/S/O	Orange	20673 U
Loredan PU B/S/Y	Yellow	20040 B
Loredan PU B/S/W	White	20601 S



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



LOREDAN STEERING WHEELS

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

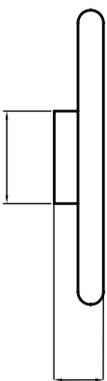
- Standard 3/4" taper
- Hub and center cap included
- Meet with the EN 28848 and ABYC P22 standards
- Aluminum spokes

POLYURETHANE GRIP, NO COVER

LOREDAN PU B/S/CH
no cover - 20942 V



Loredan PU B/S/CH no cover - Ø 13.8" (350 mm)



B

B= 3.64" - 92,5 mm

All Loredan wheels can be supplied with stainless steel spokes and/or inserts in the following colors:

<i>Model</i>	<i>Color</i>	<i>Part No.</i>
<i>Loredan PU B/S/BL no cover</i>	Blue	21234 W
<i>Loredan PU B/S/R no cover</i>	Red	20943 X
<i>Loredan PU B/S/KG no cover</i>	Green	21235 K
<i>Loredan PU B/S/PL no cover</i>	Purple	21237 C
<i>Loredan PU B/S/O no cover</i>	Orange	21236 A
<i>Loredan PU B/S/Y no cover</i>	Yellow	21239 G
<i>Loredan PU B/S/W no cover</i>	White	21238 E



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



MANIN STEERING WHEELS

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

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

**POLYURETHANE
GRIP, 304
STAINLESS STEEL
SPOKES**

MANIN PU B/SS - 68204 A



Manin PU B/SS - Ø 13.8" (350 mm)

**POLYURETHANE
GRIP ALUMINUM
SPOKES**

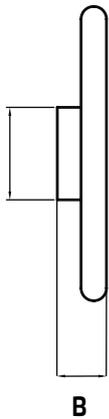
MANIN PU B/S - 68205 C
MANIN PU B/B - 68206 E



Manin PU B/B - Ø 13.8" (350 mm)



Manin PU B/S - Ø 13.8" (350 mm)



B

B= 3.19" - 81 mm



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

DORIA

STEERING

WHEELS

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

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

POLYURETHANE GRIP WITH INSERTS

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



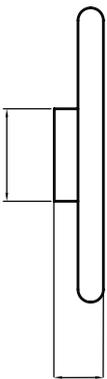
Doria PU B/S/R- Ø 13.8" (350 mm)



Doria PU B/S/B- Ø 13.8" (350 mm)



Doria PU W/S/W - Ø 13.8" (350 mm)



B

B= 2.05" - 52 mm



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



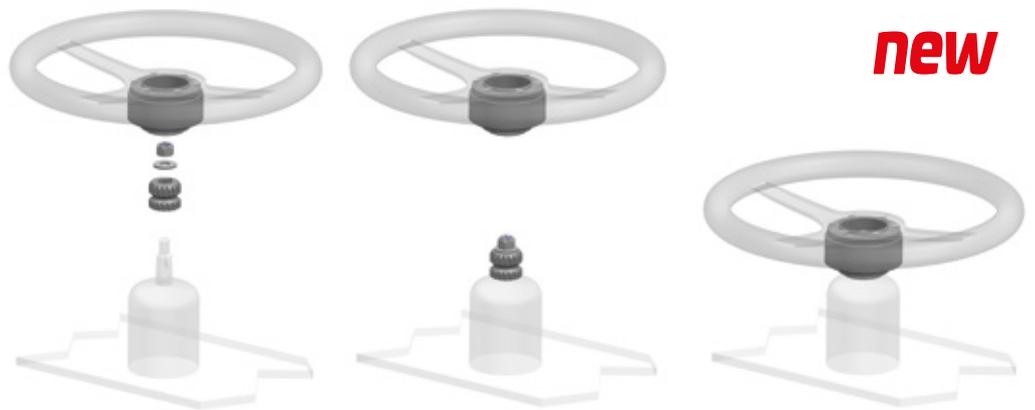
ACCESSORIES FOR STEERING WHEELS

QUICK CONNECT REMOVABLE HUB

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

Suitable with the following steering wheels:

- Loredan
- Grimani
- Manin
- Morosini
- Adorno
- Foscari



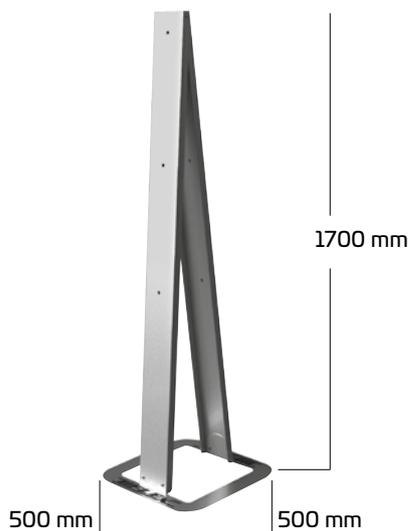
STEERING WHEEL COVER - 23912 B - with Uflex Logo

Also available with customized logo for a minimum quantity of 20 pieces.



UFLEX WHEEL DISPLAY

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



PADDLE TRIM

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

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



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

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



Single or dual

Adjustable positioning

Tilt or front mount

FEATURES

- Available both in single and dual versions (for either two equal or two different outputs).
- Both single or dual paddle can be positioned at various angles for the most comfortable choice.
- Equipped with one water proof "MOM.ON-OFF-MOM.ON" switch (2 switches on dual version).
- Max load 2 Amp @ 12VDC.
- Suitable for any kind of steering wheel dish. Max wheel dia. 400 mm (15.7").
- Easy to install on the following Uflex® 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

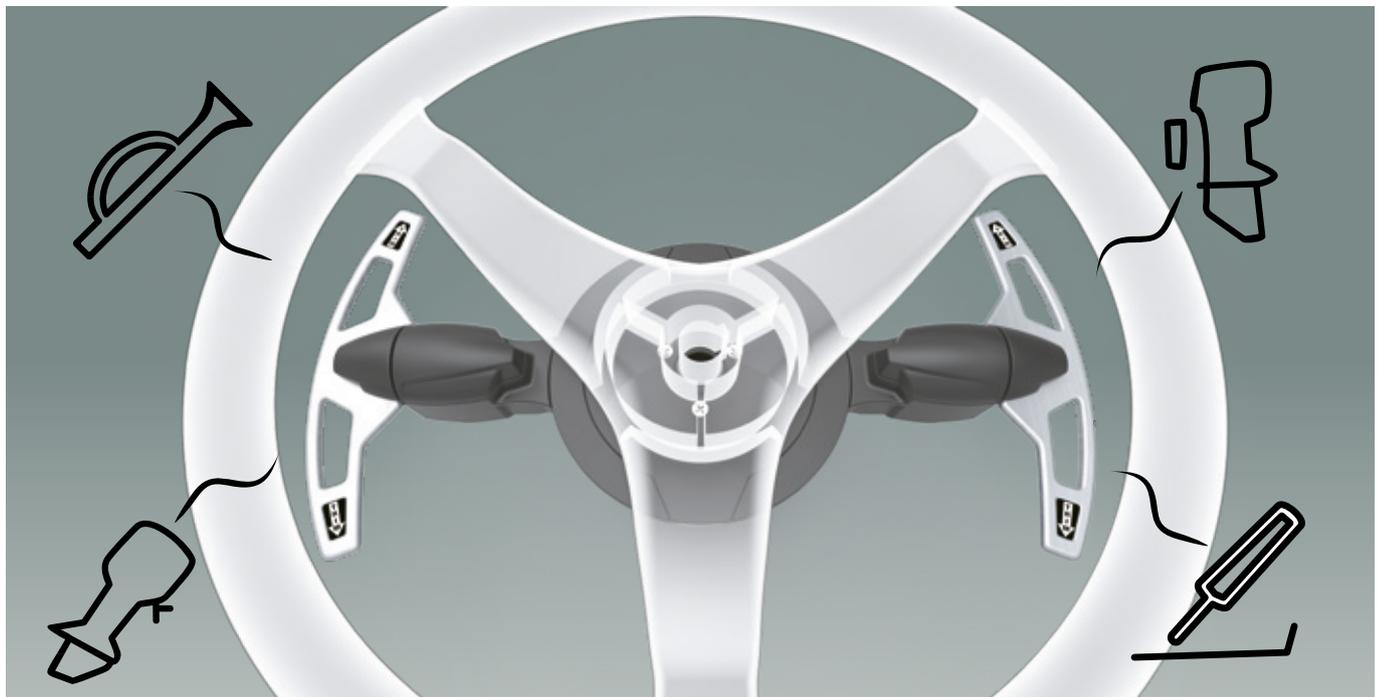
LABELS

	ENGINE TRIM & TILT	JACKPLATE	TRIM TABS	HORN
UP				
DOWN				

154

ORDER GUIDE

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



PADDLE TRIM



155

MECHANICAL CONTROL SYSTEMS

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

FEATURES

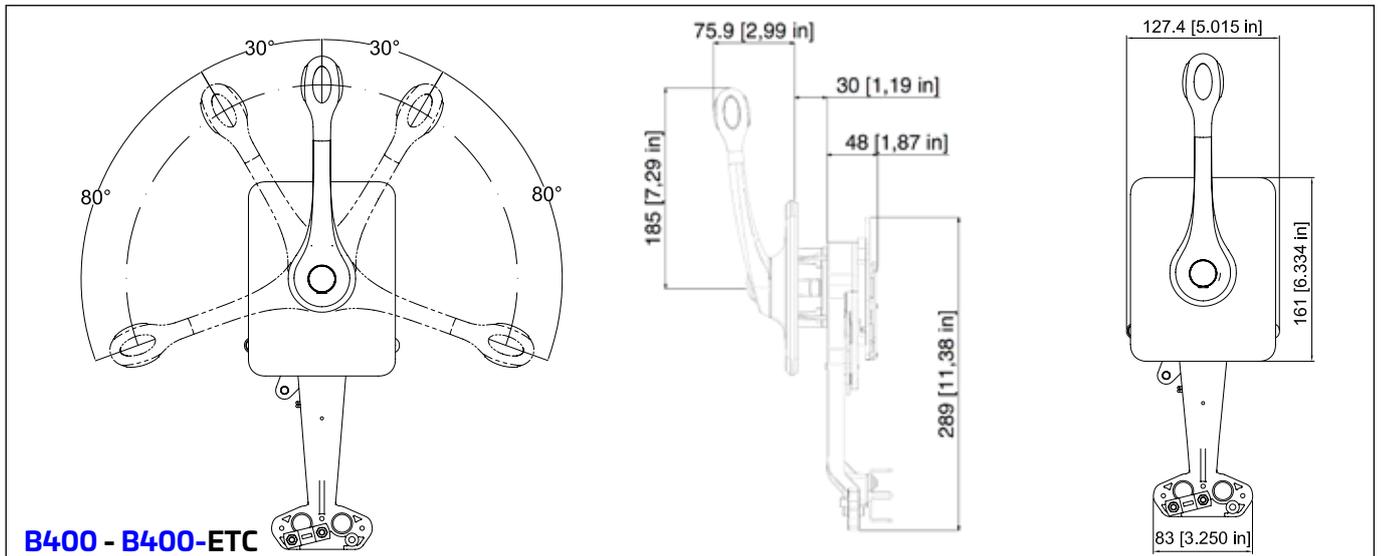
- 316 stainless steel lever and flange for a better resistance in the marine environment
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a brake tension release system easily adjustable
- Push-in button for throttle operation in Neutral (ENGINE WARM UP).
- Neutral safety switch **X41** - 38130 F included prevents in-gear starting
- Exceeds EN ISO 11547 standards when **X41** safety switch is installed
- The **B400 ETC** (Electronic Throttle Control) version is available on request. The sensor has an analog output signal which can be single or redundant. The output voltage range is chosen by the customer between 0 and 5V. Power supply 5V +/- 10%, linearity +/- 1%. For ETC controls please contact our Technical Service for custom configuration.
- For use with Uflex C2, C8, MACHZero control cables (no kit required)



B400

MODELS

B400 - 42076 Y Fully mechanical version



SINGLE LEVER B310 SERIES SIDE MOUNT CONTROLS

The B310 controls combine elegance, functionality and versatility.

Available with chrome, burl or soft touch control levers, the B310 series can be used on outboards, sterndrives and inboard applications. The universal control design allows for the connection of 33C Universal style cable and OMC (Johnson/Evinrude) cables with adapters included.

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

FEATURES

- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a brake tension release system adjustable from outside
- Pull-out handle disengages shift for warm-up
- Includes **X50** neutral safety switch which prevents in-gear starting
- Exceeds EN ISO 11547 standards when **X50** 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 Uflex control cables except C4, C36 and MACH36
 - Mercury® \ current BRP® (OMC®) \ Yamaha® \ Suzuki® Honda® \ Volvo® style cables
 - 33C style cables
- Uflex C5, C16, MACH5 and Mercury® cables require **K35** - 34730 U connection kit
- Uflex C22 and C23 cables require **KB1** - 39964 L connection kit

MODELS

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

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

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

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



B310CH



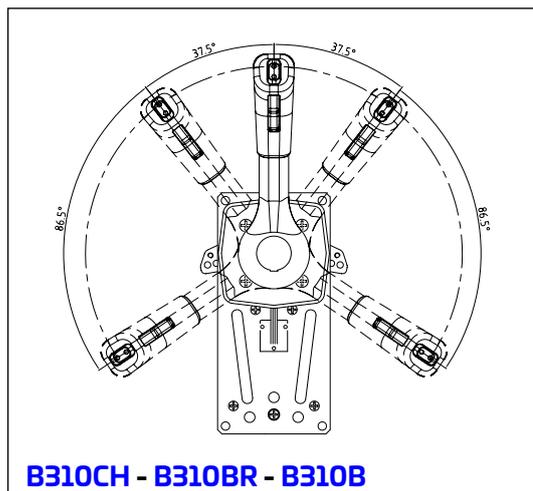
B310BR



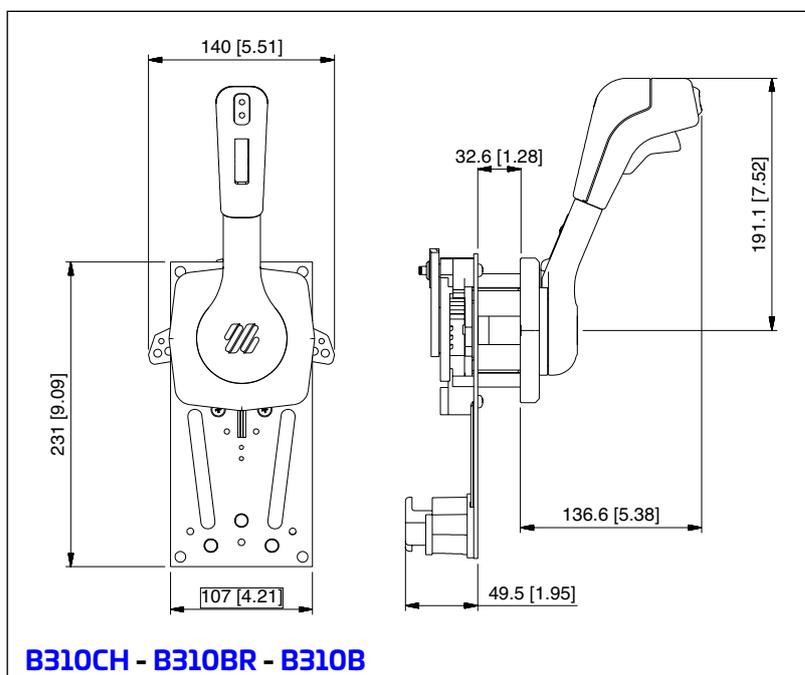
B310B



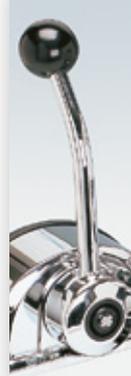
B310B-NT No Trim



B310CH - B310BR - B310B



B310CH - B310BR - B310B



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
- Includes **X12** neutral safety switch which 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** and **B184 MERC** 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 Uflex control cables except C4, C36 and MACH36
 - Mercury® \ current BRP® (OMC®) \ Yamaha® \ Suzuki® Honda® \ Volvo® style cables
 - 33C style cables
- Uflex C5, C16, MACH5 and Mercury® cables require **K35** - 34730 U connection kit
- Uflex C22 and C23 cables require **KB1** - 39964 L connection kit



B183



B184 - B184MERC



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

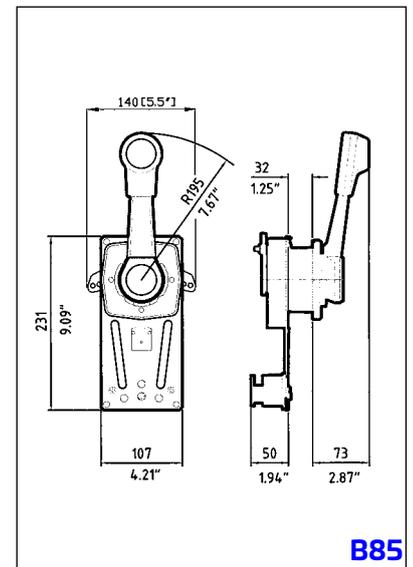
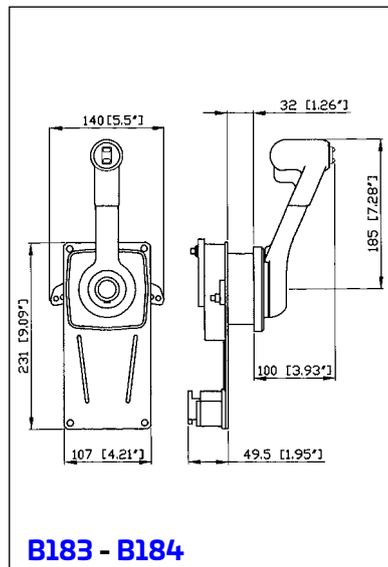
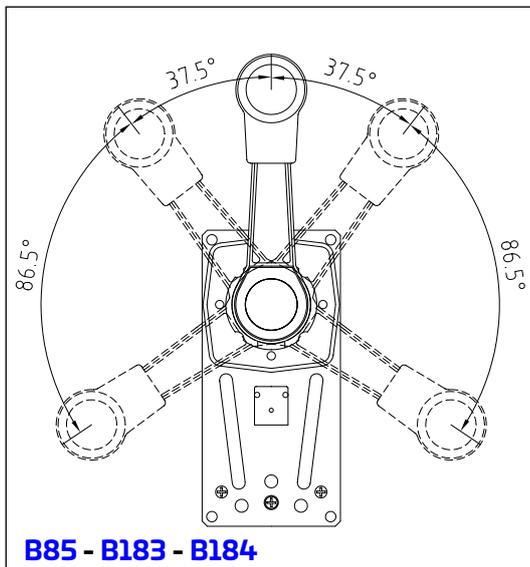
B85 - 35682 I

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

B184MERC - 39773 D

Provided with **K35** - 34730 U connection kit and **X50** neutral safety switch

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
- Includes **X12** neutral safety switch which 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 Uflex control cables except C22, C4, C36 and MACH36
 - Mercury® \ current BRP® (OMC®) \ Yamaha® \ Suzuki® Honda® \ Volvo® style cables
 - 33C style cables
- Uflex C5, C16, MACH5 and Mercury® cables require **K35** - 34730 U connection kit.
- To connect C14 and MACH14 cables and current BRP® (OMC®) cable to engine, use **K51** - 32526 N connection kit.

MODELS

B89 - 36151 G

Ivory finish with positive lock-in neutral.

B90 - 36152 H

Black finish with positive lock-in neutral.



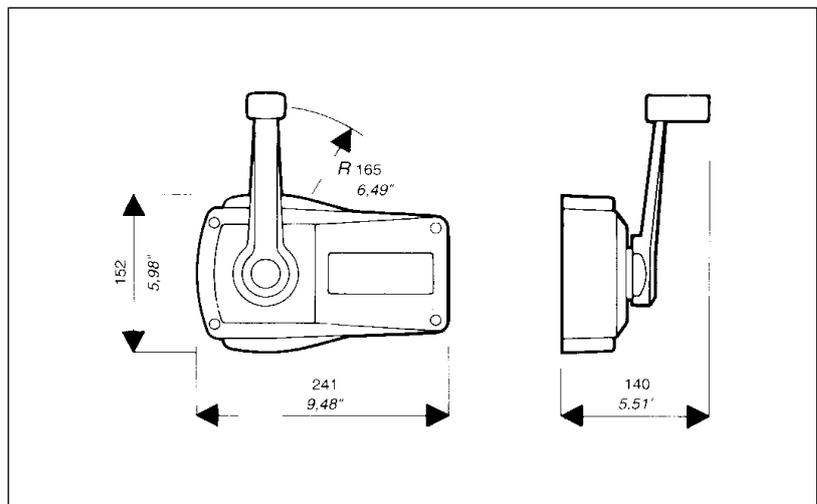
B89



B90



**Lock-in
neutral**



SINGLE LEVER B501 SERIES **TOP MOUNT CONTROLS**

With a focus on efficiency these controls have been specifically designed to improve the functionality of control systems, making the boat easier to control.

In the twin engine installation the twin lever controls operate with trim simultaneously on the lever or independently on the core body.

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

- The provided lock-in-neutral 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
 - Metal gun painted high resistance ABS housing with die cast black painted levers
- Push in button disengages shift for warm-up
- **X12** neutral safety switch included 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 Uflex 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

MODELS

B501CHT/L - 43193 H - Single engine, with lock and trim - Chrome

B502CHT/L - 43361 C - Double engine, with lock and trim (simultaneously or independently operated engines) - Chrome

B501BT/L - 43197 S - Single engine, with lock and trim - Gun metal

B502BT/L - 43360 A - Double engine, with lock and trim (simultaneously or independently operated engines) - Gun metal



B501CHT/L



B502CHT/L

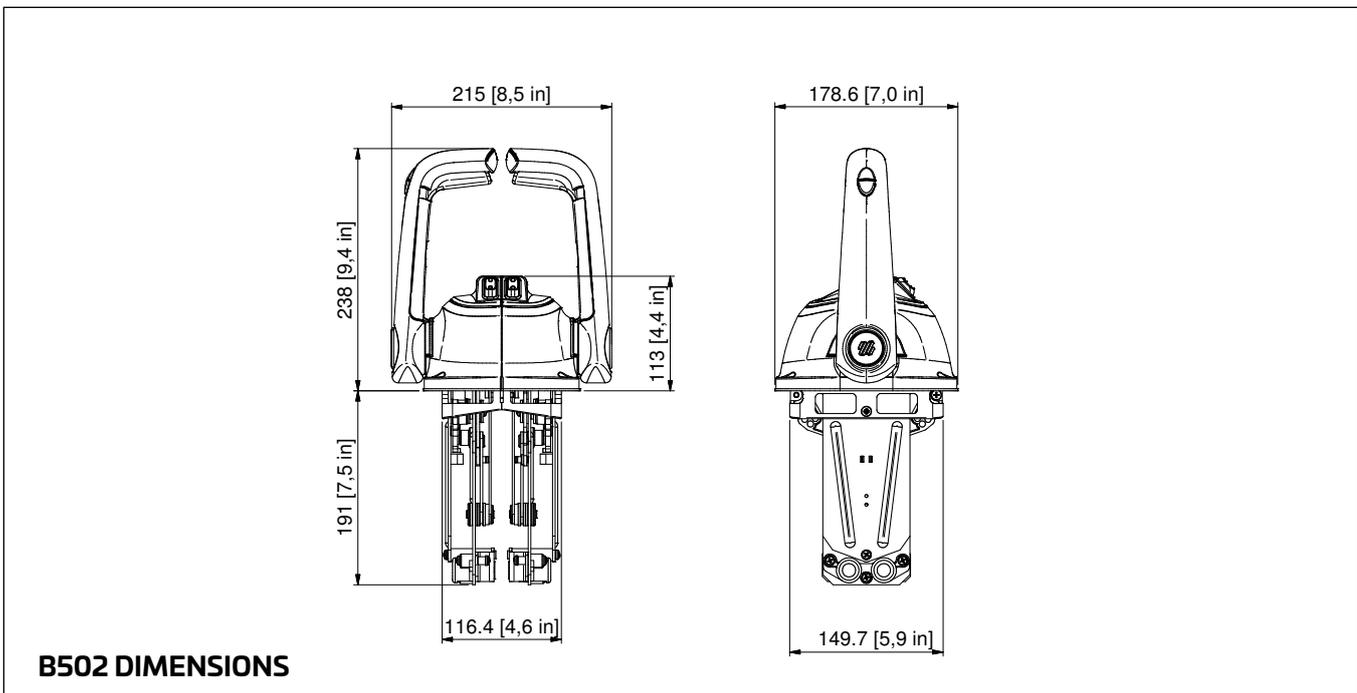
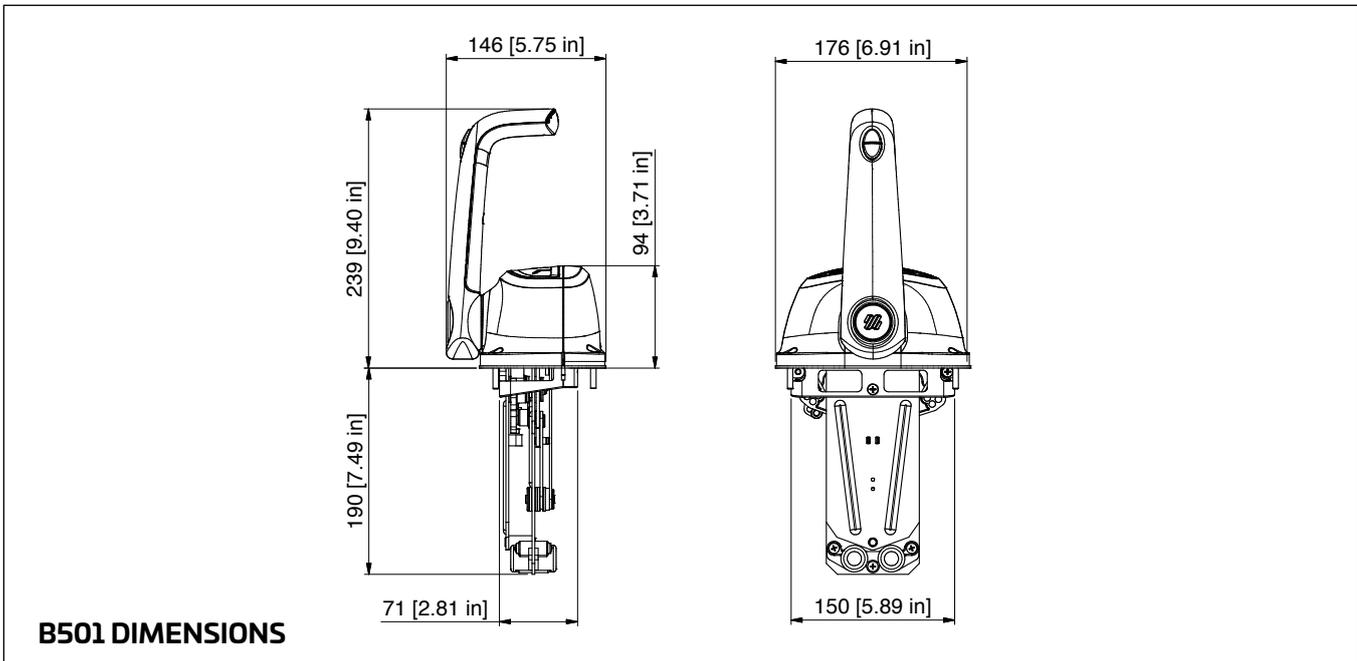




B501BT/L



B502BT/L



"LOW PROFILE" SINGLE LEVER TOP MOUNT CONTROLS

Combining traditional styling with a low profile design, the B301 and B302 controls provide the look and feel of electronic controls without the cost. With a focus on efficiency these controls have been specifically designed to improve the functionality of older control systems, making the boat easier to control.

When coupled with the Mach series control cables with industry leading efficiency, this series of controls will provide nearly fingertip control of the control system.

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
- Includes **X12** neutral safety switch which prevents in-gear starting
- Exceeds EN ISO 11547 standards when **X12** safety switch is installed
- For use with all Uflex 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

MODELS

B301CR - 40140 U

Single lever control for one engine, chrome plated.

B302CR - 40141 W

Twin lever control for two engines, chrome plated.

X75 - 40662 B

Silver knob **optional**



B301CR



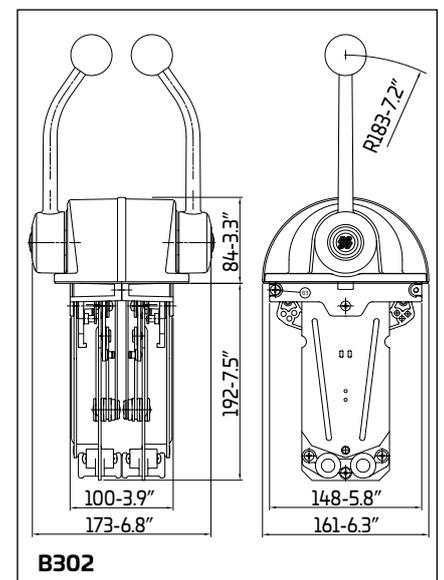
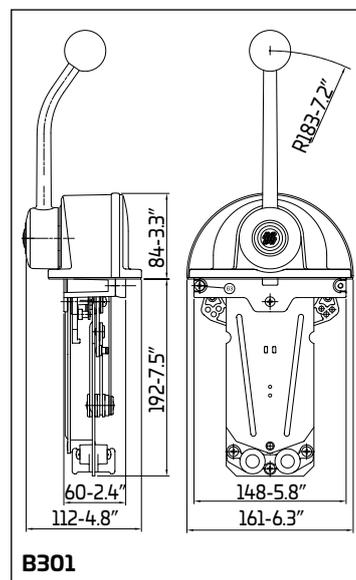
B302CR



2 X75 (OPTIONAL)



B302CR + 2 X75



"LOW PROFILE" SINGLE LEVER TOP MOUNT CONTROLS

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

FEATURES

- Compact single lever controls offering a unique low profile style compared to other controls available on the market
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Made of marine aluminum, chrome plated or powder coat finish
- Push in button disengages shift for warm-up
- Includes **X12** neutral safety switch which prevents in-gear starting
- Exceeds EN ISO 11547 standards when **X12** safety switch is installed
- For use with all Uflex control cables except C4:
 - 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



B301B



B302B



2 X75 (OPTIONAL)



B302B + 2 X75

MODELS

B301B - 40142 Y

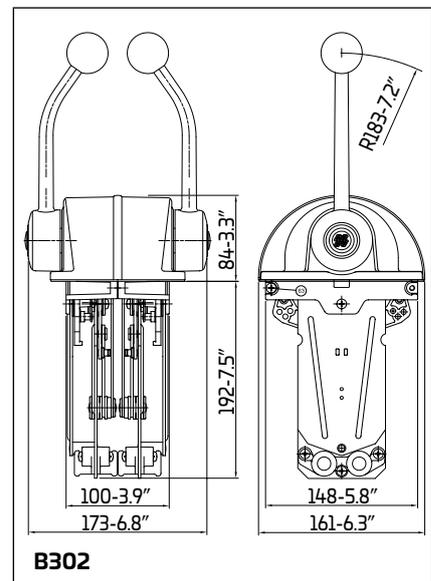
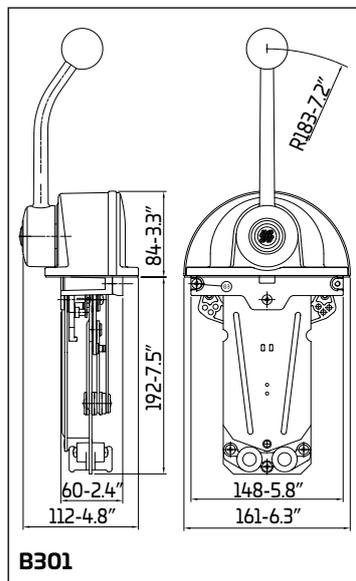
Single lever control for one engine, black dome, chrome plated lever.

B302B - 40143 A

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

X75 - 40662 B

Silver knob **optional**



TWO LEVER TOP MOUNT CONTROLS



164

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
- Made of marine aluminium 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 included prevents in-gear starting
- Available with straight or bent levers
- **B58** model is provided with an interlock kit to prevent accidental gear engagement
- Exceeds EN ISO 11547 standards when **X12** safety switch is installed
- For use with Uflex C2, C8, MACHZero and all 33C style engine control cables.
- Uflex C22 and all 43C style cables require **K22** - 34713 Q connection kit.
- Burl wood cover **optional**:
X51 - 38985 P

MODELS

BENT LEVERS:

- B46** - 34461 P Throttle and shift
- B46T** - 34462 Q Throttle only
- B46S** - 34463 R Shift only
- B58** - 34570 W Throttle and shift. With interlock. Right hand installation

STRAIGHT LEVERS:

- B50** - 34464 S Throttle and shift
- B50T** - 34465 T Throttle only
- B50S** - 34466 U Shift only

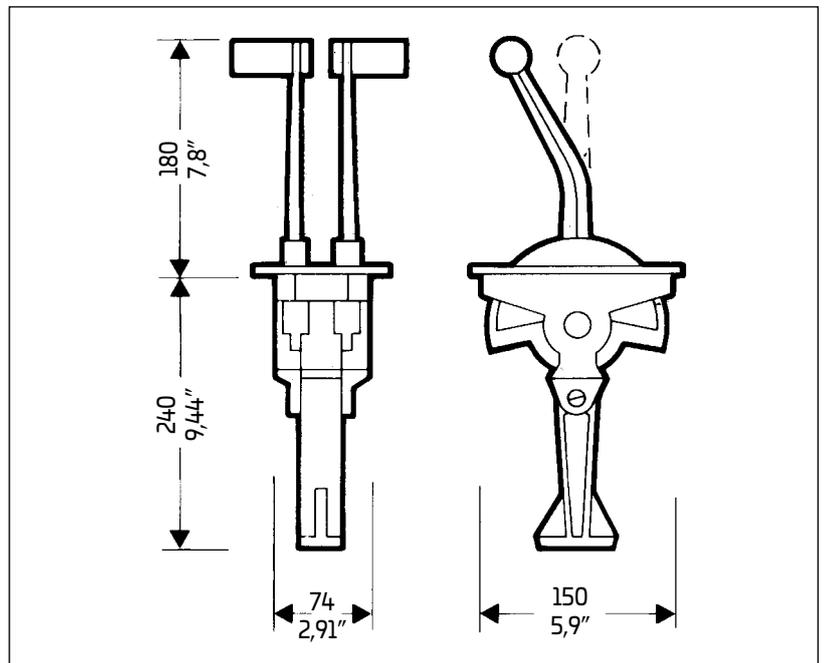


**B46
B58 with interlock**

B50



**X51
Burl wood cover**



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 Uflex C2, C8, MACHZero and all 33C style engine control cables. Uflex C22 and all 43C style cables require **K22** - 34713 Q connection kit.
- Burl wood cover **optional**: **X51** - 38985 P



B204R with interlock



B208R with interlock



X51
Burl wood cover

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.

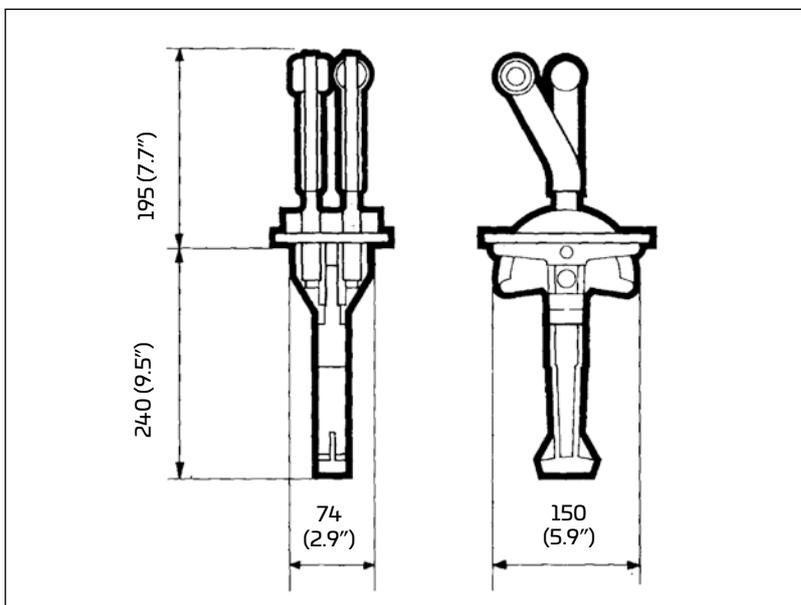
B204 ETSC - 42776 D - Throttle and shift controlled by an electrical signal.

White finish:

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

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

B208 ETSC - 42831 R - Throttle and shift controlled by an electrical signal.



TWO LEVER TOP MOUNT CONTROLS



166

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 aluminum, 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.
- Includes **X12** neutral safety switch which prevents in-gear starting
- Exceeds EN ISO 11547 standards when **X12** safety switch is installed
- Use with all Uflex control cables except C4:
 - C14 and MACH14 cables require no kit
 - For C2, C8 and MACHZero cables the connection kit **K67** - 40705 T is included
 - C5, C16 and MACH5 cables require **K63** kit - 40757 N
 - C22 cable requires **K64** kit - 40758 R
 - C36 and MACH36 cables require **K65** kit - 40759 T

MODELS

CHROME PLATED:

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

BLACK FINISH:

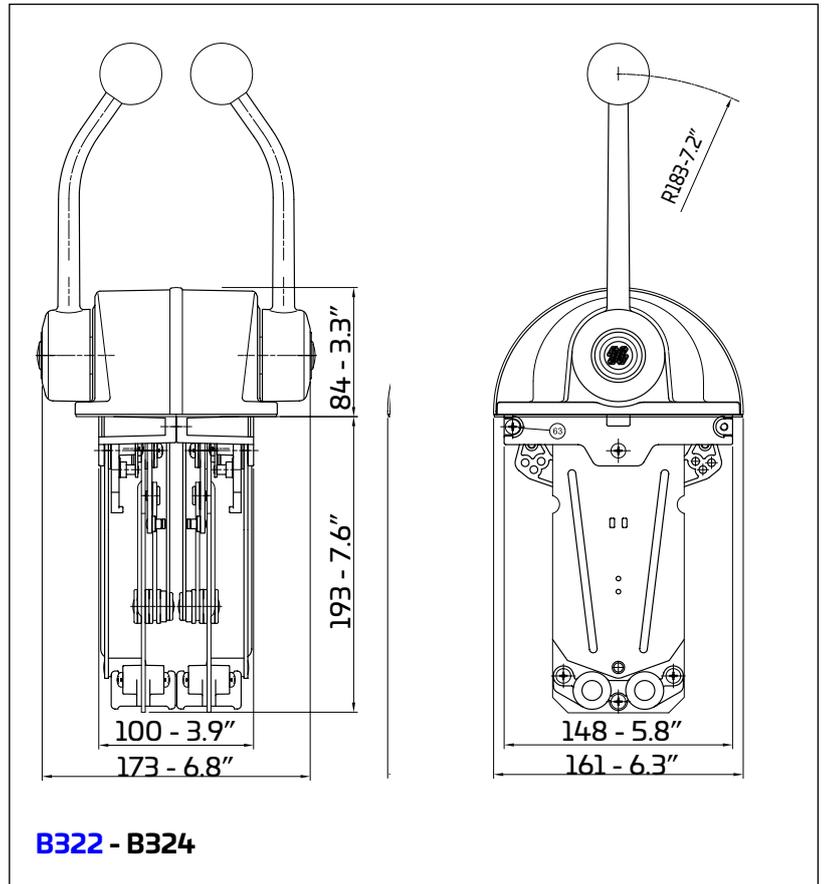
- B324** - 40674 J Throttle and shift



B322



B324



B322 - B324

TWO LEVER TOP MOUNT CONTROLS

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

- All versions are provided with shift lever detents and with a brake tension release system adjustable from the outside of the throttle lever
- Neutral safety switch **X12** - 34543 Q included, 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 Uflex C2, C8, MACHZero and all 33C style engine control cables
- Uflex C22 and all 43C style cables require **K32** - 34662 Z connection kit

MODELS

- B101** - 36856 P
Throttle and shift. White painted.
- B101T** - 36942 M
Throttle only. White painted.
- B101S** - 36898 F
Shift only. White painted.
- B102** - 36899 G
Throttle and shift. Black painted.

- X54** - 39340 V
Silver knob for **B101-B102**.
- 50030** - 42633 E
Smooth silver knob for **B101-B102**



B101

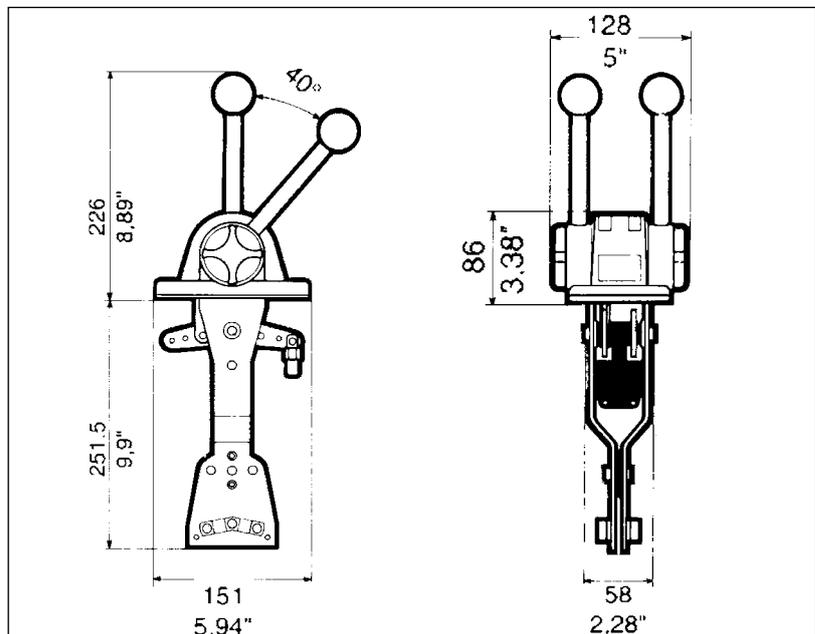
B102

CE

CE



**B101 with X54
Silver knobs**



TWO LEVER SIDE MOUNT CONTROLS



168

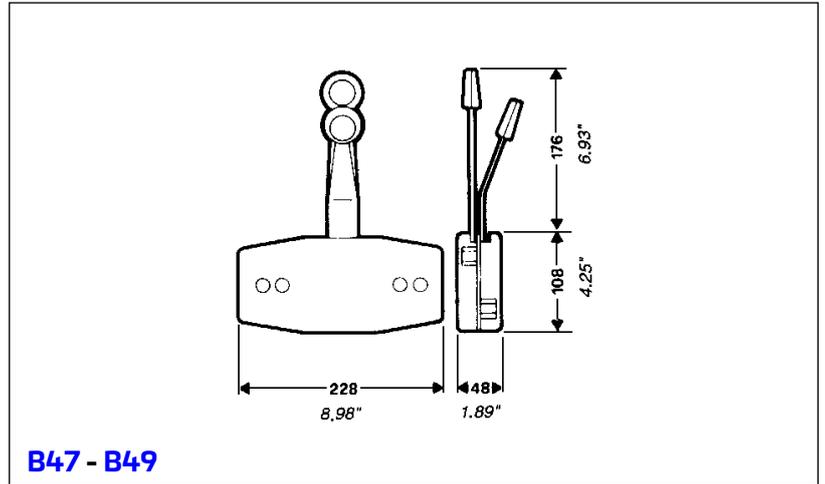
Suitable for all outboard engines.

FEATURES

- Made of nylon fiberglass with anodized aluminium levers
- Left or right side mount installation
- For use with Uflex engine control cables:
 - C14 and MACH14 with **K23** - 32773 D connection kit
 - C4 with **K24** - 32774 E connection Kit
 - C2, C8, MACHZero and all 33C style cables with **K25** - 32775 F connection kit
 - C5 and MACH5 without connection kit
 - Mercury® no connection kit needed
 - OMC® pre 1979 w/**K24**
 - BRP® (OMC®) post 1979 w/**K23**
 - Yamaha® w/**K25**
 - Honda® w/**K25**
 - Suzuki® w/**K25**

MODELS

- B47** - 32770 A - Light grey finish
- B49** - 33283 S - Black finish



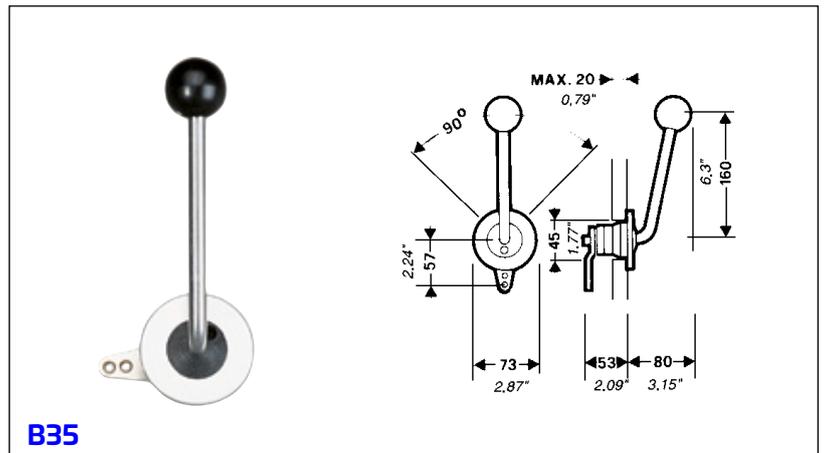
B47 - B49

B35 CONTROL BOX

FEATURES

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

B35 - 32386 A



B35

ACCESSORIES FOR CONTROL BOXES

K22 - 34713 Q

Kit to connect C22 and 4300 series cables to top mount two lever control boxes, **B46**, **B50**, **B58**, **B59**, **B204**, **B208**, **B322**, **B324**

K23 - 32773 D

Kit to connect C14, MACH14 and BRP® (OMC®) type "OS" cables to **B47** and **B49** control boxes.

K24 - 32774 E

Kit to connect C4 and BRP® (OMC®) type "O" cables to **B47** and **B49** control boxes.

K25 - 32775 F

Kit to connect C2, C8, MACHZero and all 33C style cables to **B47** and **B49** control boxes.

K32 - 34662 Z

Kit to connect C22 and 4300 series cables to top mount two lever control boxes **B101** and **B102**.

K33 - 38378 D

Kit to connect C22 and 4300 series cables to **B103** control box.

KB1 - 39964 L

Kit to connect C22 and 4300 series cables to **B183**, **B184** control boxes.

K83 - 42836 V

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

K35 - 34730 U

Kit to connect C5, C16, MACH5 and Mercury® style cables to single lever control boxes, except **B301**, **B302**, **B501** Series controls, **B103** and **B104**.

K51 - 32526 N

Kit to connect C14, MACH14 and OMC® type "OS" cables to engine for use with **B89** and **B90**.

K59 - 40144 C

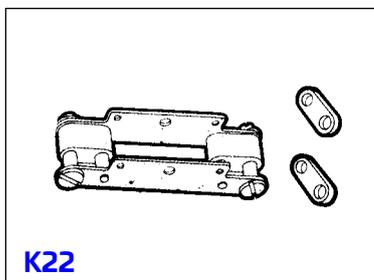
Kit to connect C2, C8 and MACHZero cables to **B301**, **B302** and **B501** Series controls (supplied with the box).

K60 - 40145 E

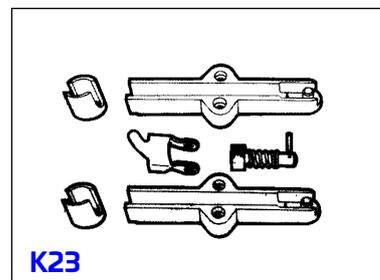
Kit to connect C5, C16, MACH5 and Mercury® (except Gen II™) cables to **B301**, **B302** and **B501** Series control boxes.

K61 - 40146 G

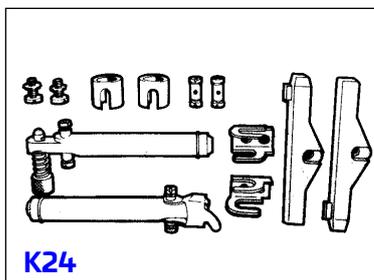
Kit to connect C22 and 4300 series cables to **B301**, **B302** and **B501** Series control boxes.



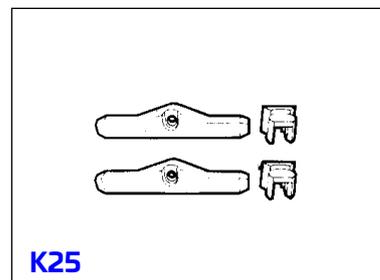
K22



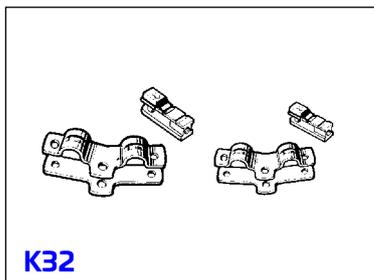
K23



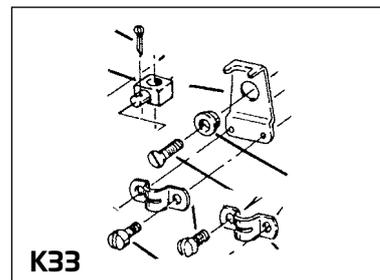
K24



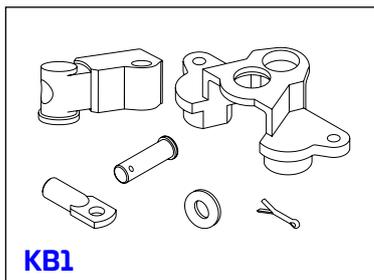
K25



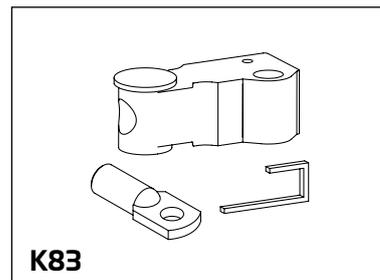
K32



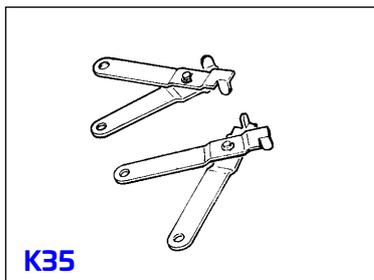
K33



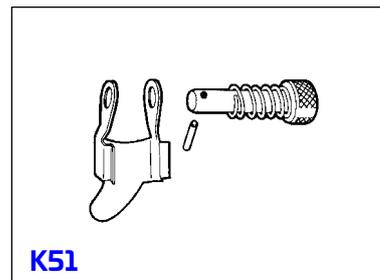
KB1



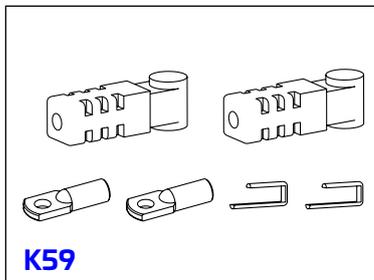
K83



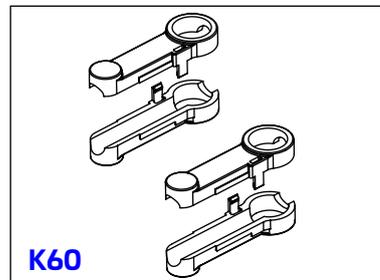
K35



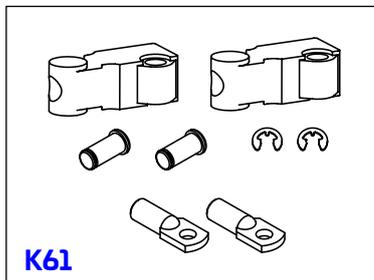
K51



K59



K60



K61



ACCESSORIES FOR CONTROL BOXES

K62 - 40147 J

Kit to connect C36, MACH36 and Mercury® Gen II™ cables to B301, B302 and B501 Series 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)

X12 - 34543 Q

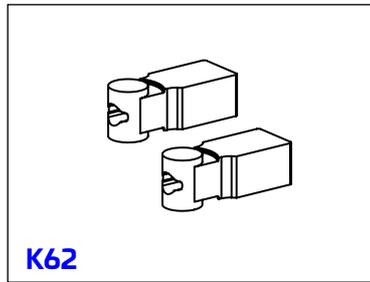
Neutral safety switch to prevent in-gear starting.

X41 - 38130 F

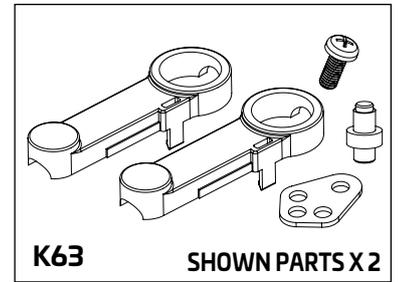
Neutral safety switch to prevent in-gear starting, suitable for B400 and B401-ETC controls.

X43 - 38160 L

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

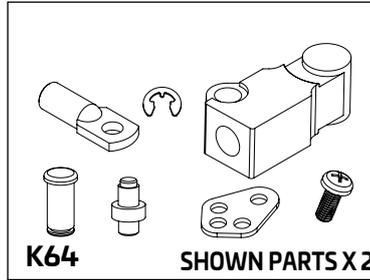


K62



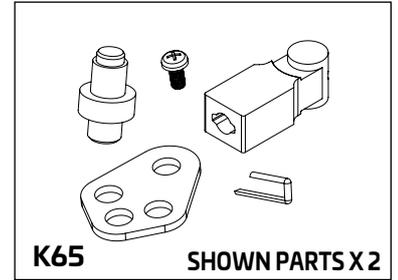
K63

SHOWN PARTS X 2



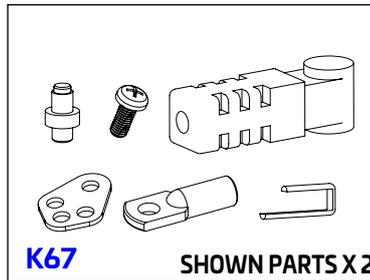
K64

SHOWN PARTS X 2



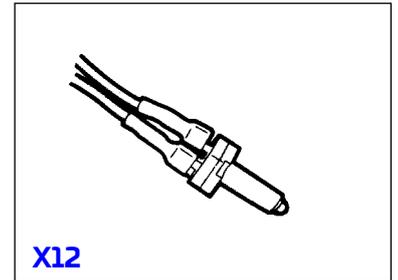
K65

SHOWN PARTS X 2

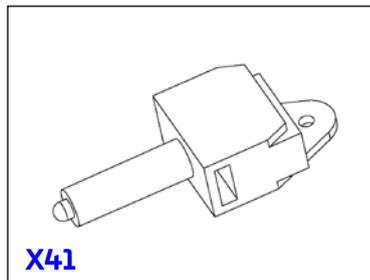


K67

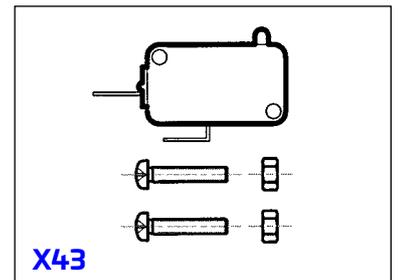
SHOWN PARTS X 2



X12



X41



X43

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.

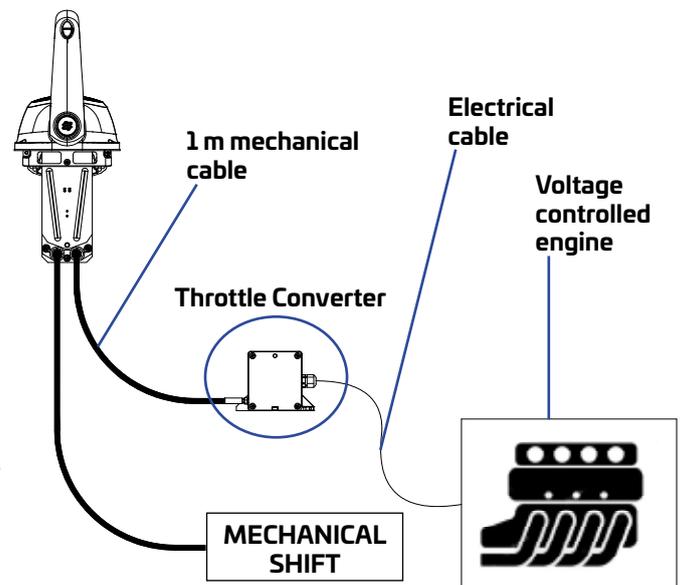
Suitable either for new installations and refitting, it allows to use an existing mechanical control and connect it to the electrical input of the new engine's throttle.

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

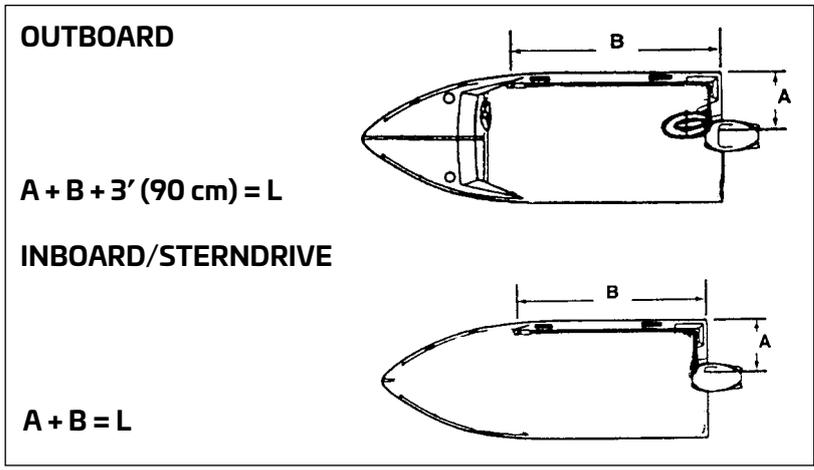


Packed together Throttle Converters for dual engine installations



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 catalog.



CONTROL CABLE CROSS REFERENCE			
UFLEX	TELEFLEX® PART#	MORSE® PART#	APPLICATION
C2	UNIVERSAL CABLE CC172		YAMAHA®, SUZUKI®, HONDA®, NISSAN®, TOHATSU®, SELVA®
C8	MIRACABLE™ CC330 PREMIUM™ CC199	33C RED JACKET™ 32377-003	YAMAHA®, SUZUKI®, HONDA®, NISSAN®, TOHATSU®, SELVA®, VOLVO®
MACHZero™	TFXTREME™ CC223	33C SUPREME™ 301947-003	YAMAHA® over 60 hp, SUZUKI®, HONDA®, NISSAN®, TOHATSU®, SELVA®, VOLVO®
C5 - MACH5™	600A CC179	TYPE KM 637323	MERCURY®, MERCRUISER®, MARINER® OVER 50 hp
C4	400 TYPE CC170	TYPE O 48296	PRE 1979 OMC®, EVINRUDE®, JOHNSON®
C14 - MACH14™	479 TYPE CC205	TYPE OS 302029	1979 TO DATE OMC®, JOHNSON®, EVINRUDE®, BRP®
C25	CC214	TYPE OC 310048	VOLVO® WITH OMC® CONTROLS
C22	STANDARD 4300 TYPE CC193	43C REDLINE 65835-003	HEAVY DUTY APPLICATIONS INBOARDS AND JETS
C23 BC	BULKHEAD 4300 TYPE CC192	43BC REDLINE 46348-003	HEAVY DUTY APPLICATIONS INBOARDS AND JETS
C36 - MACH36™			MERCURY® GENERATION II™ CONTROLS



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.

Using a patented stranded wire core with lubricated extrusion, the Mach cables are an ideal solution for applications with long cable runs, tight bends, or where easy and precise throttle response is required.

Mach Series cables also feature solid stainless steel output fittings and are available in 33C, Mercury® Gen I, Mercury® Gen II and BRP® styles.



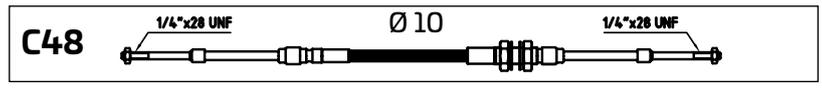
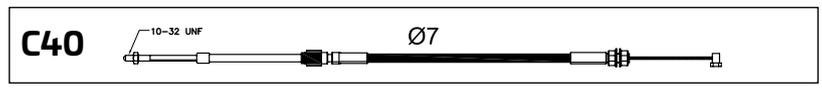
- The “high performance” MACH™ Cables are the result of our decades of experience in producing high quality, long lasting, flexible cables. The innovative core design maximizes efficiency and minimizes lost motion, while the exclusive design of the conduit provides extremely high level of flexibility.

FEATURES AND PERFORMANCE

- Available in the following configurations:
 - MACHZero - Universal style (like C2, C8)
 - MACH5 - Mercury® style (like C5)
 - MACH14 - Current BRP® (OMC®) 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 Uflex B310, B183, B184 controls.



ENGINE CONTROL CABLES

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

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

MACHZero Stroke: 3.4" (87 mm).
For use with inboard, sterndrive and outboard engines.
Ideal for high performance applications, long cable runs and complex routings. Blue color jacket.

C4 Stroke: 3.1" (80 mm)
For BRP® - Evinrude® (OMC®) engines manufactured before 1979.

C14 Stroke: 3" (75 mm)
For BRP® - Evinrude® (OMC®) engines manufactured from 1979 to date.

MACH14 Stroke: 3" (75 mm).
For BRP® - Evinrude® (OMC®) engines manufactured from 1979 to date.
Blue color jacket.
High performance applications.

C36 Stroke: 3.3" (85 mm)
For Mercury® and Mercruiser® engines and Mercury® Generation II™ series controls.

MACH36 Stroke: 3.4" (85 mm).
For Mercury® and Mercruiser® engines and Mercury® Generation II™ series controls.
Blue color jacket.
High performance applications.

C5 Stroke: 3.75" (95 mm)
For Mercury® and Mercruiser® engines.

MACH5 Stroke: 3.75" (95 mm).
For Mercury® and Mercruiser® engines. Blue color jacket.
High performance applications.

C25 Stroke: 3.1" (80 mm)
For Volvo® engines using BRP® (OMC®) top mount controls.

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

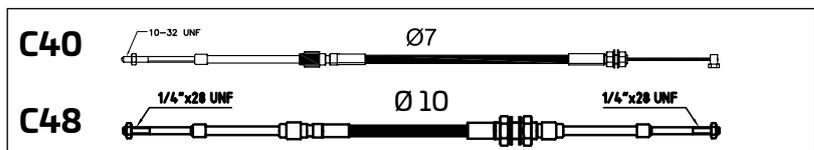
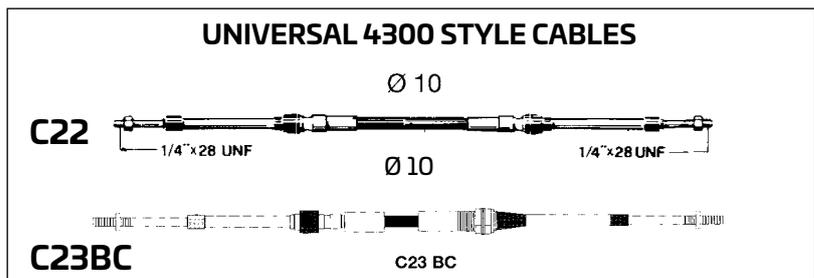
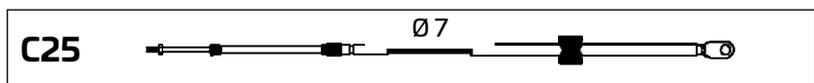
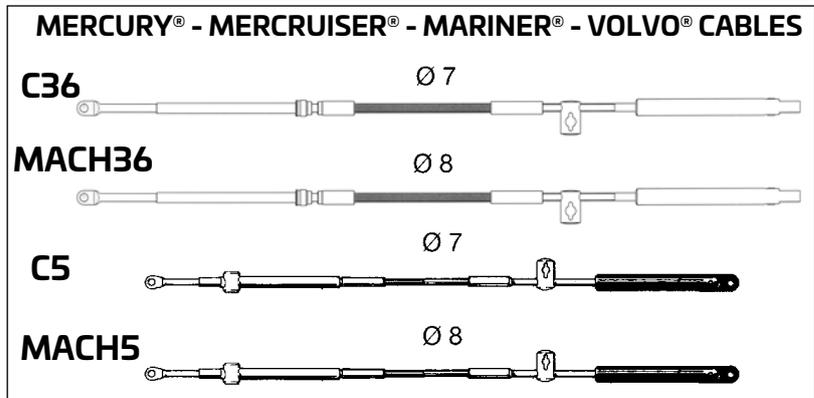
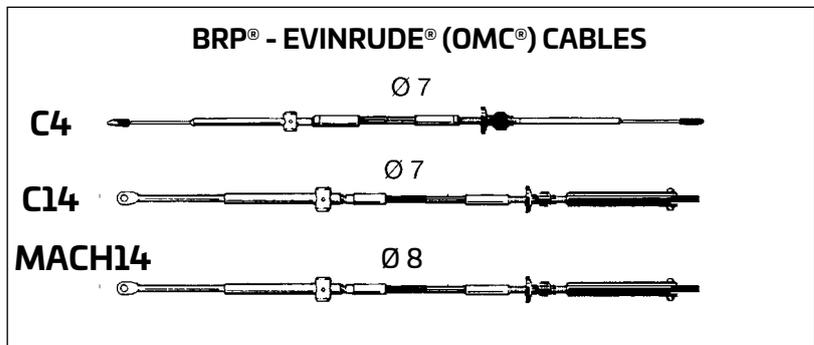
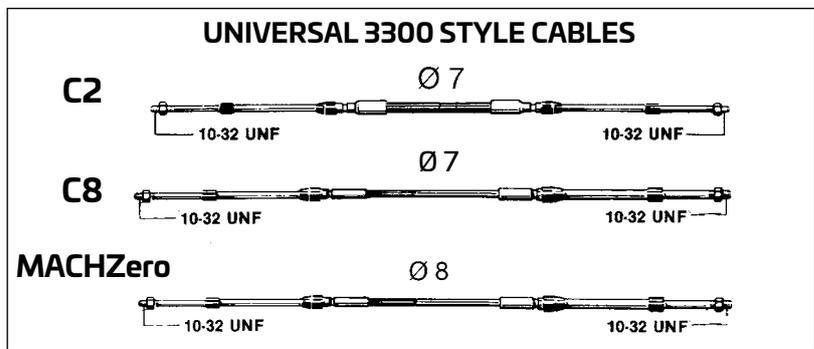
C23BC Stroke: 3.1" (80 mm)
Bulkhead mount 4300 type cable
Stainless steel clamp fitting and bulkhead fitting recommended for heavy duty applications.

B14 Stroke: 2.8" (70 mm)
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® engines

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

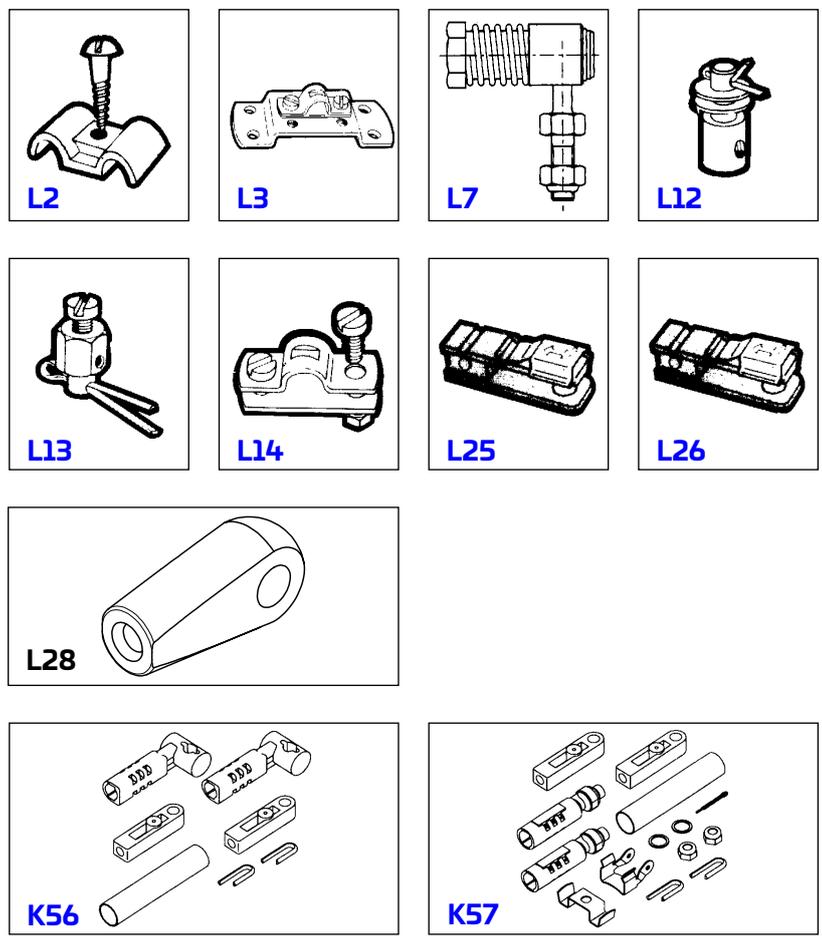
Part number for ordering:
Example: C2 XLL - LL = Length





ACCESSORIES FOR ENGINE CONTROL CABLES

- L2** - 30324 D: Cable clamp block
- L3** - 30325 E: Shim and clamp block.
Fits C2, C8, MACHZero and all 33C style cables.
- L7** - 38078 U: Ball joint 10-32 UNF.
Stainless steel, fits C2, C8, MACHZero and all 33C style cables.
- L12** - 30334 F: Cable end fitting.
Fits C2, C8, MACHZero and all 33C style cables.
- L13** - 30335 G: Stop collar. Fits C4 and B14 cables.
- L14** - 30336 H: Cable clamp block.
Fits C2, C8, MACHZero and all 33C style cables.
- L25** - 31906 D: Clevis 10-32 UNF.
Fits C2, C8, MACHZero and all 33C style cables.
- L26** - 33517 N: Clevis 1/4" x 28 threaded. Fits C22 and 4300 series cables.
- L28** - 43228 A
0.3" cable terminal.
- K56** - 39237 C
Adapts C2, C8, MACHZero and all 33C style cables for use with Mercury® engines.
- K57** - 39238 E
Adapts C2, C8, MACHZero and all 33C style cables for use with BRP® - Evinrude® engines.



CONTROL BOX-CONTROL CABLE APPLICATION MATRIX

<u>SINGLE LEVER CONTROLS</u>	MODEL	B400	B183 - B184 B85 - B310 Series	B301 - B302 B501 Series	B103	B104	B73 - B74 B77 - B79	B89 B90
C2		X	X	K59*	X	X	X	X
C8		X	X	K59*	X	X	X	X
C4		-	-	-	-	-	-	-
C14		-	X	X	-	-	X	X
C5		-	K35	K60	-	-	K35	K35
C36		-	-	K62	-	-	-	-
C22		-	-	K61	K33	-	-	-
MACHZero		X	X	K59*	X	X	X	X
MACH5		-	K35	K60	-	-	K35	K35
MACH36		-	-	K62	-	-	-	-
MACH14		-	X	X	-	-	X	X

*: Supplied with the control; X: No kit required; - : No connection

<u>TWO LEVER CONTROLS</u>	MODEL	B322 B324	B46 - B50 - B58 B59 - B204R - B208R	B101 - B102	B47 - B49	B35
C2		K67*	X	X	K25	X
C8		K67*	X	X	K25	X
C4		-	-	-	K24	-
C14		X	-	-	K23	-
C5		K63	-	-	X	-
C36		K65	-	-	-	-
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

MECHANICAL PRODUCTS

T71FC - T72FC - T73NRFC - T74NRFC

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

T91 - T93ZT

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

X52 - X66 Tilt Mechanisms

Upper cover	72297 K
Lower cover	70140 N
Gasket	70138 C

T86 - T88

2 Shaft kits	71109 A
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Steering Wheels

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

B301CR - B302CR - B301B B302B - B322 - B324

Lever assembly with black knob	40897 F
Lever assembly with red knob B322 - B324	40898 H
Black knob	72054 G
Red knob	72020 N
Chrome rear cover B301CR	71461 R
Black painted rear cover B301B	71501 A
Gasket for B301CR - B301B	71366 X
Gasket for B302CR - B302B - B322 - B324	71516 P
Installation kit B301	40170 D
Installation kit B302	40192 P
Installation kit B322 - B324	40703 N

B501 - B502

B501 components kit	43128 W
B502 components kit	43129 Y

B103 - B104

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

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**.

MECHANICAL PRODUCTS

B65 - B665 - B66 - B666 B73 - B74 - B76 - B77 - B78 - B79

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

AVAILABLE SPARE PARTS

B310CH - B310BR - B310B

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

B183 - B184 - B85

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

WARNING

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

B89 - B90

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

B46 - B50 - B58 - B59

Cover	57960 T
Black knob	32394 A
Red knob	32472 Q
Installation kit	35365 R

B99 - B101 - B102

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

B14 Engine Stop Cable

B14 Kit	59976 G
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HYDRAULIC PRODUCTS

HELM PUMPS

Vented filler plug kit with valve	40801 N
Non vented filler plug kit	40800 L
Shaft seal kit	40875 V
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	40876 X



HYDRAULIC PRODUCTS

178

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**.

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

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	43060 M
Seal kit for UC94-OBF P. No: 40154 F, 40161 M	41919 U
Tool kit for UC94-OBF P. No: 40154 F, 40161 M	41920 C
Seal kit for UC94-OBF P. No: 42918 X, 42968 N	43174 D
Tool kit for UC94-OBF P. No:- 42918 X, 42968 N	43175 F

UC128-OBF OUTBOARD CYLINDER

Black bull horn mounting bracket	43248 G
Through tube stainless steel rod	39491 T
Spacer kit	41812 Z
Plastic cap kit	41810 V
UC128-OBF 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-Single aluminum end cap with preloaded seals for UC128-OBF P. No: 43231 N, 43232 R, 43233 T, 43234 V, 43235 X (order 2 per cylinder)	75675 H
Seal cartridge kit-Two aluminum end caps with preloaded seals with insertion for UC128-OBF P. No: 43231 N, 43232 R, 43233 T, 43234 V, 43235 X	43350 X
Tool kit for UC128-OBF P. No: 43231 N, 43232 R, 43233 T, 43234 V, 43235 X	43395 W

UC130-SVS OUTBOARD CYLINDER

Tiller arm connecting kit (ultrabolt)	42081 R
Seal cartridge kit-Single aluminum end cap with preloaded seals for UC130-SVS P.No: 43225 U, 43226 W, 43227 Y (order 2 per cylinder)	76123 W
Seal cartridge kit-Two aluminum end caps with preloaded seals with insertion for UC130-SVS P.No: 43225 U, 43226 W, 43227 Y	43364 J
Tool kit for UC130-SVS P.No: 43225 U, 43226 W, 43227 Y	43386 V

UC68-OBS OUTBOARD CYLINDER

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

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

INBOARD CYLINDERS

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

STERNDRIVE CYLINDERS

Extension rod connecting pin	40917 J
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NUT AND SLEEVE

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



179



WIFLEX®



ELECTROMECHANICAL TRIM TABS

TRIM TABS - INNOVATIVE FINGERTIP JOYSTICK CONTROL

Boats often become unbalanced to port or starboard due to wind, sea conditions, and weight transfer within the boat.

The innovative joystick by Uflex takes all the guesswork out of realigning the boat. A simple push of the joystick lever in the opposite direction of the "lean" of the boat is all you need to do.

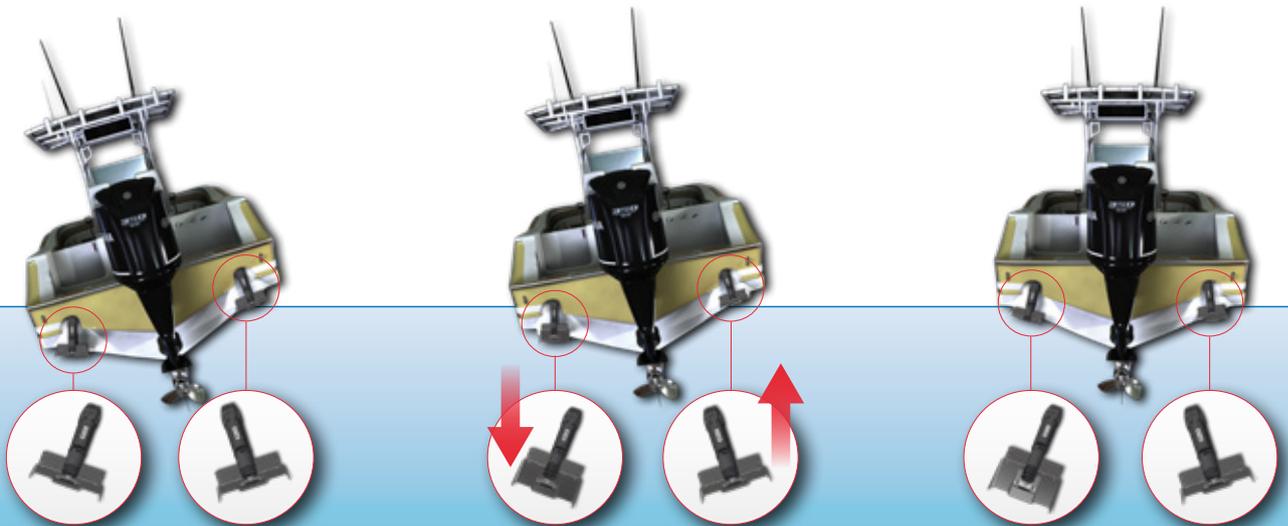
Gone are the days of having to think about the current positions of the tabs and then push two rocker switches, hoping that you have the correct sequence, i.e. port up and starboard down or vice versa.

The Uflex joystick let's you drive like a pro!

- Makes adjusting the position of the boat more intuitive than traditional rocker switches
- Both trim actuators move simultaneously in opposite directions when pushing the joystick to port or to starboard

REALIGNING LEAN TO PORT OR STARBOARD

Because the joystick simultaneously activates both tabs in opposite directions when adjusting for a lean to port or starboard, the realignment of the boat occurs very quickly, and with optimal tab positioning in terms of efficiency.



The unique profile of the Uflex planes offers greater efficiency and stern lift than traditional flat planes, often providing the opportunity to use a smaller size tab with the same performance of a larger flat plane.

- Get on plane quicker
- Keep the boat on plane with lower engine RPM

IP68-rated, triple sealed 12VDC electrical mechanical actuators provide:

- One-piece actuator housing reduces the possibility of water intrusion

- Exclusive rubber boot protects internal primary seals from sea growth and high-pressure water
- Planetary gear actuator gearbox provides high efficiency and low amp consumption
- Tempered stainless-steel ball screw gives peak resistance to impact and high-torque loads
- Patented snap-in actuator provides for a clean rigging job
- Abrasion-resistant routing of electrical wires minimizes the transom holes

REALIGNING BOW LIFT

Pushing the joystick up or down moves the tabs in the same direction. This changes the attitude of the boat bow up or down.



UFLEX ELECTROMECHANICAL TRIM TAB SYSTEMS

Improve fuel economy and passenger comfort with Uflex electromechanical trim tabs. Featuring electropolished stainless steel planes and low consumption, high speed, composite actuators, these tabs are built to last in the most demanding sea conditions.

Uflex trim tabs have been specifically designed for easy installation using a quick connect bracket-actuator, requiring only one small hole per tab through the transom.

Uflex trim tab systems are available in 2 versions:

MTT systems for standard installations

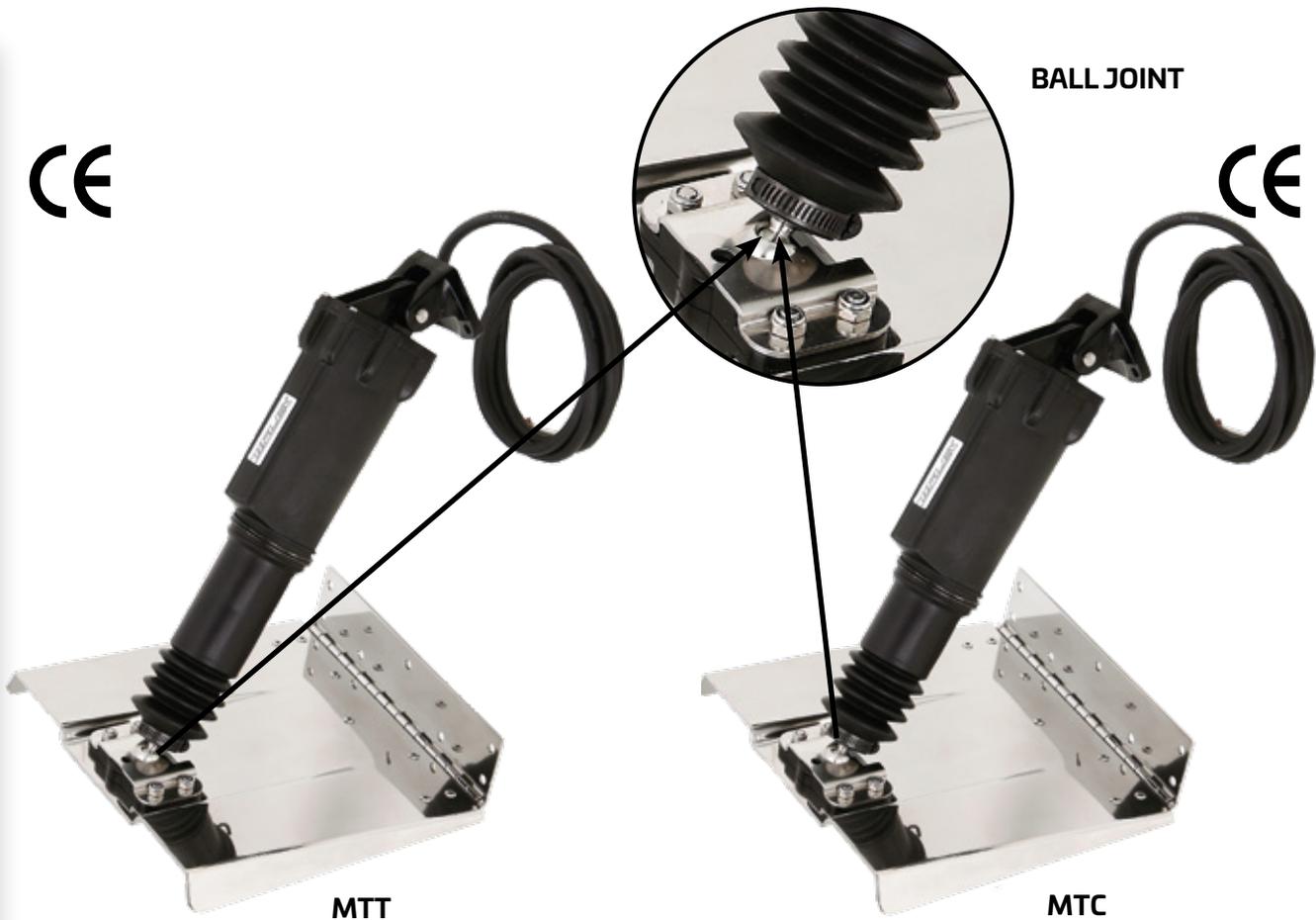
MTC systems for compact installations

182

CE

BALL JOINT

CE



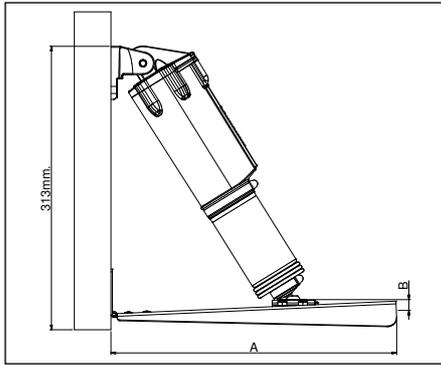
MTT

MTC

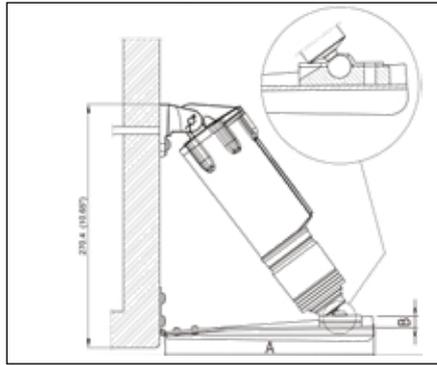
MTT AND MTC SYSTEMS - FEATURES:

- Tab bracket with **BALL JOINT**
- Operating system with hardened steel ballscrew, suitable to withstand high push loads.
- Prompt and easy control with the innovative use of a **Joystick**)
- **AUTO-LINE UP**: automatic flap re-alignment function
- Completely sealed thermoplastic resin tab actuators: maximum protection guaranteed by dual seals and a rubber bellow
- Stainless steel rod and tabs
- The innovative profile of the tabs increases the efficiency of the system
- Non polished stainless steel tabs also available.
- The stainless steel top surface of the tabs is mirror polished to give higher resistance to marine environment.
- Hole hinge design allows for precise retrofit replacement with Lenco® and Bennett® same size tabs
- Fully maintenance free
- Voltage: 12V DC
- Waterproof: IP68 protection
- CE Certification
- Meets with the EN 60945 standards

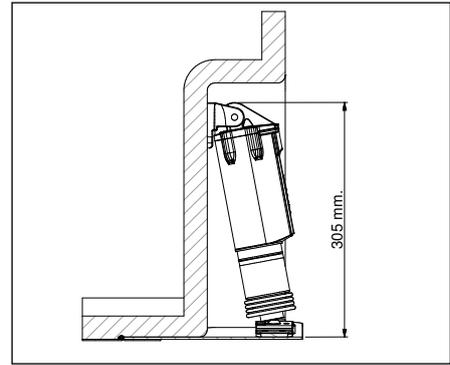
APPLICATIONS:



MTT INSTALLATION



MTC TILTED INSTALLATION



MTC VERTICAL INSTALLATION

NOTE: dimensions could change in case of raked transom

A: 228.6 mm - 9"
B: 19.5 mm - 0.77"

MTT SYSTEMS - APPLICATIONS:

BOAT LENGTH	BOAT LENGTH (m)	TAB SIZE (L x W)	TAB SIZE (cm)	TRANSOM MINIMUM HEIGHT
14' - 18'	4,5 - 5,5	9" x 9"	22,8 x 22,8	31.03 cm (12.22")
16' - 25'	5,0 - 8,0	12" x 9"	30,5 x 22,8	31.03 cm (12.22")
18' - 30'	5,5 - 9,0	12" x 12"	30,5 x 30,5	31.03 cm (12.22")
26' - 36'	8,0 - 11,0	12" x 18"	30,5 x 45,7	31.03 cm (12.22")

MTC SYSTEMS - APPLICATIONS:

BOAT LENGTH	BOAT LENGTH (m)	TAB SIZE (L x W)	TAB SIZE (cm)	TRANSOM MINIMUM HEIGHT	
				TILTED INSTALLATION	VERTICAL INSTALLATION
14' - 18'	4,5 - 5,5	9" x 9"	22,8 x 22,8	27.04 cm (10.65")	30.5 cm (12")
16' - 25'	5,0 - 8,0	12" x 9"	30,5 x 22,8	27.04 cm (10.65")	30.5 cm (12")
18' - 30'	5,5 - 9,0	12" x 12"	30,5 x 30,5	27.04 cm (10.65")	30.5 cm (12")
26' - 36'	8,0 - 11,0	12" x 18"	30,5 x 45,7	27.04 cm (10.65")	30.5 cm (12")

NOTE: 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

WARNING: The systems are not intended for use in racing applications

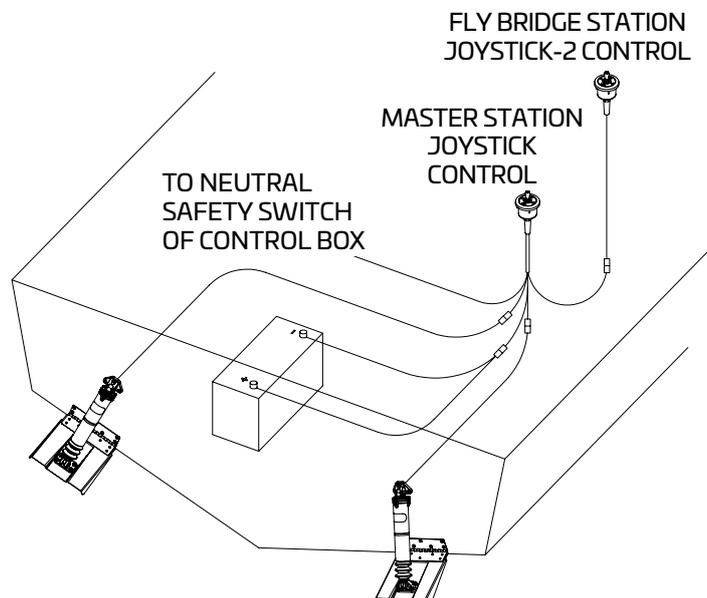
STANDARD COMPONENTS

(SINGLE ACTUATOR PER TAB)

- 1 pair of electromechanical actuator complete with connection brackets and 2 m (6.56') wiring harness.
- 1 joystick control unit with 0.50 m (1.64') wiring harness
- 1 pair of stainless steel tabs. Tabs are sold separately; specify selected size when ordering

OPTIONAL COMPONENTS

- 1 extension wiring harness kit for the power cable and the actuator cables. Deutsch plugs included
- 1 second station joystick-2 control unit with 0.50 m (1.64') wiring harness
- 1 extension wiring harness (6 m and 9 m for second station). Deutsch plugs included.
- 1 extension wiring harness (2 m for auto-line up). Deutsch plugs included.
- 1 zinc alloy sacrificial anode kit to neutralize the galvanic currents on tabs (2 anode kits for every 1 pair tab installation)



ACTUATORS



AT12 - 43160S

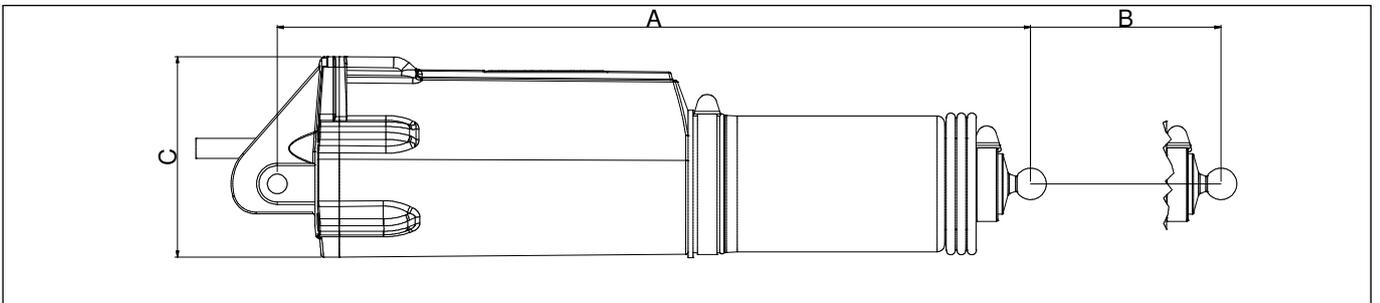


AC12 - 43001 V



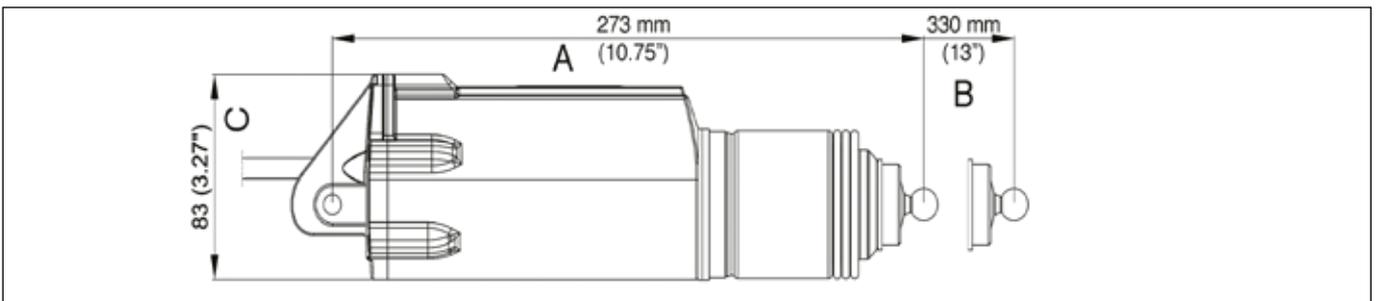
FEATURES:

- 12 VDC Black actuator and brackets
- 1 m (3.28') wiring harness with Deutsch crimped pins included
- Stroke: 57 mm (2.25")



AT actuator full closed/open

AT: A = 309 mm (12.17")
B = 366 mm (14.41")
C = 83 mm (3.27")



AC actuator full closed/open

AC: A = 273 mm (10.75")
B = 330 mm (13")
C = 83 mm (3.27")

JOYSTICK CONTROL UNITS FOR SINGLE AND DUAL STATION

new



J/CH



JLP/CH



J/B-LED

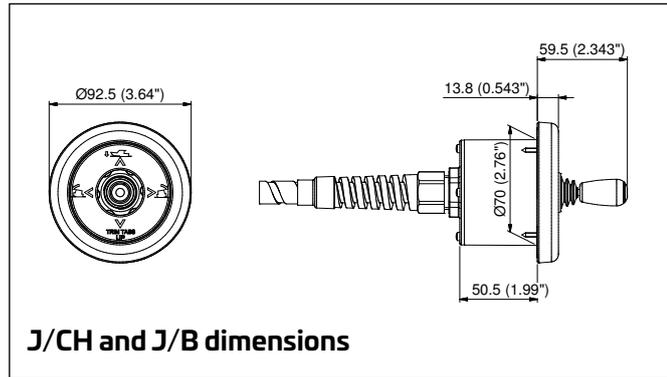
185



J/B

JLP/B

Black finish (optional)



J/CH and J/B dimensions

JOYSTICK CONTROL UNITS FOR SINGLE STATION:

J/CH - 41849 Z chrome

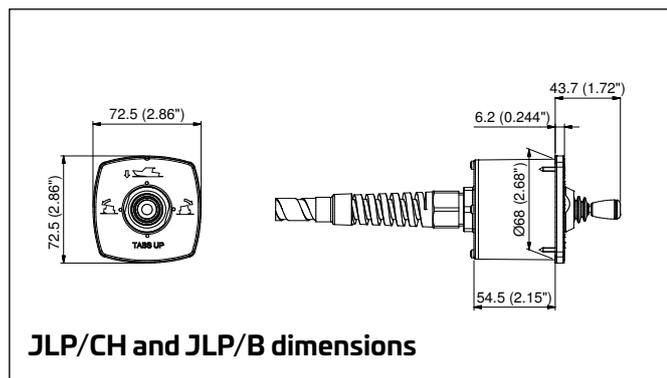
J/B - 42855 Z black (optional)

JLP/CH - 43004 B chrome, low profile

JLP/B - 43005 D black, low profile (optional)

J/B-LED - 43416 B joystick control with led indicators

- Main station compact control unit with joystick (PATENTED), **auto-line-up** function included (automatic fla re-alignment)
- 0.50 m (1.64") wiring harness included
- 70 mm (2.76") hole size



JLP/CH and JLP/B dimensions

JOYSTICK CONTROL UNITS FOR DUAL STATION:

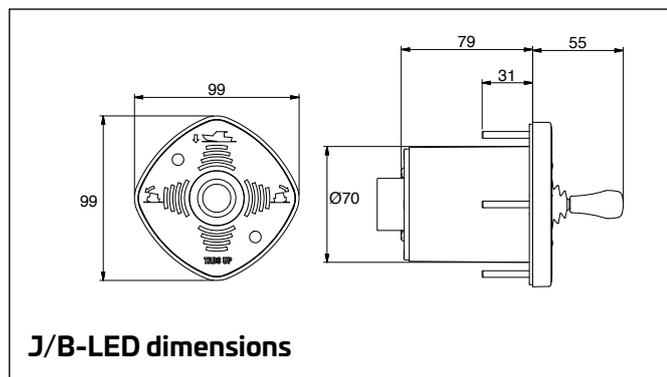
J/CH-2 - 42306 N chrome

J/B-2 - 42856 B black (optional)

JLP/CH-2 - 43080 U chrome, low profile

JLP/B-2 - 43081 W black, low profile (optional)

- 70 mm (2.76") hole size
- 6 m and 9 m (19.7' and 29.6') extension wiring harness available with deutsch plugs included (optional)



J/B-LED dimensions

ELECTROMECHANICAL TRIM TABS

HIGH PERFORMANCE POLISHED TABS

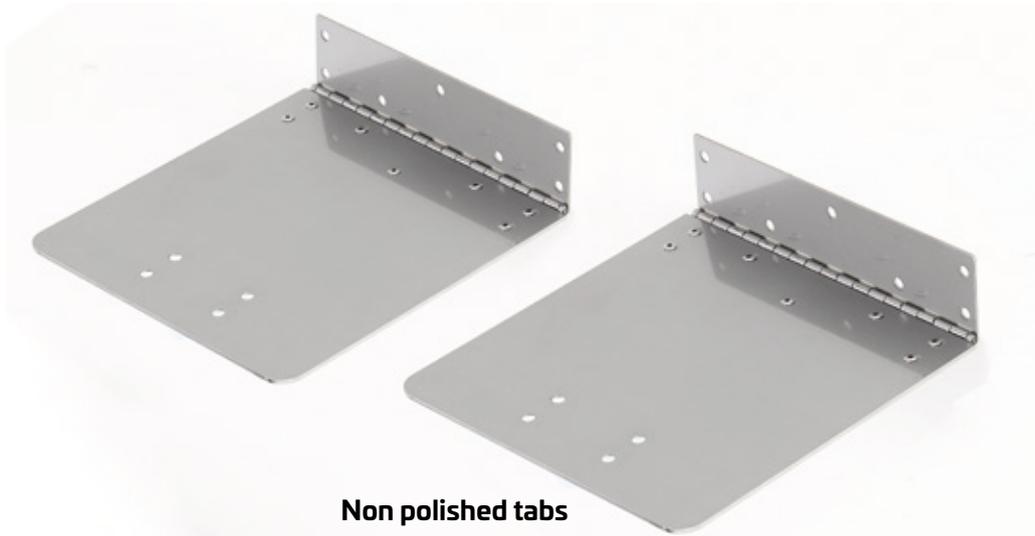


Mirror polished stainless steel tabs

Stainless steel, mirror electro-polished trim tab blades.
No need for new holes in case of Lenco® or Bennett® same size replacements.
They are not designed for use in racing applications.

MODEL	PART No.	DESCRIPTION	WEIGHT PER PAIR KG (LBS)
P99	41844 N	Stainless steel tab pair 228,6 x 228,6 mm (9"x9")	2,8 kg (6.2 lbs)
P129	41845 R	Stainless steel tab pair 304,8 x 228,6 mm (12"x9")	3,6 kg (7.9 lbs)
P1212	41846 T	Stainless steel tab pair 304,8 x 304,8 mm (12"x12")	4,6 kg (10.1 lbs)
P1218	41847 V	Stainless steel tab pair 304,8 x 457,2 mm (12"x18")	6,7 kg (14.8 lbs)

STANDARD NON POLISHED TABS



Non polished tabs

No need for new holes in case of Lenco® or Bennet® same size replacements.
They are not designed for use in racing applications.

MODEL	PART No.	DESCRIPTION	WEIGHT PER PAIR KG (LBS)
NP99	42650 E	Stainless steel tab pair 228,6 x 228,6 mm (9"x9")	3,3 kg (7.3 lbs)
NP129	42653 L	Stainless steel tab pair 304,8 x 228,6 mm (12"x9")	4,0 kg (8.8 lbs)
NP1212	42651 G	Stainless steel tab pair 304,8 x 304,8 mm (12"x12")	5,0 kg (11.0 lbs)
NP1218	42652 J	Stainless steel tab pair 304,8 x 457,2 mm (12"x18")	7,4 kg (16.3 lbs)

OPTIONAL COMPONENTS

EXTENSION WIRING HARNESS KITS

KE20 - 42378 R - Extension Wiring Harness Kit includes one 16.4' (5,0 m) length wiring harness extension for the power cable and two 19.7' (6,0 m) length wiring harness extensions for the actuator cables. Deutsch plugs included

KE30 - 42379 T - Extension Wiring Harness Kit includes one 16.4' (5,0 m) length wiring harness extension for the power cable and two 29.5' (9,0 m) length wiring harness extensions for the actuator cables. Deutsch plugs included

KEJ2-20 - 41853 P
19.7' (6,0 m) extension wiring harness for a second station. Deutsch connectors included.

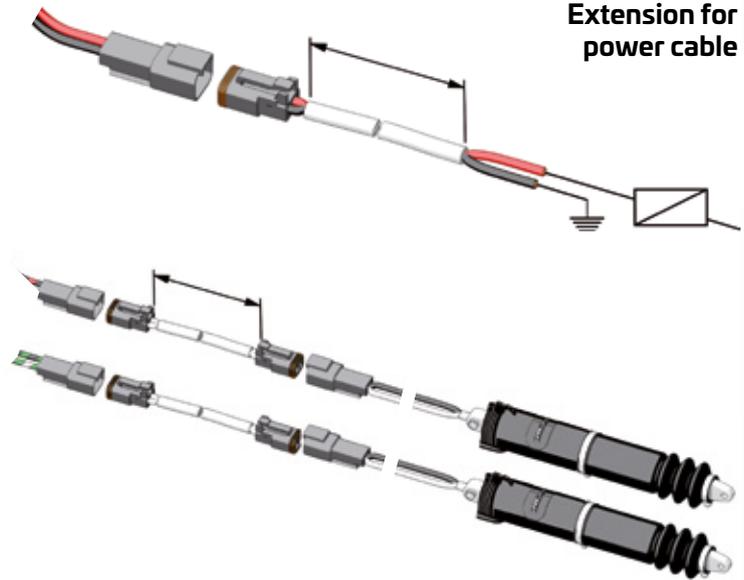
KEJ2-30 - 42375 J
29.5' (9,0 m) extension wiring harness for a second station. Deutsch connectors included.

KEK-7 - 42376 L
6.6' (2,0 m) auto-line up extension wiring harness key frame. Deutsch connectors included.

KENS-7 - 42377 N
6.6' (2,0 m) auto-line up extension wiring harness neutral safety. Deutsch connectors included.



Extension for power cable



Extension for actuator cables

RETROFIT BRACKET

BRS-T bracket will adapt AT12 actuator to pre-existing mounting holes on transom, in case of AS12 or of Lenco® replacement.

BRS-T - 43220 H - black bracket



BRS-T

ANODE KITS

Zinc alloy anode kit neutralizes the galvanic currents endangering the trim tabs. 2 anode kits are necessary for every 1 pair tab installation.

KA70 - 42441 V
Ø 2.8" (70 mm) sacrificial anode kit for tab up to 12" x 12" size.

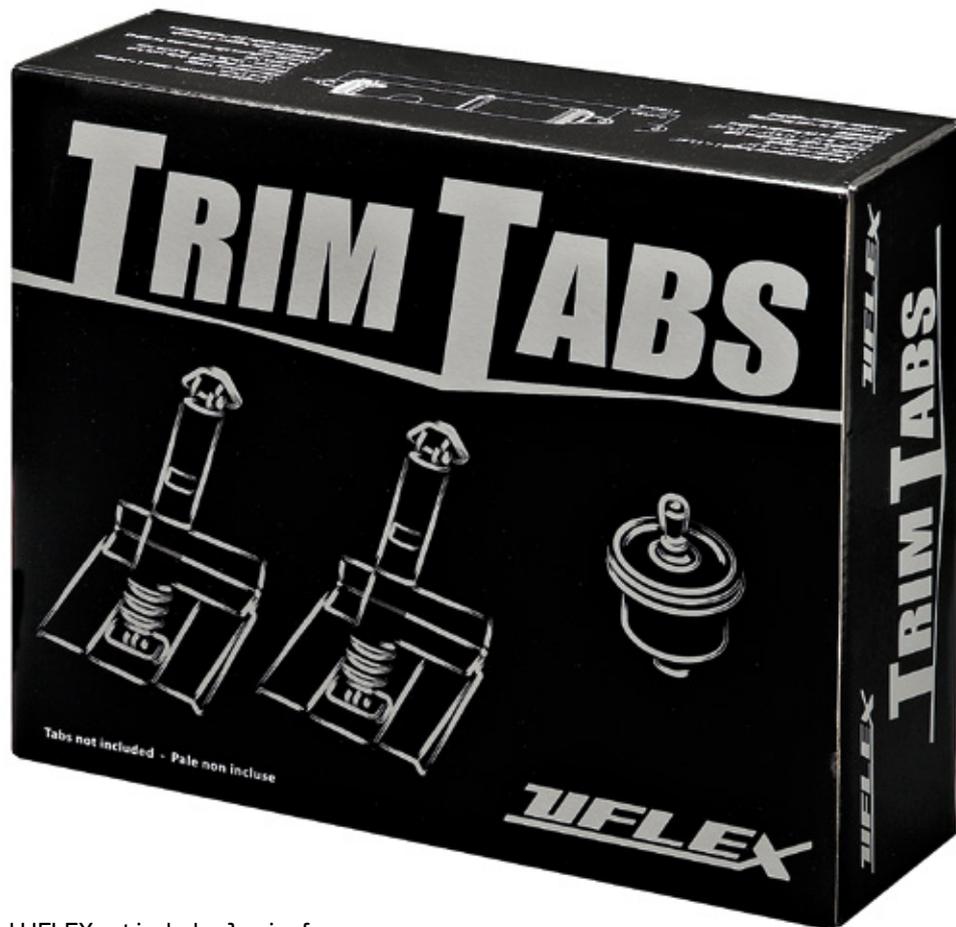
KA90 - 42442 X
Ø 3.5" (90 mm) sacrificial anode kit for tab 12" x 18" size



KA70



KA90



The prepackaged UFLEX set includes 1 pair of actuators complete with brackets and 1 joystick. The tabs are not included and sold separately: selected model has to be specified when ordering.

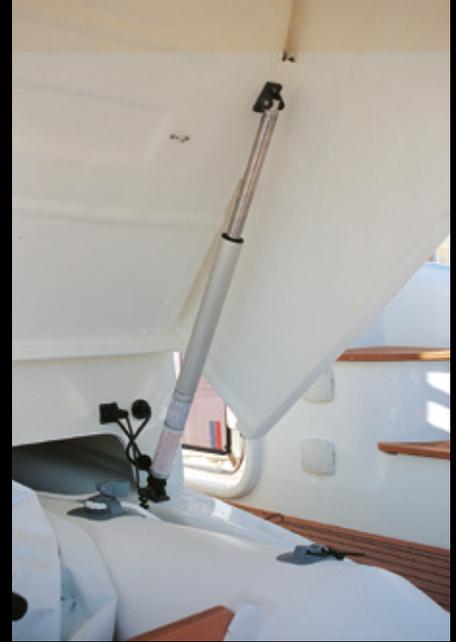
CE Certification
Waterproof: IP68
EN60945 Certification

Not intended for use in racing applications.

MODEL	PART No.	VOLT	DESCRIPTION
MTT 12-CH	43250 T	12V DC	2 AT12 actuators, 12V DC + 1 chrome joystick
MTT 12-CH-LP	43251 V	12V DC	2 AT12 actuators, 12V DC + 1 chrome low profile joystick
MTC 12-CH	43043 M	12V DC	2 AC12 actuators, 12V DC + 1 chrome joystick
MTC 12-CH-LP	43044 P	12V DC	2 AC12 actuators, 12V DC + 1 chrome low profile joystick

SPARE PARTS

MODEL	PART No.	DESCRIPTION
BRS-C	43039 X	Bracket kit - Connection between AT or AC actuators and boat
BRT-C	43040 F	Bracket kit - Connection between AT or AC actuators and tab
EP 5	42440 T	Wiring harness extension for power cable 5,0 m (16.4')
EP 6	42302 E	Wiring harness extension for actuator cable 6,0 m (19.7')
EP 9	42439 J	Wiring harness extension for actuator cable 9,0 m (29.5')



189



WES[®]
ULTRAFLEX CONTROL SYSTEMS s.r.l.



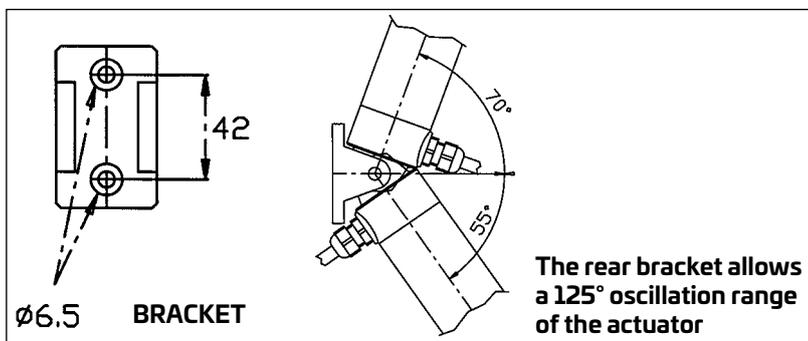
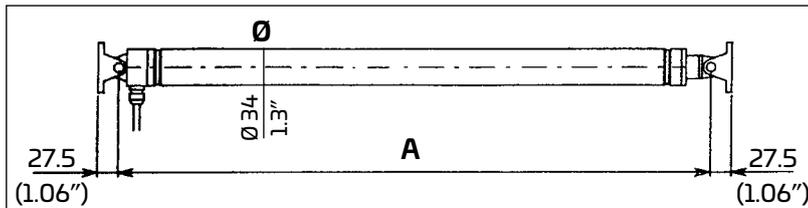
HATCH LIFTERS

AV SERIES ELECTRICAL HATCH LIFTERS

Constructed of anodized aluminum and stainless steel, the Uflex hatch lifters are built to last. Lifting with up to 265 Lbs of force, these actuators are an ideal solution for controlling engine hatches, lazarets, doors and other on board fixtures. A unique sleeve on the AV "Non Locking" version of these actuators allows you to manually open the hatch in the event of power loss i.e. weak batteries. For high performance applications where the hatch could blow open, we recommend the AVL series which pushes as well as pulls with 265 Lbs. All mounting hardware is included.

TECHNICAL FEATURES

- According to the load required, the AV hatch lifter can be mounted individually, or in twin cylinder installation for heavier loads.
- **Maximum load for single installations: 1200N (265 lbs - 120 kg)**
- **Maximum load for dual installations: 2400N (529 lbs - 240 kg)**
- Maximum load is recommended not to be exceeded.
- Supplied with all mounting hardware.
- Stainless steel telescopic ram for manual operation in case of emergency.
- Locking version (AV-L) recommended for high performance applications.
- Circuit breaker to stop accidental overloading of the system and electronic stop at closed or full open position.
- IP 65 protection rated
- Speed: 25mm/sec no load applied, 17 mm/sec maximum load
- Current absorption in single installations: 10A at 12V, 5A at 24V
- Current absorption in dual installations: 20A at 12V, 10A at 24V
- AV 12VDC models are Ignition Protected. UL1500 - ISO8846 approved.



The rear bracket allows a 125° oscillation range of the actuator

SPARE FIXING BRACKET:
BR/AV - 80382 I

AV SERIES - SINGLE ACTION

MODEL	PART No.	VOLTS	STROKE	LENGTH A (FULL CLOSED ACTUATOR)	EXTERNAL DIA.
AV 3012	40671 C	12 V DC	12" - 300 mm	27" - 677 mm	1,9" - 48 mm
AV 4512	40582 D	12 V DC	18" - 450 mm	33" - 827 mm	1,9" - 48 mm
AV 6012	40584 H	12 V DC	24" - 600 mm	39" - 977 mm	1,9" - 48 mm

AV-L SERIES - LOCKING - DUAL ACTION

MODEL	PART No.	VOLTS	STROKE	LENGTH A (FULL CLOSED ACTUATOR)	EXTERNAL DIA.
AV-L 3012	40703 P	12 V DC	12" - 300 mm	27" - 677 mm	1,9" - 48 mm
AV-L 4512	40590 D	12 V DC	18" - 450 mm	33" - 827 mm	1,9" - 48 mm
AV-L 6012	40592 G	12 V DC	24" - 600 mm	39" - 977 mm	1,9" - 48 mm

WARNING: The AV Series hatch lifters can be opened freely in the event of a power failure, and can therefore open while underway. The AV Series hatch lifters are not intended for use on high performance boats or in applications where the hatch may open unintentionally. For these applications we recommend the AV-L series hatch lifters, which stay locked when the actuator is in the closed position.

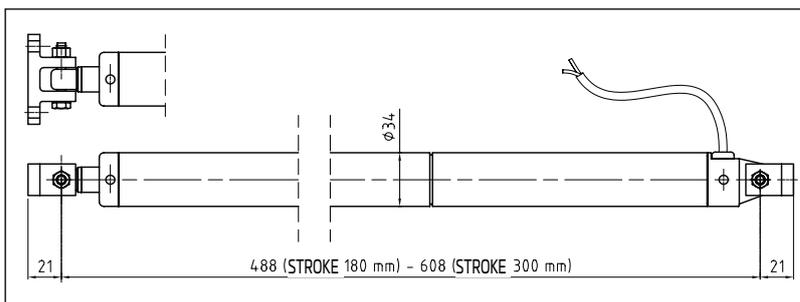
ULYSSES SERIES

ELECTRICAL

LINEAR ACTUATORS

TECHNICAL FEATURES

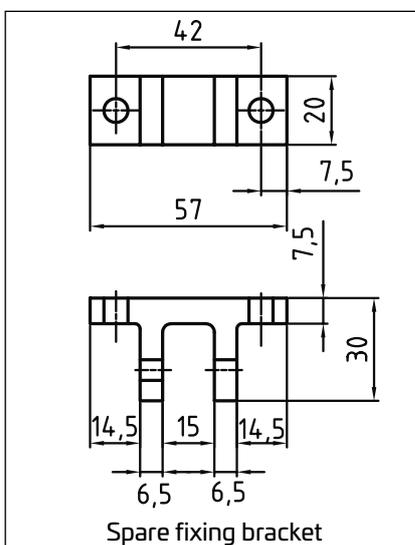
- Single installation only
- Pull and push maximum load: **650N (65 kg - 144 lbs)**
- Pull and push maximum load is recommended not to be exceeded.
- Supplied with all mounting hardware.
- Aluminium ram.
- Circuit breaker to stop accidental overloading of the system and electronic stop at closed or full open position.
- IP 65 protection rated
- Speed: 5 mm/sec no load applied, 4 mm/sec maximum load
- Current absorption: 2A



Highest installation flexibility: 180° oscillation range

MODEL	PART No.	VOLTS	STROKE	LENGTH A (FULL CLOSED ACTUATOR)	EXTERNAL DIA.
ULYSSES 1812	40924 Q	12V DC	7" - 180 mm	19.2" - 488 mm	1.3" - 34 mm
ULYSSES 3012	40925 R	12V DC	12" - 300 mm	23.9" - 608 mm	1.3" - 34 mm

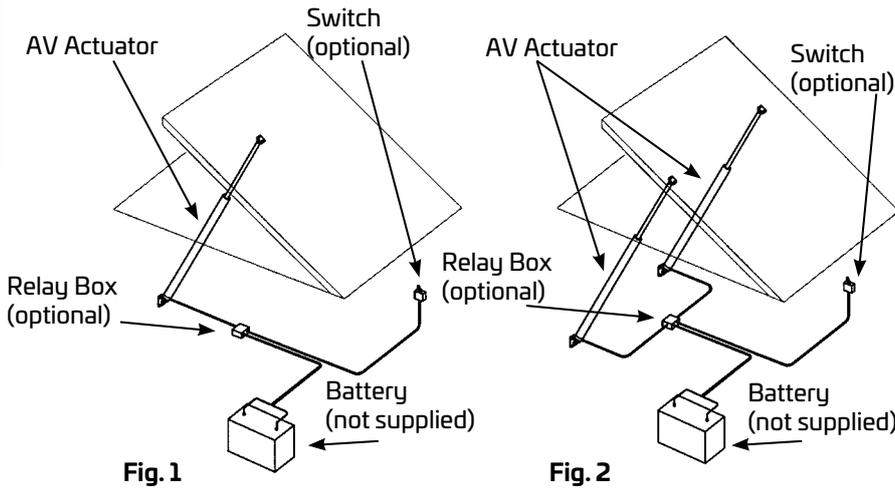
SPARE FIXING BRACKET: BR/UL - 35697 P



191

AV AND ULYSSES SERIES ELECTRICAL HATCH LIFTERS

192



COMPONENTS DESCRIPTION

AV Series Hatch Lifter

- n° 1 AV actuator for single installation (Fig.1)
- n° 2 AV actuators for dual installation (Fig.2)
- External diameter: 48 mm (1.9")
- Length at closed position: 377 mm (14.8") + stroke
- Maximum oscillation range: 125°

ULYSSES Series actuators

- n° 1 Ulysses actuator (Fig.1)
- **no dual installatio**
- External diameter: 34 mm (1.3")
- Length at closed position: 308 mm (12.1") + corsa
- Maximum oscillation range: 180°

INSTALLATION

- The following equation will help you to calculate the maximum strength (Fmax) required from the hatch lifter to open your hatch, knowing the dimensions and weight of the hatch and the position of the mounting brackets.

$$F_{max} = \frac{P}{2} \times \frac{L}{b} \times \frac{X}{a} \times K^*$$

Maximum load (Fmax):

• AV Series actuators:

1200 N (120 kg - 265 lbs) single installation, pushing only 2400 N (240 kg - 530 lbs) dual installation pushing only

Note: when the load exceeds 2400 N (240 kg - 530 lbs), it is possible to install more than two AV actuators. Please, contact our Technical Service for the proper electrical configuration

• ULYSSES actuators:

650 N (65 kg - 144 lbs) single installation only, both pull and push

Power supply cable:

- AV and ULYSSES actuators are supplied with 5 ft (1,5 m) of electrical cable
- Warning: in case of longer cable length required, do not substitute the existing harness, but make a junction following the instructions supplied with the product.

Relay Box: 12-24V (on demand)

Two way push-button with central off position (optional)

Fuse (not supplied)

Battery (not supplied)

*Values of K with ratio included between approx. 0 and 0.5 (if ratio > 0.5 use K=1)

		b/d															
		0.1	0.15	0.2	0.3	0.4	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
c/a	0.0	1.09	1.14	1.17	1.24	1.30	1.34	1.41	1.34	1.26	1.21	1.17	1.15	1.13	1.11	1.10	1.09
	0.1	1.00	1.01	1.04	1.09	1.13	1.16	1.23	1.16	1.10	1.06	1.04	1.02	1.01	1.00	1.00	1.00
	0.2	1.00	1.00	1.00	1.03	1.06	1.10	1.16	1.10	1.04	1.01	1.00	1.00	1.00	1.00	1.00	1.00
	0.3	1.00	1.00	1.00	1.00	1.03	1.06	1.12	1.06	1.26	1.01	1.00	1.00	1.00	1.00	1.00	1.00
	0.4	1.00	1.00	1.00	1.00	1.00	1.03	1.10	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	0.5	1.00	1.00	1.00	1.00	1.00	1.01	1.08	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

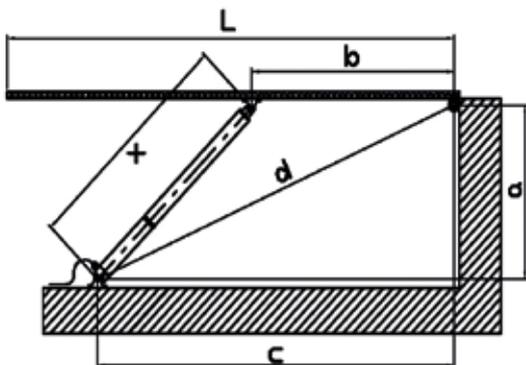


Fig. 3

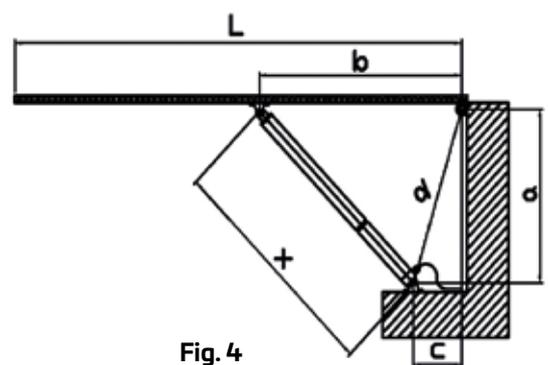


Fig. 4



UFLEX USA Inc.

6442 Parkland Drive
Sarasota, Florida 34243 - USA



ULTRAFLEX GROUP