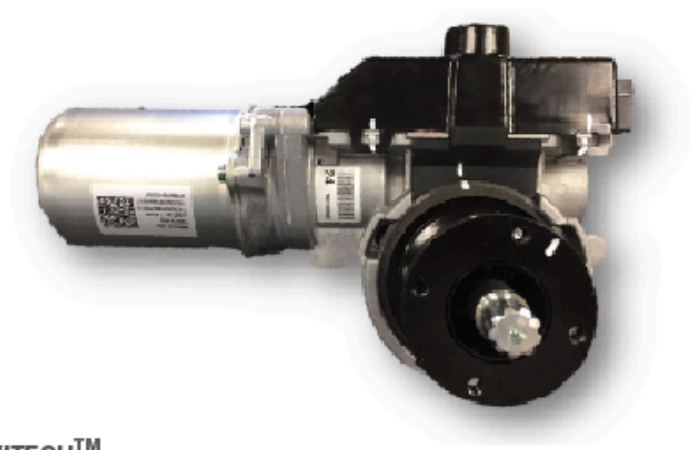


UF LEX 18

**DRIVING
THE FUTURE
OF BOATING**





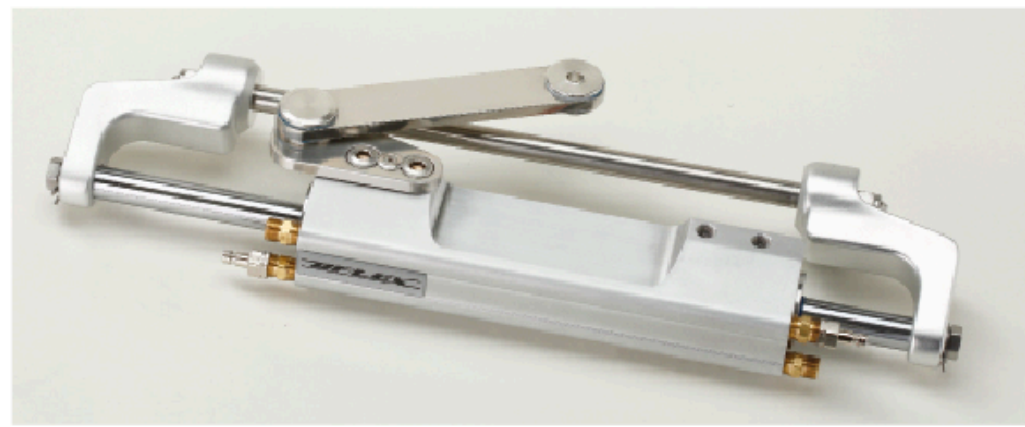
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V56



Customize V56 steering wheel with color inserts

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ULTRAFLEX GROUP

83 years

1935-2018



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



QUALITY AND ENVIROMENTAL MANAGEMENT SYSTEM

The Ultraflex Quality System is certified CISQ-EQ Net by the Italian Shipping Registry (RINA), in conformity with the UNI EN ISO 9001 rule, certification N. 6669/02/S. The quality system involves all the company resources and processes starting from the design, in order to:

- assure product quality to the customer.
- set up the actions to maintain and improve the quality standards constantly.
- pursue a continuous process improvement to meet the market needs.
- maintain and verify conformity with ABYC requirements.



Member of CISQ Federation

RINA

ISO 9001:2008
Certified Quality System



Member of CISQ Federation

RINA

ISO 14001
Certified Environmental System

SOCIO





www.uflexusa.com

- Technical Service ph. 941.351.2628
- Sales ph. 941.351.2628
- Administration ph. 941.351.2628

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. And, 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 and South 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.

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Ultraflex Group



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**UFLEX USA®
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WARRANTY**

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Power A Mark II™

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**SELECTING
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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.

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.



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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 electronic engines, or on engines with the combination of both characteristics.

PRIVATE PROTOCOL CAN BUS FOR DATA TRANSMISSION

SUITABLE FOR MECHANICAL SHIFT AND THROTTLE AS WELL AS ELECTRONIC THROTTLE AND SHIFT

CONNECTION OF MULTIPLE STATIONS UP TO 4 CONTROLS

MODULAR SYSTEM

DIRECT COMMUNICATION WITH ELECTRONIC ENGINES (SAE J 1939 or NMEA 2000)

PLUG'N PLAY CONNECTIVITY

AUTOMATIC ENGINES SYNCHRONIZATION

DOCK ASSIST

FULLY PROGRAMMABLE SHIFT DELAYS

PERSONALIZED LABEL UPON REQUEST

ALSO AVAILABLE INSTALLATION FOR 3 OR 4 ENGINES



CHROME FINISH CONTROL STATIONS:

Control without trim:

Single engine - 42009 G
Twin engines - 42011 T

Control with trim:

Single engine - 42010 R
Twin engines - 42012 V

IP protection: IP66



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.

TECHNICAL FEATURES:

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

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.



Control Unit



PA2-CU - 42017 F

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)

E-Troll Electronic or electric



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

Power Unit



PA2-PU - 42026 G

Grants the power supply 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 shift or custom made trolling valve) through MACHZero and C8 mechanical cables.

IP protection: IP66

Length: 12.6" (320 mm)





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CHART A - E-Throttle Unit

MODEL	P. No.	DESCRIPTION	FEATURES	No. OF ENGINES	ENGINE TYPE
V-Throttle	42018H	Throttle with analog voltage interface	Redundant voltage input, IVS.	1 - 2	FPT, VolksWagen, Yanmar, Mercruiser, Lombardini.
I-Throttle	42019K	Throttle with current analog interface	Current outoputs.	1 - 2	4 - 20 mA throttle engines
PWM-Throttle	42020 U	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.	CONNETTORS
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

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
Shift cable with electric Troll	Shift and trolling solenoid connection cable	1 - 3,3 3 - 9,8 7 - 22,9 10 - 32,8	42064R 42065T 42066V 42067X	One each shift and trolling with solenoids
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

CHART D - Troll cables

DESCRIPTION	APPLICATION	LENGTH (m - ft)	P. NO.	CONNECTORS
Universal V-Troll cable	0-5 V cable with no redundancy	2 - 6,6 4 - 13,1	42068Z 42069B	None
Universal I-Troll cable	4-20 mA output cable, no connectors included	2 - 6,6 4 - 13,1	42070K 42071M	None

Spare parts

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





OR



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 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"



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.	Q.TY
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
	Two Engines	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
	Power supply cable (optional for second battery)		Chart C	1
	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.	Q.TY	
PwA II-ME Mechanical throttle Electronic shift	Single Engine	Single control with trim (or no trim)	42010R (42009G)	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	
		Two Engines			
	Power supply cable (optional for second battery)		Chart C	1	
	Dual control with trim (or no trim)		42012V (42011T)	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)	42010R (42009G)	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)	42012V (42011T)	1	
		Control Unit	42017F	1	
		Mechanical actuator	42027J	4	
		CAN cable	Chart C	5	
		Power supply cable (general)	Chart C	1	
		Network terminators	42028L	1	
		Power Unit	42026G	1	
		Power extension cable	Chart C	4	
		Power supply cable (optional for second battery)	Chart C	1	
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		

CHART E - Components for Trolling Valve Systems

ENGINE	NO. OF ENGINES	COMPONENTS	P. No.	Q.TY
Mechanical trolling valve	Single Engine	Mechanical actuator (Troll)	42027J	1
		CAN cable	Chart C	1
		Power cable extension	Chart C	1
	Twin Engines	Mechanical actuator	42027J	2
		Power Unit	42026G	0 (*)
		CAN cable	Chart C	2
		Power supply cable (general)	Chart C	0 (*)
		Power cable extension	Chart C	2
		(*) When there are no more free sockets in the existing power unit, add one Power Unit with one or two power supply cables according to battery number. Refer to the diagram on installation manual.		
Electric troll (proportional solenoid)	Single Engine	Shift Unit	42023A	1(**)
		CAN cable	Chart C	1(**)
		Power cable extension	Chart C	1(**)
	Twin Engines	Cavo Shift con Troll	Chart C	1
		Shift Unit	42023A	1(**)
		CAN cable	Chart C	1(**)
		Power cable extension	Chart C	1(**)
		Power Unit	42026G	0 (*)
		Power supply cable (general)	Chart C	0 (*)
		Shift cable with Troll	Chart C	2
		(*) When there are no more free sockets in the existing power unit, add one Power Unit with one or two power supply cables according to battery number. Refer to the diagram on installation manual.		
		(**) When a shift unit is already present in the system, it can control the electric troll by using the proper cable. When a shift box is not present, add one to the system with the shift and CAN cables.		
Electronic Troll (0-5V, 4-20mA)	Single Engine	E-Troll Unit	Custom made	1
		CAN cable	Chart C	1
		Troll cable	Chart D	1
	Twin Engines	E-Troll Unit	Custom made	1
		CAN cable	Chart C	1
		Troll cable	Chart D	2



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

PLANETARY GEAR DESIGN:

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.

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 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 includes helm, bezel and cable. It is 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 system 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 (patented).

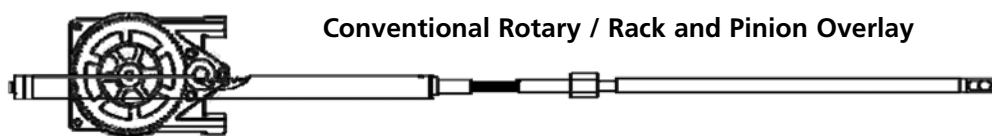
The Fourtech-2 package includes T93ZT (zero torque configuration) helm, bezel and M90 Mach cable and presents the same technical features as Fourtech-1.

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. 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.

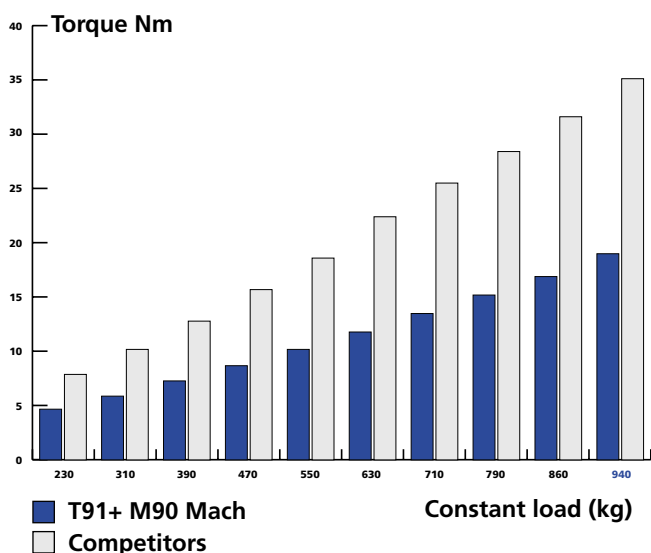
Uflex offers the Silversteer and Masterdrive helm and cylinder for these applications. With the same benefits as the Protech cylinder, the Silversteer cylinder also features a keyed bullhorn design that maximizes the rigidity of the cylinder when dealing with peak torque loads.

INBOARD

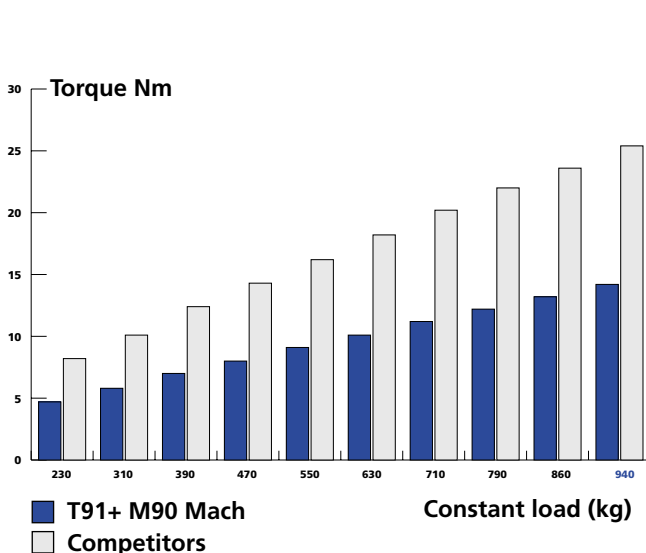
Large inboard boats with displacement hulls can generate high torque loads. Uflex offers a wide variety of hydraulic helms and cylinders that can be paired together to provide optimal steering for your application

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





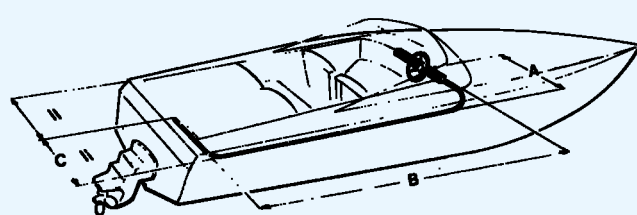
SELECTION OF STEERING SYSTEM AND CABLE LENGTH MEASUREMENT

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

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

- Speed, hull, horsepower, engine type, displacement and size are major factors in boat performance and handling characteristics. The above selection guide should be used as a general reference only.
- One of the major factors in selecting a steering system is proper cable length. Due to specific routing in each boat, these approximate lengths will vary. Final selection should be made with the assistance of a qualified technician.
- Ultraflex mechanical steering systems should not be used on boats equipped with engines that exceed the maximum horsepower rating of the boat.

HOW TO MEASURE FOR NEW STEERING CABLE INSTALLATION



Add 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.

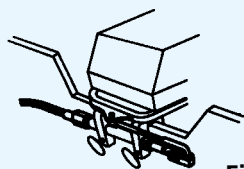


Fig. 1

TILT TUBE MOUNTING - Fig. 1

Example:
 $A (2.5') + B (10.5') + C (3') = 16'$
 $16' - 8''$ (two 90° bends) = $15'4''$
 $15'4'' + 12''$ (tilt tube) = $16'4''$
Round up to 17'

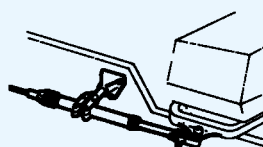


Fig. 2

TRANSOM SUPPORT OR SPLASHWELL MOUNTING - Fig. 2-3

Example:
 $A (2.5') + B (10.5') + C (3') = 16'$
 $16' - 8''$ (two 90° bends) = $15'4''$
Round up to 16'

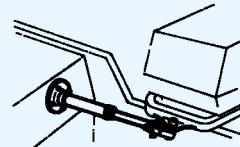
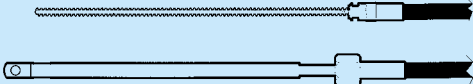



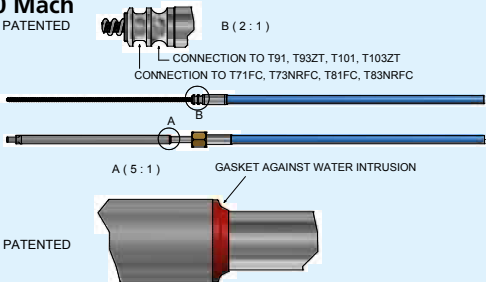


Fig. 3

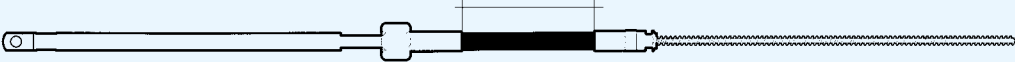
REPLACEMENT STEERING CABLES

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 	T91 - T93ZT T101 - T103ZT T71FC - T72FC - T73NRFC - 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



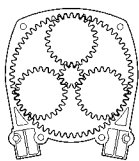
D = Conduit length

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



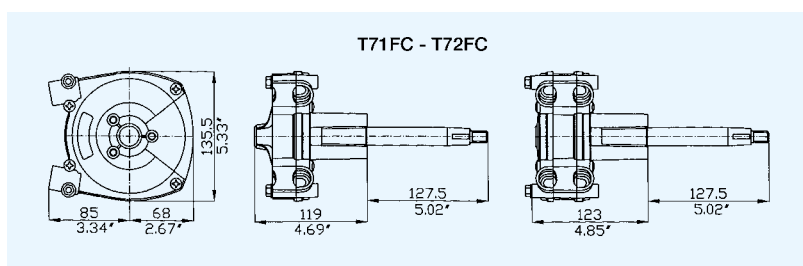
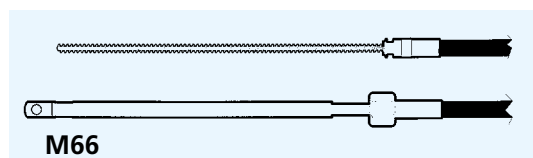
FEATURING PLANETARY GEAR DESIGN

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

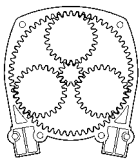
- Fast connect, simple installation
 - All stainless steel cable output ends
 - Corrosion resistant materials
 - Particularity suitable where clearance is limited
 - Optional 90° or 20° installation
 - Standard 3/4" tapered shaft
 - Lock-to-lock steering wheel turns: approx. 3.8
 - Stroke: 9" (228 mm)
 - 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 X35 bezel and M66 cable.
- Exceeds EN 28848 safety standards
 - Exceeds ABYC P17 safety standards



T73NRFC

ANTI-FEEDBACK

STEERING SYSTEM



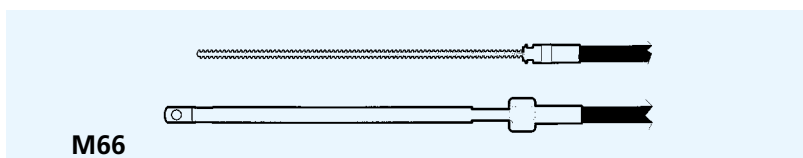
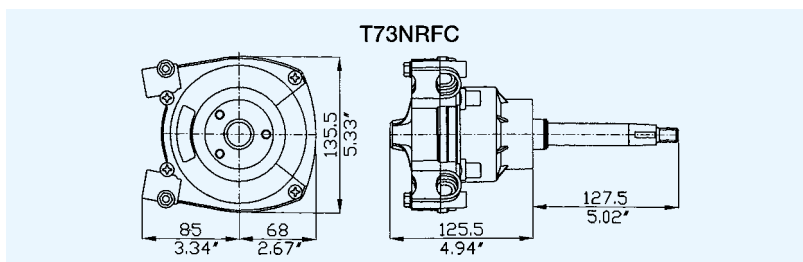
**FEATURING
PLANETARY GEAR
DESIGN**

A COMPLETE STEERING SYSTEM CONSISTS OF:

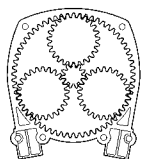
- Steering helm:
T73NRFC - 38869 M
anti-feedback single cable steering helm
- Mounting bezel:
X34 - 36654 B - black, 90° mounting
X34W - 40654 C - white, 90° mounting
X35 - 36655 C - black, 20° mounting
- Steering cable: M66
- Optional steering wheel (see index)
- Engine connection kits (see index)

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



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

NOTE: X52 tilt mechanism fits Ultraflex tilt mount rotary and rack and pinion steering helms as well as Ultraflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems
- Steering cable: **M66**
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

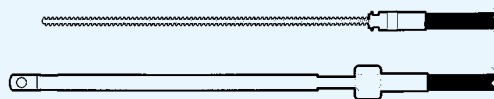


T81FC with X52



X52

M66



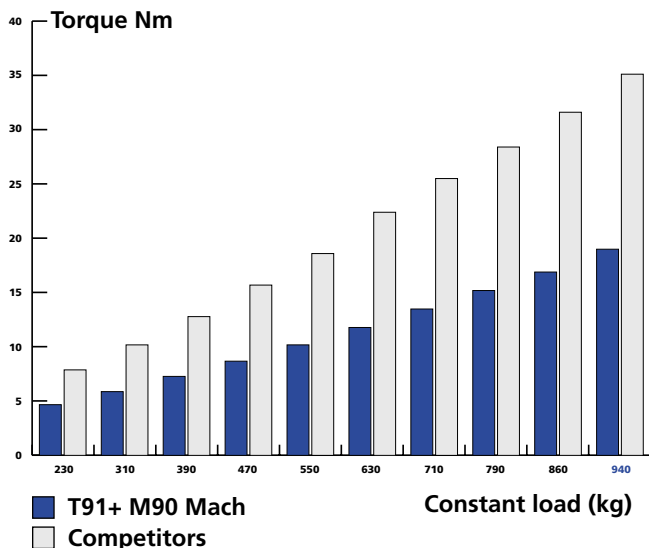
T91, T93ZT STEERING SYSTEMS - TORQUE COMPARISON

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.

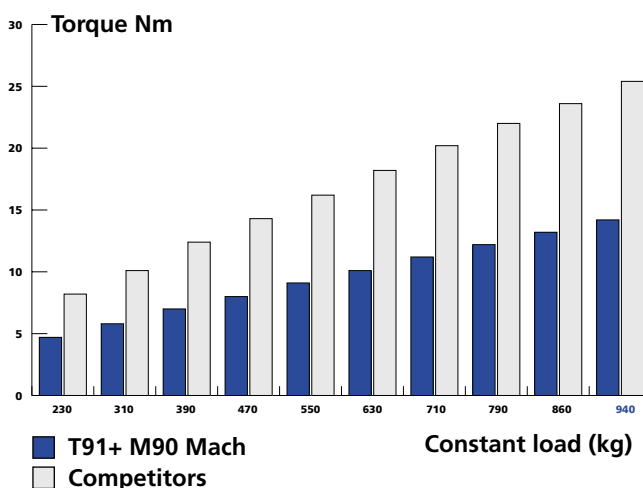
The new Ultraflex T91 and T93ZT steering systems, fitted with the M90 Mach single-cable, are the best mechanical steering systems on the market today. They combine a minimal backlash with higher efficiency and they guarantee results with very narrow cable bends.

TORQUE COMPARISON WITH PUSH AND PULL LOAD - RADIUS 200 mm

Push load:

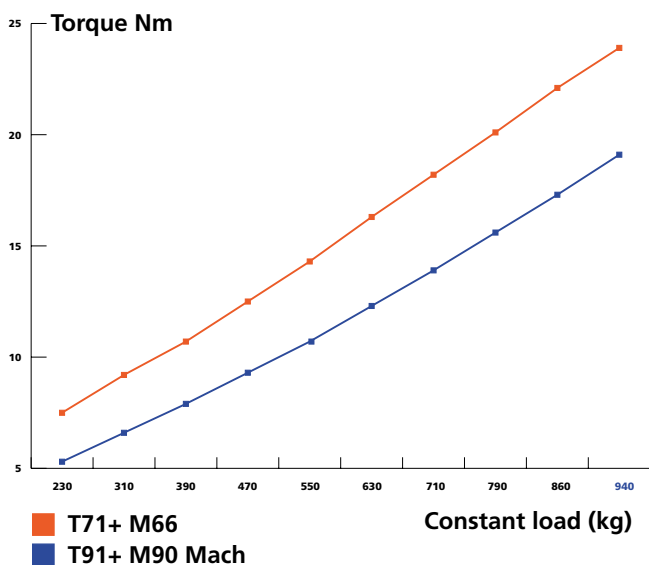


Pull load:

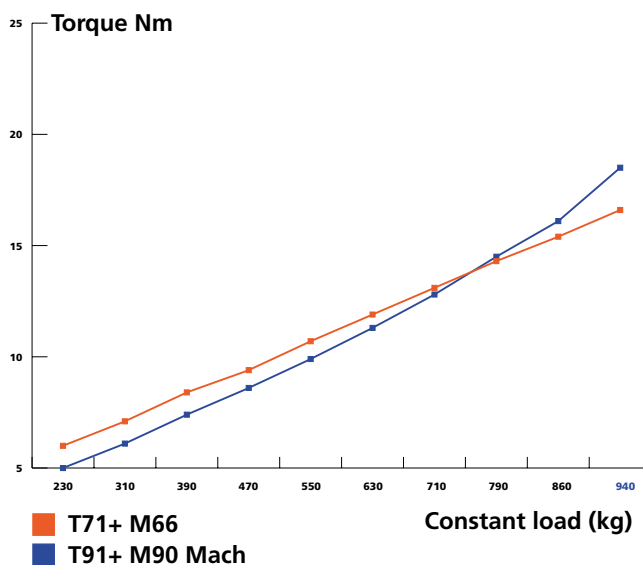


TORQUE COMPARISON WITH PUSH AND PULL LOAD - RADIUS 100 mm

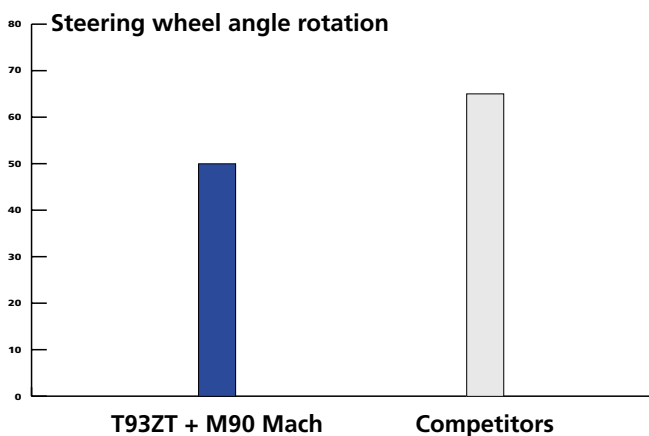
Push load:



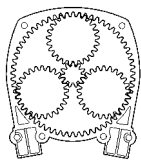
Pull load:



BACKLASH ON THE STEERING SYSTEM COMPARISON



T91 ROTARY STEERING SYSTEM



FEATURING PLANETARY GEAR DESIGN

A COMPLETE STEERING SYSTEM CONSISTS OF:

- Steering helm:
 - T91** - 42647 S - single cable steering helm
- Mounting bezel (ref. page 30):
 - 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 Ultraflex steering helms. M66 will not fit the following Uflex helms: T91, T93ZT, T101, T103ZT.
- Optional steering wheel (see index)
- Engine connection kits (see index)



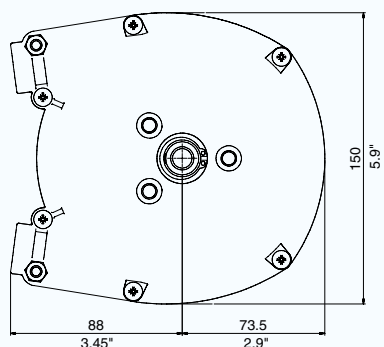
T91 High Performance

FEATURES AND TECHNICAL SPECIFICATIONS:

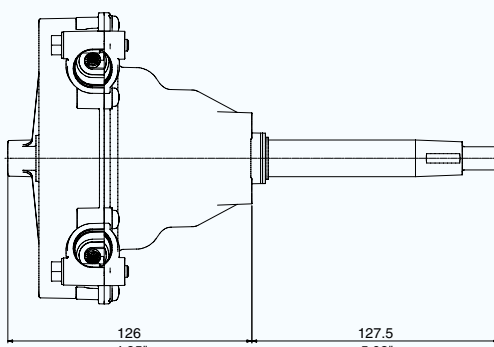
- Specifically designed for high performance and high efficiency applications
- M90 Mach cable (patented): performance, flexibility and durability increased by top quality materials and construction.
- Fast connect, simple installation, patented end fitting.
- Stainless steel cable output end featuring 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



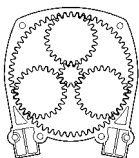
T91



M90 Mach (Patented)



T93ZT (ZERO TORQUE) 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 (ref. page 30):
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 Ultraflex 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 High Performance

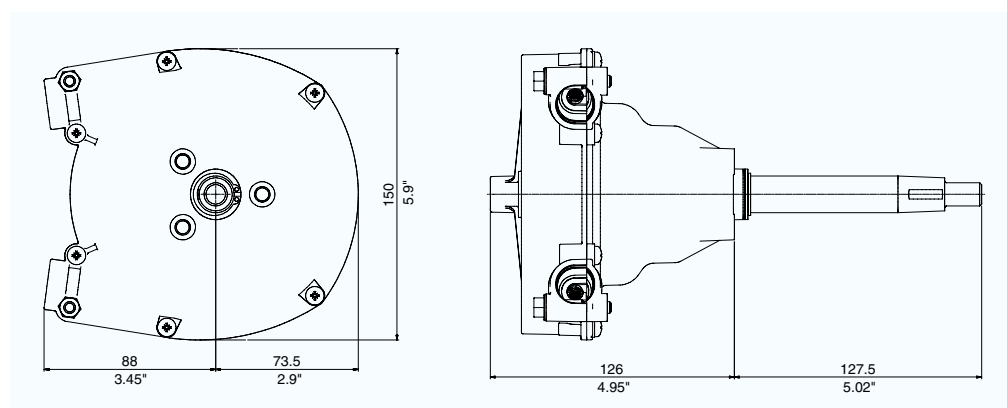
FEATURES AND TECHNICAL SPECIFICATIONS:

- 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



T93ZT



M90 Mach (Patented)

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



X34 - 36654 B
Black bezel
90° mounting

X34W - 40654 C
White bezel
90° mounting



X35 - 36655 C
Black bezel
20° mounting

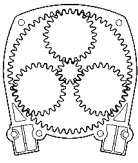


X90 - 42646 P
Chrome plated bezel with
steering lock device



X91 - 42850 N
Chrome plated mounting bezel

T101 AND T103ZT (ZERO TORQUE) TILT STEERING SYSTEMS



FEATURING PLANETARY GEAR DESIGN

A COMPLETE STEERING SYSTEM CONSISTS OF:

- Steering helm:
T101 - 42839 B - single cable steering helm
T103ZT - 42840 K - zero torque single cable steering helm
- Tilt mechanism:
X52 - 39250 U

NOTE: X52 tilt mechanism fits Ultraflex tilt mount rotary and rack and pinion steering helms as well as Ultraflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems

- Steering cable: **M90 Mach** (patented)
ATTENTION: M90 Mach steering cable is suitable for use also with T71FC, T72FC, T73NRFC, T81FC, T82FC, T83NRFC Ultraflex 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

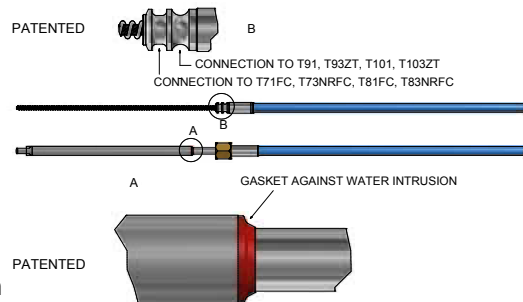


T101 with X52 High Performance

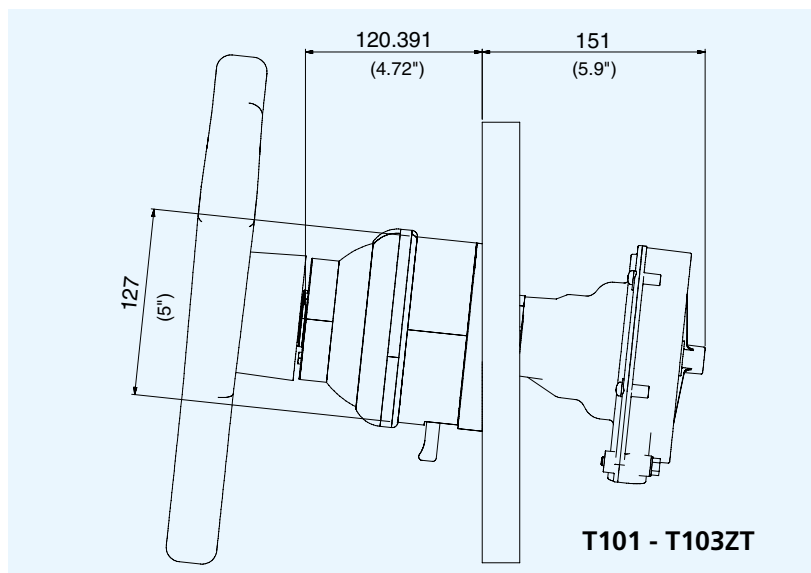


T101

T103ZT



M90 Mach



T101 - T103ZT



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NAVITECH STEERING SYSTEM

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.

"Uflex continues to Drive the Future of Boating with new technology and performance! Come along for the ride!"



M90 Mach (Patented)



NAVITECH™ STEERING SYSTEM

new

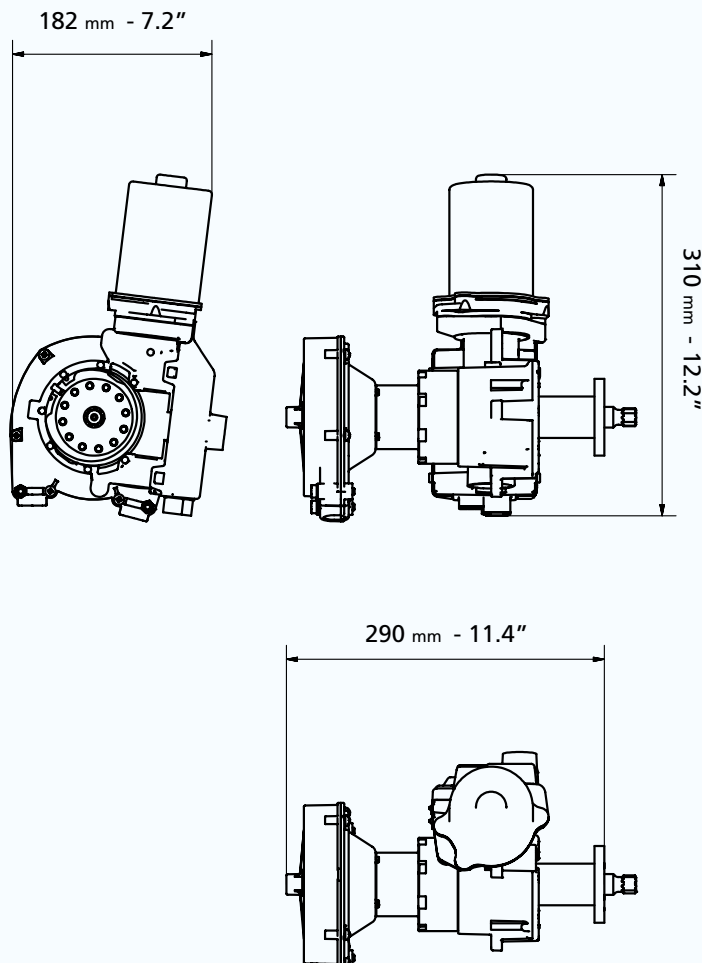
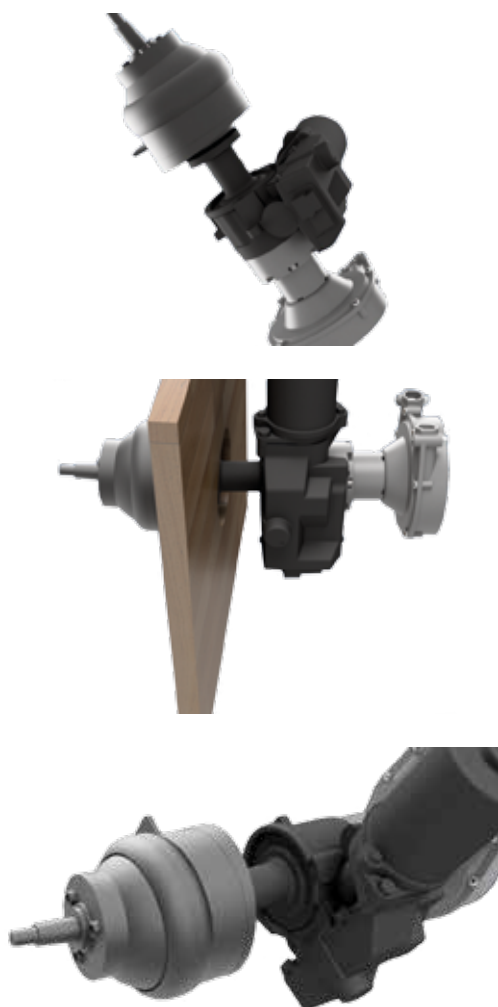
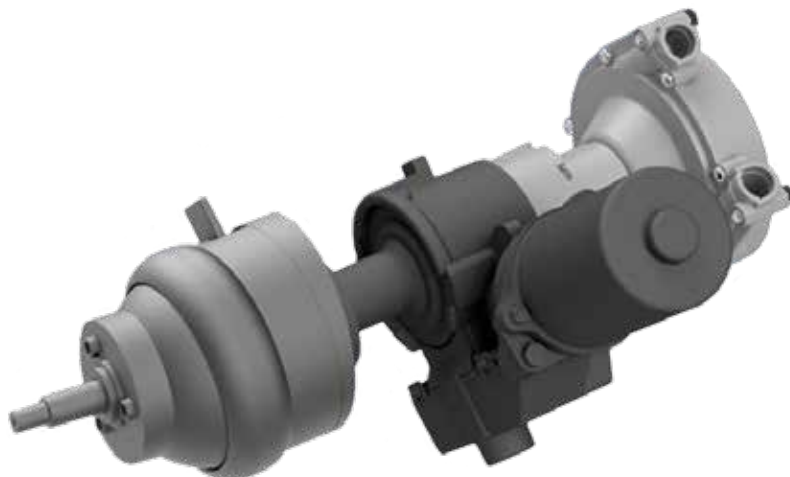
A COMPLETE STEERING SYSTEM CONSISTS OF:

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

FEATURES AND TECHNICAL SPECIFICATIONS:

- Automotive steering effort and response
- 100% Balanced steering - Port to Starboard / Starboard to Port
- Silent Operation
- Integrated System Monitoring
- Field tested for over 1 year
- 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
- Validation for Marine application is per ABYC P17, P27, and ISO 25197
- NMMA Type Acceptance Completed

new



NaviTech™ Dimensions

M90 MACH - HIGH EFFICIENCY AND FLEXIBILITY STEERING CABLE

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

FEATURES AND TECHNICAL SPECIFICATIONS:

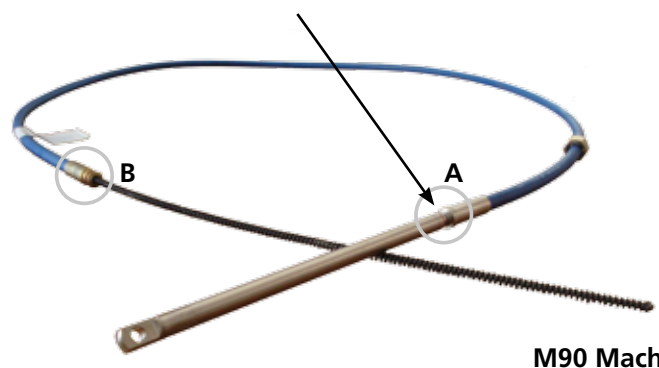
- Ideal solution for long cable runs and tight bend applications
- Corrosion resistant materials, stainless steel engine side output fitting
- Minimize feedback
- Fast connect, simple installation, end fitting

- M90 Mach steering cable is suitable for use with T91, T93ZT, T101, T103ZT, T71FC, T72FC, T73NRFC, T81FC, T82FC, T83NRFC Ultraflex 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)

Stainless steel output fitting

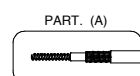
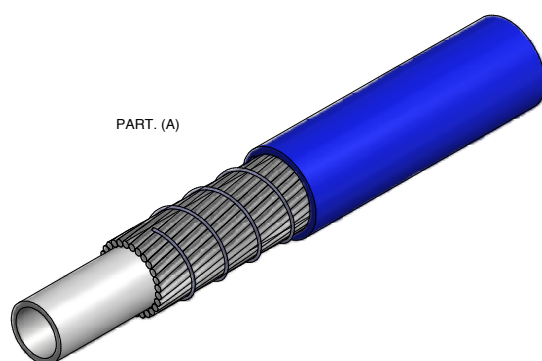


PATENTED



M90 Mach

CONNECTION TO T91, T93ZT, T101, T103ZT
CONNECTION TO T71FC, T73NRFC, T81FC, T83NRFC



MINIMUM STEERING CABLE
BEND RADIUS: 5.9" (150 mm)

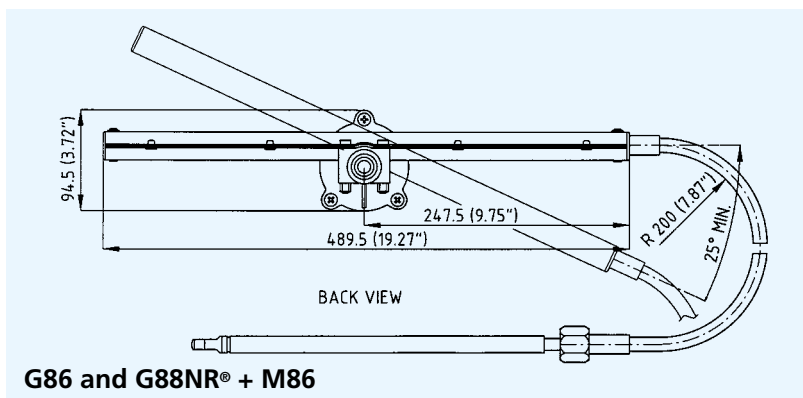
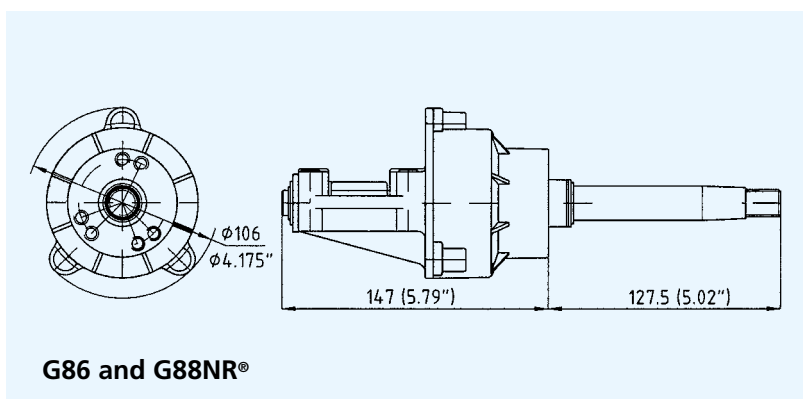
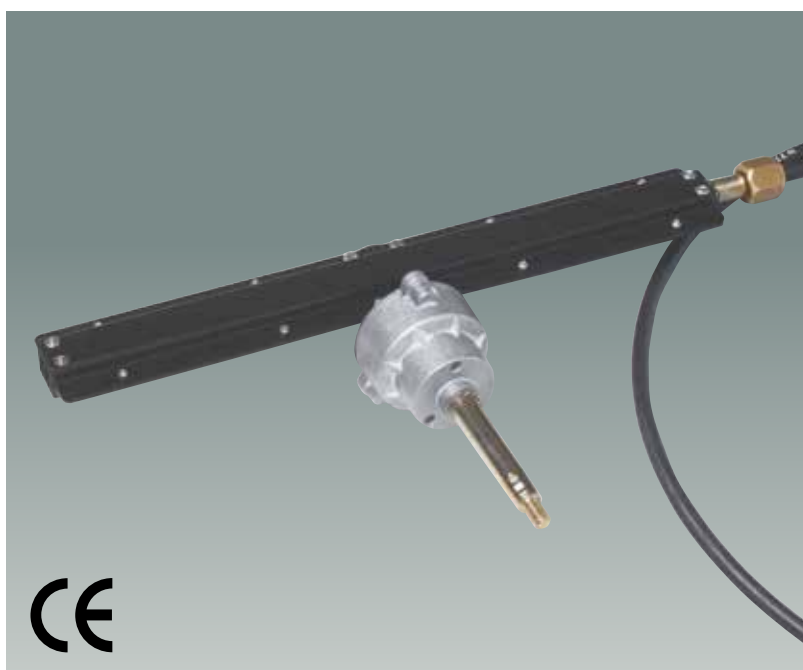
G86 AND G88NR (ZERO TORQUE FEEDBACK) RACK AND PINION STEERING SYSTEMS

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



G96 AND 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
- NOTE:** X52 tilt mechanism fits Ultraflex tilt mount rotary and rack and pinion steering helms as well as Ultraflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems
- Optional steering wheel (see index)
 - Engine connection kits (see index)



FEATURES AND TECHNICAL SPECIFICATIONS

- Easy and safe steering: the patented 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



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

Steering cable supports with stainless steel tube also available:

S39SS - 41551 X

S39TSS - 72971 W Stainless steel tube for S39SS

S40SS - 41552 Z

S40TSS - 72972 Y Stainless steel tube for S40SS

S55SS - 41553 B

S38

S39

S40

S55

OMC-TT

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 Ultraflex® FC type steering helms

K66 - 38432 Q

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

1503

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

K46

K66

1503



WIRE TYPE STEERING GROMMETS AND RINGS

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)

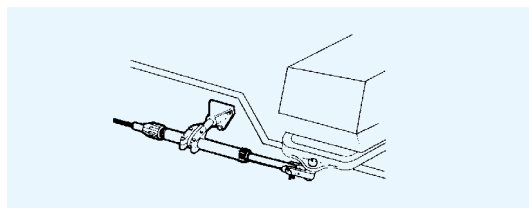
WHITE GROMMETS

- 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)

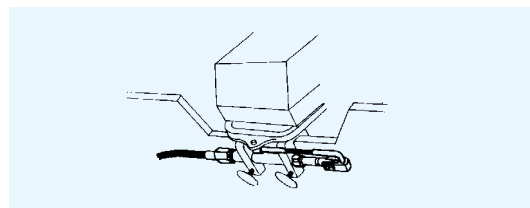


TYPICAL INSTALLATIONS

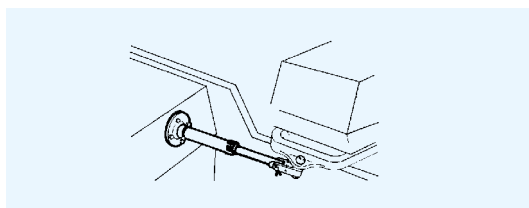
INSTALLATION	CABLE SUPPORT + ENGINE CONNECTION KIT	INSTALLATION	CABLE SUPPORT + ENGINE CONNECTION KIT
A	S39 + A75	C	A73SS or A74SS
B	S40 + A75	D	S55 + A75



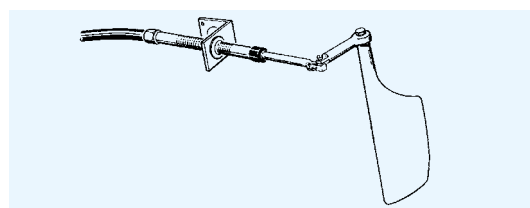
A = With clamp block



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 20 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 - anti-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 T73NRFC 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-1 - 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™ STEERING SYSTEM

- FOURTECH-2 -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.

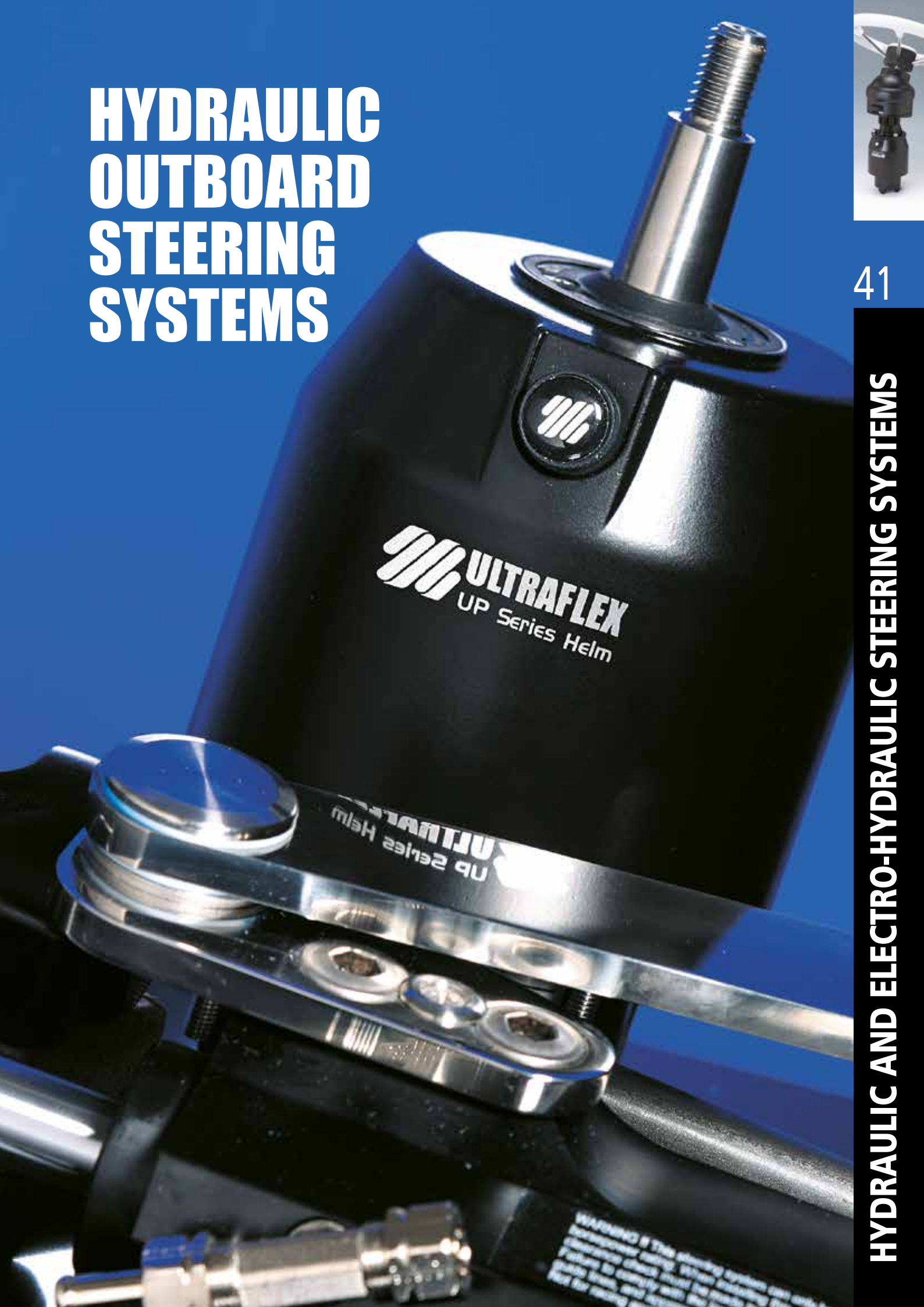


HYDRAULIC OUTBOARD STEERING SYSTEMS



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HYDRAULIC AND ELECTRO-HYDRAULIC STEERING SYSTEMS



WARNING If this steering system can only
forward power steering. When installing, use only
clearance effect must be made. The
Failure to comply with the instructions
may lead to injury, and with the
risk for injury or death. See instructions.

ULTRAFLEX HYDRAULIC STEERING SYSTEMS

All the components of Ultraflex 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.

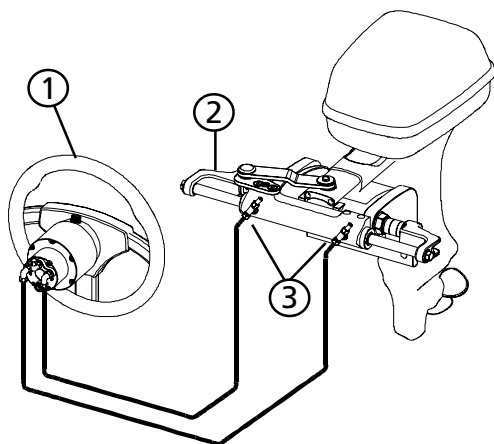
Other factors that can significantly affect the amount of effort to steer the system can be:

- 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



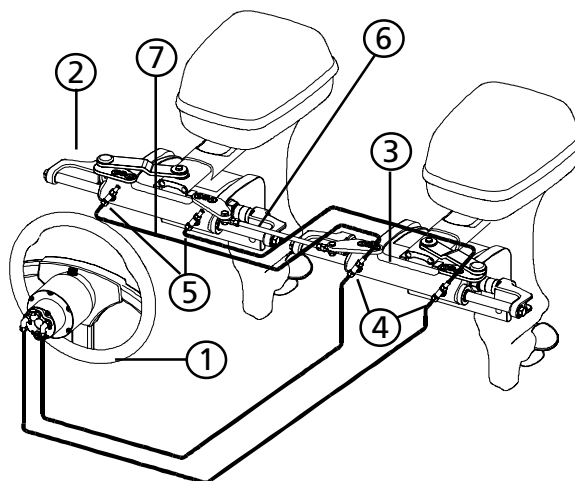


SINGLE STATION / SINGLE CYLINDER:



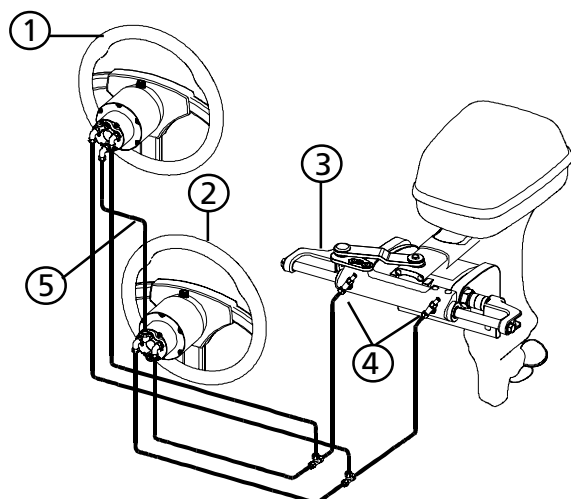
- 1. helm
- 2. starboard cylinder
- 3. bleed valves

SINGLE STATION / DUAL CYLINDER:



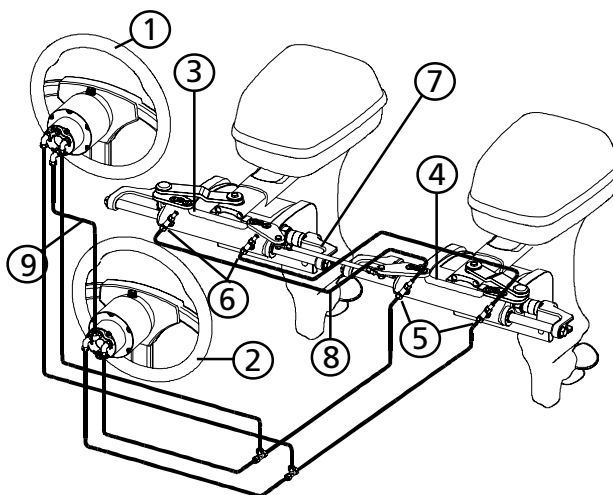
- 1. helm
- 2. starboard cylinder
- 3. port cylinder
- 4. "T" fittings
- 5. bleed valves
- 6. tie bar
- 7. kit OB-DBR (Kit OB-DBR-SVS for SilverSteer™)

DUAL STATION / SINGLE CYLINDER



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

DUAL STATION / DUAL CYLINDER



- 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-DBR-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	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	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	UP 39 39cc	UP45 45 cc	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						
	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

ADJUSTABLE STEERING WHEEL SYSTEMS (TILT MECHANISM)



X52, X70-SVS, X66

■ Tilt range of 48° and five locking positions - suitable on tilt mount helms (please refer to the application chart below)

X72 - 43140 K

■ Tilt range of 60° and five locking positions - suitable on front mount helms (please refer to the application chart below)

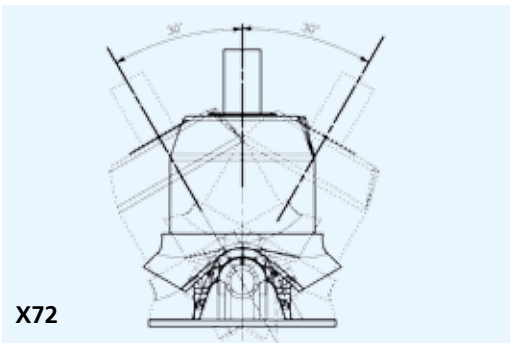
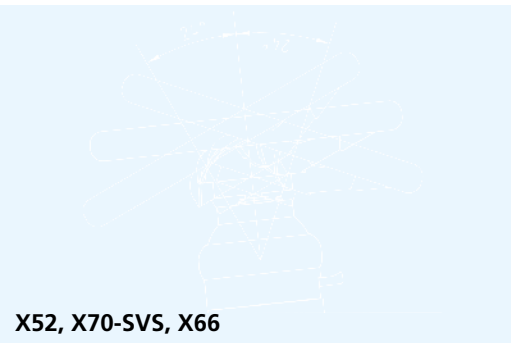
TILT MECHANISM APPLICATION FOR MECHANICAL STEERING SYSTEMS

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

TILT MECHANISM APPLICATION FOR HYDRAULIC STEERING SYSTEMS

TILT MECHANISM	Part No.	FRONT MOUNT HELMS				TILT MOUNT HELMS		MASTERDRIVE, 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

DIMENSIONS:





PACKAGED OUTBOARD STEERING SYSTEM FOR SINGLE ENGINE UP TO 115 HP

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



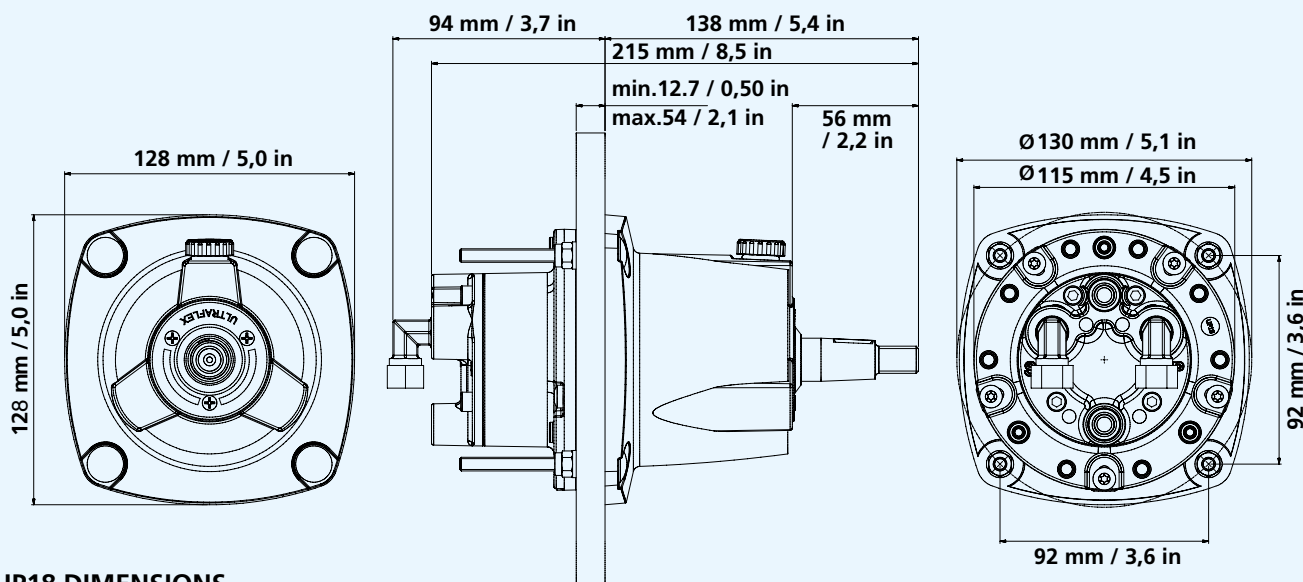
UP18 - HELM PUMP

- Built-in lock valve for positive rudder lock
- Integral relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Supplied by 2x 1/4" 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

GOTECH™ - 42634 G



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



UC81-OBF

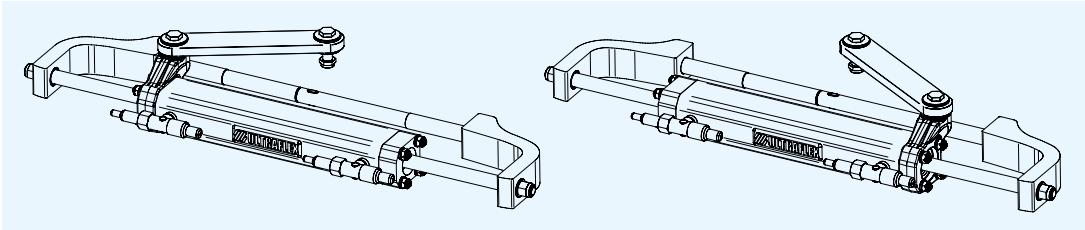
FRONT

MOUNT

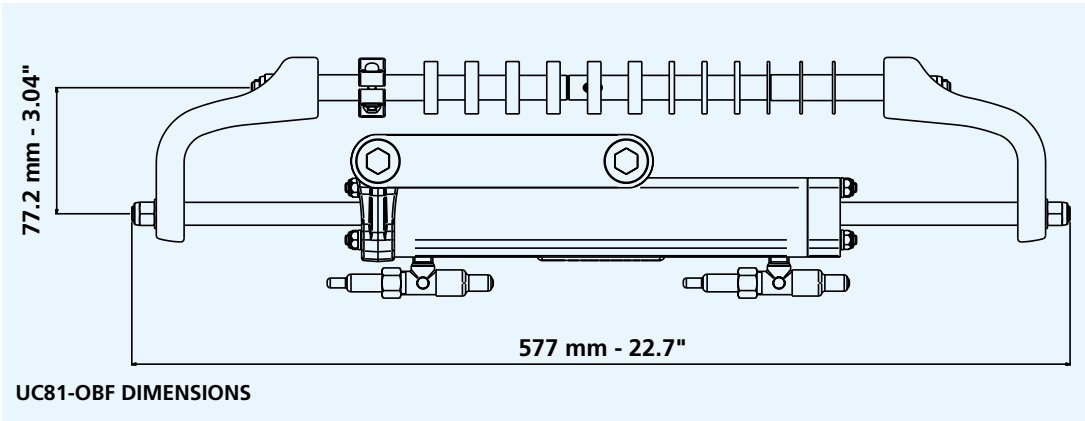
CYLINDER



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



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 - 43185 J



K18



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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 (39 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 F90-F100-F115 EFI 4T F80-F100 4T F115 F40D-F50F-F60C EFI 4T	1984-2008 1998-2008 1990-2008 2010-today 1999-2007 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



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

It consists of a pair of high pressure flexible hose dia. 1/4" with fittings, featuring turning nuts, preassembled at one end only and supplied with 2 non assembled fittings.
Recommended for use with GOTECH™ steering systems. Available on 6 m (19.7') standard length that can be cut to fit the desired application.

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



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

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

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



KIT OB-GT/R5: HYDRAULIC HOSE KIT

Two high pressure flexible hoses with pre-crimped brass fittings, 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



UP20 F - UP20 T 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 UP20 T pump
Tilt range of 48° and five locking positions
- NOTE:** X52 tilt mechanism fits standard Ultraflex tilt mount rotary and rack and pinion steering helms as well as standard Ultraflex tilt mount hydraulic pumps except SilverSteer™ and MasterDrive™ steering systems
- **X74** - 43048 Y square flange permits to install the UP20F pump in an intermediate dashboard position



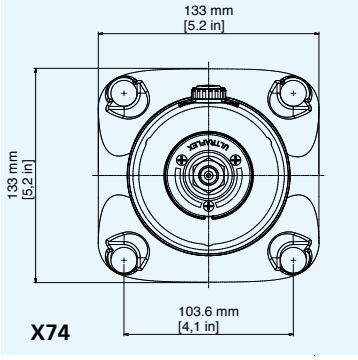
UP20 F



UP20 T + X52

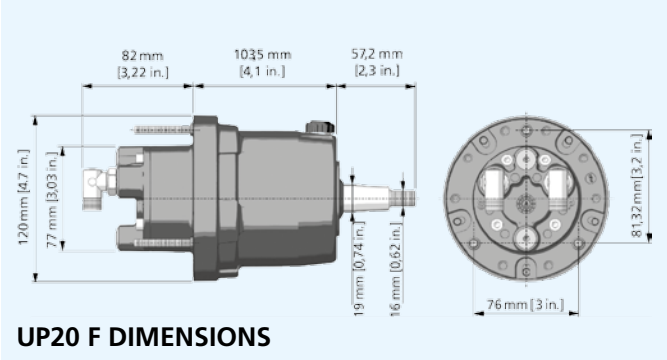


UP20 F + X74

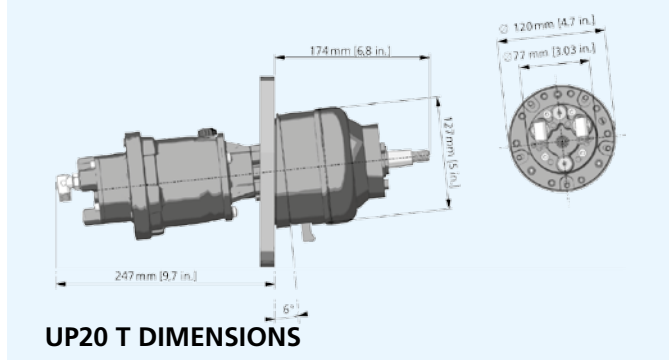


X74

MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP20 F	43180 Y	Front mount	20 cc - 1.2 cu. in	5	70 Bar - 1000 PSI	508 mm - 20"	3,6 kg - 8 lbs
UP20 T + 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



UP20 F DIMENSIONS



UP20 T DIMENSIONS

UP25 F - UP28 F
UP33 F - UP39 F - UP45 F
FRONT 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
- 3/4" tapered stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- Includes 90° **adjustable** fittings for 3/8" tube
- **UP45 F** pump is ideal for dual cylinder applications
- 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.



X72



X56 with front mount helm

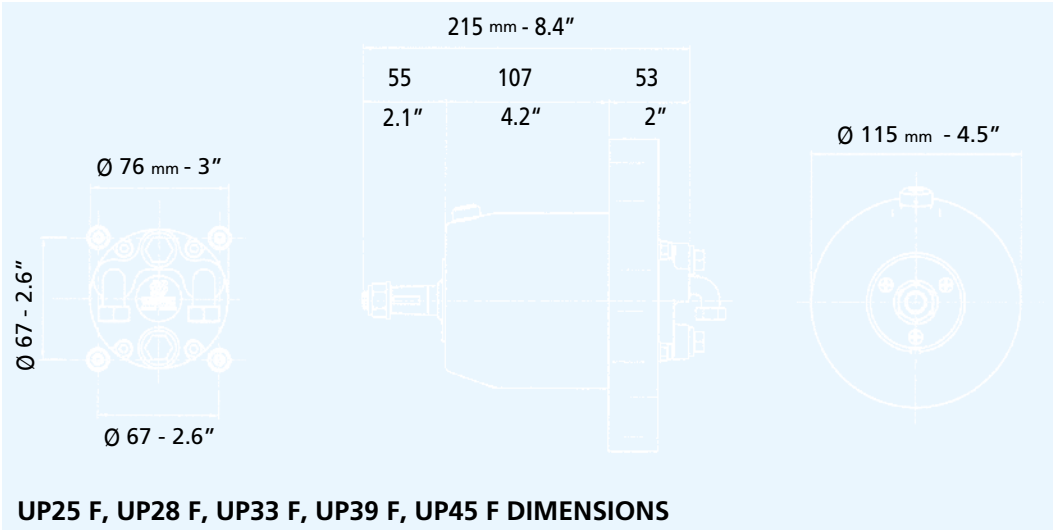


X57 with front mount helm

- 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 (page 45)

MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP25 F	42462 D	Front mount	25 cc - 1.5 cu.in	5	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP28 F	42459 R	Front mount	28 cc - 1.7 cu.in	5	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP33 F	42456 J	Front mount	33 cc - 2.0 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP39 F	42453 C	Front mount	39 cc - 2.4 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP45 F	42465 K	Front mount	45 cc - 2.7 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs





UP25 T - UP28 T - UP33 T UP39 T - UP45 T 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
- **UP45 T** pump is ideal for dual cylinder, dual outboard engine applications
- Tilt mechanism:
X52 - 39250 U
Tilt range of 48° and five locking positions

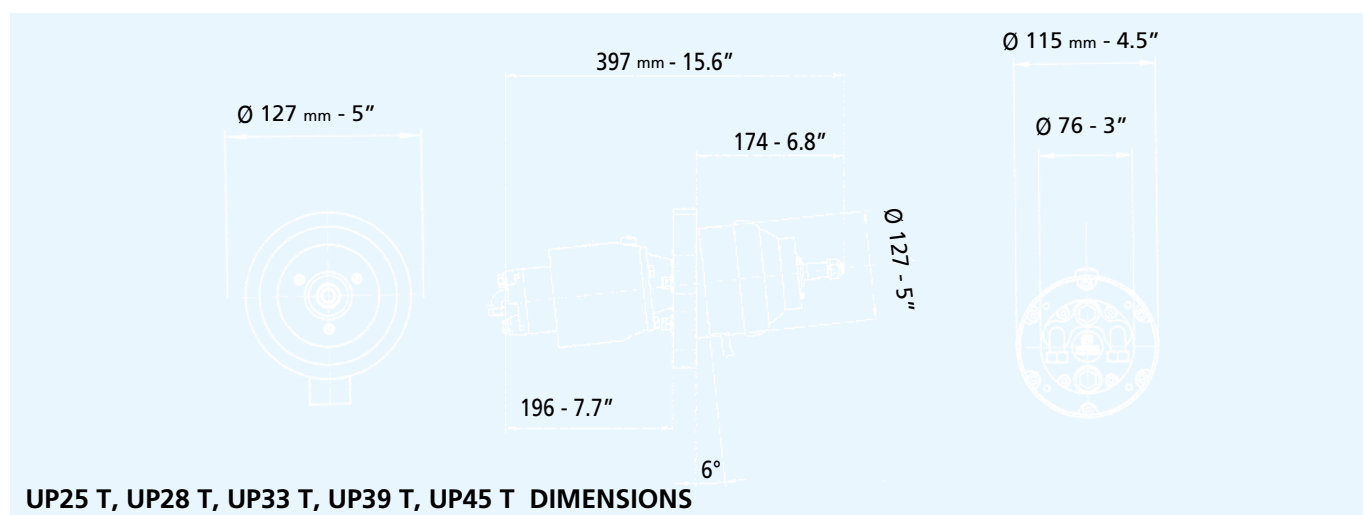
NOTE: Please refer to the tilt mechanism application chart

- **KIT F** (optional) - 39664 Y Remote fill adapter



X52 TILT MECHANISM INCLUDED

MODEL	PART No.	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP25 T + X52	42464 H + 39250 U	25 cc - 1.5 cu.in	5	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP28 T + X52	42461 B + 39250 U	28 cc - 1.7 cu.in	5	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP33 T + X52	42458 N + 39250 U	33 cc - 2.0 cu.in	7	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP39 T + X52	42455 G + 39250 U	39 cc - 2.4 cu.in	7	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs
UP45 T + X52	42467 P + 39250 U	45 cc - 2.7 cu.in	7	70 Bar - 1000 PSI	406 mm - 16"	5 kg - 11 lbs



UP28 R - UP33 R - UP39 R
UP45 R
REAR MOUNT
HELM PUMPS

FEATURES

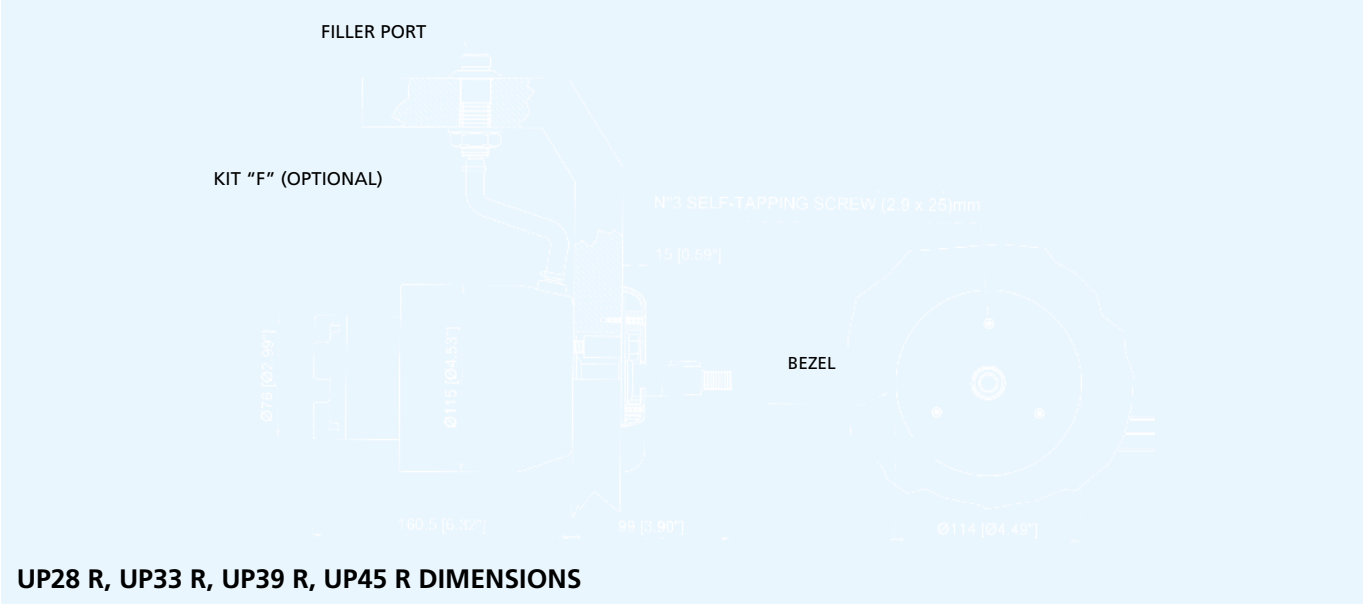
- Available in four different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- Integral relief valve for over-pressure protection
- 3/4" tapered stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron cylinder rotor for greater durability and longer life
- 1/4" NPT fitting for 3/8" tube
- Includes 90° **adjustable** fittings for 3/8" tube and white bezel
- **UP45 R** 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



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MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP28 R	42460 Z	Rear mount	28 cc - 1.7 cu.in	5	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP33 R	42457 L	Rear mount	33 cc - 2.0 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP39 R	42454 E	Rear mount	39 cc - 2.4 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP45 R	42466 M	Rear mount	45 cc - 2.7 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs





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



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



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

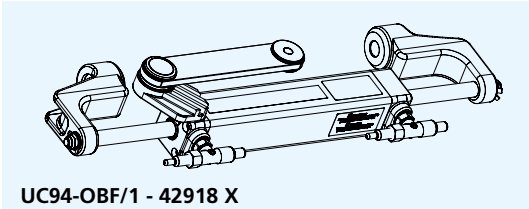
**Adjustable boss style fittings for easy installation
High resistance stainless steel connection bolt (ULTRABOLT)**

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).

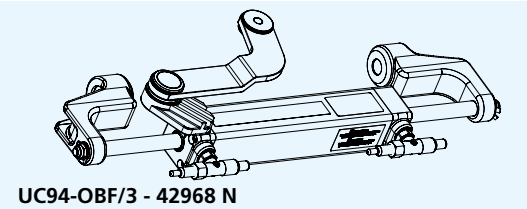
INNOVATIVE DESIGN (PATENTED):

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:

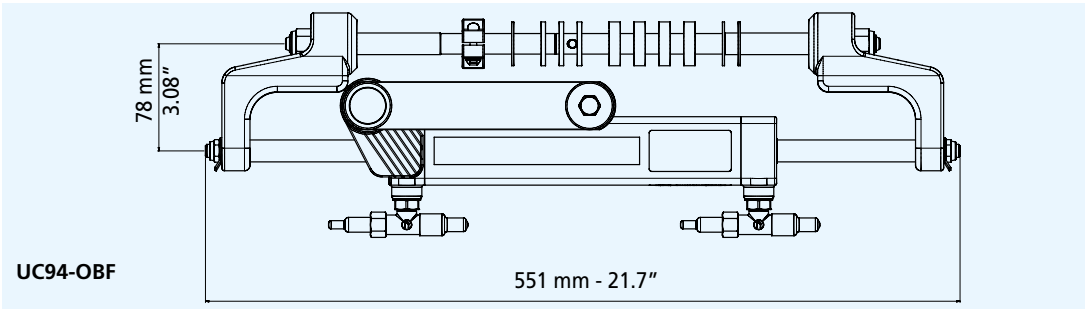


UC94-OBF/1 - 42918 X



UC94-OBF/3 - 42968 N

SPECIFICATIONS	UC94-OBF/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



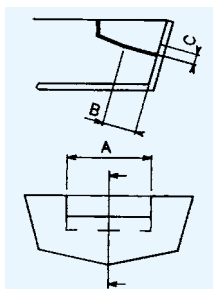
UC94-OBF

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"
2	1110 mm - 43.70"	152 mm - 5.98"	152 mm - 5.98"

For twin engine applications, the minimum distance between the two engine centers is 21.6" (550 mm)



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UC94-OBF

CYLINDER

APPLICATIONS

WARNING

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

Not intended for use in racing applications.

WARNING

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

ENGINE	POWER	YEAR	CYLINDER	P. No.
Mercury® Mariner®	50 – 75 – 90 2 Stroke	1990-2008	UC94-OBF/1	42918 X
	115 – 125 – 150 EFI 2 Stroke	1990-2007	UC94-OBF/1	42918 X
	75 – 90 – 115 - 125 Optimax 2 Stroke	2004-to date	UC94-OBF/3	42968 N
	135 – 150 Optimax 2 Stroke	1999-to date	UC94-OBF/1	42918 X
	40 – 50 – 60 EFI 4 Stroke	2004-to date	UC94-OBF/1	42918 X
	75 – 80 – 90 EFI 4 Stroke	2000-to date	UC94-OBF/1	42918 X
	100 – 115 EFI 4 Stroke	2007-to date	UC94-OBF/1	42918 X
	150 Fourstroke 4 Stroke	2011-to date	UC94-OBF/1	42918 X
Evinrude®	E40-E50-E55-E60 2 Stroke	2004-to date	UC94-OBF/1	42918 X
	E75-E90 2 Stroke	2004-to date	UC94-OBF/1	42918 X
	E115-E130-E135 2 Stroke V4	1995-to date	UC94-OBF/1	42918 X
	E150 2 Stroke V6	1995-to date	UC94-OBF/1	42918 X
Yamaha®	60-70 2 Stroke	1984-2008	UC94-OBF/1	42918 X
	75C-90 2 Stroke	1998-2008	UC94-OBF/1	42918 X
	115C-130B 2 Stroke	1990-2008	UC94-OBF/1	42918 X
	150F	1996-2007	UC94-OBF/1	42918 X
	150 HPDI VMAX 2 Stroke	2000-2008	UC94-OBF/1	42918 X
	F60-F75-F80 EFI 4 Stroke	1999-2007	UC94-OBF/1	42918 X
	F90-F100-F115-F150 EFI 4 Stroke	1999-2007	UC94-OBF/1	42918 X
	F80-F100 4 Stroke	2000-to date	UC94-OBF/1	42918 X
	F115-F150	2004-to date	UC94-OBF/1	42918 X
Honda®	BF75-BF90 4 Stroke	1995-to date	UC94-OBF/1	42918 X
	BF115D	1998-2009	UC94-OBF/3	42968 N
	BF115A	2009-to date	UC94-OBF/1	42918 X
	BF130A	1998-2005	UC94-OBF/3	42968 N
	BF135-BF150 4 Stroke	2005-to date	UC94-OBF/1	42918 X
	BF90-BF150 V-TEC 4 Stroke	2008-to date	UC94-OBF/1	42918 X
Suzuki®	DF70-80-90 4 Stroke	1998-to date	UC94-OBF/1	42918 X
	DF100-115-140 4 Stroke	1998-2008	UC94-OBF/1*	42918 X
	DF100-115-140 4 Stroke new model	2008-to date	UC94-OBF/1	42918 X
	DF150 4 Stroke	2006-to date	UC94-OBF/1	42918 X
Tohatsu® Nissan®	50-60-70-90 2 Stroke	2004-to date	UC94-OBF/1	42918 X
	115-120-140 2 Stroke	2004-to date	UC94-OBF/1	42918 X
	40-50TLDI 4 Stroke	2004-to date	UC94-OBF/1	42918 X
	70-90-115 TLDI 4 Stroke	2004-to date	UC94-OBF/1	42918 X
Selva®	50 Madeira/ Bull shark-60 Grey Shark/ St.tropez- 70 Mako Shark 2 Stroke	1995-2008	UC94-OBF/1	42918 X
	80 Portofino/Tigershark 2 Stroke	2001-2007	UC94-OBF/1	42918 X
	150 White Shark 2 Stroke		UC94-OBF/1	42918 X
	50-60 Dorado efi 4 Stroke		UC94-OBF/1	42918 X
	100 EFI Marlin -115 EFI Narwhal-150EFI	2000-to date	UC94-OBF/1	42918 X
	Killer Whale 4 Stroke			
Johnson®	BJ60-70 4 Stroke	2001-2007	UC94-OBF/1	42918 X
	BJ90-115-140 4 Stroke	2001-2007	UC94-OBF/1	42918 X
	J90-115 V4 2 Stroke	1995-2007	UC94-OBF/1	42918 X



UC128-OBF FRONT MOUNT CYLINDER

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OUTBOARD STEERING

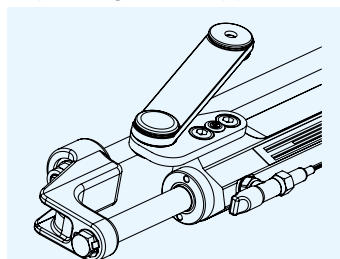


UC128-OBF - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa

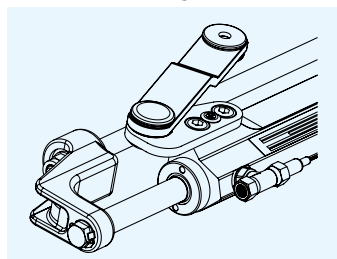
Adjustable boss style fittings for easy installation
High resistance stainless steel connection bolt (ULTRABOLT)
Replaceable cylinder heads

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

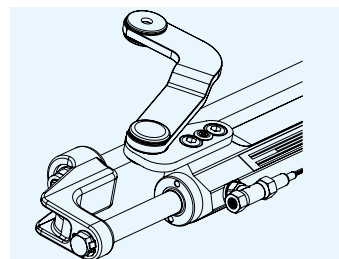
Depending on the applications on the outboard engines, the UC128-OBF is available in 3 versions:



UC128-OBF/1 43231 N



UC128-OBF/2 43232 R



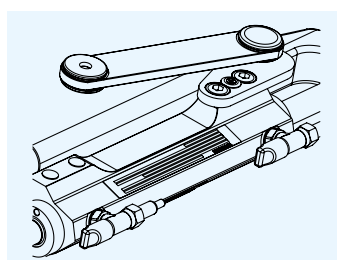
UC128-OBF/3 43233 T

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 tie bar, required for dual engine/dual cylinder applications.

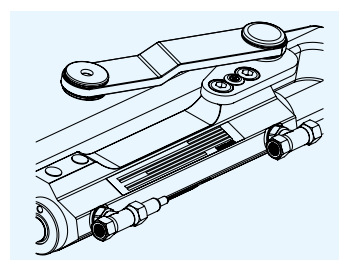
Depending on the applications on the outboard engines, the UC128P-OBF port cylinder is available in 2 versions:



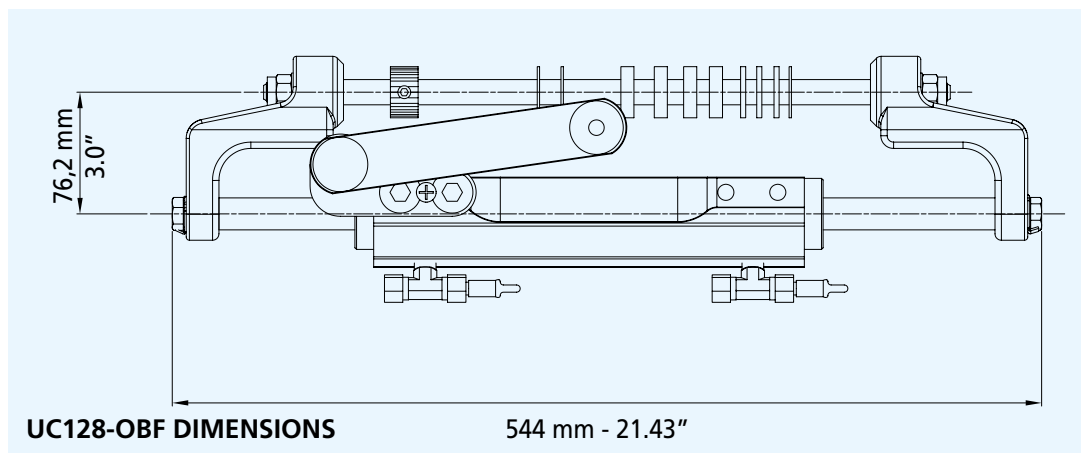
UC128P-OBF



UC128P-OBF/1 43234 V



UC128P-OBF/2 43235 X



UC128-OBF DIMENSIONS

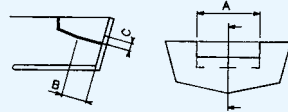
544 mm - 21.43"

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

SPECIFICATIONS	UC128-OBF/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 21.6" (550 mm)

**UC128-OBF****CYLINDER****APPLICATIONS**

ENGINE	MODEL	YEAR	CILINDER	P. NO.	PACKAGED
Mercury® Mariner®	75-90-115-125 Optimax 2 Stroke	2004-to date	UC128-OBF/3	43233 T	PROTECH 3
	135-150-175 Optimax 2 Stroke	1999-to date	UC128-OBF/1	43231 N	PROTECH 1
	200-225-250 Optimax 2 Stroke	1999-to date	UC128-OBF/1	43231 N	PROTECH 1
	RACING 300 Optimax 2 Stroke	1999-2011	UC128-OBF/1	43231 N	PROTECH 1
	100-115 EFI 4 Stroke	2007-to date	UC128-OBF/1	43231 N	PROTECH 1
	115-125-150 EFI 2 Stroke	1990-2007	UC128-OBF/1	43231 N	PROTECH 1
	225-250 EFI 2 Stroke	2000-2007	UC128-OBF/1	43231 N	PROTECH 1
	250 Saltwater EFI 4 Stroke	2007-2011	UC128-OBF/1	43231 N	PROTECH 1
	135 Verado L4 4 Stroke	2004-2006	UC128-OBF/1	43231 N	PROTECH 1
	150-175-200 Verado L4 4 Stroke	2004-to date	UC128-OBF/1	43231 N	PROTECH 1
Evinrude®	E75-E90 2 Stroke	2004-to date	UC128-OBF/2	43232 R	PROTECH 2
	E115-E130-E135 2 Stroke V4	1995-to date	UC128-OBF/2	43232 R	PROTECH 2
	E150-E175-E200 2 Stroke V6	1995-to date	UC128-OBF/2	43232 R	PROTECH 2
	E200 HO- E225-E250 2 Stroke V6	1995-to date	UC128-OBF/2	43232 R	PROTECH 2
	E250 HO- E300 2 Stroke V6	1995-to date	UC128-OBF/2	43232 R	PROTECH 2
Yamaha®	75C-90 2 Stroke	1998-2008	UC128-OBF/2	43232 R	PROTECH 2
	115C-130B 2 Stroke	1990-2008	UC128-OBF/2	43232 R	PROTECH 2
	150F-200F-250G 2 Stroke	1996-2007	UC128-OBF/2	43232 R	PROTECH 2
	150 HPDI VMAX 2 Stroke	2000-2008	UC128-OBF/2	43232 R	PROTECH 2
	175-200-225-250-300 HPDI VMAX 2 St.	2000-2008	UC128-OBF/2	43232 R	PROTECH 2
	F70 4 Stroke	2010-to date	UC128P-OBF/1	43234 V	-
	F90-F100-F115-F150 EFI 4 Stroke	1999-2007	UC128-OBF/1	43231 N	PROTECH 1
	F200-F225-F250 4 Stroke	2002-2007	UC128-OBF/2	43232 R	PROTECH 2
	F115-F150	2004-to date	UC128-OBF/1	43231 N	PROTECH 1
	F200-F225-F250-F300 4 Stroke	2006-to date	UC128-OBF/1	43231 N	PROTECH 1
Honda®	F350 4 Stroke	2008-to date	see UC130-SVS	SilverSteer	-
	BF75-90 4 Stroke	1995-to date	UC128-OBF/1	43231 N	PROTECH 1
	BF115D	1998-2009	UC128-OBF/3	43233 T	PROTECH 3
	BF115A	2009-to date	UC128-OBF/1	43231 N	PROTECH 1
	BF130A	1998-2005	UC128-OBF/3	43233 T	PROTECH 3
	BF135-150 4 Stroke	2005-to date	UC128-OBF/1	43231 N	PROTECH 1
	BF90-BF150 V-TEC 4 Stroke	2008-to date	UC128-OBF/1	43231 N	PROTECH 1
Suzuki®	BF175-200-225-250 4 Stroke	2001-to date	UC128-OBF/1	43231 N	PROTECH 1
	DF70-80-90 4 Stroke	1998-to date	UC128-OBF/2	43232 R	PROTECH 2
	DF100-115-140 4 Stroke	1998-2008	UC128-OBF/1*	43231 N	PROTECH 1
	DF100-115-140 4 Stroke new model	2008-to date	UC128-OBF/1	43231 N	PROTECH 1
	DF150-175 4 Stroke	2006-to date	UC128-OBF/1	43231 N	PROTECH 1
Tohatsu®	DF200-DF225-DF250-DF300	2006-to date	UC128-OBF/2	43232 R	PROTECH 2
	115-120-140 2 Stroke	2004-to date	UC128-OBF/2	43232 R	PROTECH 2
Selva®	70-90-115 TLDI 4 Stroke	2004-to date	UC128-OBF/1	43231 N	PROTECH 1
	80 Portofino/Tigershark 2 Stroke	1995-to date	UC128-OBF/1	43231 N	PROTECH 1
	150 White Shark 2 Stroke	2001-2007	UC128-OBF/2	43232 R	PROTECH 2
Johnson®	100EFI Marlin -115 EFI Narwhal-	2000-to date	UC128-OBF/1	43231 N	PROTECH 1
	150EFI Killer Whale 4 Stroke	2000-to date	UC128-OBF/1	43231 N	PROTECH 1
	BJ90-115-140 4 Stroke	2001-2007	UC128-OBF/1	43231 N	PROTECH 1
	J90-115 V4 2 Stroke	1995-2007	UC128-OBF/2	43232 R	PROTECH 2
	J150-175 V6 2 Stroke	1995-2007	UC128-OBF/2	43232 R	PROTECH 2
	J200-225 V6 4 Stroke	2004-2007	UC128-OBF/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	UC128-OBF	1
			Helm pump	UP25 or UP28	1
			Hose Kit	KIT OB	1
		4.3 (UP28)	Oil	OIL 15	2
			Steering wheel	(Wheel selection)	1


For a second station add:

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

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

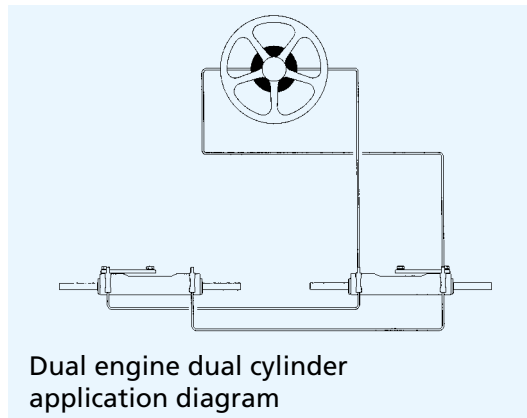
For a second station add:

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

Dual engine Dual cylinder 	Up to 500 hp max (non-counter rotating engines)	6.1 (UP39)	Cylinder	UC128-OBF	1
			Cylinder Port	UC128P-OBF	1
			Helm pump	UP39 or UP45	1
			Hose Kit	KIT OB	1
	Up to 600 hp max (counter rotating engines)	5.3 (UP45)	Oil	OIL 15	3
			Tie bar	A90	1
			Steering wheel	(Wheel selection)	1
			Connection Kit	KIT OB-DBR	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 any further and detailed information, please contact our Technical Service.



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

UC132-OBS SIDE MOUNT CYLINDER



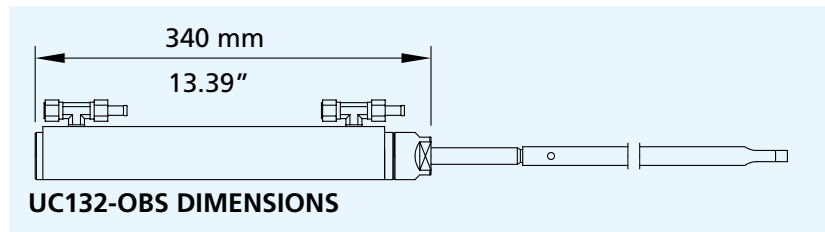
WARNING

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

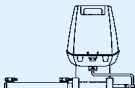
SPECIFICATIONS	UC132-OBS - 39430 W
Volume	132 / 163 cc - 8 / 9.95 cu. in
Output force	464 / 574 kg - 1023 / 1265 lbs
Inside diameter	32 mm - 1.25"
Stroke	203 mm - 8"
3/8" (9,5 mm) fittings	For high pressure flex hose



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

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

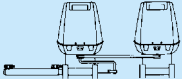
ORDER GUIDE:

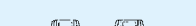
SYSTEM	APPLICATION	WHEEL TURNS	COMPONENTS	MODEL	QTY
Single engine Single cylinder 	Up to 300 hp max	5.3/6.5 (UP25)	Cylinder	UC132-OBS	1
			Helm pump	UP25 or UP28	1
			Hose Kit	KIT OB	1
		4.7/5.8 (UP28)	Oil	OIL 15	2
			Steering wheel	(Wheel selection)	1
For a second station add: 1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OIL 15, 1 steering wheel					

WARNING:

the UC132-OBS side mount cylinder is not recommended for use in installations where the boat speed exceeds **51.5 mph (45 knots)** and the power exceeds max Coast Guard recommendation for the boat.

Not intended for use in racing applications.

Dual engine Single cylinder 	Up to 300 hp max (non-counter rotating engine)	5.3/6.5 (UP25)	Cylinder	UC132-OBS	1
			Helm pump	UP25 or UP28	1
			Hose Kit	KIT OB	1
			Oil	OIL 15	2
	Up to 450 hp max (counter rotating engine)	4.7/5.8 (UP28)	Tie bar	A94	1
			Steering wheel	(Wheel selection)	1
	For a second station add: 1 UP25 or UP28 helm pump, 1 KIT OB-2S fitting kit, 1 KIT OB, 1 OIL 15, 1 steering wheel				

<div>Dual engine Dual cylinder</div> <div></div>	Up to 500 hp max (non-counter rotating engines)	6.7/8.3 (UP39)	Cylinder	UC132-OBS	2
			Helm pump	UP39 or UP45	1
			Hose Kit	KIT OB	1
	Up to 600 hp max (counter rotating engines)	5.8/7.3 (UP45)	Oil	OIL 15	3
			Tie bar	A90	1
			Steering wheel	(Wheel selection)	1
			Connection Kit	KIT OB-DBR	1

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 Ultraflex 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 OB-2S: FITTINGS FOR A SECOND STEERING STATION OR AUTOPILOT INSTALLATION

It includes all necessary fittings and 7,6 m (25 ft) of 3/8" dia. nylon tube for the compensating line

KIT OB-2S - 43074 Z



KIT OB-2S

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:

- UP20 F** 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:

- UP20 F** 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:

- UP28 F** 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

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 overtightening or leaking fittings from loosening during installation, a common problem on competing cylinders.



HYCO



HYCO-TU95



PROTECH



61



HIGH PERFORMANCE STEERING SYSTEMS

UP25 F-SVS – UP33 F-SVS – UP39 F-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 overtightening or leaking fittings from loosening during installation, a common problem on competing cylinders.

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

The front mount version is a direct drop-in replacement for competing helms. Both the front mount and tilt helms feature stainless steel shafts and 90° adjustable nickel-plated brass fittings.

FEATURES

- Available in three different displacement sizes
- Compact design
- Ball bearing piston race
- Built-in lock valve for positive rudder lock
- **Integral relief valve for over-pressure protection 105 bar (1500 psi)**
- 3/4" tapered stainless steel shaft
- Easily accessible lock valve and shaft seal for replacement
- Cast iron rotor for greater durability and longer life
- **Complete with 90° adjustable fittings for 3/8" tube**
- Tilt mechanism for front mount helms:

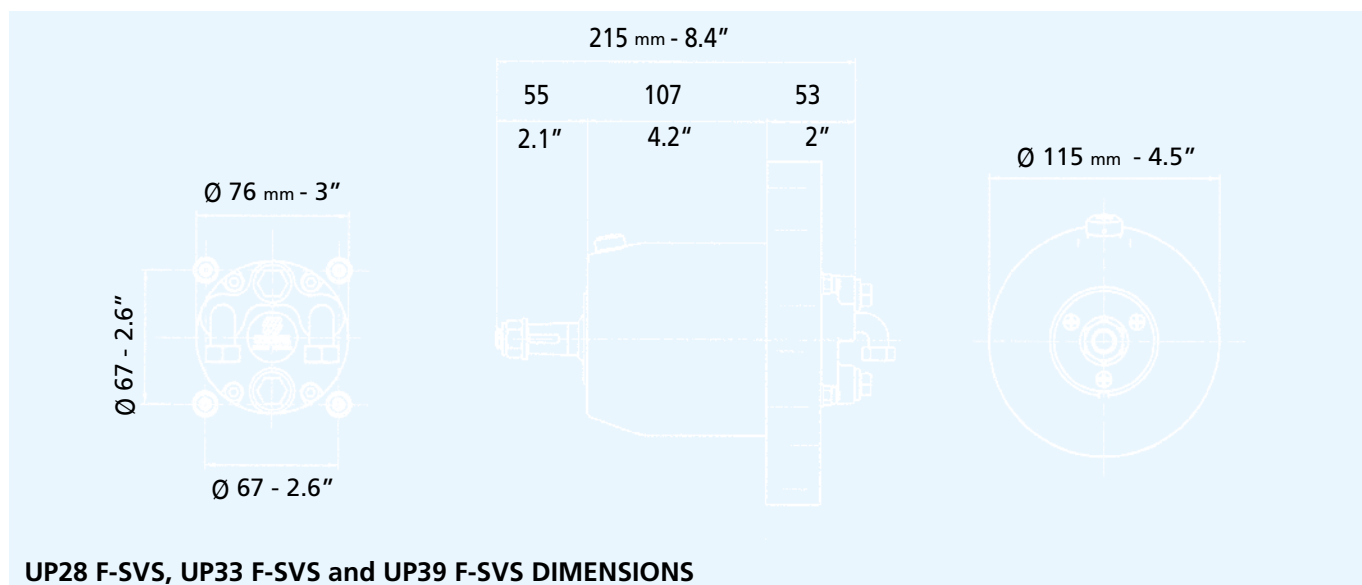
X72 - 43140 K

Tilt range of 60° and five locking positions. Please refer to application chart (page 45)

X72



MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP25 F-SVS	42841 M	Front mount	25 cc - 1.5 cu.in	5	105 bar - 1500 PSI	710 mm - 28"	5 kg - 11 lbs
UP33 F-SVS	42475 N	Front mount	33 cc - 2.0 cu.in	7	105 bar - 1500 PSI	710 mm - 28"	5 kg - 11 lbs
UP39 F-SVS	42474 L	Front mount	39 cc - 2.4 cu.in	7	105 bar - 1500 PSI	710 mm - 28"	5 kg - 11 lbs



FEATURES

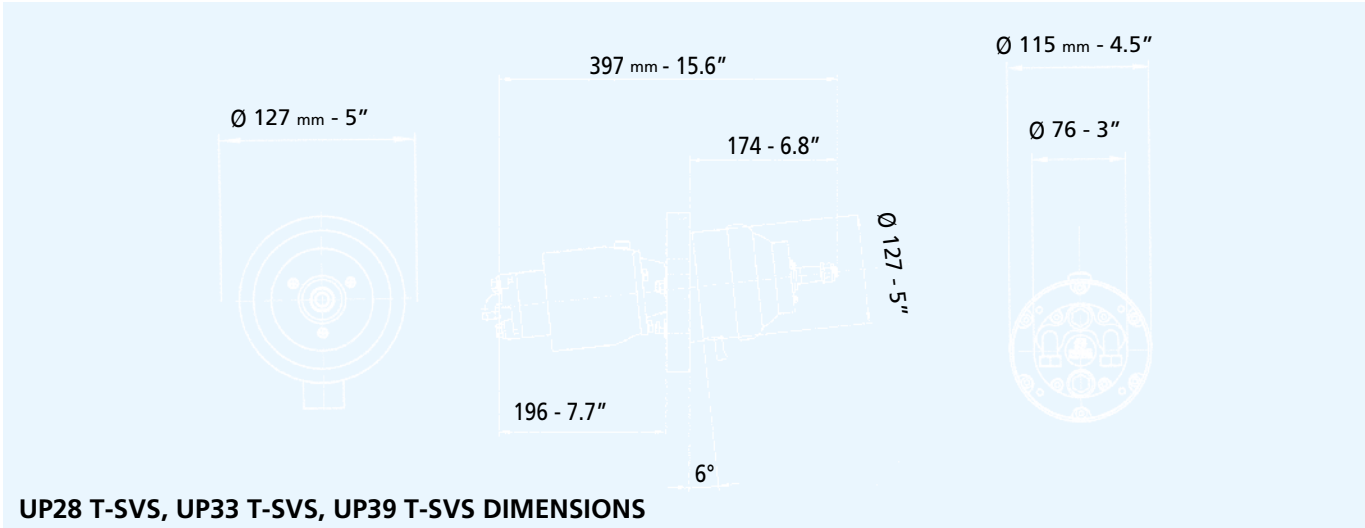
- Available in three different displacement sizes
 - Compact design
 - Ball bearing piston race
 - Built-in lock valve for positive rudder lock (patented)
 - **Integral relief valve for over-pressure protection 105 bar (1500 psi)**
 - Stainless steel shaft
 - Easily accessible lock valve and shaft seal for replacement
 - Cast iron rotor for greater durability and longer life
 - Complete with 90° **adjustable** fittings for 3/8" tube
 - Tilt mechanism for tilt mount SilverSteer™ helms:
X70-SVS – 41880 T
Tilt range of 48° and five locking positions
- NOTE:** Please refer to the tilt mechanism application chart
- **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
UP25 T-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
UP33 T-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
UP39 T-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



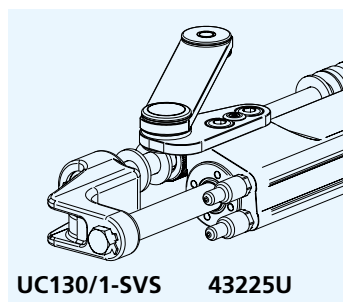


UC130-SVS – Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa

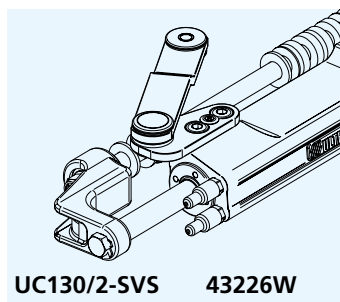
Adjustable boss style fittings for easy installation
High resistance stainless steel connection bolt (ULTRABOLT)

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

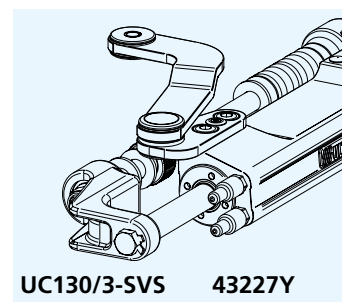
Depending on the applications on the outboard engines, the UC130-SVS is available in 3 versions:



UC130/1-SVS 43225U



UC130/2-SVS 43226W



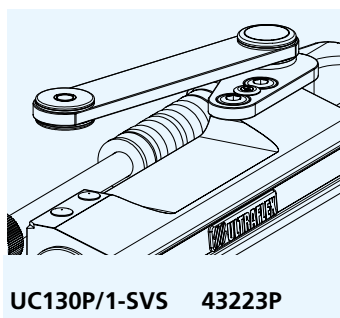
UC130/3-SVS 43227Y

In the applications with dual UC130-SVS cylinder it is necessary to order a standard UC130-SVS cylinder (link arm attached to the starboard side of the cylinder) and a port UC130-SVS cylinder (link arm attached to the port side of the cylinder). See appropriate section for A90 tie bar required for use on dual engine/dual cylinder applications.

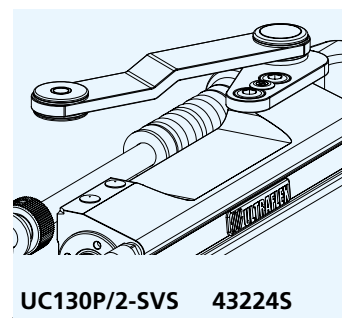
Depending on the applications on the outboard engines, the UC130P-SVS port cylinder is available in 2 versions:



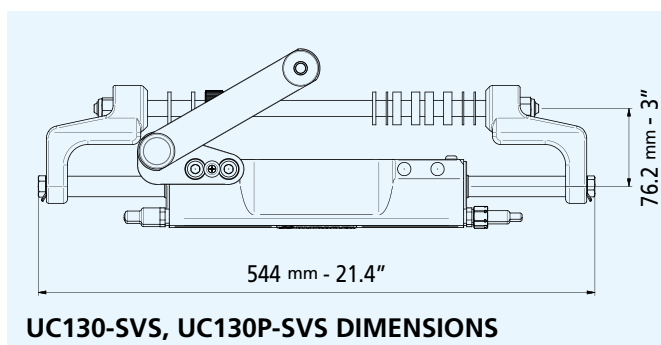
UC130P-SVS



UC130P/1-SVS 43223P

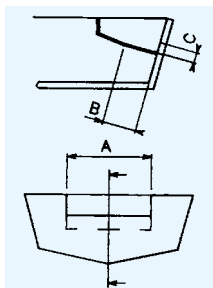


UC130P/2-SVS 43224S



UC130-SVS, UC130P-SVS DIMENSIONS

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



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

For twin engine applications minimum engine center distance is 21.6" (550 mm)



UC128-SVS

CYLINDER

APPLICATIONS

WARNING


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

ENGINE	POWER	YEAR	CYLINDER	P. No.	PACKAGED
Mercury® Mariner®	115-125-150 EFI 2 Stroke	1990-2007	UC130/1-SVS	43225 U	Silversteer 1
	225-250 EFI 2 Stroke	2000-2007	UC130/1-SVS	43225 U	Silversteer 1
	135-150-175 Optimax	1999-to date	UC130/1-SVS	43225 U	Silversteer 1
	200-225-250 Optimax	1999-to date	UC130/1-SVS	43225 U	Silversteer 1
	RACING 300 Optimax	1999-2011	UC130/1-SVS	43225 U	Silversteer 1
	250 Saltwater EFI 4 Stroke	2007-2011	UC130/1-SVS	43225 U	Silversteer 1
	135 Verado L4 4 Stroke	2004-2006	UC130/1-SVS	43225 U	Silversteer 1
	150-175-200 Verado L4 4 Stroke	2004-to date	UC130/1-SVS	43225 U	Silversteer 1
Evinrude®	E115-E130-E135 2 Stroke V4	1995-to date	UC130/2-SVS	43226 W	Silversteer 2
	E150-E175-E200 2 Stroke V6	1995-to date	UC130/2-SVS	43226 W	Silversteer 2
	E200 HO- E225-E250 2 Stroke V6	1995-to date	UC130/2-SVS	43226 W	Silversteer 2
	E250HO- E300 2 Stroke V6		UC130/2-SVS	43226 W	Silversteer 2
Yamaha®	115C-130B 2 Stroke	1998-2008	UC130/2-SVS	43226 W	Silversteer 2
	150F-200F-250G 2 Stroke	1996-2007	UC130/2-SVS	43226 W	Silversteer 2
	150 HPDI VMAX 2 Stroke	2000-2008	UC130/2-SVS	43226 W	Silversteer 2
	175-200-225-250-300 HPDI VMAX 2 St.	2000-2008	UC130/2-SVS	43226 W	Silversteer 2
	F115-F150 EFI 4 Stroke	1999-2007	UC130/1-SVS	43225 U	Silversteer 1
	F200-F225-F250 4 Stroke	2002-2007	UC130/2-SVS	43226 W	Silversteer 2
	F115-F150	2004-to date	UC130/1-SVS	43225 U	Silversteer 1
	F200-F225-F250-F300-F350 4 Stroke	2006-to date	UC130/1-SVS	43225 U	Silversteer 1
Honda®	BF135-150 4 Stroke	2005-to date	UC130/1-SVS	43225 U	Silversteer 1
	BF150 V-TEC 4 Stroke	2008-to date	UC130/1-SVS	43225 U	Silversteer 1
	BF175-BF200-BF225-BF250 4 Stroke	2001-to date	UC130/1-SVS	43225 U	Silversteer 1
Suzuki®	DF100-115-140 4 Stroke	1998-2008	UC130/1-SVS*	43225 U	Silversteer 1
	DF100-115-140 4 Stroke	2008-to date	UC130/1-SVS	43225 U	Silversteer 1
	DF150-175 4 Stroke	2006-to date	UC130/1-SVS	43225 U	Silversteer 1
	DF200-DF225-DF250-DF300		UC130/2-SVS	43226 W	Silversteer 2
Tohatsu®	115-120-140 2 Stroke	2004-to date	UC130/2-SVS	43226 W	Silversteer 2
	70-90-115 TLDI 4 Stroke	2004-to date	UC130/1-SVS	43225 U	Silversteer 1
Selva®	80 Portofino/Tigershark 2 Stroke	1995-2008	UC130/1-SVS	43226 W	Silversteer 2
	150 White Shark 2 Stroke	2001-2007	UC130/2-SVS	43225 U	Silversteer 1
	100EFI Marlin -115 EFI Narwhal-150EFI Killer Whale 4 Stroke	2000-to date	UC130/1-SVS	43226 W	Silversteer 2
Johnson®	BJ90-115-140 4 Stroke	2001-2007	UC130/1-SVS	43225 U	Silversteer 1
	J90-115 V4 2 Stroke	1995-2007	UC130/2-SVS	43226 W	Silversteer 2
	J150-175 V6 2 Stroke	1995-2007	UC130/2-SVS	43226 W	Silversteer 2
	J200-225 V6 4 Stroke	2004-2007	UC130/2-SVS	43226 W	Silversteer 2



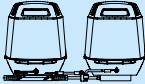
SILVERSTEER™ UC130-SVS CYLINDER

ORDER GUIDE:

SYSTEM	APPLICATION	WHEEL TURNS	COMPONENTS	MODEL	QTY
Single Engine Single Cylinder 	Up to 350 hp max	5.5 (UP25)	Cylinder	UC130-SVS	1
			Helm pump	UP25 or UP33-SVS	1
			Hose Kit	KIT OB-SVS	1
		3.9 (UP33)	Oil	OIL 15	2
			Steering wheel	(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)	5.5 (UP25)	Cylinder	UC130-SVS	1
			Helm pump	UP25 or UP33-SVS	1
			Hose Kit	KIT OB-SVS	1
	Up to 600 hp max (counter rotating engine)	3.9 (UP33)	Oil	OIL 15	2
			Tie bar	A94	1
			Steering wheel	(Wheel selection)	1

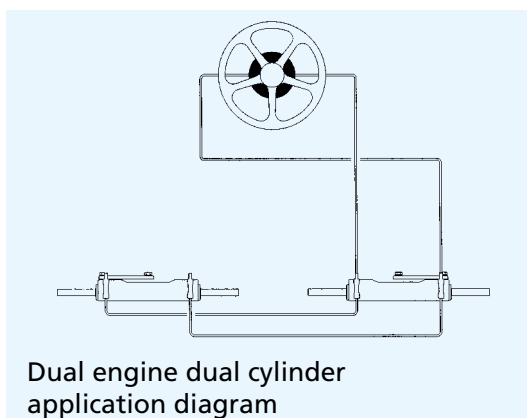
For a second station add:

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)	6.6 (UP39)	Cylinder	UC130-SVS	1
			Cylinder Port	UC130P-SVS	1
			Helm pump	UP39-SVS	1
	Up to 700 hp max (counter rotating engines)		Hose Kit	KIT OB-SVS	1
			Oil	OIL 15	3
			Tie bar	A90	1
			Steering wheel	(Wheel selection)	1
			Connection Kit	KIT OB-DBR-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



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:

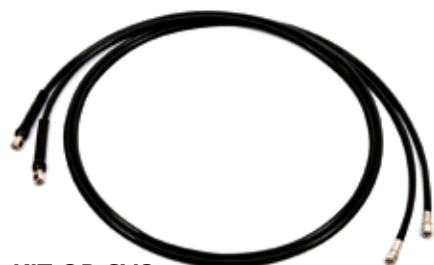
Three outboard engine applications are available with UC130-SVS cylinder. For any further and detailed information, please contact our Technical Service.



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

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

Two high pressure flexible 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.



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	KIT OB-BHBR-SVS	LENGTH
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 OB-DBR-SVS : DUAL CYLINDER/ DUAL ENGINE CONNECTION KIT FOR SILVERSTEER™ SYSTEMS

Two high pressure flexible hoses, with pre-crimped fittings and bend restrictors on both ends. Recommended for use with all Uflex SilverSteer™ Series cylinders. Five lengths available: 2', 2.5', 3', 4', 5'.

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



KIT OB-DBR-SVS

SILVERSTEER™ WHEEL TURNS: 4.8

SilverSteer™ package kit contains:

UP25 F-SVS Front mount helm pump
UC130-SVS Front mount outboard cylinder.
Specify engine type when ordering.

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

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



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.



MD

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)
- 1 **KIT OBMD**: high pressure hose kit, helm-power unit connection, complete with preassembled fittings.
- 1 **KIT OB-SVS**: SilverSteer™ high pressure hose kit complete with preassembled fittings.
- 1 **KIT OB-DBR-SVS**: SilverSteer™ high pressure hose kit complete with preassembled fittings for cylinder connection (dual cylinder applications only).
- 1 Tilt mechanism **X66-40613 M** suitable for Tilt Mount Helm. Tilt range of 48° and five locking positions.
- 1 Dual cylinder application Tie Bar: see selection
- 1 Steering Wheel: see selection
- 1 Instruction Manual



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



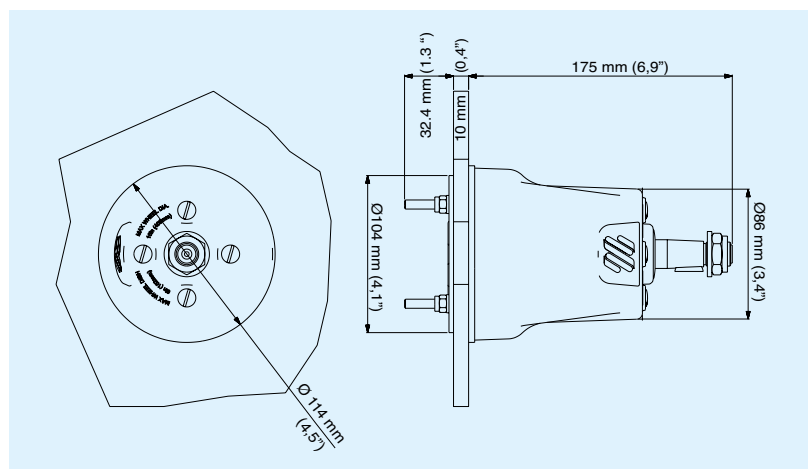
UH



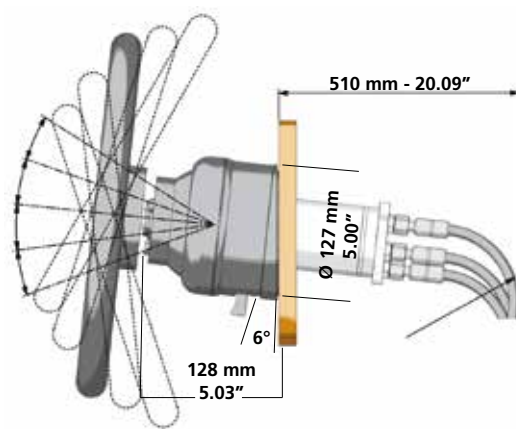
MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	APPLICATION	No. OF STATIONS	MAXIMUM WHEEL DIA.
UH32-F	42091 U	front mount	32cc - 1.95 cu.in	single cylinder	1	406 mm - 16"
UH32-T	42092 W	with X66 tilt	32cc - 1.95 cu.in	single cylinder	1	406 mm - 16"
UH40-F	42093 Y	front mount	40cc - 2.44 cu.in	dual cylinder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

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

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



UH32-F and UH40-F DIMENSIONS



UH32-T and UH40-T DIMENSIONS

TILT MECHANISM

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

90° TWO FITTING KIT FOR MASTERDRIVE™ HELMS (OPTIONAL)

- MDF90 - 42821 F



X66



MDF-90

INTERMEDIATE HELM POSITION INSTALLATION KIT (OPTIONAL)

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



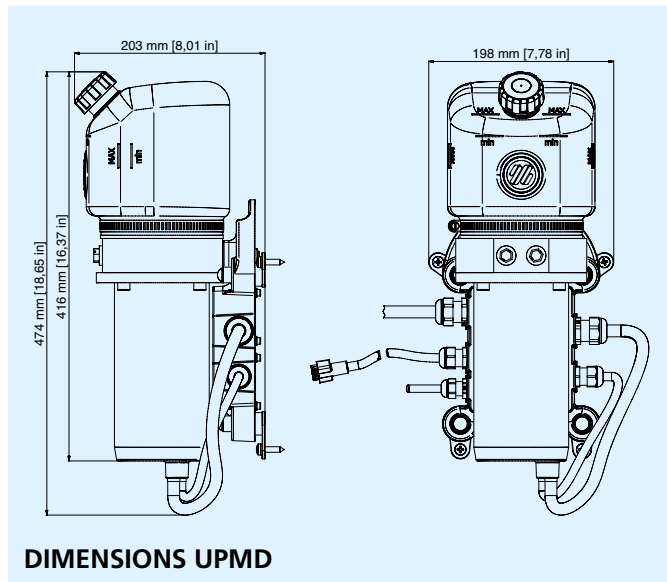
K81



K81MM

UPMD - POWER UNIT - 42096 E

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



UPMD



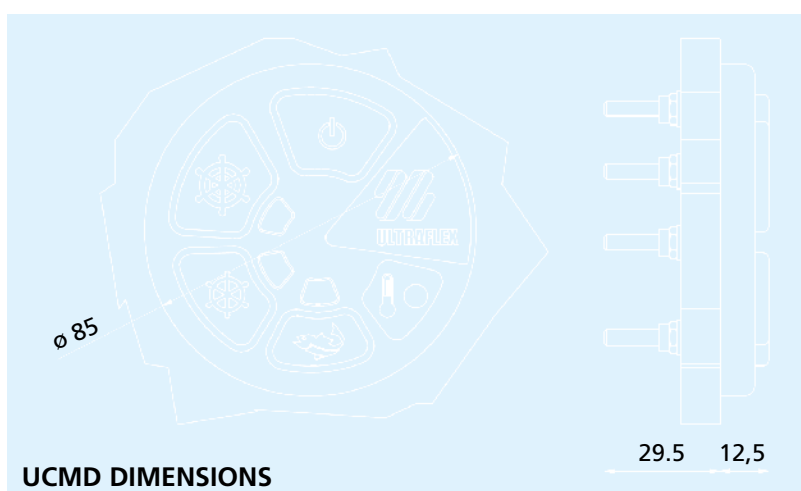


UCMD USER INTERFACE - 42097 G

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



UCMD



UCMD DIMENSIONS

MD - PACKAGED KIT FOR SINGLE STATION

MasterDrive™ packaged kit contains:

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

Depending on the helm type, different versions are available:

Please, see full kit offering on page 76.

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

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



HOSE KITS

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



KIT OBMD

KIT OB-DBR-SVS	LENGTH
KIT OB-DBR-SVS-025	2.5 ft
KIT OB-DBR-SVS-03	3.0 ft
KIT OB-DBR-SVS-04	4.0 ft
KIT OB-DBR-SVS-05	5.0 ft



KIT OB-DBR-SVS





MD2 - PACKAGED KITS FOR DUAL STATION

MasterDrive™ MD2 packaged kit for dual station contains:

- **UHD 1** Slave helm pump
- **UCMD 1** User interface
- **74162 W** - n.1 23 ft (7 m) electric cable for communication with second station
- **70957 S** - 1 3/8" straight fitting
- **70831 T** - 2 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

* For more details, please refer to page 76.



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:

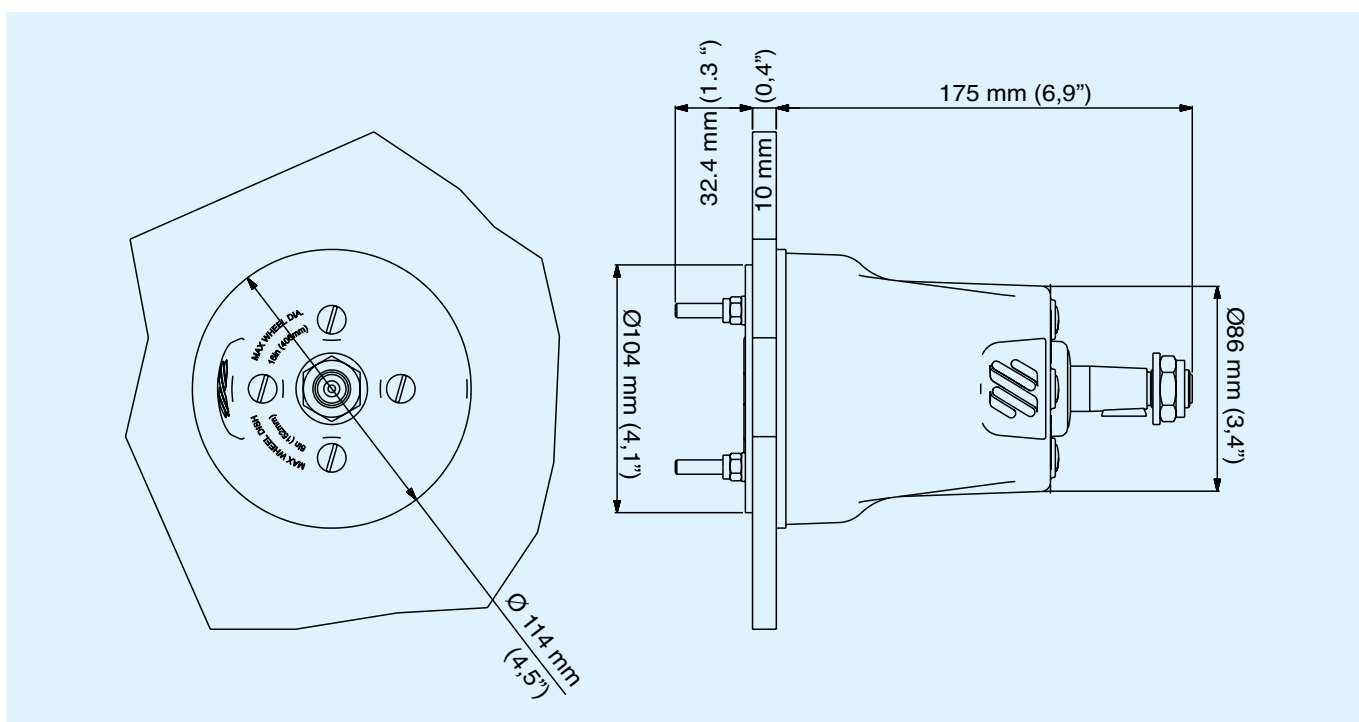
n.1 Kit OBMD with length equal to the distance between the master helm pump and the slave helm pump

n.2 Kits OB-SVS: select the desired length

n.1 OIL 15 1 liter of hydraulic oil

n.1 steering wheel (wheel selection)

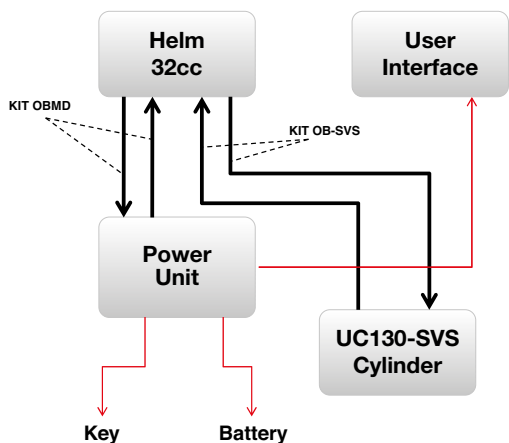
For dual cylinder applications, order: n.1 KIT OB-DBR-SVS select the desired length.



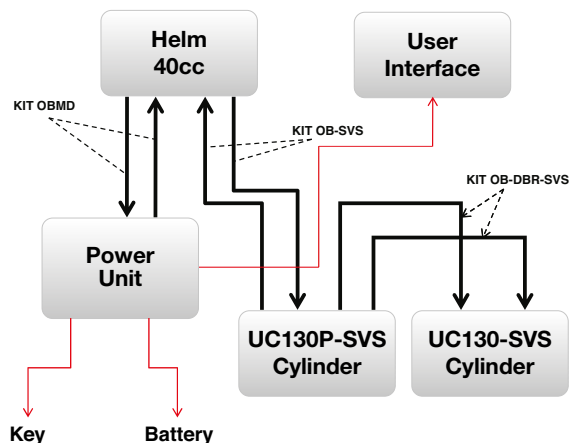
UHD32-F, UHD32-T, UHD40-F and UHD40-T DIMENSIONS



SINGLE CYLINDER SINGLE STATION APPLICATION



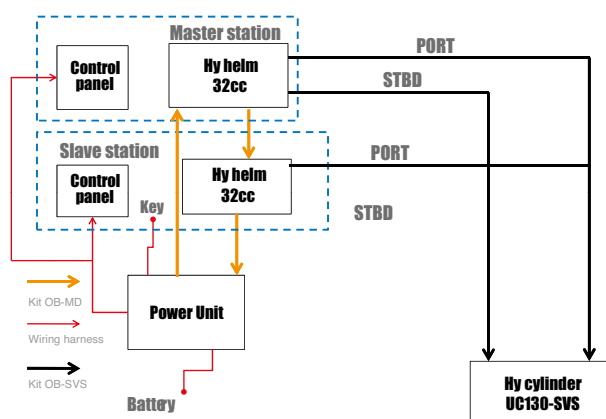
DUAL CYLINDER SINGLE STATION APPLICATION



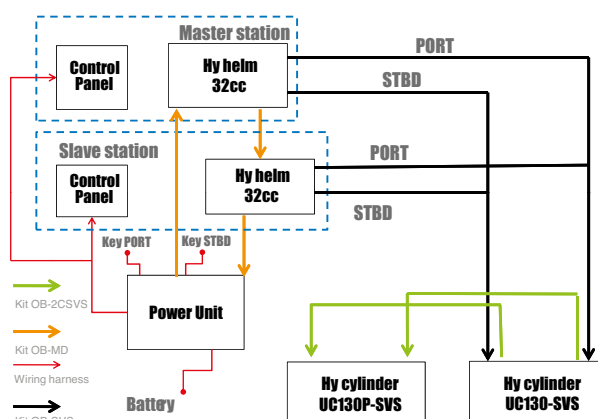
— wiring harness

— high pressure hoses

SINGLE CYLINDER DUAL STATION APPLICATION



DUAL CYLINDER DUAL STATION APPLICATION





76

- POWER ASSISTED OUTBOARD STEERING SYSTEM

MASTERDRIVE™

MASTERDRIVE™ - POWER ASSISTED OUTBOARD STEERING SYSTEM

SINGLE STATION / SINGLE CYLINDER KITS

MD32-1F	KIT INCLUDES	MD32-1T	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	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 12V DC UC130 SILVERSTEER CYLINDER VER 1 2 QUARTS OF OIL 15
MD32-2F	KIT INCLUDES	MD32-2T	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	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 12V DC UC130 SILVERSTEER CYLINDER VER 2 2 QUARTS OF OIL 15

SINGLE STATION RETROFIT KITS

MD32FM	KIT INCLUDES	MD32T	KIT INCLUDES
UH32-F UCMD UPMD	MASTERDRIVE 32CC FRONT MOUNT HELM MASTERDRIVE USER INTERFACE MASTERDRIVE POWER UNIT 12V DC	UH32-T X66 UCMD UPMD	MASTERDRIVE 32CC TILT MOUNT HELM TILT MECHANISM FOR POWER STEERING MASTERDRIVE USER INTERFACE MASTERDRIVE POWER UNIT 12V DC
MD40FM	KIT INCLUDES	MD40T	KIT INCLUDES
UH40-F UCMD UPMD	MASTERDRIVE 40CC FRONT MOUNT HELM MASTERDRIVE USER INTERFACE MASTERDRIVE POWER UNIT 12V DC	UH40-T X66 UCMD UPMD	MASTERDRIVE 40CC TILT MOUNT HELM TILT MECHANISM FOR POWER STEERING MASTERDRIVE USER INTERFACE MASTERDRIVE POWER UNIT 12V DC

SINGLE STATION / TWIN CYLINDER KITS

MD40-D1F	KIT INCLUDES	MD40-D1T	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	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-D2F	KIT INCLUDES	MD40-D2T	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 VER 2P 2 QUARTS OF OIL 15	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 VER 2P 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** - 42636 L

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

A94

TWIN OUTBOARD ENGINE/SINGLE

UC128-OBF or UC128-SVS CYLINDER TIE BAR

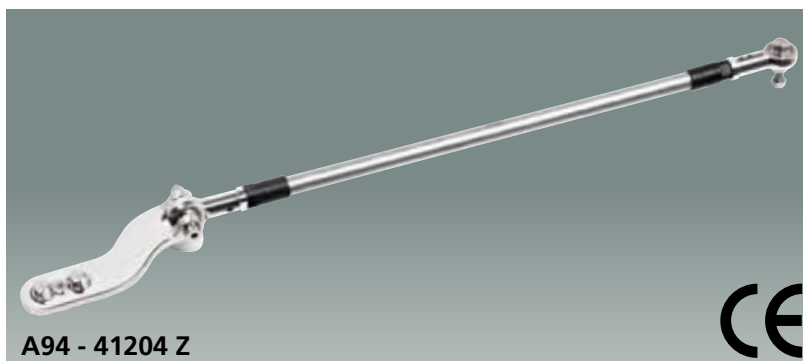
- Suitable for applications with single UC128-OBF (or UC130-SVS) front mount cylinder
NOTE: In the applications with dual cylinder use **A90** tie bar
- Allows to tilt the engines independently
- Stainless steel components
- Electropolished stainless steel ball joints
- Not recommended for applications 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 x 26



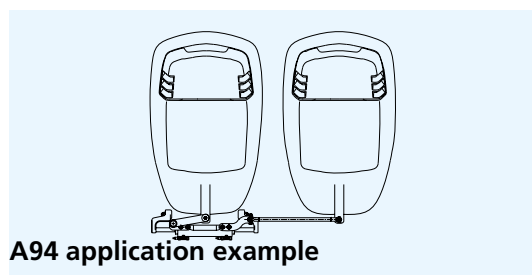
A94 - 41204 Z

A94 TIE BAR APPLICATIONS

WARNING

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

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



A94 application example



UC128 + A94





A90

TWIN OUTBOARD ENGINE/TWIN

UC128-OBF or UC130-SVS CYLINDER TIE BAR

Heavy duty twin engine/twin cylinder tie bar kit for use with UC128 or UC130 and UC128P or UC130P "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 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 UC130-SVS) cylinder it is necessary to order a standard UC128-OBF (or UC130-SVS) cylinder (link arm attached to the starboard side of the cylinder) and a UC128P-OBF (or UC130P-SVS) port cylinder (link arm attached to the port side of the cylinder).

UC128 and UC130 starboard cylinders:

UC128-OBF/1 - 43231 N
UC128-OBF/2 - 43232 R
UC128-OBF/3 - 43233 T
UC130/1-SVS - 43225 U
UC130/2-SVS - 43226 W
UC130/3-SVS - 43227 Y

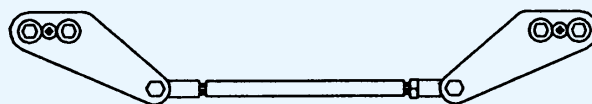
UC128P and UC130P port cylinders:

UC128P-OBF/1 - 43234 V
UC128P-OBF/2 - 43235 X
UC130P/1-SVS - 43223 P
UC130P/2-SVS - 43224 S

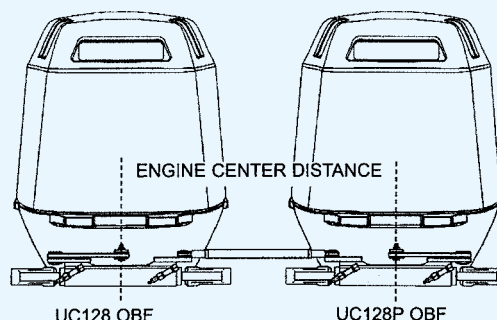
ATTENTION: As the tiller arm position varies from engine to engine and the distance between two engines is not predictable, unexpected interferences may occur while tilting. A duly check of the tie bar installation is then strongly recommended. Should you need additional information, please do not hesitate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



A90



A90 - X LL
 LL = ENGINE CENTER DISTANCE



A90 - application example



UC128 + A90

A93

TRIPLE OUTBOARD ENGINE/TWIN UC128-OBF OR UC130-SVS CYLINDER TIE BAR

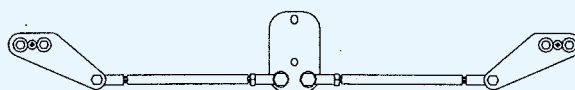
- Suitable for applications with triple outboard engines and dual cylinders UC128-OBF (or UC130-SVS)
- 4 different lengths available:
A93 x 26 - 42613 Y - 26" (660,4 mm) twin engine centers
A93 x 27 - 42637 N - 27" (685,8 mm) twin engine centers
A93 x 28 - 42638 R - 28" (711,2 mm) twin engine centers
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 or UC130 and UC128P or UC130P "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.

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.



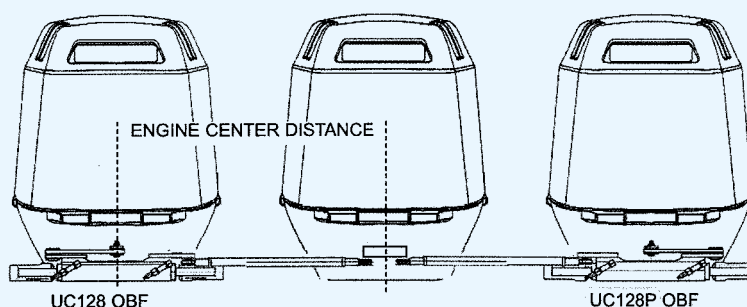
A93



A93 X LL X ENGINE MODEL
LL = ENGINE CENTER DISTANCE

EXAMPLE:

A93 - TE/DC TB KIT X 26 X MERC 225 OPTI



A93 - application example



Photo courtesy of Donzi Marine

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.



LTB1

Helm Connection

Starboard Cylinder Out

Port Cylinder In/Out

Starboard Cylinder In/Out

LTB1 application example



STERNDRIVE
CYLINDERS

80

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

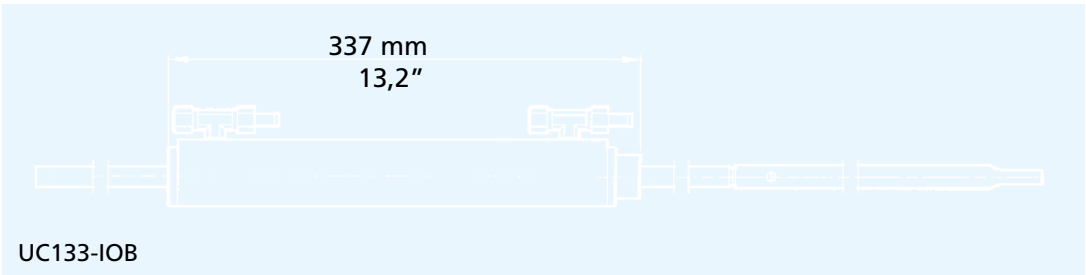
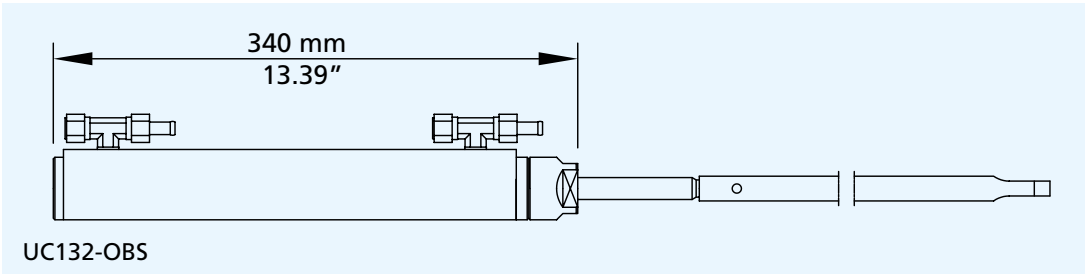


UC133-IOB
Balanced cylinder: the number of turns lock to
lock is equal port to starboard or vice-versa



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

SPECIFICATIONS	UC133-IOB - 39429 M Balanced	UC132-OBS - 39430 W Unbalanced
Volume	132 cc - 8 cu. in	132 / 163 cc - 8 / 9.95 cu. in
Torque	66 kgm - - 5738 lbs. in	
Output force	464 kg -1023 lbs	464 / 574 kg - 1023 / 1265 lbs
Inside diameter	32 mm - 1.25"	32 mm - 1.25"
Stroke	203 mm - 8"	203 mm - 8"
3/8" (9,5 mm) Fittings	For high pressure flex hose	For high pressure flex hose



STERNDRIVE CYLINDERS

ENGINE	YEAR	MODEL	STERNDRIVE CYLINDERS			
			non power assist engine	see notes	power assisted engine	see notes
MERCURISER®	To date	ALPHA	UC133-IOB	1, 3	UC132-OBS	2
	To date	BRAVO ONE	UC133-IOB	1, 3	UC132-OBS	2
	To date	BRAVO TWO	UC133-IOB	1, 3	UC132-OBS	2
	To date	BRAVO THREE	UC133-IOB	1, 3	UC132-OBS	2
VOLVO®	To date	275	UC168-I	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).**
- ULTRAFLEX 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			Turn lock to lock: Balanced 4.7 - Unbalanced 4.7/5.8 Max rudder torque: 66 kgm - 5738 lbs. in
Components	Model	Qty	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
Helm pump	UP28	1	
Cylinder	see application	1	
Hose Kit	KIT OB	1	
Oil	OIL 15	3	
Steering wheel	(Wheel selection)	1	
SYSTEM B			Turn lock to lock: Balanced 4 - Unbalanced 4/5 Max rudder torque: 66 kgm - 5738 lbs. in
Components	Model	Qty	For 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
Helm pump	UP33	1	
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 two 1.6 ft (0,5 m) nylon tubes and all necessary fittings for a single station.



KIT 95

BULKHEAD HOSE KITS

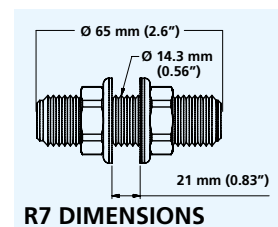
R7 - 3/4" BULKHEAD FITTING KIT

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



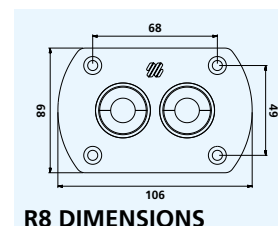
R8B



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



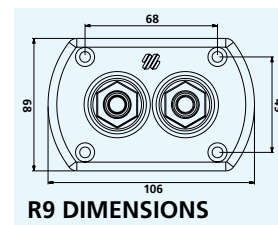
R9B



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 and UC128-SVS cylinders.

KIT 95-25 - 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 95-25

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

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
VFNO38 40868Y	 COMPLETE BOSS FITTING UC128OBF	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 to '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	 Tapered 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' ring Face)
UPS 11/16 ELBOW	 POWERTECH 11/16, 90 DEG ELBOW	90° fitting for the pressure and tank line on a powertech helm	-
UPS 90 DEG ELB	 POWERTECH 90 DEGREE ELBOW	90° fitting for the two high pressure outlets on a powertech helm/also used for connection from a bulkhead	-
UPS BLKHD T-FIT	 POWERTECH BULKHEAD T-FITTING	T-Fitting used on bulkhead fittings or helm high pressure lines on powertech helm	-
UPS T-FITTING	 POWERTECH T-FITTING	3-way 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 style hoses	-
UPS 4-4 FLO-SS	 POWERTECH MALE CONNECTOR	Used when connecting an Autopilot to Powertech System - Autopilot to ORF Hose	-





HYDRAULIC CROSS REFERENCE GUIDE

UFLEX® PART No.	TELEFLEX® 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-OBF 1	HC5345 or HC5358	CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - # 1 LINK ARM
UC128-OBF 2	HC5345 or HC5358	CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - # 2 LINK ARM
UC128-OBF 3	HC5345 or HC5358	CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - # 3 LINK ARM
UC128P-OBF 1	HC5345 or HC5358	CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - PORT ENGINE CYLINDER - # 1 LINK ARM
UC128P-OBF 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)		
UC130/1-SVS	HC5345 or HC5358 or HC6750 or HC6751 or HC6752	HIGH PERFORMANCE CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - # 1 LINK ARM
UC130/2-SVS	HC5345 or HC5358 or HC6750 or HC6751 or HC6752	HIGH PERFORMANCE CYLINDER, 1.38" BORE, 7.8" STROKE, FRONT MOUNT - # 2 LINK ARM
UC130P/1-SVS	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/2-SVS	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-OBF/1	HC4645H or HC4647H or HC4658H	CYLINDER, 1.18" BORE, 7.3" STROKE, FRONT MOUNT (150 HORSEPOWER AND UNDER) - # 1 LINK ARM
UC94-OBF/3	HC4645H	CYLINDER, 1.18" BORE, 7.3" STROKE, FRONT MOUNT (150 HORSEPOWER AND UNDER) - # 3 LINK ARM
SIDEMOUNT OUTBOARD CYLINDER		
UC132-OBS	HC5370	CYLINDER, 1.26" BORE, 8.0" STROKE, SIDE MOUNT



UFLEX® PART No.	TELEFLEX® CROSS REFERENCE	DESCRIPTION
GOTECH™	NOT APPLICABLE	FRONT MOUNT HYDRAULIC SYSTEM FOR UNDER 115 HP
HYCO OUTBOARD STEERING PACKAGES (See application chart)		
HYCO 1.0	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 1.0	HK6300 or HK6400 SeaStar®	FRONT MOUNT OUTBOARD SYSTEM
PROTECH 2.0	HK6300 or HK6400 SeaStar®	FRONT MOUNT OUTBOARD SYSTEM
PROTECH 3.0	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 1.0	HK7300 or HK7400 SeaStar Pro®	1500PSI HI-PERFORMANCE FRONT MOUNT OUTBOARD SYSTEM
SILVER STEER 2.0	HK7300 or HK7400 SeaStar Pro®	1500PSI HI-PERFORMANCE FRONT MOUNT OUTBOARD SYSTEM
SILVER STEER T 1.0	HK7300 or HK7400 SeaStar Pro®	1500PSI HI-PERFORMANCE FRONT MOUNT OUTBOARD SYSTEM WITH TILT HELM
SILVER STEER T 2.0	HK7300 or HK7400 SeaStar Pro®	1500PSI HI-PERFORMANCE FRONT MOUNT OUTBOARD SYSTEM WITH TILT HELM
STERNDRIIVE APPLICATION CYLINDERS		
UC133-IOB	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	HO51LL	PREMADE HYDRAULIC HOSES
KIT OB-BHBR-LL	HO81LL	PREMADE HYDRAULIC HOSES WITH BULKHEAD BEND RESTRICTORS
KITOB SVS-LL	HO81LL	TWO FLEXIBLE HOSES SILVER STEER HIGH PERFORMANCE
TU95-LL	HT5LL	NYLON TUBE IN 1 FT. INCREMENTS (NOT RECOMMENDED FOR OUTBOARD APPLICATIONS)
KIT 95 25	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.



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BubbleBuster™

BubbleBuster™

A PORTABLE DEVICE FOR AUTOMATIC FILLING AND PURGING OF HYDRAULIC SYSTEMS

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

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

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

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

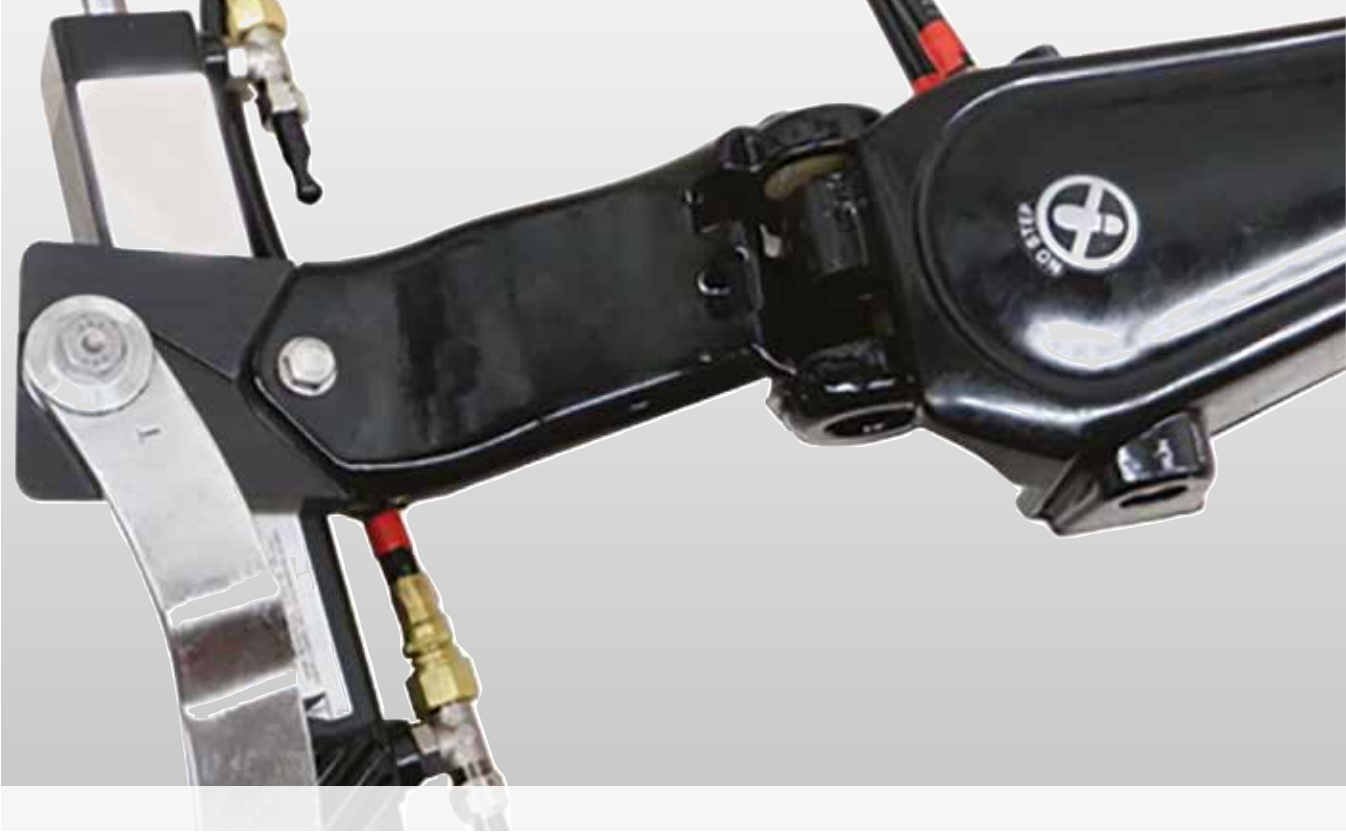
OPTIONAL COMPONENTS

- **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)



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)

A SAFER WAY TO FISHING



ZERO TORQUE TILLER STEERING SYSTEM

Tiller steered boats are labor intensive to steer due to the constant load on the tiller from propeller torque, and the fact that the operator is positioned (while driving the boat) in such a way that maintaining control requires physical effort not customary in everyday activities.

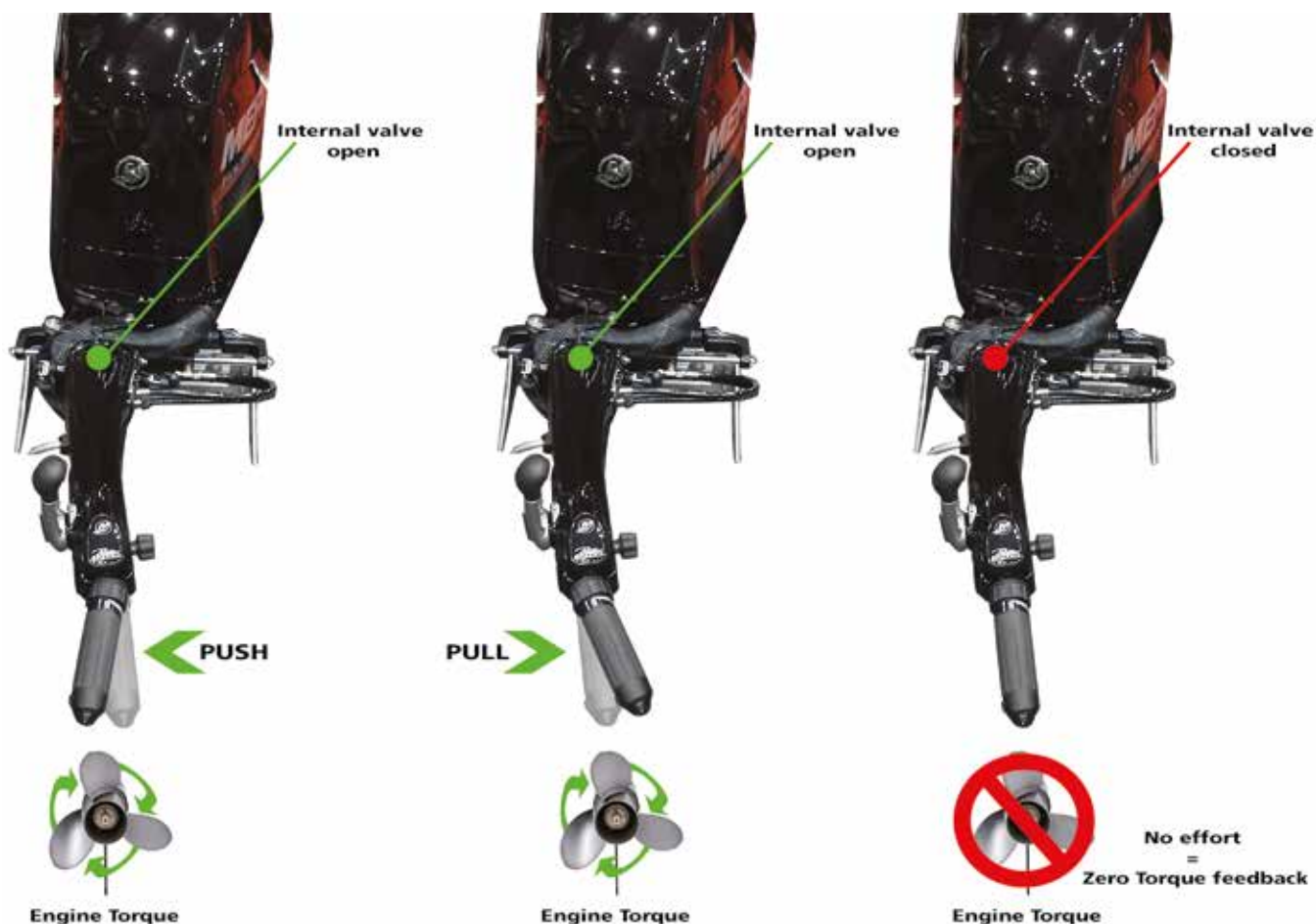
The higher torque of today's four stroke engines has naturally increased the load on the tiller as compared to two strokes. Though engine horsepower on tiller steered boats may not have changed, the difficulty in controlling these boats has increased.

Having a system that locks out the torque while the boat is not actively being steered, during fishing, is a desirable feature that has been implemented on larger engines by engine manufacturers.



The solution is the ZERO TORQUE Tiller System which consists of a hydraulic cylinder with a control valve that opens and closes following the operation made on the handle. The valve closes when the steering effort by the driver is stopped; as a consequence the cylinder locks the steering position.

HOW THE ZERO TORQUE SYSTEM WORKS:



ZERO TORQUE TILLER STEERING SYSTEM

FEATURES

- Suitable for boats up to 150 HP
- Hydraulic torque lockout
- Safer boat handling operations
- Consistent boat direction
- Fatigue reducer
- Includes Mercury® "BIG TILLER"
- Patented



When the handle is operated it swivels around its pivot and moves the linkage bar which will operate the valve.



PATENTED

ZERO TORQUE TILLER STEERING SYSTEM

MODELS

ZTF TILLER - 43058 B - Neutralize propeller torque with the ZTF Tiller! This unique tiller handle contains a hydraulic valve and cylinder that virtually locks out propeller torque while not actively changing the direction of the boat. Rated for Mercury® engines up to 150HP this system comes complete with the Mercury Big Tiller®, and the hydraulic valve and cylinder.

ZTF TILLER-C - 43059 D - Convert your existing Mercury Big Tiller® handle to a ZeroTorque Feedback Tiller! Send the Big Tiller to Uflex to have the conversion performed.



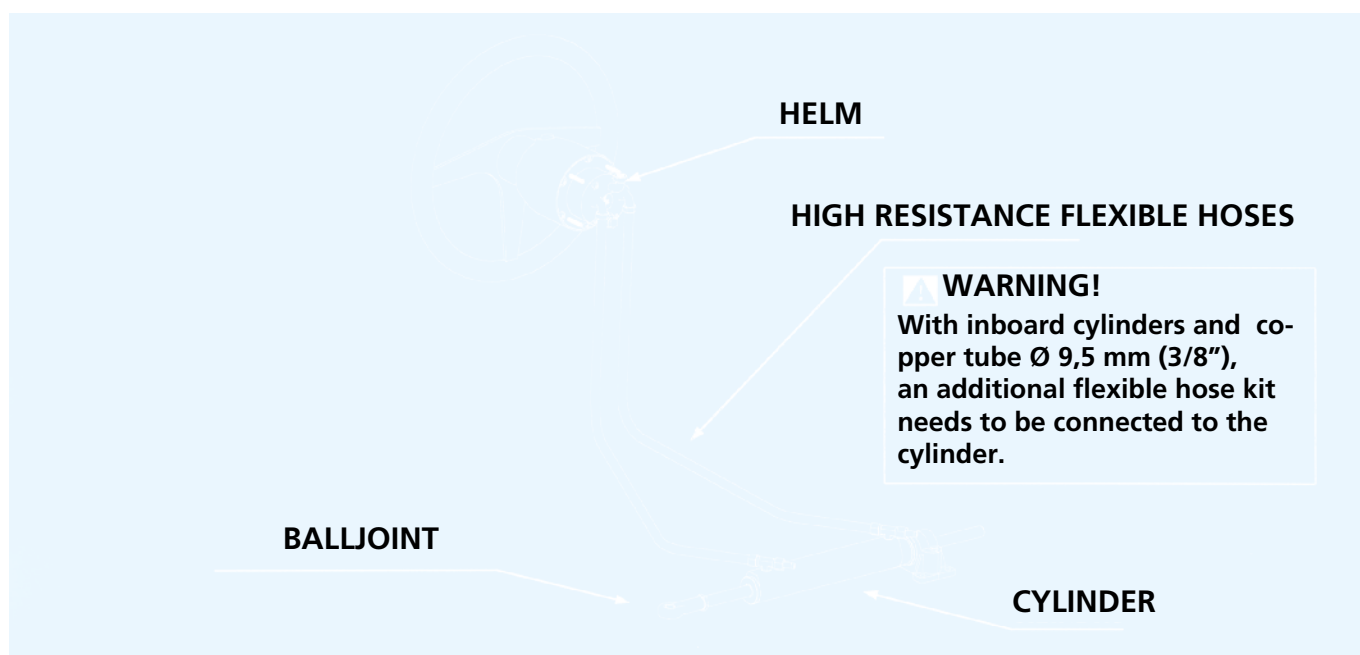
HYDRAULIC INBOARD STEERING SYSTEMS



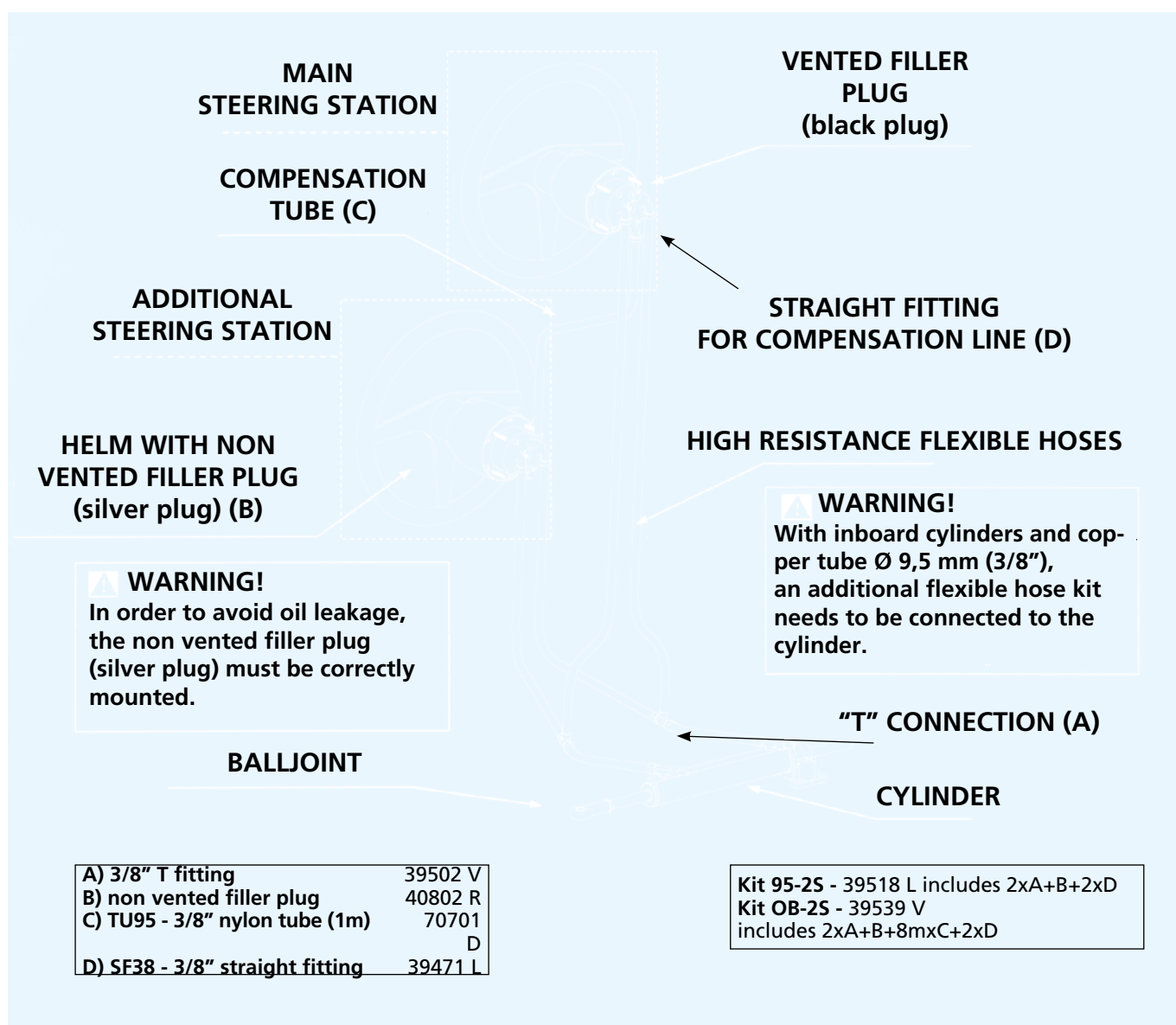
HYDRAULIC STEERING SYSTEMS



SINGLE STEERING STATION INSTALLATION DIAGRAM




DUAL STEERING STATION INSTALLATION DIAGRAM



INBOARD STEERING SYSTEM APPLICATION GUIDE

BOAT LENGTH	UP to 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
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			
UP45					6.5 M - 3/8"	N/A	N/A		
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
	P= 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



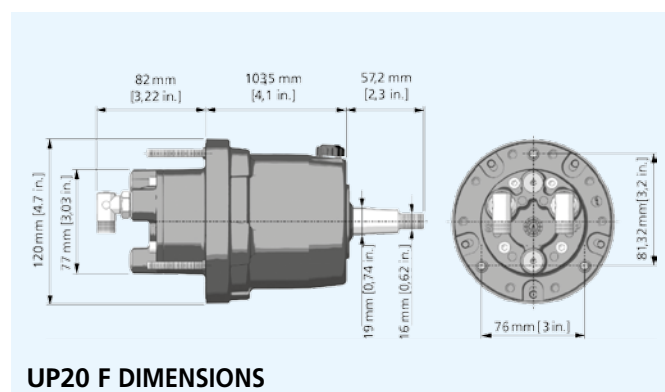
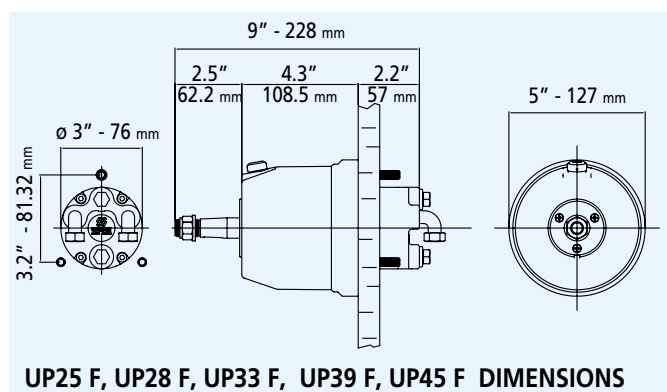
UP20 F - UP25 F UP28 F - UP33 F UP39 F - UP45 F FRONT MOUNT HELM PUMPS

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 (for all models except UP20) round flange permit to install the pumps in an intermediate dashboard position.



MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP20 F	43180 Y	Front mount	20 cc - 1.2 cu.in	5	70 Bar - 1000 PSI	508 mm - 20"	3,6 kg - 8 lbs
UP25 F	42462 D	Front mount	25 cc - 1.5 cu.in	5	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP28 F	42459 R	Front mount	28 cc - 1.7 cu.in	5	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP33 F	42456 J	Front mount	33 cc - 2.0 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP39 F	42453 C	Front mount	39 cc - 2.4 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP45 F	42465 K	Front mount	45 cc - 2.7 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs



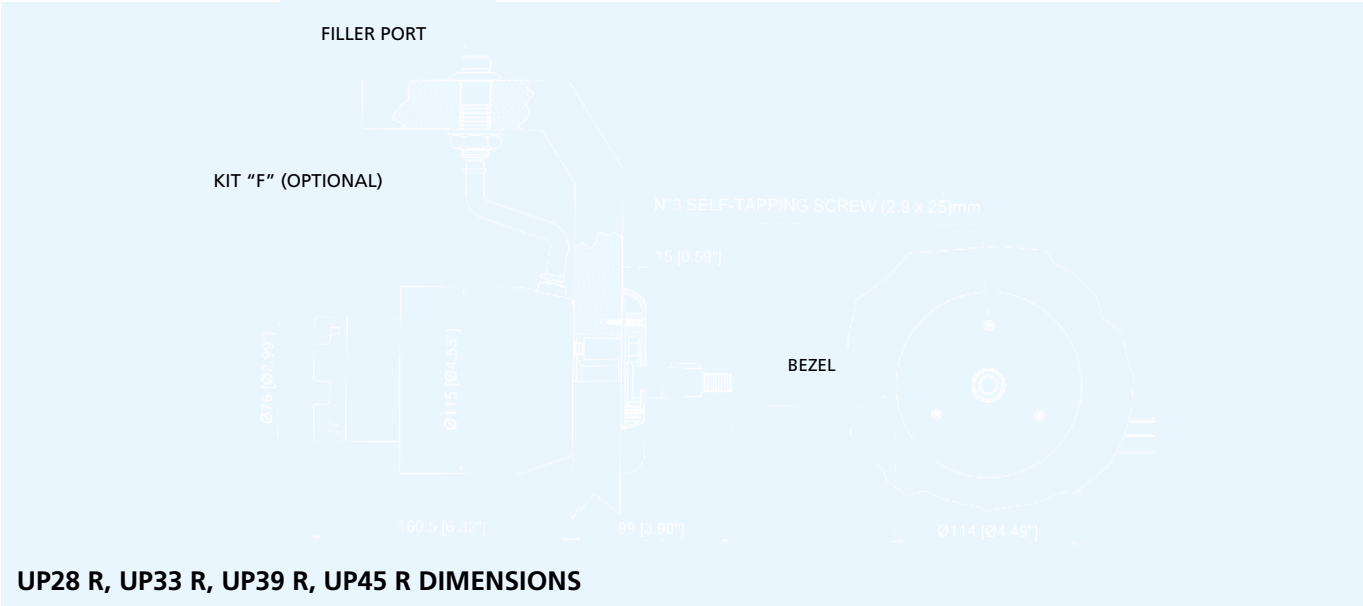
UP28 R - UP33 R
UP39 R - UP45 R
REAR MOUNT
HELM PUMPS

FEATURES

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



MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP28 R	42460 Z	Rear mount	28 cc - 1.7 cu.in	5	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP33 R	42457 L	Rear mount	33 cc - 2.0 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP39 R	42454 E	Rear mount	39 cc - 2.4 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs
UP45 R	42466 M	Rear mount	45 cc - 2.7 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	5 kg - 11 lbs





UP56 - UP68 HELM PUMPS

FEATURES

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

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

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



KIT F56



KR56

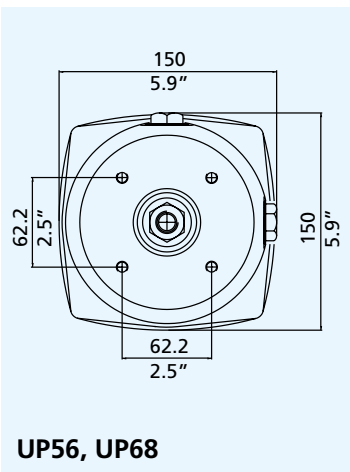
MODEL	P. No.	MOUNTING	DISPLACEMENT/ REVOLUTION	No. OF PISTONS	RELIEF VALVE SETTING	MAXIMUM WHEEL DIA.	WEIGHT
UP56	40808 D	Rear (KR56) - Intermediate (KIM56)	56 cc - 3.4 cu.in	7	70 Bar - 1000 PSI	710 mm - 28"	7,5 kg - 16,5 lbs
UP68	42561 F	Rear (KR56) - Intermediate (KIM56)	68 cc - 4.15 cu.in	7	70 Bar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

RV70 - 42560 D - RELIEF VALVE 70 BAR

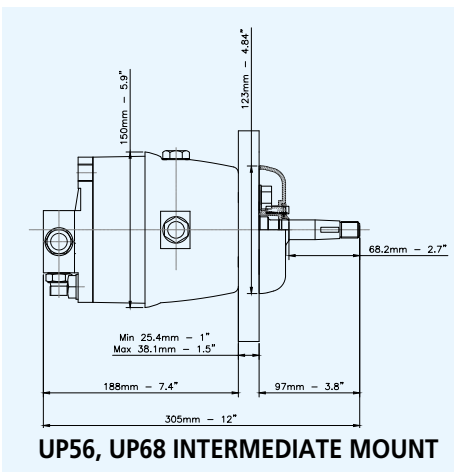
WARNING: Applications with UP56 or UP68 pumps require the RV70 relief valve added to the system for over-pressure protection.



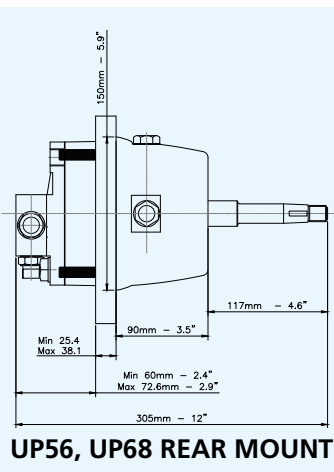
RV70



UP56, UP68



UP56, UP68 INTERMEDIATE MOUNT



UP56, UP68 REAR MOUNT

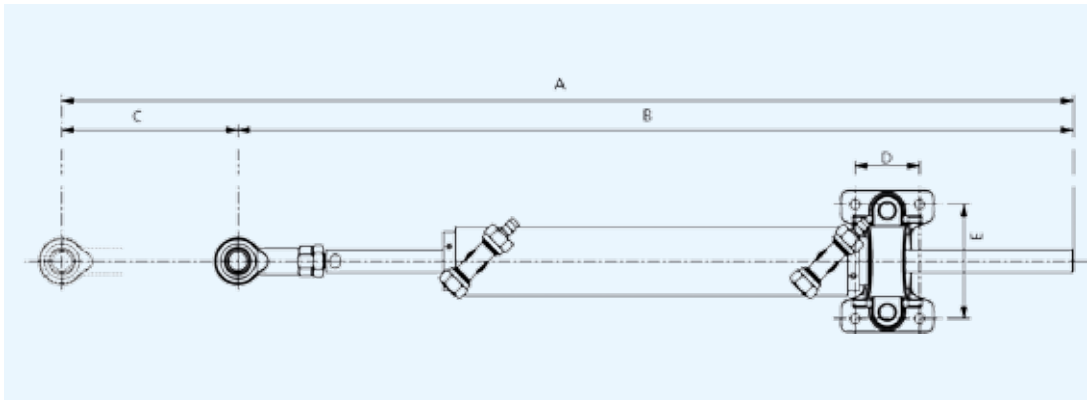


UC69-I - Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



UC116-I; UC168-I; UC215-I
All balanced cylinders: the number of turns lock-to-lock is equal port to starboard and vice-versa

SPECIFICATIONS	UC69-I - 39782 E	UC116-I - 39431 Y 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	For high pressure flex hose	For high pressure flex hose	For high pressure flex hose



	UC69-I	UC116-I	UC168-I	UC215-I
A	644 mm - 25.33"	741 mm - 22.17"	792 mm - 31.18"	941 mm - 37.05"
B	494 mm - 19.43"	563 mm - 29.17"	614 mm - 24.17"	713 mm - 28.07"
C (stroke)	150 mm - 5.9"	178 mm - 7"	178 mm - 7"	228 mm - 8.98"
D	40 mm - 1.57"	40 mm - 1.57"	40 mm - 1.57"	40 mm - 1.57"
E	73 mm - 2.87"	105 mm - 4.13"	105 mm - 4.13"	105 mm - 4.13"
Rod Ø	25 mm - 0.98"	32 mm - 1.25"	40 mm - 1.57"	40 mm - 1.57"



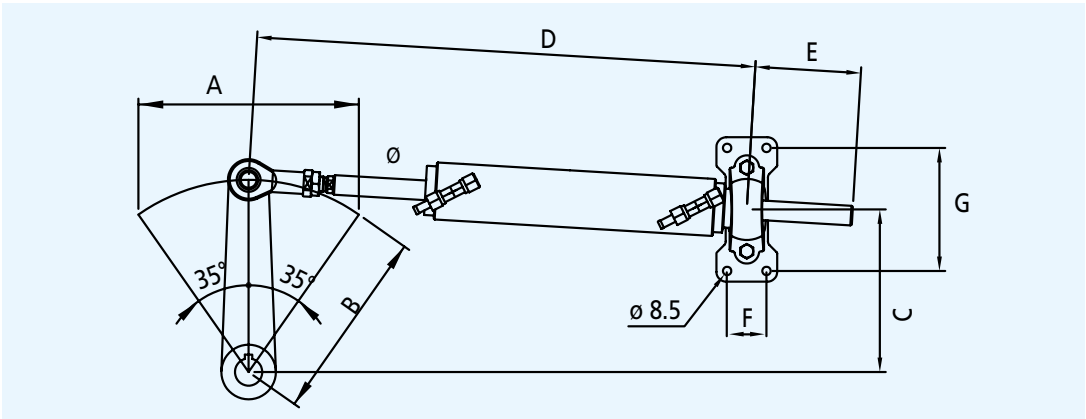


INBOARD CYLINDERS



UC293-I; UC378-I
 Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.

SPECIFICATIONS	UC293-I - 40246 L Brass	UC378-I - 40810 P Brass
Volume	293 cc - 17.8 cu. in	376 cc - 22.94 cu. in
Torque	146,5 kgm - 12816 lbs. in	187,6 kgm - 16347 lbs. in
Output force	1155 kg - 2545 lbs	1155 kg - 2545 lbs
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"

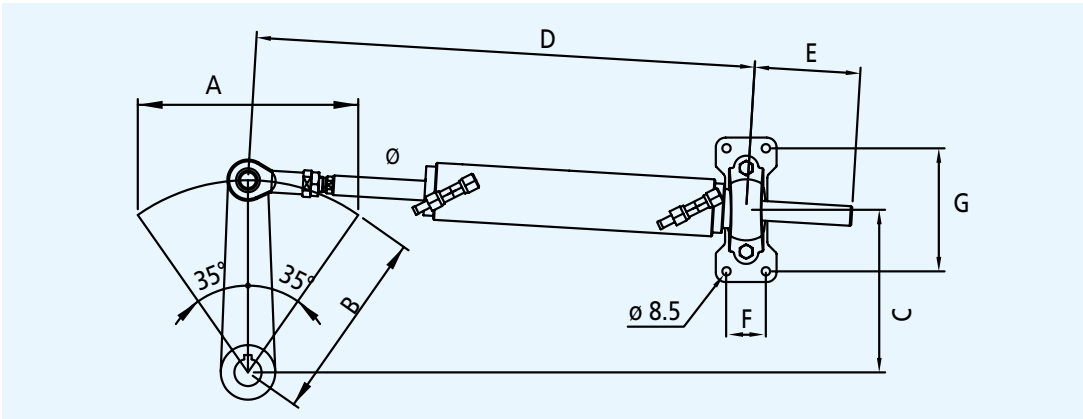


UC339-I; UC442-I
Balanced: the number of turns lock-to-lock is equal port to starboard or vice-versa.



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 50 m (164 ft) 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 50 m (164 ft) 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 8 m (ft 26.3) 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 1,0 m (3.2 ft) nylon tube and all necessary fittings for a single station application.

KIT 120-I - 42765 Y: 12 mm copper tube fitting kit – It includes one 1,0 m (3.2 ft) 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













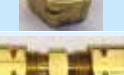











OIL 15



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
VFNO38 40868Y	 COMPLETE BOSS FITTING UC128OBF	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 to '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	 Tapered 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' ring Face)
UPS 11/16 ELBOW	 POWERTECH 11/16, 90 DEG ELBOW	90° fitting for the pressure and tank line on a PowerTech helm	-
UPS 90 DEG ELB	 POWERTECH 90 DEGREE ELBOW	90° fitting for the two high pressure outlets on a PowerTech helm/also used for connection from a bulkhead	-
UPS BLKHD T-FIT	 POWERTECH BULKHEAD T-FITTING	T-Fitting used on bulkhead fittings or helm high pressure lines on PowerTech helm	-
UPS T-FITTING	 POWERTECH T-FITTING	3-way 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 style 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 following page "order guide")
- 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	1 kit OB-SVS (length selection) 1 kit OBMD (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	1 kit OB-SVS (length selection)	1 steering wheel
MD40F - 42102 W	2 UC168 - 39432 A	8,4	87 kgm 7565 lbs. in	1 kit OBMD (length selection)	
MD50F - 42830 G	2 UC215 - 39433 C	8,6	111 kgm 9642 lbs. in	1 kit OB-DBR-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)

2 Kit OB-SVS (select length required)

1 Kit OBMD (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:

PUMP model	CYLINDER model	Wheel turns Lock-to-lock	Max rudder torque	Flex hose or copper tube	Kit for a dual station installation
UP25 F	UC116-I	4.6	58 kgm 5043 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539 V or Kit 95-2S 39518 L
UP28 F or UP28	UC116-I	4.1	58 kgm 5043 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539 V or Kit 95-2S 39518 L
UP28 F or UP28 R	UC168-I	6.0	87 kgm 7565 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539 V or Kit 95-2S 39518 L
UP33 F or UP33 R	UC168-I	5.1	87 kgm 7565 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539 V or Kit 95-2S 39518 L
UP33 F or UP33 R	UC215-I	6.5	111 kgm 9642 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539 V or Kit 95-2S 39518 L
UP39 F or UP39 R	UC215-I	5.5	111 kgm 9642 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539 V or Kit 95-2S 39518 L
UP39 F or UP39 R	UC293-I	7.5	146,5 kgm 12816 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539 V or Kit 95-2S 39518 L
UP45 F or UP45 R	UC293-I	6.5	146,5 kgm 12816 lbs.in.	TU5/16 flex hose or 3/8" copper tube	KIT-OB-2S 39539 V or Kit 95-2S 39518 L
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.



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STEERING WHEELS

STEERING WHEELS

All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards

- Thermoplastic antishock material
- Standard 3/4" taper
- Complete with hub
- 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)



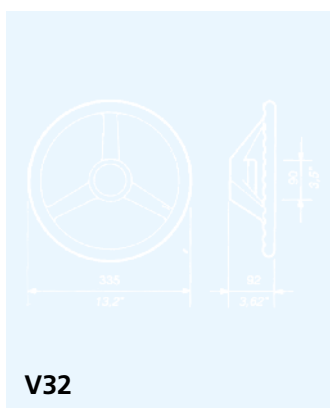
V45B Ø 11" (280 mm)



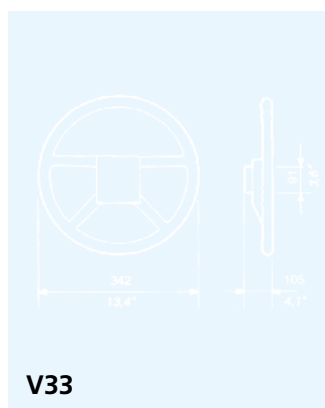
V45W Ø 11" (280 mm)



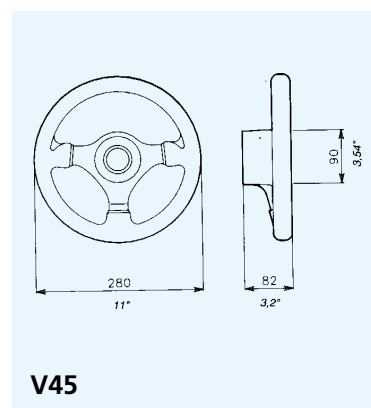
V45G Ø 11" (280 mm)



V32



V33



V45



ANTIGUA STEERING WHEELS

All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards

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

SOFT TOUCH GRIP

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

WOOD LOOK GRIP

V61B	- 39191 E
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V60B Black grip - Black spokes
Ø 13.8" (350 mm)



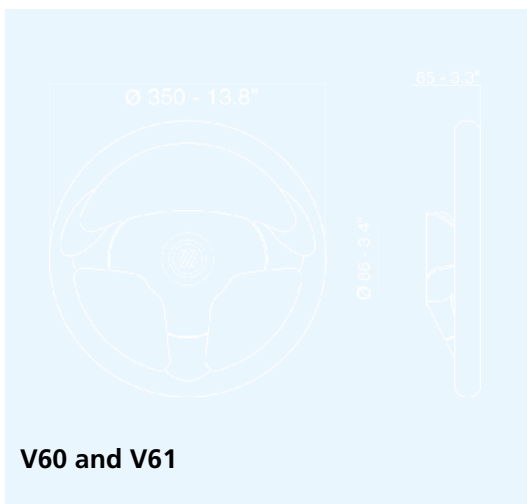
V60W White grip - White spokes
Ø 13.8" (350 mm)



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 ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards

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

SOFT TOUCH GRIP

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



V99 B/B/S Ø 13.8" (350 mm)



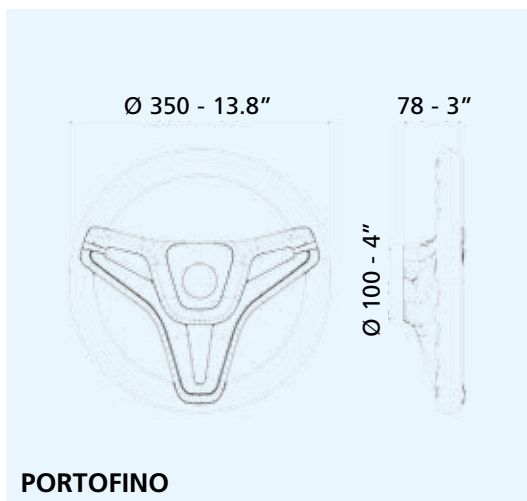
V99 B/S/S Ø 13.8" (350 mm)



V99 B/B/GL Ø 13.8" (350 mm)



V99 B/GL/GL Ø 13.8" (350 mm)



PORTOFINO



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 ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards

- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- X63 - 40119 D hub with button

SOFT TOUCH GRIP

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

CORSE BURL COVER

CBC	- 73706 F
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CENTER RINGS (OPTIONAL)

RING S	- 61820 L silver
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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)



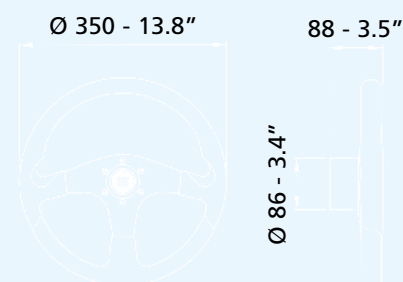
CORSE G/S Grey grip - Silver spokes
Ø 13.8" (350 mm)



CBC - Corse Burl Cover



X63 - easy centering hub



CORSE





NISIDA, SANTORINI, MYKONOS, 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 included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE SOFT TOUCH GRIP

NISIDA B/B - 61812 M
NISIDA B/S - 61813 P

BLACK SOFT TOUCH GRIP WITH INSERTS

SANTORINI B/S - 65995 W

POLYURETHANE GRIP AND REDUCED DIMENSIONS

MYKONOS - 68365 B

CENTER RING (OPTIONAL)

RING S - 61820 L silver



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



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



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



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



Easy
centering hub



PALMARIA GORGONA, BUDELLI, VIVARA STEERING WHEELS

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

POLYURETHANE SOFT TOUCH GRIP

PALMARIA B/B - 63727 H

120° THREE SPOKE WHEELS

LINOSA S/S - 64295 K

POLYURETHANE GRIP WITH INSERTS

BUDELLI CH/P - 65294 N

BUDELLI CH/S - 65293 L

VIVARA CH/P - 64643 G

CENTER RING (OPTIONAL)

RING S - 61820 L silver



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



**LINOSA S/S Silver inserts
Silver 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
Chrome center ring - Ø 13.8" (350 mm)**





LEVANZO, USTICA, MONTECRISTO LINOSA, STEERING WHEELS

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

POLYURETHANE GRIP AND REDUCED DIMENSIONS

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

POLYURETHANE GRIP

MONTECRISTO B/B/CH -
20351 V
MONTECRISTO B/S/S -
20350 T

POLYURETHANE GRIP WITH INSERTS AND REDUCED DIMENSION

LEVANZO B/S/CH - 20927 Z



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



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



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



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



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



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

MAHOGANY GRIP

LAMPEDUSA - 62684 L
ALICUDI - 62682 G



LAMPEDUSA Ø 14.1" (360 mm)



ALICUDI Ø 13.8" (350 mm)



Easy
centering hub





NON MAGNETIC STAINLESS STEEL WHEELS

All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards

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

POLYURETHANE GRIP

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

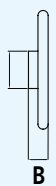
V20B - 42843 S black
V20W - 42844 U white
V20G - 42845W grey

MAHOGANY GRIP

V25M - 40644 Z

STAINLESS STEEL GRIP

V25SS - 40643 X



MOD.	B mm (")
V25	57 (2.2)
V20	67 (2.64)



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)



V20B Ø 13.8" (350 mm)



V20W Ø 13.8" (350 mm)



V20G Ø 13.8" (350 mm)

NON MAGNETIC STAINLESS STEEL WHEELS

All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards

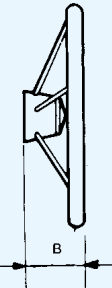
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP

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

STAINLESS STEEL GRIP

V01SS - 41692 S



MOD.	B mm (")
V01	67 (2.6)



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 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

V10TK35 - 41697 C
V10TK40 - 41698 E

STAINLESS STEEL GRIP

V10SS35 - 41699 G



V10B Ø 13.8" (350 mm)



V10W Ø 13.8" (350 mm)



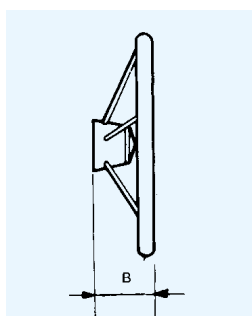
V10G Ø 13.8" (350 mm)



V10TK35 Ø 13.8" (350 mm)
V10TK40 Ø 15.7" (400 mm)



V10SS35 Ø 13.8" (350 mm)



MOD.	B mm (")
V10	67 (2.6)
V10TK 40	73 (2.9)



NON MAGNETIC STAINLESS STEEL WHEELS

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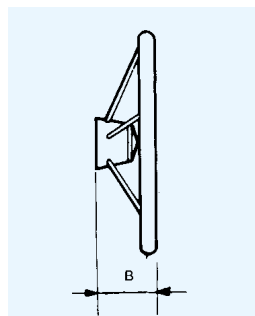
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP

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-B/P - 21414 Y
KV56-W/P - 21415 A



MOD.	B mm (")
V56	95 (3.7)



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)



KV56B/KG Ø 13.8" (350 mm)



KV56B/O Ø 13.8" (350 mm)

CUSTOMIZE V56 STEERING WHEEL WITH COLOR INSERTS



KV56-R

KV56-O

KV56-KG

KV56-B/P

KV56-W/P



NON MAGNETIC STAINLESS STEEL WHEELS

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

POLYURETHANE GRIP

V24W - 42347 D

V24B - 42345 Z

V24COMANDO - 42370 Y

V29B - 42846 Y

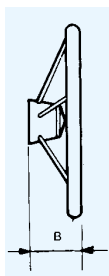
V29W - 42847 A

V29G - 42848 C

POLYURETHANE GRIP AND REDUCED DIMENSION

V52B - 40631 P black

V52W - 40633 U white



MOD.	B mm (")
V24	75 (2.95)
V29	107 (4.2)
V52	73 (2.9)



V24W Ø 13.8" (350 mm)



V24B Ø 13.8" (350 mm)



V24COMANDO Ø 13.8" (350 mm)



V29B Ø 13.8" (350 mm)



V29W Ø 13.8" (350 mm)



V29G Ø 13.8" (350 mm)



V52B Ø 12.6" (320 mm)



V52W Ø 12.6" (320 mm)



NON MAGNETIC STAINLESS STEEL WHEELS

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

EXCLUSIVE POLYURETHANE "FIRM GRIP"

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

POLYURETHANE GRIP

V58B - 38649 X black
V58G - 38650 F grey

STAINLESS STEEL GRIP

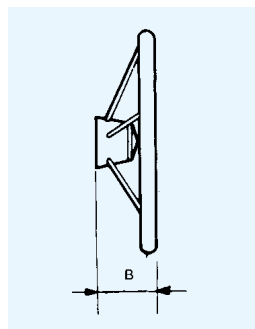
V29SS - 43007 H

MAHOGANY GRIP

V74/40- 41115 A

NATURAL TEAK GRIP

V77/40- 41152 G



MOD.	B mm (")
V70	90 (3.5)
V58	78 (3.0)
V29SS	107 (4.2)
V74	63 (2.5)
V77	63 (2.5)



V70B Ø 13.8" (350 mm)



V70W Ø 13.8" (350 mm)



V70G Ø 13.8" (350 mm)



V58B Ø 15.7" (400 mm)



V58G Ø 15.7" (400 mm)



V29SS Ø 13.8" (350 mm)



V74/40 Ø 15.7" (400 mm)



V77/40 Ø 15.7" (400 mm)



SIESTAKEY 2 SPOKE NON MAGNETIC STAINLESS STEEL WHEELS

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

316L STAINLESS STEEL GRIP

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

KNOB/SK - 68832 G



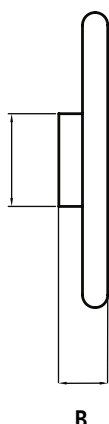
SIESTAKEY/B Ø 14.5" (368 mm)



SIESTAKEY/G Ø 14.5" (368 mm)



KNOB/SK - Speed knob for Siestakey



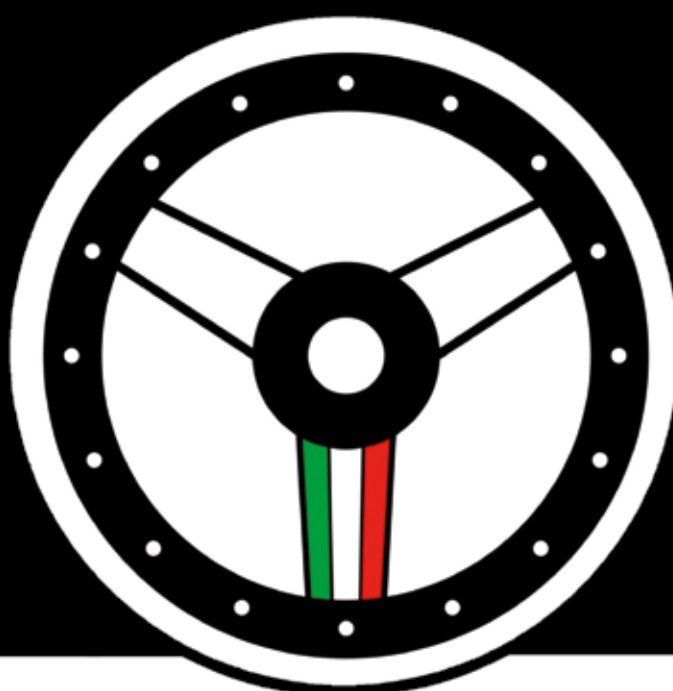
B

B= 3.54" - 90 mm





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VERO VOLANTE ITALIANO

"VERO VOLANTE ITALIANO"

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

STEERING WHEELS



VERO VOLANTE ITALIANO - MAINTENANCE



VERO VOLANTE ITALIANO

- 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 textile cover during non-use periods



BOCCANEGRA STEERING WHEELS

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

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

VYNIL GRIP AND PAINTED 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)



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VERO VOLANTE ITALIANO



BOCCANEGRA STEERING WHEELS

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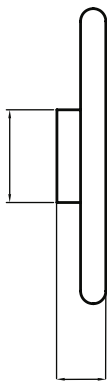
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes

VYNIL GRIP AND PAINTED 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)

ODERICO STEERING WHEELS

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

VYNIL GRIP

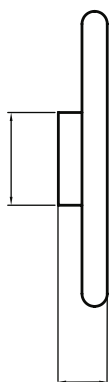
ODERICO V B/SS/CH - 69563 L

ODERICO V B/SS/B - 69564 N

LEATHER GRIP

ODERICO L B/SS/CH - 69570 H

ODERICO L B/SS/B - 69565 R



B

B= 2.8" - 72 mm



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)



All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards



VERO VOLANTE ITALIANO



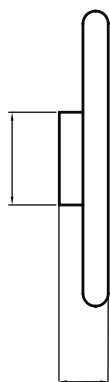
IMPERIALE STEERING WHEELS

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

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

VYNIL GRIP, 316L STAINLESS STEEL SPOKES

IMPERIALE V B/SS/P
- 21299 B



B

B= 2.6" - 66,5 mm



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

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VERO VOLANTE ITALIANO

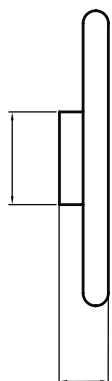
IMPERIALE STEERING WHEELS

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

POLYURETHANE GRIP, ALUMINUM SPOKES

IMPERIALE PU B/S/S
- 21300 G



B

B= 2.6" - 66,5 mm



Imperiale PU B/S/P - Ø 13.8" (350 mm)



All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 – EN 29775 and ABYC P22 safety standards



VERO VOLANTE ITALIANO



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DOLFIN STEERING WHEELS

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

VYNIL GRIP

DOLFIN V B/SS/P -
69561 G

LEATHER GRIP

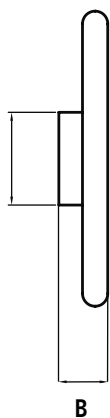
DOLFIN L B/SS/P - 69562 J



Dolfin V B/SS/P - Ø 13.8" (350 mm)



ON REQUEST



B

B= 3.7" - 93 mm



Dolfin L B/SS/P - Ø 13.8" (350 mm)

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VERO VOLANTE ITALIANO

MOROSINI STEERING WHEELS

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

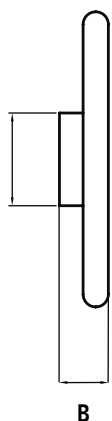
VYNIL GRIP, CHROME HUB

MOROSINI V B/CH-
68000 H

MOROSINI V G/CH-
68830 C

POLYURETHANE GRIP, CHROME HUB

MOROSINI PU B/CH -
67461 S



B

B= 3.0" - 78 mm



Morosini V B/CH - Ø 13.8" (350 mm)



Morosini V G/CH - Ø 13.8" (350 mm)

CHRISTIANGRANDE
DesignWorks



All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 - EN 29775 and ABYC P22 safety standards



VERO VOLANTE ITALIANO

MOROSINI STEERING WHEELS

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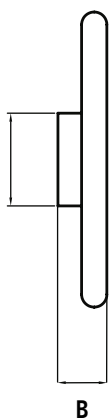
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

VYNIL GRIP, PAINTED HUB

MOROSINI V W/P -
68831 E

LEATHER GRIP, PAINTED HUB

MOROSINI L C/P -
67299 K



B= 3.0" - 78 mm



Morosini V W/P - Ø 13.8" (350 mm)



Morosini L C/P - Ø 13.8" (350 mm)

 **CHRISTI GRANDE**
DesignWorks



All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 - EN 29775 and ABYC P22 safety standards



VERO VOLANTE ITALIANO

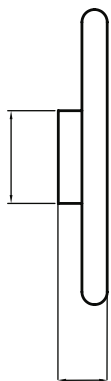
MOROSINI STEERING WHEELS

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- Standard 3/4" taper
- Hub 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= 3.0" - 78 mm

CHRISTIANGRANDE
DesignWorks



Morosini M - Ø 13.8" (350 mm)

All ULTRAFLEX steering wheels meet the EEC directive 94/25 requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 - EN 29775 and ABYC P22 safety standards



VERO VOLANTE ITALIANO



FOSCARI STEERING WHEELS

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

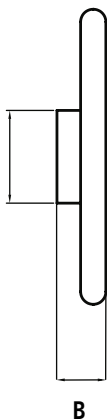
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

POLYURETHANE GRIP

FOSCARI PU B - 67303 X

VYNIL GRIP

FOSCARI V B/R - 21552 L



B

B= 3.0" - 78 mm



Foscari PU B - Ø 13.8" (350 mm)



Foscari V B/R - Ø 13.8" (350 mm)

All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 - EN 29775 and ABYC P22 safety standards



VERO VOLANTE ITALIANO

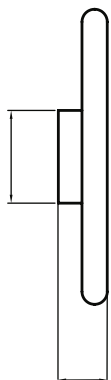
FOSCARI STEERING WHEELS

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

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

POLYURETHANE GRIP

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



B

B= 3.2" - 81 mm



Foscari PU W - Ø 13.8" (350 mm)



Foscari PU C - Ø 13.8" (350 mm)

CHRISTIANGRANDE
DesignWorks



All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 - EN 29775 and ABYC P22 safety standards



VERO VOLANTE ITALIANO



ADORNO STEERING WHEELS

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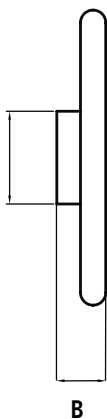
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

LEATHER GRIP

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 = 3.2" - 81 mm



Adorno L B/CH - Ø 13.8" (350 mm)



Adorno L B/B - Ø 13.8" (350 mm)



All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 - EN 29775 and ABYC P22 safety standards



VERO VOLANTE ITALIANO

CONTARINI STEERING WHEELS

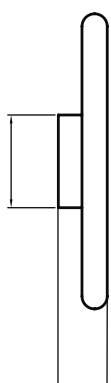
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- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 316L stainless steel spokes

POLYURETHANE GRIP

CONTARINI TPU/SS - 69199 S

KNOB/SK - 68832 G



B

B= 3.1" - 79,5 mm



Contarini TPU/SS - Ø 13.8" (350 mm)



KNOB/SK - Speed knob for Contarini



All ULTRAFLEX steering wheels meet the directive 2013/53/EU requirements about pleasure boats. All steering wheels are CE marked in conformity with the EN 28848 - EN 29775 and ABYC P22 safety standards



VERO VOLANTE ITALIANO



GRIMANI STEERING WHEELS

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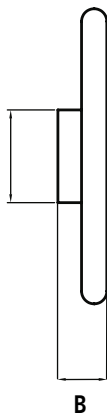
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP, ALUMINUM SPOKES

GRIMANI PU B/S/VE -
69297 S

POLYURETHANE GRIP, ALUMINUM SPOKES, NO COVER

GRIMANI PU B/S/VE
no cover - 20940 R
GRIMANI PU B/S/KG
no cover - 20941 T



B

B= 3.6" - 91.5 mm



Grimani PU B/S/VE - Ø 13.8" (350 mm)



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



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

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VERO VOLANTE ITALIANO

GRIMANI STEERING WHEELS

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

POLYURETHANE GRIP ALUMINUM SPOKES

GRIMANI PU B/S/BL - 69480 G

GRIMANI PU B/S/R - 69481 J

GRIMANI PU B/S/Y - 69482 L

GRIMANI PU B/S/PL - 69483 N

GRIMANI PU B/S/O - 20671 P

GRIMANI PU B/S/W - 20600 P



Grimani PU /B/S/BL - Ø 13.8" (350 mm)



Grimani PU /B/S/R - Ø 13.8" (350 mm)



Grimani PU /B/S/Y - Ø 13.8" (350 mm)



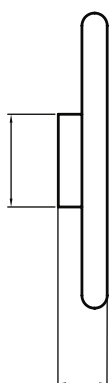
Grimani PU /B/S/PL - Ø 13.8" (350 mm)



Grimani PU /B/S/O - Ø 13.8" (350 mm)



Grimani PU /B/S/W - Ø 13.8" (350 mm)



B

B= 3.6" - 91.5 mm



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VERO VOLANTE ITALIANO



LOREDAN STEERING WHEELS

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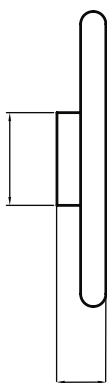
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP ALUMINUM SPOKES

LOREDAN PU B/S/CH - 69558 U

POLYURETHANE GRIP ALUMINUM SPOKES NO COVER

LOREDAN PU B/S/CH
no cover - 20942 V
LOREDAN PU B/S/R
no cover - 20943 X



B

B= 3.6" - 92,5 mm



Loredan PU B/S/CH - Ø 13.8" (350 mm)



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



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

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VERO VOLANTE ITALIANO

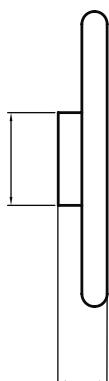
LOREDAN STEERING WHEELS

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

POLYURETHANE GRIP ALUMINUM SPOKES

LOREDAN PU B/S/BL - 20039 T
LOREDAN PU B/S/KG - 20837 Y
LOREDAN PU B/S/O - 20673 U
LOREDAN PU B/S/PL - 20342 U
LOREDAN PU B/S/R - 20041 D
LOREDAN PU B/S/W - 20601 S



B

B= 3.6" - 92,5 mm



Loredan PU B/S/BL - Ø 13.8" (350 mm)



Loredan PU B/S/KG - Ø 13.8" (350 mm)



Loredan PU B/S/O - Ø 13.8" (350 mm)



Loredan PU B/S/PL - Ø 13.8" (350 mm)



Loredan PU B/S/R - Ø 13.8" (350 mm)



Loredan PU B/S/W - Ø 13.8" (350 mm)

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VERO VOLANTE ITALIANO



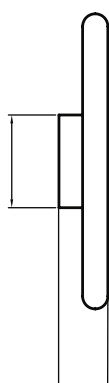
BALBI STEERING WHEELS

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

POLYURETHANE GRIP

BALBI - 68833 J



B

B= 2.9" - 73 mm



Balbi - Ø 13.8" (350 mm)

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VERO VOLANTE ITALIANO

MANIN STEERING WHEELS

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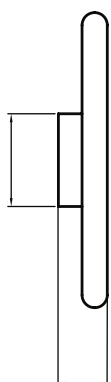
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards
- 304 stainless steel spokes

POLYURETHANE GRIP STAINLESS STEEL SPOKES

MANIN PU B/SS - 68204 A

POLYURETHANE GRIP ALUMINUM SPOKES

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



B

B= 3.2" - 81 mm



Manin PU B/SS - Ø 13.8" (350 mm)



Manin PU B/B - Ø 13.8" (350 mm)



Manin PU B/S - Ø 13.8" (350 mm)

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VERO VOLANTE ITALIANO



DORIA STEERING WHEELS

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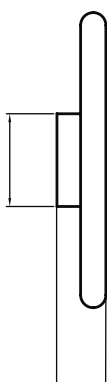
- Standard 3/4" taper
- Hub included
- Meet with the EN 28848 and ABYC P22 standards

POLYURETHANE GRIP WITH INSERTS

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



Doria PU B/S/R- Ø 13.8" (350 mm)



B

B= 2.0" - 52 mm



Doria PU B/S/B- Ø 13.8" (350 mm)



Doria PU W/S/W - Ø 13.8" (350 mm)



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VERO VOLANTE ITALIANO

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.



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 5 Amp @ 12VDC.
- For loads exceeding 5 Amp we recommend the use of the KTR - 42860S kit relay.
- Uflex® trim tabs require the use of the KTR - 42860S kit relay.
- Suitable for any kind of steering wheel dish. Max wheel dia. 400 mm (15.7").
- Easy to install on the following Ultraflex® steering systems:
 - front and tilt mount hydraulic helms
 - tilt mount mechanical helms
- Wiring harness, labels and mounting hardware kit are included. The mounting plate, which differs between front and tilt mount installation, is ordered separately.



**PADDLE TRIM
LABELS**

	ENGINE TRIM & TILT	JACKPLATE	TRIM TABS	HORN
UP				
DOWN				

ORDER GUIDE

- 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





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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.

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

FEATURES

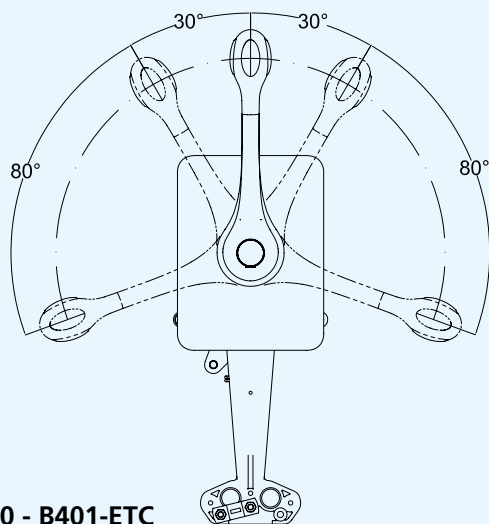
- 316 stainless steel lever and flange for a better resistance in the marine environment
- Enables easy and safe shifting by preventing accidental gear engagement unless engine is idling
- Can be installed horizontally or vertically, on the starboard or port side of the boat
- Provided with a brake tension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



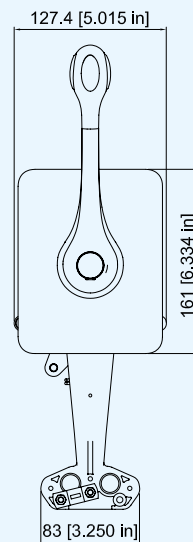
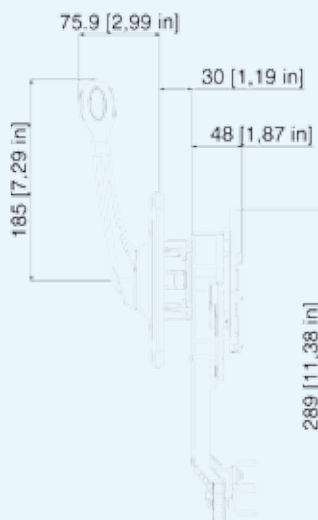
B400

MODELS

B400 - 42076 Y Fully mechanical version



B400 - B401-ETC



SINGLE LEVER B310 SERIES SIDE MOUNT CONTROLS

The new 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 Ultraflex control cables except C4, C36 and MACH36
 - Mercury® \ current BRP® (OMC®) \ Yamaha® \ Suzuki® Honda® \ Volvo® style cables
 - 33C style cables
- Ultraflex C5, C16, MACH5 and Mercury® cables require K35 - 34730 U connection kit
- Ultraflex C22 and C23 cables require KB1 - 39964 L connection kit

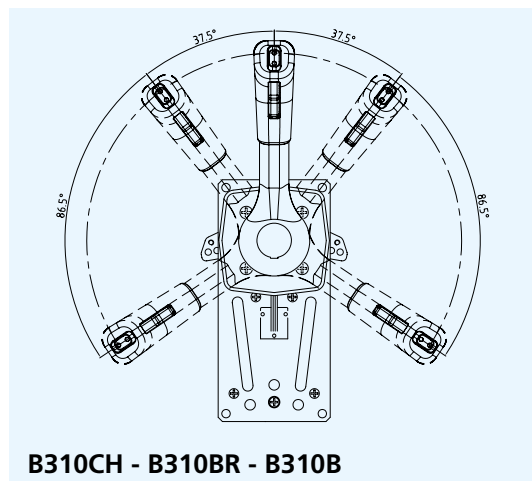
MODELS

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



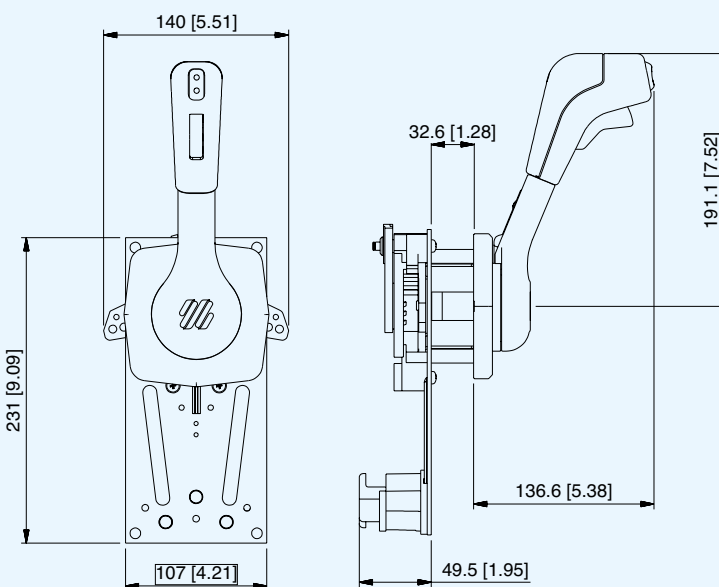
B310BR



B310B



B310B-NT No Trim



B310CH - B310BR - B310B



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 B184CB models are provided with a power trim switch conveniently located in the handle grip that enables an easy tilting of the engine
- For use with:
 - All Ultraflex control cables except C4, C36 and MACH36
 - Mercury® \ current BRP® (OMC®) \ Yamaha® \ Suzuki® Honda® \ Volvo® style cables
 - 33C style cables
- Ultraflex C5, C16, MACH5 and Mercury® cables require **K35** - 34730 U connection kit
- Ultraflex C22 and C23 cables require **KB1** - 39964 L connection kit



B183



B184 - B184MERC



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

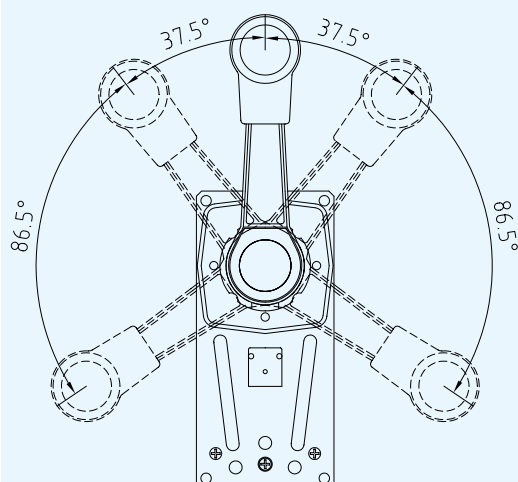
Standard model, smooth design for use on sailboats. Provided with a positive lock-in neutral

B184MERC - 39773 D

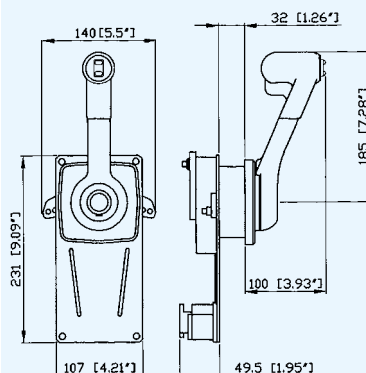
Provided with K35 - 34730 U connection kit and X50 neutral safety switch



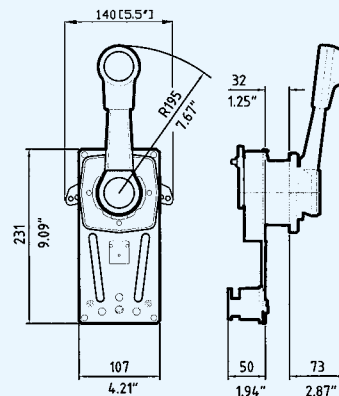
B85



B85 - B183 - B184



B183 - B184



B85

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 Ultraflex control cables except C22, C4, C36 and MACH36
 - Mercury® \ current BRP® (OMC®) \ Yamaha® \ Suzuki® Honda® \ Volvo® style cables
 - 33C style cables
- Ultraflex C5, C16, MACH5 and Mercury® cables require **K35** - 34730 U connection kit.
- 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.

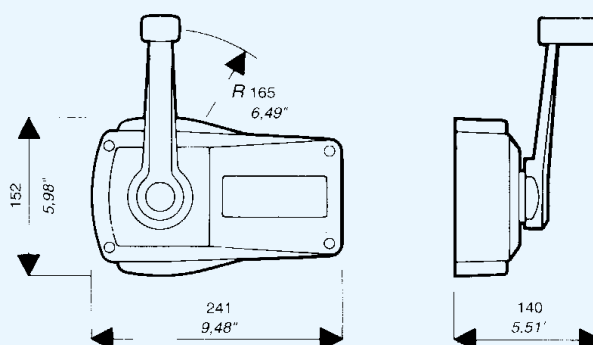
B89



B90



**Lock-in
neutral**





SINGLE LEVER B501 SERIES TOP MOUNT CONTROLS

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

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

FEATURES

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

CONTROLS WITHOUT LOCK IN NEUTRAL

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

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

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

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

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

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

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

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

CONTROLS WITH LOCK IN NEUTRAL

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

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

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

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

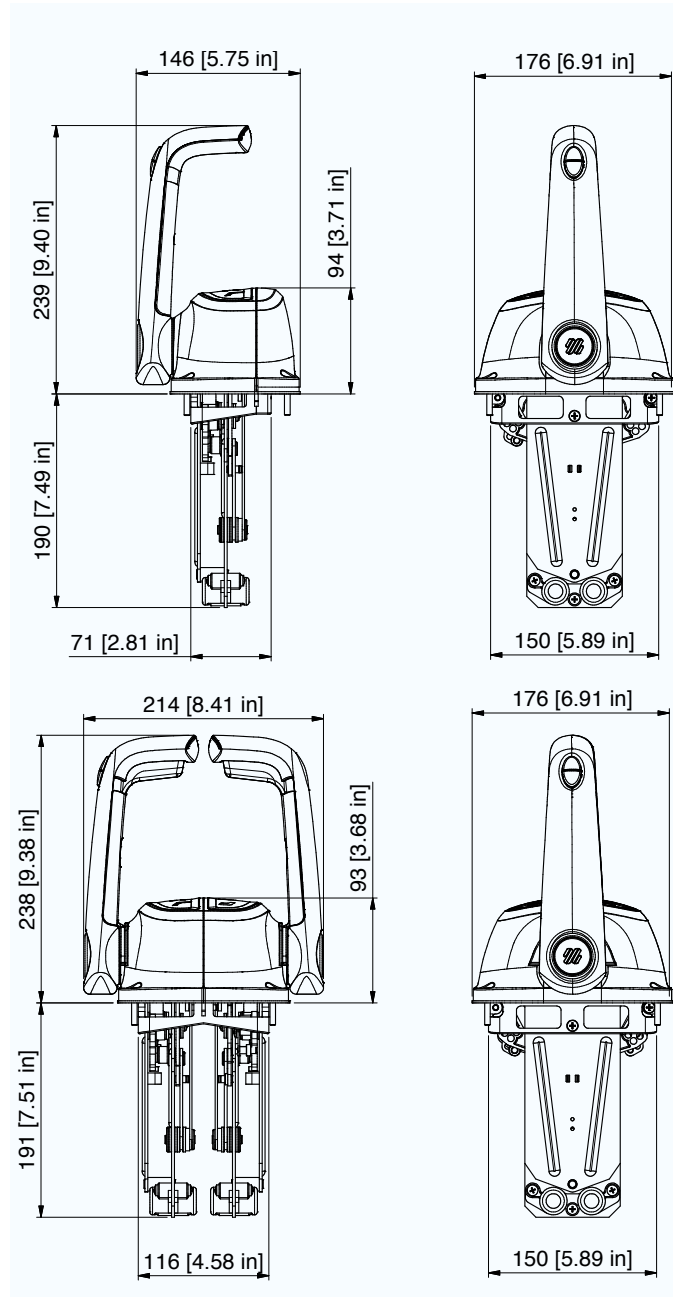


CE

new

B501BT/L

B502BT



"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 Ultraflex control cables except C4:
 - C14 and MACH14 cables require no kit
 - for C2, C8 and MACHZero cables the connection kit **K59** - 40144 C is included
 - C5, C16 and MACH5 cables require **K60** Kit - 40145 E
 - C36 and MACH36 cables require **K62** Kit - 40157 J
 - C22 cable requires **K61** Kit - 40146 G

MODELS

B301CR - 40140 U

Single lever control for one engine, chrome plated.

B302CR - 40141 W

Twin lever control for two engines, chrome plated.

X75 - 40662 B

Silver knob **optional**



B301CR



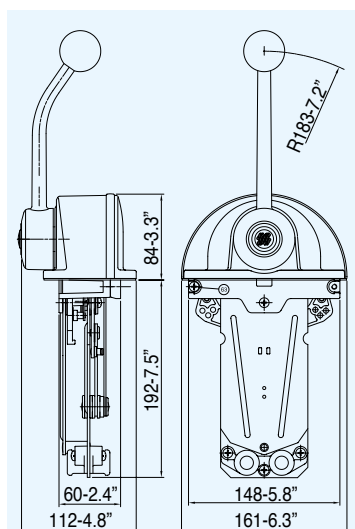
B302CR



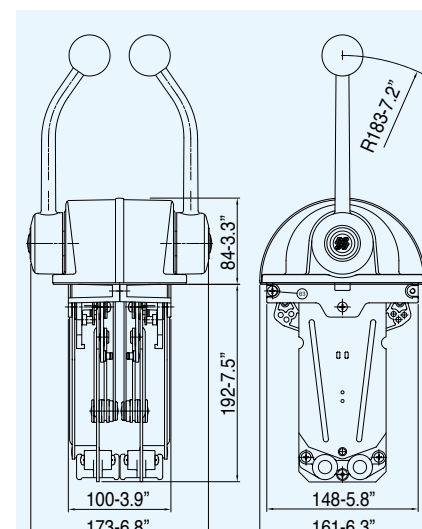
2 X75 (OPTIONAL)



B302CR + 2 X75



B301



B302

"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 Ultraflex 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

MODELS

B301B - 40142 Y

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

B302B - 40143 A

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

X75 - 40662 B

Silver knob **optional**



B301B



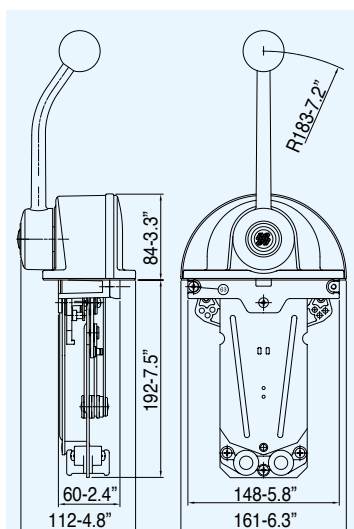
B302B



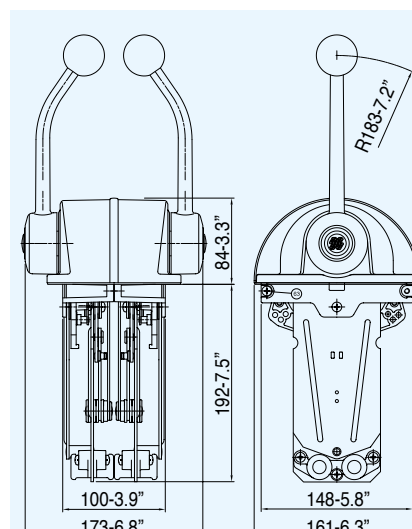
2 X75 (OPTIONAL)



B302B + 2 X75



B301



B302



TWO LEVER TOP MOUNT CONTROLS

154

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 and B59 models are provided with an interlock kit to prevent accidental gear engagement
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- For use with Ultraflex C2, C8, MACHZero and all 33C style engine control cables.
- Ultraflex 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

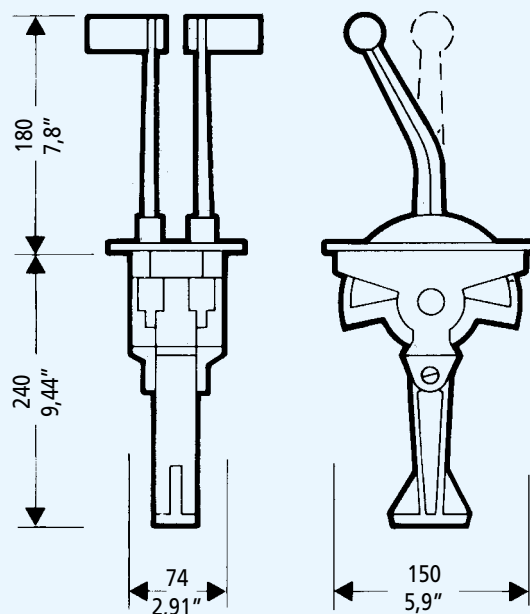
B46
B58 with interlock



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

MODELS

Fully mechanical controls:

B204R - 37383 C - Throttle and shift – Black
B208R - 37654 C - Throttle and shift – White

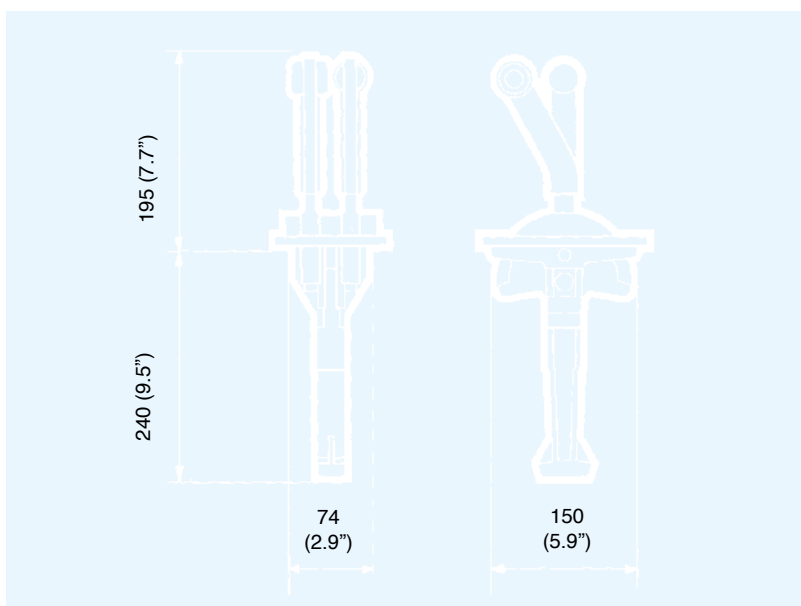
Hybrid controls:

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



156

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

FEATURES

- Made of aluminium, chrome plated or black powder coat finish
- Throttle lever is provided with adjustable brake tension release system and shift lever with forward, reverse and neutral detents.
- Includes **X12** neutral safety switch which prevents in-gear starting
- In dual station applications the **L23-31649 B** selector unit has to be used (page 110)
- Exceeds EN ISO 11547 standards when X12 safety switch is installed
- Use with all Ultraflex 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:

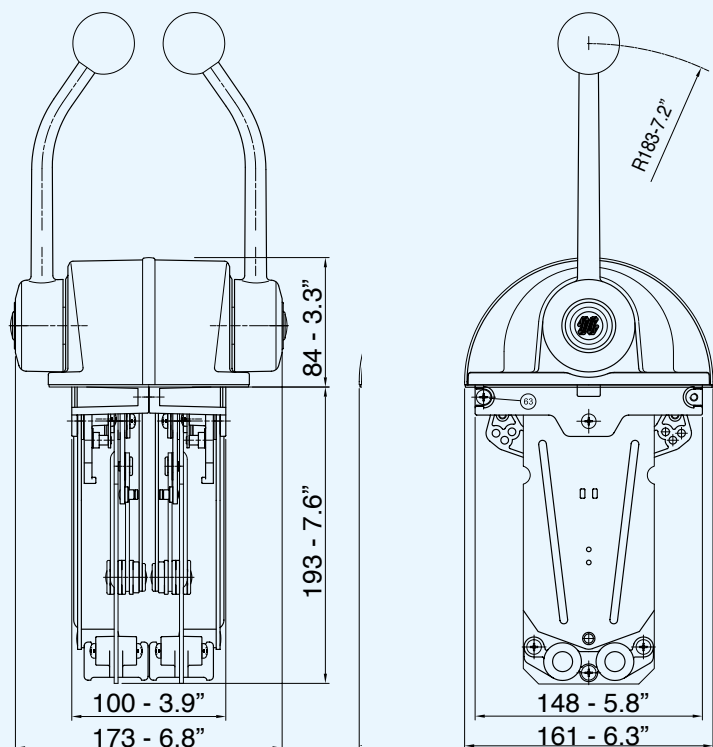
- B324** - 40674 J Throttle and shift



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 Ultraflex C2, C8, MACHZero and all 33C style engine control cables
- Ultraflex 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

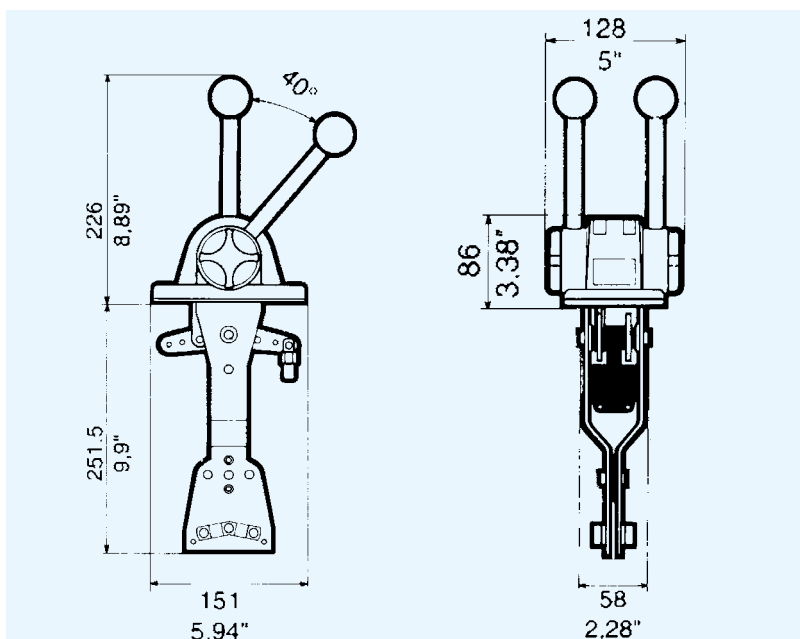


B101

B102



**B101 with X54
Silver knobs**





TWO LEVER SIDE MOUNT CONTROLS

158

Suitable for all outboard engines.

FEATURES

- Made of nylon fiberglass with anodized aluminium levers
- Left or right side mount installation
- For use with Ultraflex 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**

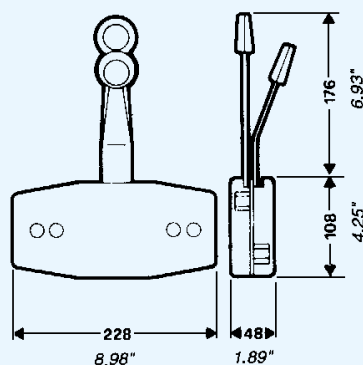
MODELS

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



B47

B49

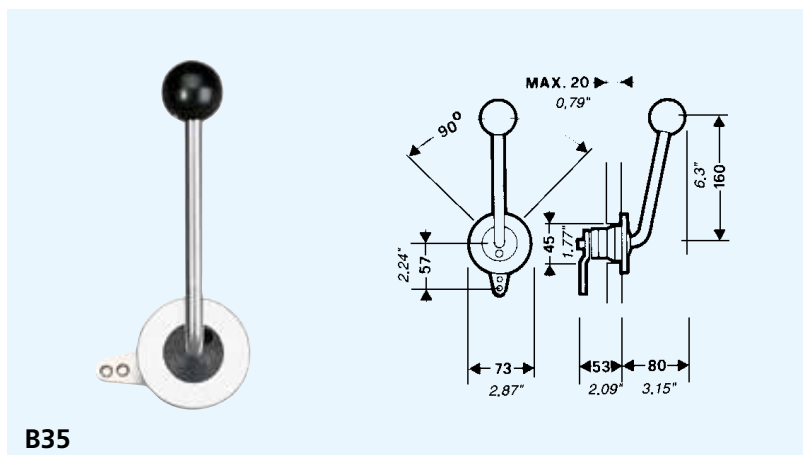


B47 - B49

B35 CONTROL BOX

FEATURES

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



B35

ACCESSORIES FOR CONTROL BOXES

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

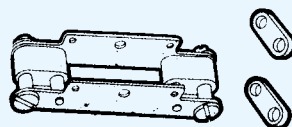
Kit to connect C5, C16, MACH5 and Mercury® style cables to single lever control boxes, except B301, B302, B501 Series controls, B103 and B104.

K51 - 32526 N

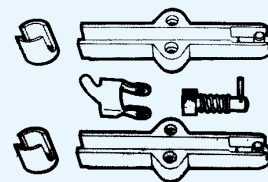
Kit to connect C14, MACH14 and OMC® type "OS" cables to engine for use with B89 and B90.

K59 - 40144 C

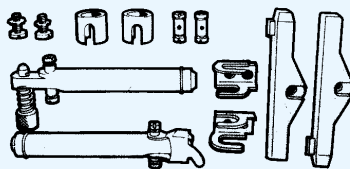
Kit to connect C2, C8 and MACHZero cables to B301, B302 and B501 Series controls (supplied with the box).



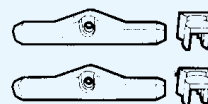
K22



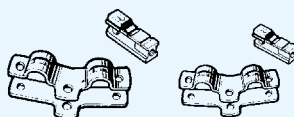
K23



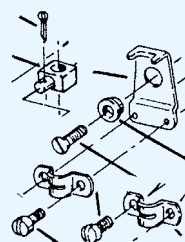
K24



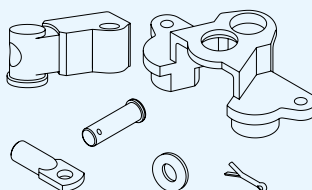
K25



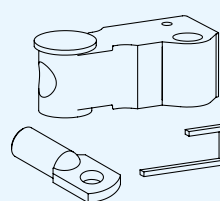
K32



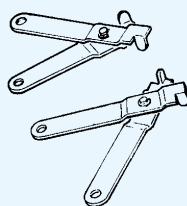
K33



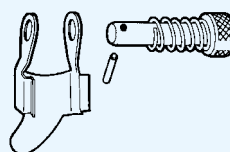
KB1



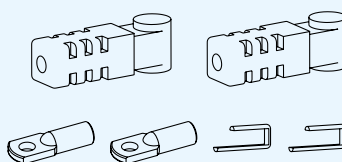
K83



K35



K51



K59





ACCESSORIES FOR CONTROL BOXES

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.

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

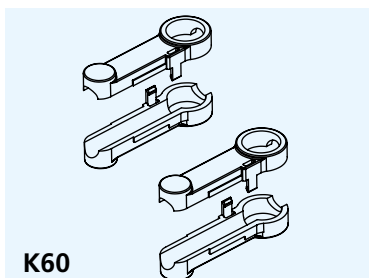
Kit to connect C22 cable to B322 and B324 controls.

K65 - 40759 T

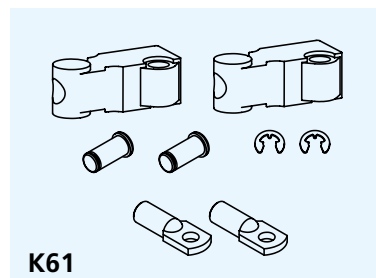
Kit to connect C36 and MACH36 cables to B322 and B324 controls.

K67 - 40705 T

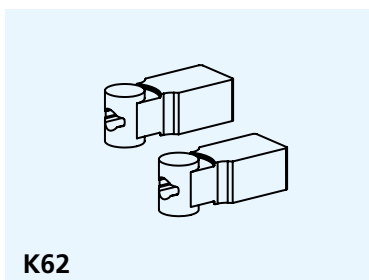
Kit to connect C2, C8 and MACHZero cables to B322 and B324 controls (supplied with the box)



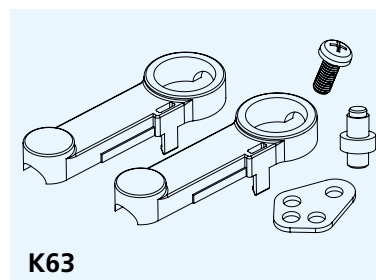
K60



K61

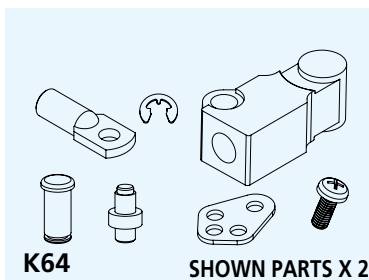


K62



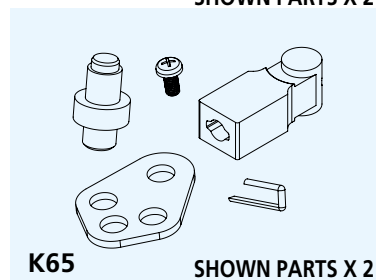
K63

SHOWN PARTS X 2



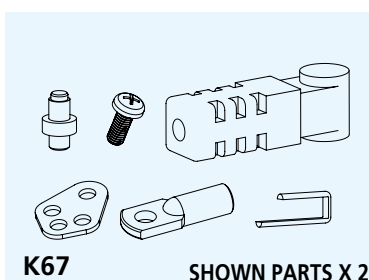
K64

SHOWN PARTS X 2



K65

SHOWN PARTS X 2



K67

SHOWN PARTS X 2

X12 - 34543 Q

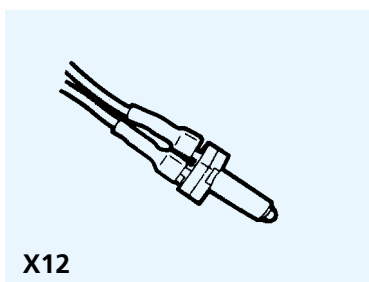
Neutral safety switch to prevent in-gear starting.

X41 - 38130 F

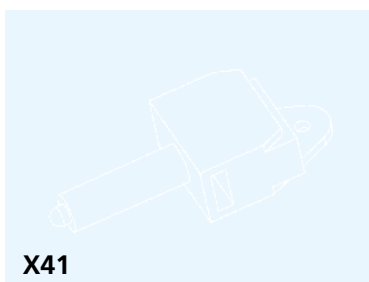
Neutral safety switch to prevent in-gear starting, suitable for B400 and B401-ETC controls.

X43 - 38160 L

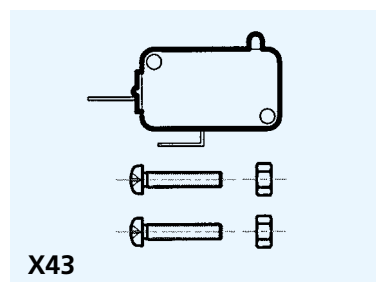
Neutral safety switch to prevent in-gear starting, suitable for B103 and B104 controls.



X12



X41



X43



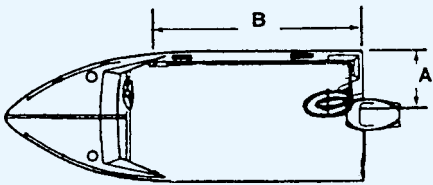
HOW TO MEASURE FOR CONTROL CABLE INSTALLATION

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.

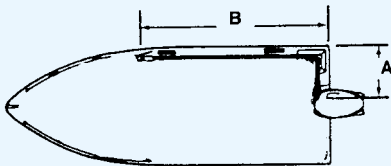
OUTBOARD

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



INBOARD/STERNDRIVE

$A + B = L$



CONTROL CABLE CROSS REFERENCE			
ULTRAFLEX	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®, MERCRUSER®, 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.



MACHZero

MACH5

MACH14

MACH36

- 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 Ultraflex B310, B183, B184 controls.

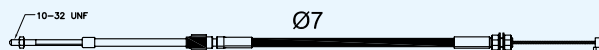


C40

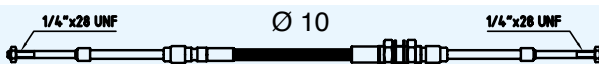


C48

C40



C48

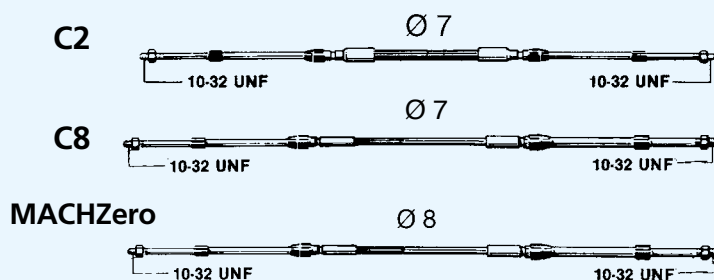


ENGINE CONTROL CABLES

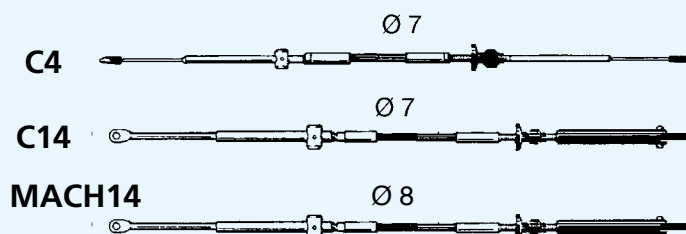
- C2** Stroke: 3.4" (87 mm)
For use with inboard, sterndrive and outboard engines with appropriate accessories.
- C8** Stroke: 3.4" (87 mm)
For use with inboard, sterndrive and outboard engines, with appropriate accessories.
- MACHZero** Stroke: 3.4" (87 mm).
For use with inboard, sterndrive and outboard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

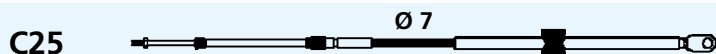
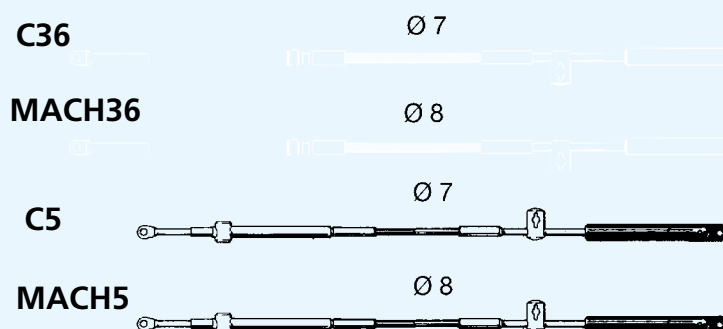
UNIVERSAL 3300 STYLE CABLES



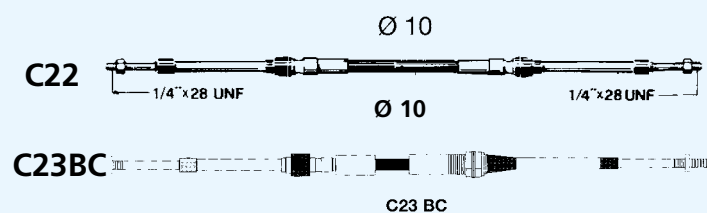
BRP® - EVINRUDE® (OMC®) CABLES



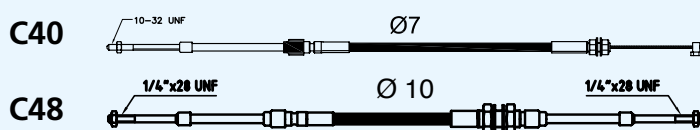
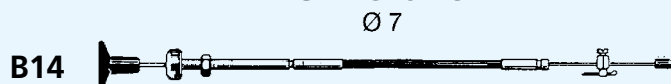
MERCURY® - MERCUISER® - MARINER® - VOLVO® CABLES



UNIVERSAL 4300 STYLE CABLES



ENGINE STOP CABLE





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

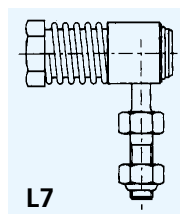
Adapts C2, C8, MACHZero and all 33C style cables for use with BRP® - Evinrude® engines.



L2



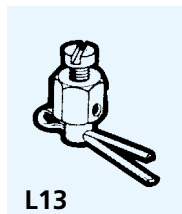
L3



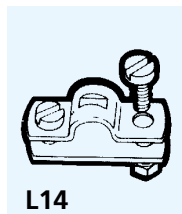
L7



L12



L13



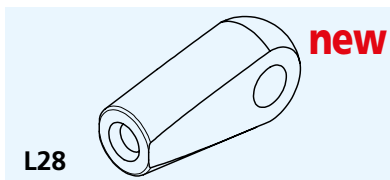
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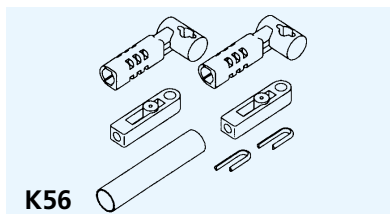
L25



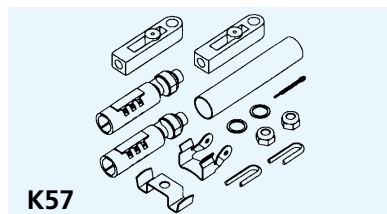
L26



L28



K56



K57

CONTROL BOX-CONTROL CABLE APPLICATION MATRIX

SINGLE LEVER CONTROLS

MODEL	B400	B183 - B184 B85 - B310 Series	B301 - B302 B501 Series	B103	B104	B73 - B74 B77 - B79	B89 B90
C2	X	X	K59*	X	X	X	X
C8	X	X	K59*	X	X	X	X
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

TWO LEVER CONTROLS

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



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UIFLEX®



ELECTROMECHANICAL TRIM TABS

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

CE

new

BALL JOINT

CE



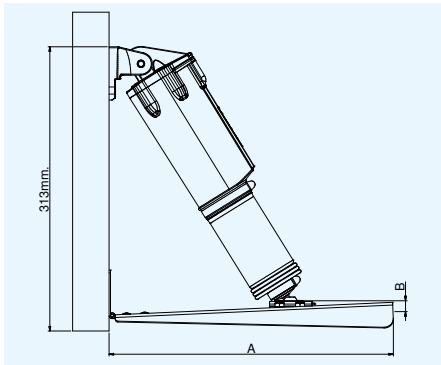
MTT

MTC

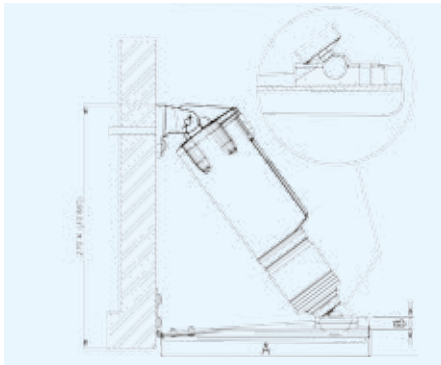
MTT AND MTC SYSTEMS - FEATURES:

- Tab bracket with **BALL JOINT (PATENTED)**
- Operating system with hardened steel ballscrew, suitable to withstand high push loads.
- Prompt and easy control with the innovative use of a **Joystick (PATENTED)**
- **AUTO-LINE UP:** automatic flap re-alignment function
- Completely sealed thermoplastic resin tab actuators: maximum protection guaranteed by dual seals and a rubber bellow (PATENTED)
- 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 (PATENTED) 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

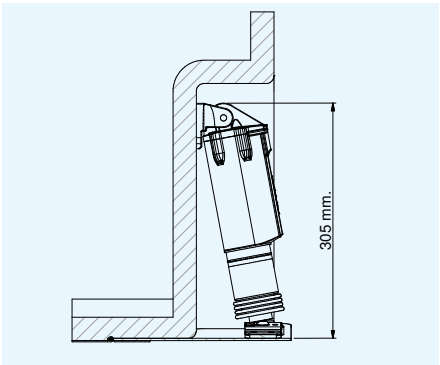
APPLICATIONS:



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	9"x 12"	22,8 x 30,5	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	9"x 12"	22,8 x 30,5	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 Thecnical Service

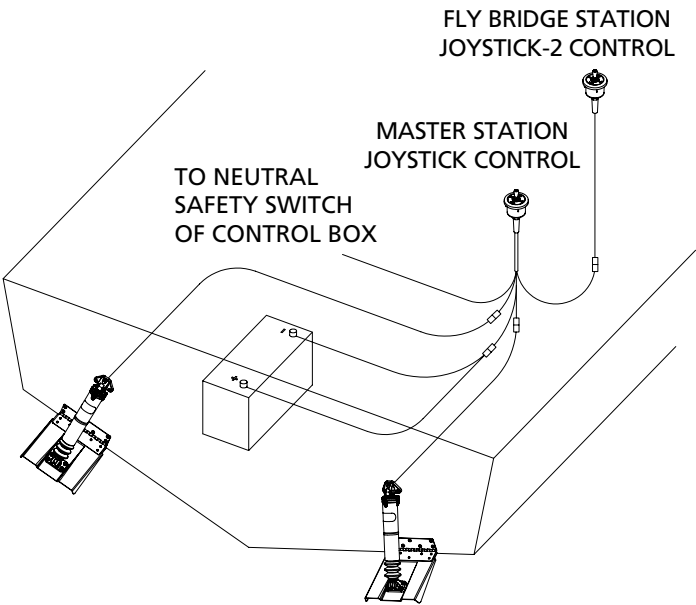
WARNING: The systems are not intended for use in racing applications

STANDARD COMPONENTS
(SINGLE ACTUATOR PER TAB)

- 1 pair of electromechanical actuator complete with connection brackets and 1 m (3.28') 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)



new



AT12 - 43160S

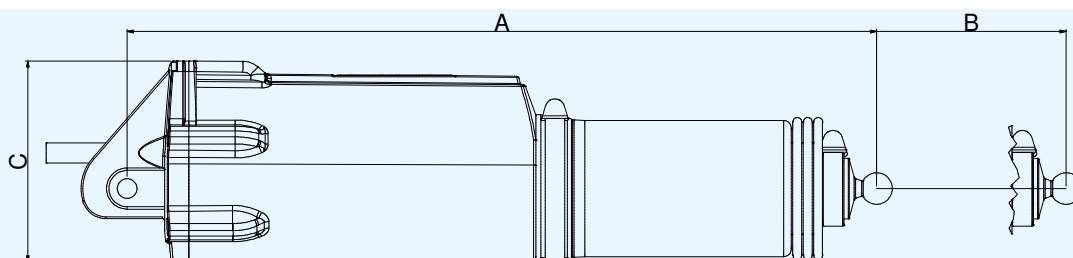


AC12 - 43001 V



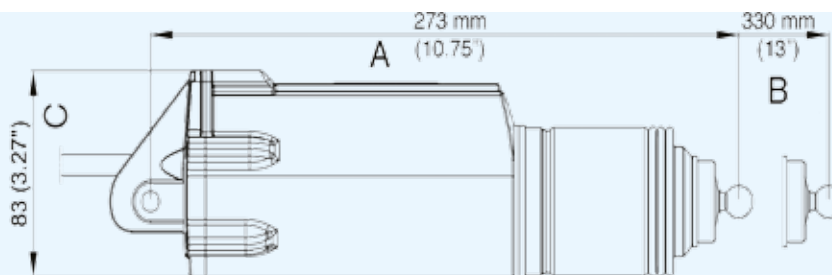
FEATURES:

- 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")



J/CH



J/B (optional)



JLP/CH



JLP/B (optional)

CONTROL UNIT 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)

- 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

CONTROL UNIT FOR DUAL STATION:

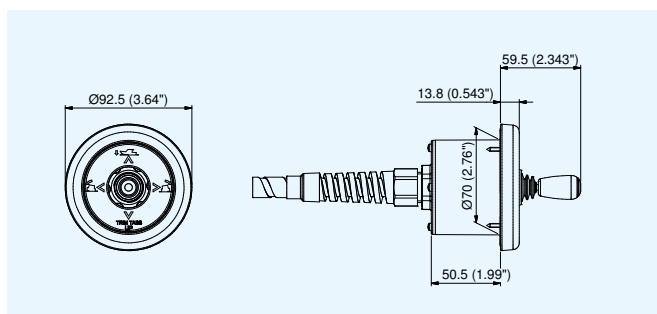
J/CH-2 - 42306 N chrome

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

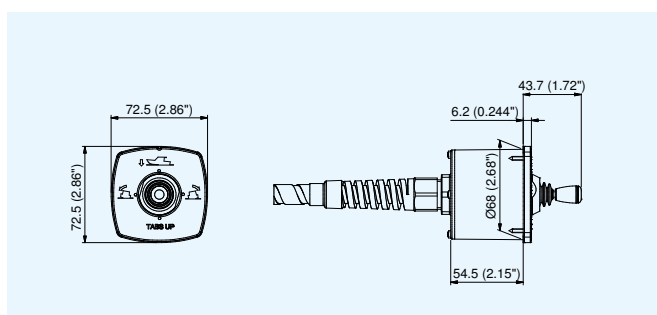
JLP/CH-2 - 43080 U chrome, low profile

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)



JOYSTICK - Dimensions



JOYSTICK LOW PROFILE - Dimensions



HIGH PERFORMANCE POLISHED TABS

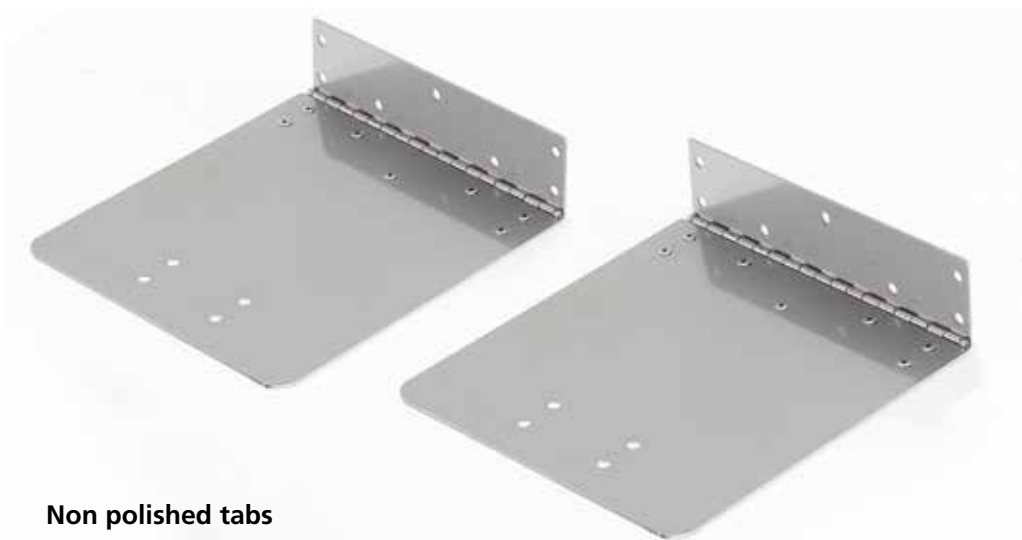


Mirror polished stainless steel tabs

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)
P912	41845 R	Stainless steel tab pair 228,6 x 304,8 mm (9"x12")	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)
NP912	42653 L	Stainless steel tab pair 228,6 x 304,8 mm (9"x12")	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.

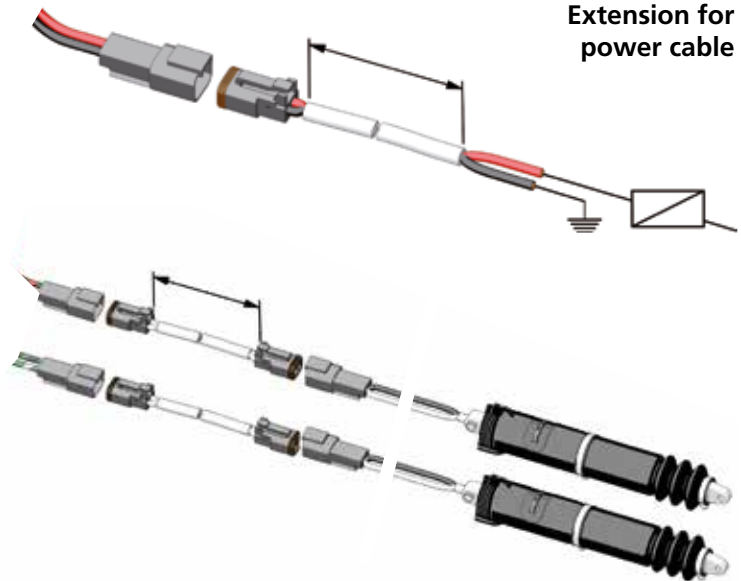
KEJ2-30 - 42375 J
29.5' (9,0 m) extension wiring harness for a second station. Deutsch connectors included.

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

new



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



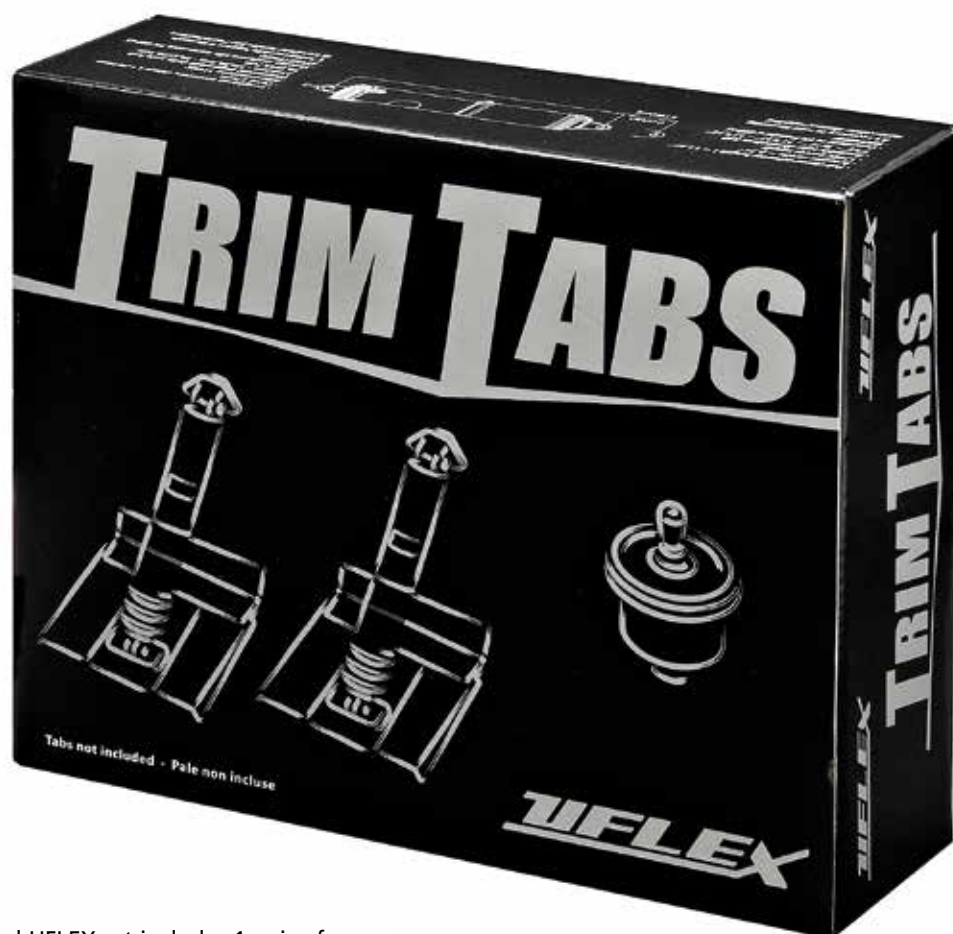
KA70



KA90



PACKAGED UFLEX TRIM TAB SET



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')



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



HATCH LIFTERS

AV SERIES ELECTRICAL HATCH LIFTERS

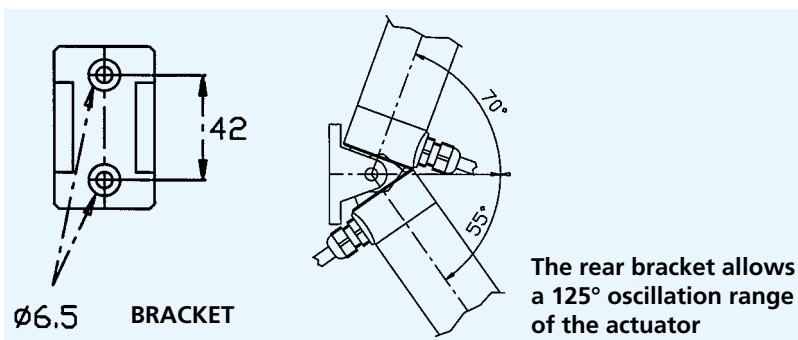
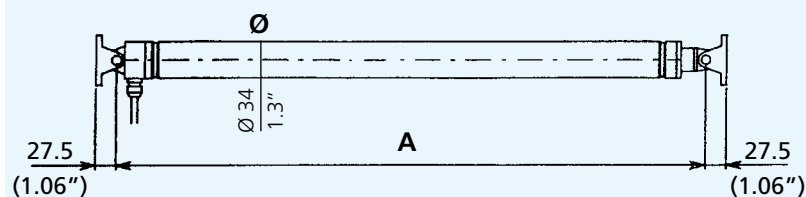
Constructed of anodized aluminum and stainless steel, the Uflex hatch lifters are built to last. Lifting with up to 265 Lbs of force, these actuators are an ideal solution for controlling engine hatches, lazarets, doors and other on board fixtures.

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. It is also possible to install more than two AV actuators in multiple applications.
- **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.



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

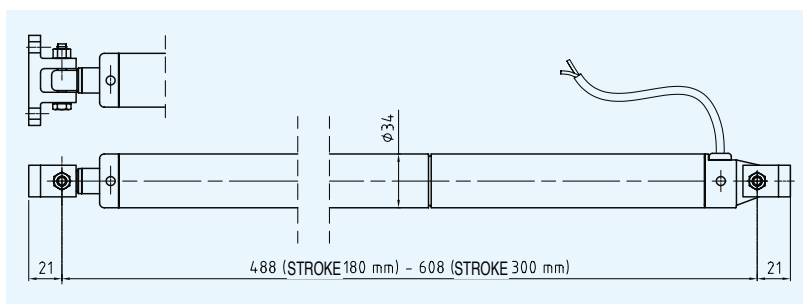
MODEL	PART No.	VOLTS	STROKE	LENGTH A (FULL CLOSED ACTUATOR)	EXTERNAL DIA.
AV-L 3012	40703 P	12 V DC	12" - 300 mm	27" - 677 mm	1,9" - 48 mm
AV-L 4512	40590 D	12 V DC	18" - 450 mm	33" - 827 mm	1,9" - 48 mm
AV-L 6012	40592 G	12 V DC	24" - 600 mm	39" - 977 mm	1,9" - 48 mm

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

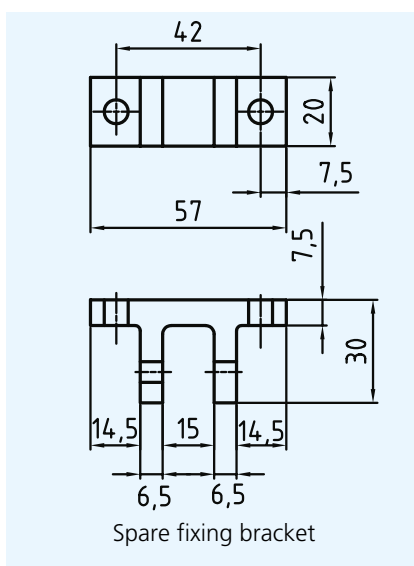
- **Single installation only**
- **Pull and push maximum load: 650N (65 kg - 144 lbs)**
- Pull and push maximum load is recommended not to be exceeded.
- Supplied with all mounting hardware.
- Aluminium ram.
- Circuit breaker to stop accidental overloading of the system and electronic stop at closed or full open position.
- IP 65 protection rated
- Speed: 8 mm/sec no load applied, 4 mm/sec maximum load
- Current absorption: 2A

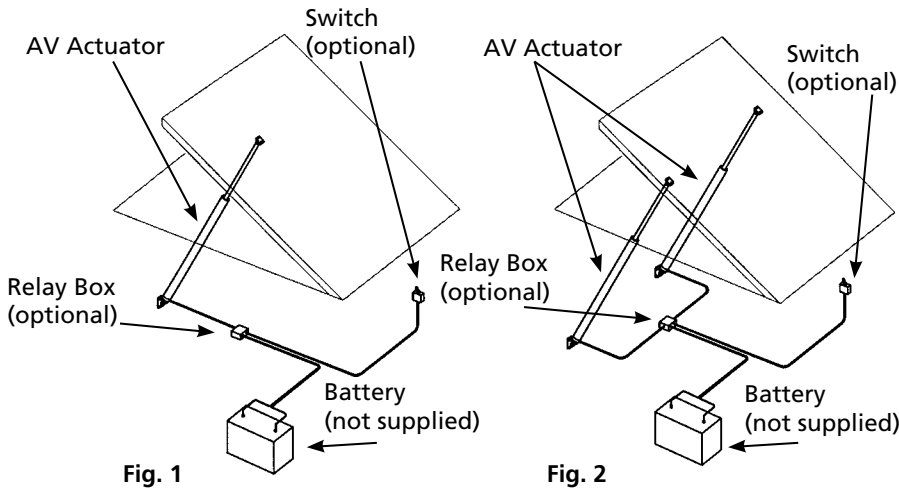


Highest installation flexibility: 180° oscillation range

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





COMPONENTS DESCRIPTION

AV Series Hatch Lifters

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

ULYSSES Series actuators

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

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.

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

Fuse (not supplied)

Battery (not supplied)

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

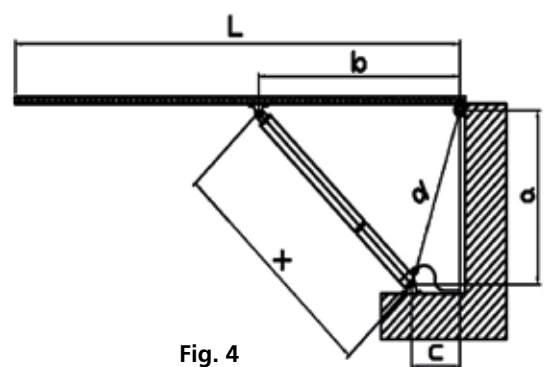
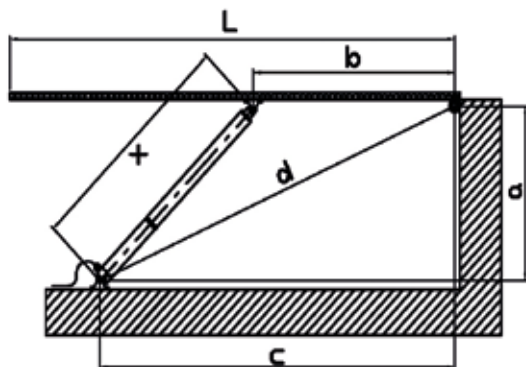
Note: when the load exceeds 2400 N (240 kg - 530 lbs), it is possible to install more than two AV actuators

• ULYSSES actuators:

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

*Values of K with ratio included approx. between 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







MECHANICAL PRODUCTS

AVAILABLE SPARE PARTS

WARNING

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

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 Tilt Mechanism

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

MECHANICAL PRODUCTS

AVAILABLE SPARE PARTS

WARNING

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

B65 - B665 - B66 - B666

B73 - B74 - B76 - B77 - B78 - B79

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

B310CH - B310BR - B310B

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

B183 - B184 - B85

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

B89 - B90

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

B46 - B50 - B58 - B59

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

B99 - B101 - B102

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

B14 Engine Stop Cable

B14 Kit	59976 G
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HYDRAULIC PRODUCTS

AVAILABLE SPARE PARTS

WARNING

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

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

UC81-OBF OUTBOARD CYLINDER

Black 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

UC128-OBF OUTBOARD CYLINDER

Black bull horn mounting bracket	43248 G
Through tube stainless steel rod	39491 T
Spacer kit	41812 Z
Plastic cap kit	41810 V
UC128 Hardware kit (link arm)	39979 A
Tiller arm connecting kit (ultrabolt)	40822 X
Shaft screws kit	43255 D

UC130-SVS OUTBOARD CYLINDER

Tiller arm connecting kit (ultrabolt)	42081 R
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UC68-OBS OUTBOARD CYLINDER

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

Stainless steel tilt tube extension	39495 B
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

STERNDRIIVE CYLINDERS

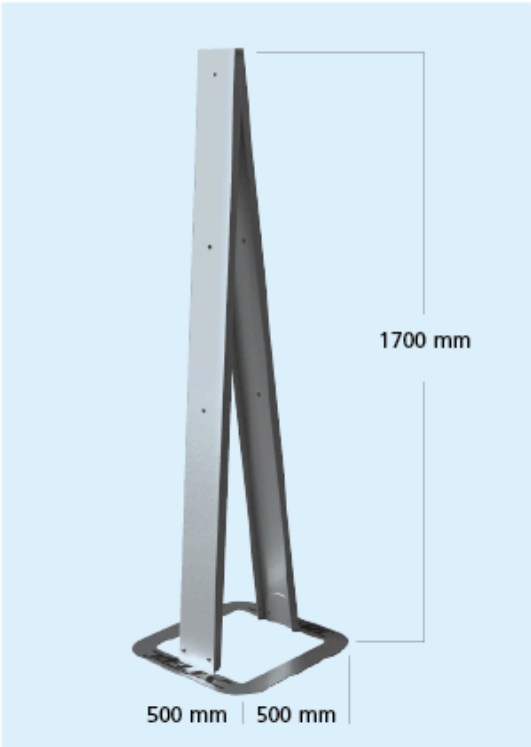
Extension rod connecting pin	40917 J
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NUT AND SLEEVE

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

UFLEX WHEEL DISPLAY

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





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 **ULTRAFLEX GROUP**