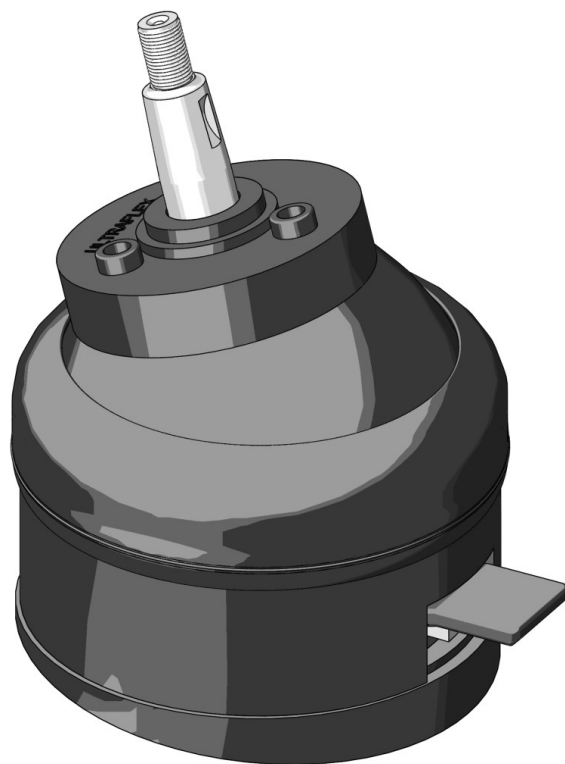


Installation instructions

TILT X52 - X66 - X70-SVS



CE

WFLUX



PARTNER





Dear Customer,

We would like to thank you for choosing an **ULTRAFLEX** SpA product.

ULTRAFLEX SpA has been a leader in steering systems for pleasure and professional boats for many years.

All **ULTRAFLEX** SpA products are designed and manufactured to ensure the best performance.

To ensure your safety and to maintain a high quality level, **ULTRAFLEX** SpA products are guaranteed only if they are used with original spare parts (see attached document "Application Spare Parts").

The quality management system involves all the company resources and processes starting from the design, in order to:

- ensure product quality to the customer;
- maintain and improve the quality standards constantly;
- pursue a continuous process improvement to meet the market needs and to increase the customer satisfaction;
- constantly test the products to verify their conformity with the 2013/53/EU.



"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 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 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 perform it's best for many, many years."

UFLEX USA

Sarasota, FL 34243 - 6442 Parkland Drive

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DOCUMENT REVISIONS

Rev.	Date	Revision description
0	30/07/2020	First edition

MANUAL USE AND SYMBOLS USED

THE INSTALLATION AND MAINTENANCE MANUAL is the document accompanying the product from its sale to its replacement and discharge. The manual is an important part of the product itself.

It is necessary to read carefully the manual, before ANY ACTIVITY involving the product, handling and unloading included.

In this manual the following symbols are used to ensure the user safety and to guarantee the correct operation of the product:

DANGER

Immediate hazards which CAUSE severe personal injury or death.

WARNING

Denotes that a hazard exists which can result in injury or death if proper precautions are not taken.

CAUTION

Denotes a reminder of safety practices or directs attention to unsafe practices which could result in personal injury or damage to the craft or components or to the environment.

NOTICE

Important information for the correct installation and for maintenance, that does not cause any damage.

INTRODUCTION

This installation and maintenance manual represents an important part of the product and must be available to the people in charge of its use and maintenance.

The user must know the content of this manual.

UFLEX USA declines all responsibility for possible mistakes in this manual due to printing errors.

Apart from the essential features of the described product, **UFLEX** USA reserves the right to make those modifications, such as descriptions, details and illustrations, that are considered to be suitable for its improvement, or for design or sales requirements, at any moment and without being obliged to update this publication.

ALL RIGHTS ARE RESERVED. Publishing rights, trademarks, part numbers and photographs of **UFLEX** USA products contained in this manual are **UFLEX** USA property.

Great care has been taken in collecting and checking the documentation contained in this manual to make it as complete and comprehensible as possible. Nothing contained in this manual can be interpreted as warranty either expressed or implied - including, not in a restricted way, the suitability warranty for any special purpose. Nothing contained in this manual can be interpreted as a modification or confirmation of the terms of any purchase contract.

WARNING

To ensure the correct product and component operation, the product must be installed by qualified staff. In case of part damage or malfunction, please contact the qualified staff or our Technical Service.

TECHNICAL SERVICE

North - South - Central America:

UFLEX USA

6442 Parkland Drive

Sarasota, FL 34243

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16012 Busalla (GE)-Italy

Tel: +39.010.962.01

Email: service@ultraflexgroup.it

www.ultraflexgroup.it

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 AVOIDS 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 or 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 agreements 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.

All communications and notices from Purchaser regarding this limited warranty should be sent to: **UFLEX USA, INC.**, 6442 Parkland Drive, Sarasota, FL 34243; (941) 351-2628.

Return 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 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 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.

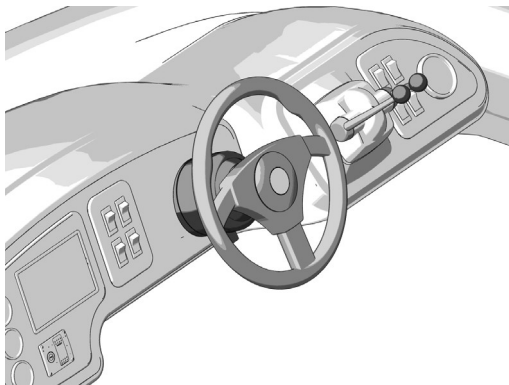
Our products are not intended for use in racing applications.

PRODUCT DESCRIPTION

The steering wheel position adjusting systems (tilt mechanisms) X52, X66 and X70-SVS can be used with **UFLEX** mechanical, rotary, rack and pinion or hydraulic steering systems in compliance with the compatibility table in this chapter.

According to this system the steering system is assembled on the rear part of the dashboard.

The tilt mechanism allows tilting the steering wheel in 5 different angular positions, spaced by 12 degrees.



⚠ CAUTION

To assemble the steering system according to the specific instructions, see the corresponding manual.

NOTICE

This product is not suitable for being used in racing applications.

⚠ CAUTION

The X52 tilt **CANNOT** be assembled with SVS and 1500 psi pumps.

NOTICE

The maximum thickness of the dashboard is 28 mm (1.1").

⚠ CAUTION

Before starting the installation, check again the assembly compatibility of the tilt model with your application (see the compatibility table).

TILT MECHANISM	PART No.	UP20T	MECHANICAL STEERING SYSTEMS			HYDRAULIC STEERING SYSTEM		MASTER-DRIVE / NAVITECH
			T81, T83NRFC	T96, T98NR	T101, T103ZT	STANDARD UP25T, UP28T, UP33T, UP39T, UP45T	SILVERSTEER UP28T-SVS, UP33T-SVS, UP39T-SVS	
X52	39250 U	X	X	X	X	X	-	-
X70-SVS	41880 T	-	-	-	-	-	X	-
X66	40613 M	-	-	-	-	-	-	X

NOTICE

The X72 tilt mechanism can be applied to front mount helm pumps (except for pumps UP18 and UP20).

TRANSPORT

General warnings for the product handling

The product weight including the packaging is lower than 20 Kg (44 lbs.), therefore it can be handled manually.



CAUTION

The staff in charge of the product handling must use protective gloves and safety shoes.

Packaging contents

- 1 Tilt mechanism
- 1 Dashboard mounting bracket
- 1 Mobile cover
- 1 Fixed cover
- 1 Cover joint
- 1 Dashboard joint
- 1 Hole cover joint
- 3 Hex head screws M8x45
- 3 Locknuts M8
- 3 Washers M8 - 21x1,5
- 3 Hexagonal socket head cap screws M8x45
- 4 Hexagonal socket head cap screws M6x16
- 2 Self-threading screws 3,5x25
- 3 Self-threading screws 3,5x16
- 1 Key for shaft
- 1 Washer 13x24x2,5
- 1 Locknut M12
- 1 Template for dashboard drilling

NOTICE

The X66 model packaging does not include the hole cover joint and the hexagonal socket head cap screws M8x45 because they are not necessary. There are 8 hexagonal socket head cap screws M6x16.

INSTALLATION

Safety rules

STRICTLY FOLLOW the safety precautions and criteria indicated in this manual. Any non-compliance could result in the boat being off course with possible damage, injuries and death.

UFLEX declines all responsibility for errors during installation, wrong use, carelessness or lack of ordinary maintenance or checks.

DANGER

- DO NOT INSERT YOUR HANDS BETWEEN THE MOVING PARTS.
- Do not disable or dismantle in any way the safety devices.
- Do not modify or add any device to the equipment without the written authorization or the intervention of **UFLEX** technical support proving the change made in the intervention description.
- The device must only be installed by properly trained and skilled nautical technicians.

Necessary tools



Drill



Drill bit
Ø 10 / 0.39"



Hole saw
Ø 74 / 3"



Open end wrench
13 mm (0.51")



Open end wrench
19 mm (0.75")



Dynamometric key



 Cross slot screwdriver



Allen wrench 5 mm



Allen wrench 3 mm

NOTICE

The 3 mm Allen wrench is not used to install the X66 tilt.

Choice of the steering station positioning

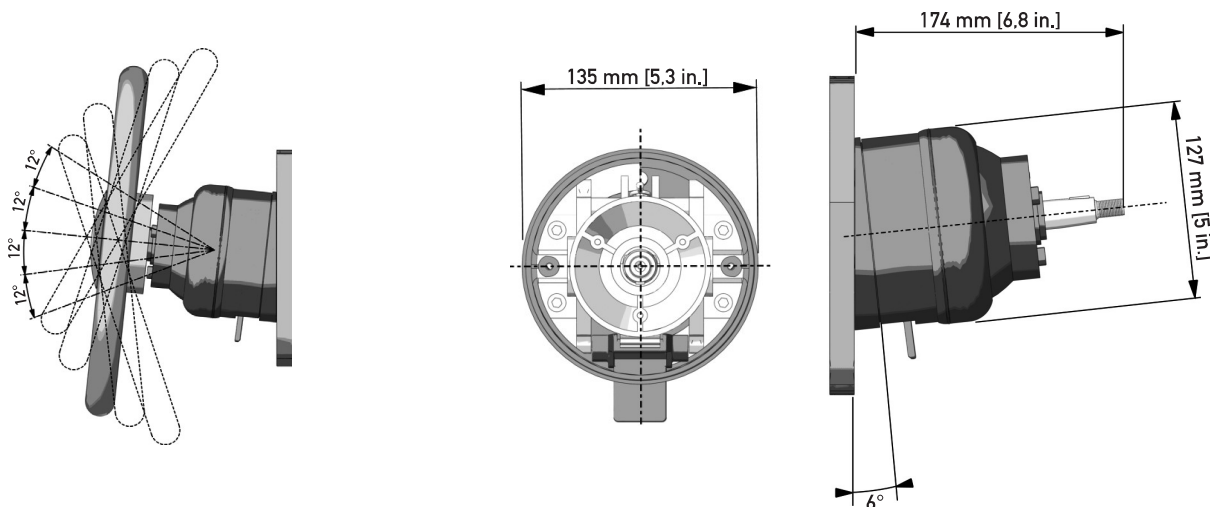
Choose a suitable position to install the steering station. Make sure there is enough space to move the steering wheel and for the steering system and its components behind the dashboard (see the steering system installation and maintenance manual).

CAUTION

For mechanical steering systems: do not use steering wheels with a diameter higher than 406 mm (16 in.) and a height higher than 152 mm (6 in.). For hydraulic steering systems: do not use steering wheels with a diameter higher than 508 mm (20 in.) and a height higher than 152 mm (6 in.).

NOTICE

The tilt mechanism overall dimensions are indicated in the pictures below.



Dashboard drilling

Use the suitable template supplied to make the 10 mm 3 holes (1) for the hex head screws M8x45 on the dashboard and make the 74 mm central hole (2) using the hole saw.

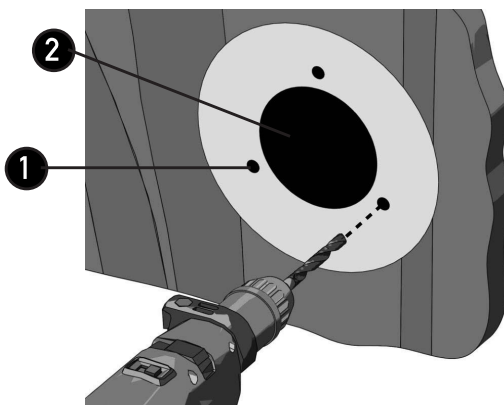


CAUTION

Before drilling make sure there are no cables or any other obstructions behind the dashboard that could be damaged while drilling.

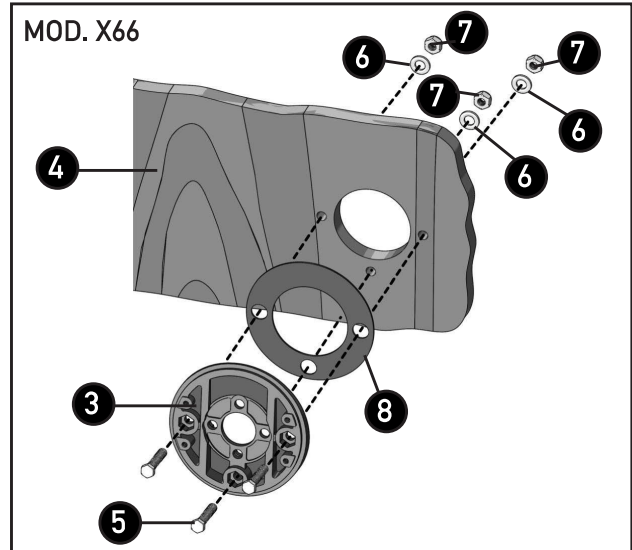
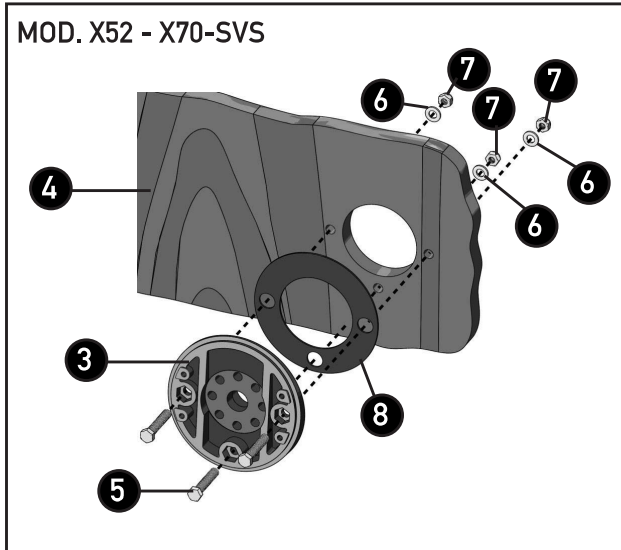
NOTICE

Use the suitable template according to the type of installation on horizontal or vertical dashboards. See the template for the two types of assembly. The hole position changes according to the type of assembly.



Bracket assembly

Fix the bracket (3) to the dashboard (4) using the 3 hex head screws M8x45 (5), the 3 washers (6) and the 3 locknuts M8 (7) with a tightening torque of 10 Nm (7.38 lb-ft), paying attention to interpose the rubber gasket (8) between the flange and the dashboard.



Steering system assembly on the bracket

NOTICE

The steering system can be fixed in different positions as required (see the steering system manual).

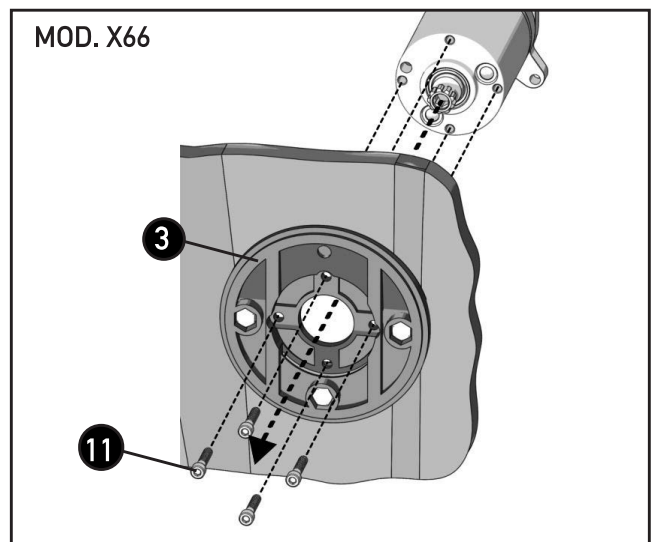
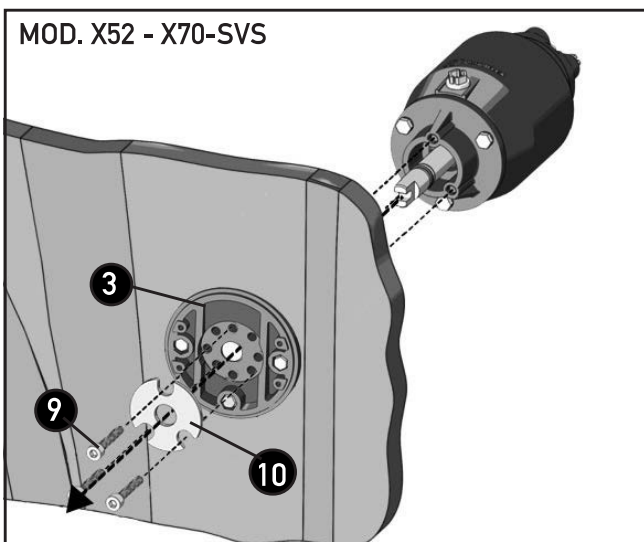
MOD. X52/X70-SVS

Position the steering system from the rear part of the dashboard and fix it to the bracket (3) using the 3 socket head screws M8x45 (9) with a tightening torque of 12 Nm (8.85 lb-ft).

Position the hole cover joint (10) on the flange (3) so that it covers the holes not used.

MOD. X66

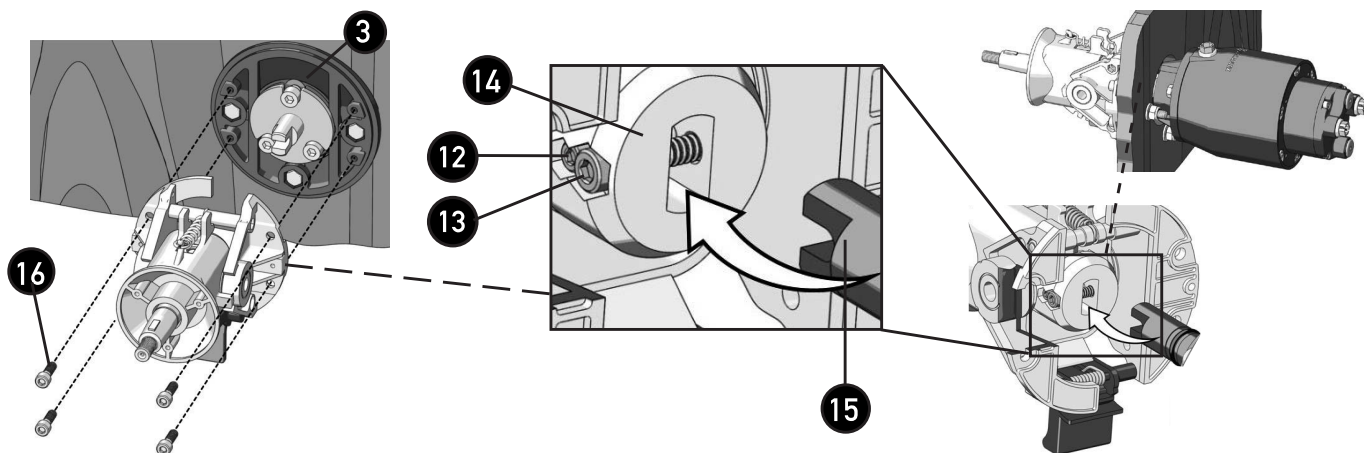
Position the steering system from the rear part of the dashboard and fix it to the bracket (3) using the 4 socket head screws M6x16 (11) with a tightening torque of 10,4 Nm (7.67 lb-ft).



Tilt connection to the steering system and fastening to the bracket

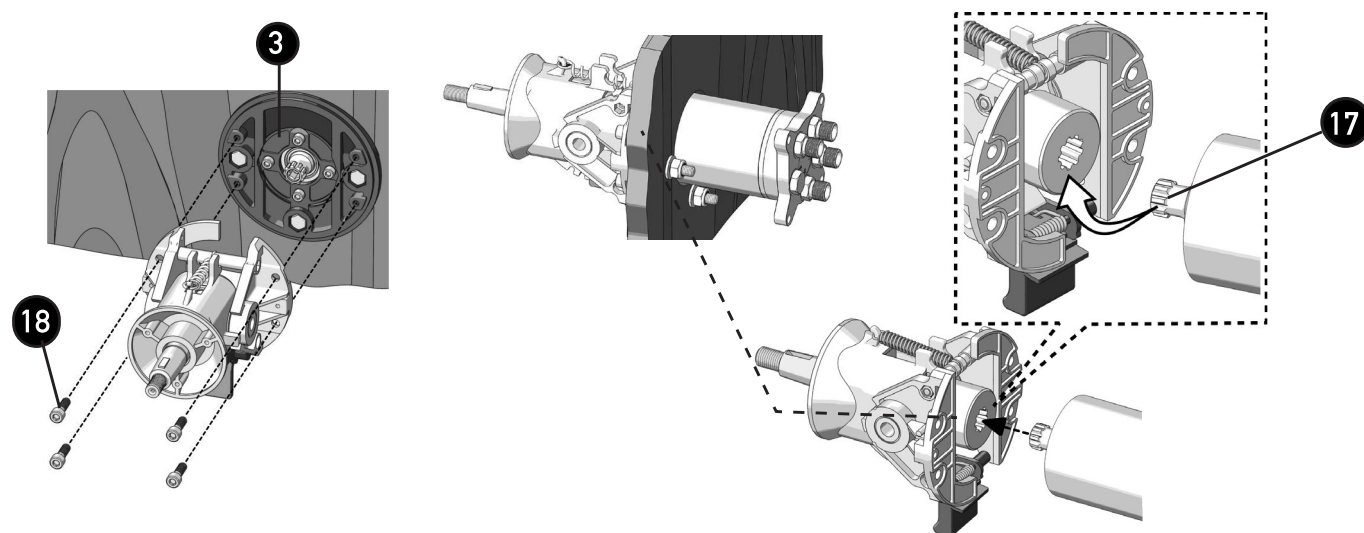
MOD. X52/X70-SVS

Loosen the socket head screw M4x30 (12) and the socket head screw M6x30 (13) on the tilt cardan joint (14) by about 1-1,5 turns. Align and insert the tilt cardan joint into the steering system shaft (15). Abut the tilt mechanism against the aluminium bracket (3) and tighten the two screws (12) and (13) with a tightening torque of 2,5 Nm (1,84 lb-ft) and 7 Nm (5.16 lb-ft) respectively. Fix the tilt mechanism to the bracket using the 4 socket head screws M6x16 (16) with a tightening torque of 5 Nm (3.69 lb-ft).



MOD. X66

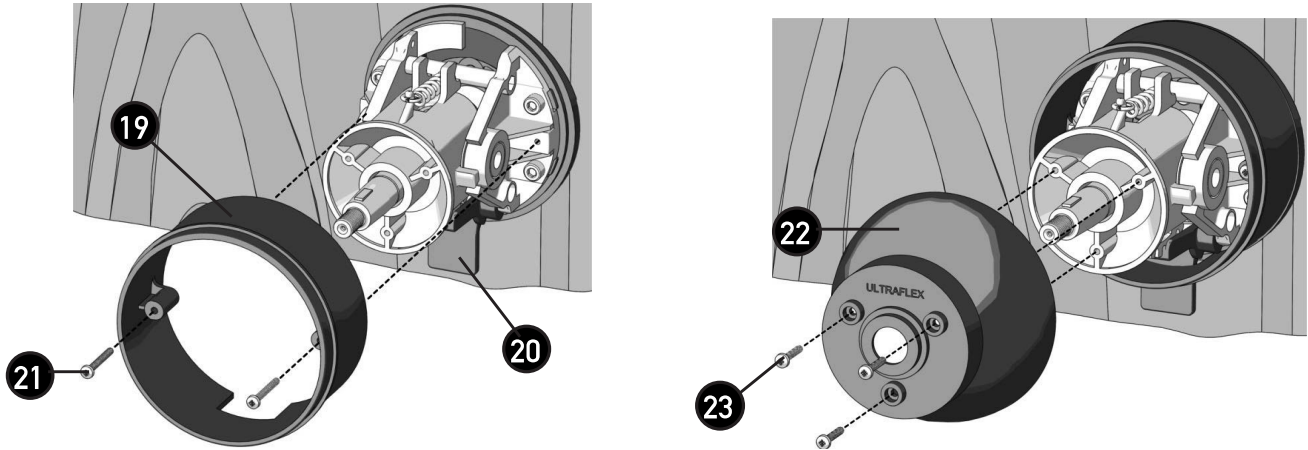
Position the X66 tilt mechanism on the steering system shaft (17) and abut it against the bracket (3). Fix the tilt mechanism to the bracket using the 4 socket head screws M6x16 (18) with a tightening torque of 10,4 Nm (7,67 lb-ft).



ABS cover assembly

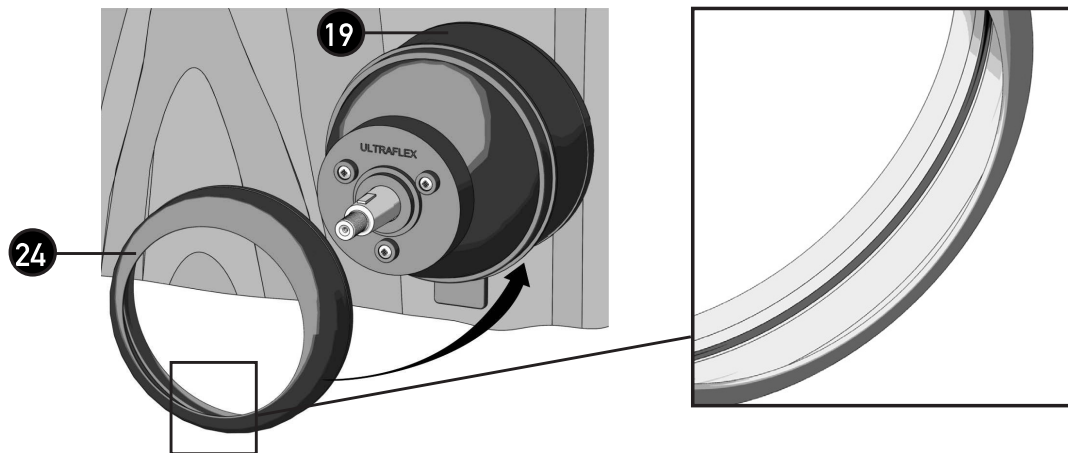
Position the fixed covering (19) on the tilt mechanism so that the rectangular part is aligned with the locking tooth (20). Then fix it to the device using the 2 self-threading screws ST 3.5x25 (21).

Fix the mobile cover (22) to the tilt mechanism using the 3 self-threading screws ST 3.5x16 (23).



Joint assembly

Insert the joint (24) paying attention to position the proper groove on the fixed cover flange (19).



Steering wheel installation

CAUTION

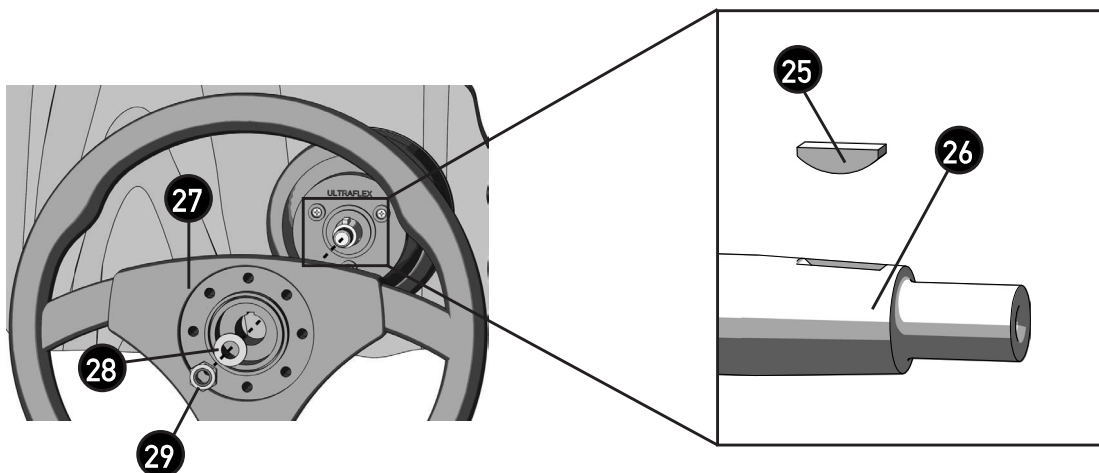
Install a steering wheel whose dimensions are compatible with the steering system used (see the steering system installation manual).

Insert the key (25) into the shaft slot (26).

Position the steering wheel (27) on the tilt mechanism shaft (26) so that the slot on the steering wheel hub is aligned with the key (25). Insert the 24 mm washer (28) and tighten the locknut M12 (29) using a 19 mm open end wrench with a tightening torque of 30 Nm (22.14 lb·ft).

⚠ CAUTION

Do not use threadlockers such as Loctite or something similar.



STEERING SYSTEM TEST

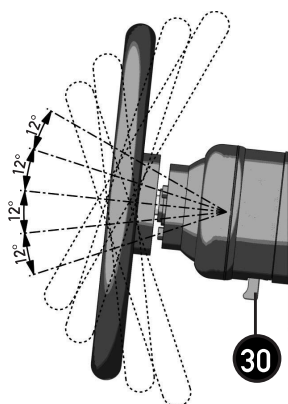
⚠ WARNING

Test the steering system before steering the boat.

After assembling the tilt device and the steering system, check that the steering wheel rotation corresponds to a correct movement of the steering system. To do this, refer to the steering system installation and maintenance manuals.

STEERING WHEEL ADJUSTMENT

To modify the steering wheel tilt press the tilt lever (30) and act on the steering wheel. Make sure the 5 expected positions are allowed.



NOTICE

The tilt mechanism is internally provided with a return spring. Hold the steering wheel firmly when the tilt is adjusted, to avoid sudden movements.

⚠ ATTENZIONE

Move the tilt mechanism to change the tilt only when the boat is stationary, since any sudden movement could make the driver lose balance and lose the boat control.

MAINTENANCE

WARNING

Poor installation and maintenance may result in loss of steering and cause property damage and/or personal injury.

After the first 10 hours of use and afterwards periodically check that screws, bolts and nuts are not loose. If one or more fastening devices are loose this can result not only in the steering system malfunction but also in damage to people or things.

Check periodically that metal parts are not oxidized.
Replace the worn and/or damaged components.

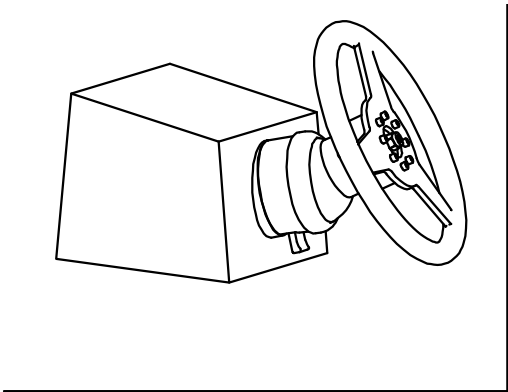
DISMANTLING

When for any reason, the components are put out of service, it is necessary to follow some rules in order to respect the environment.

Sheaths, pipelines, plastic or non-metallic components must be disassembled and disposed of separately.



SCALE 1 : 1



UNDERSIDE
OF DECKING

TOP

$\phi 128$ [$\phi 5.0$ "] OVERALL DIMENSION

$\phi 74$ [$\phi 2.9$ "]

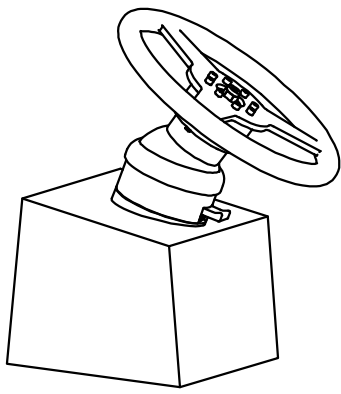
$\phi 10$ [$\phi 0.4$ "] 3 HOLES

101.5 [4.0 "] MINIMUM

47.5 [1.9 "]

95 [3.74 "]

MOUNTING TEMPLATE
FOR VERTICAL DECKING

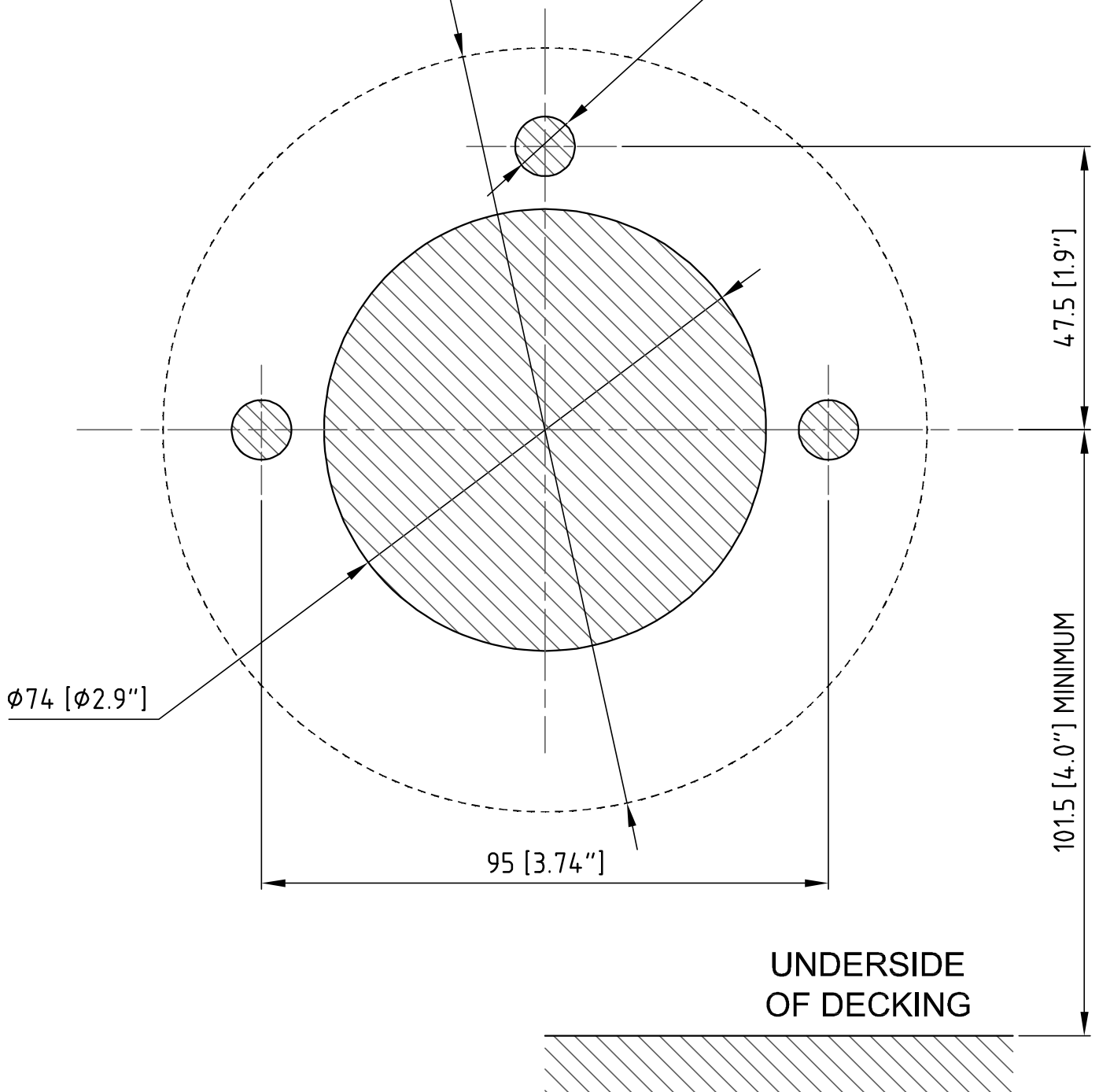


SCALE 1 : 1

BOW

$\phi 128$ [$\phi 5.0$ "] OVERALL DIMENSION

$\phi 10$ [$\phi 0.4$ "] 3 HOLES



MOUNTING TEMPLATE FOR
HORIZONTAL DECKING

[illegible]

[illegible]

[illegible]



UFLEX USA

Sarasota, FL 34243 - 6442 Parkland Drive

