

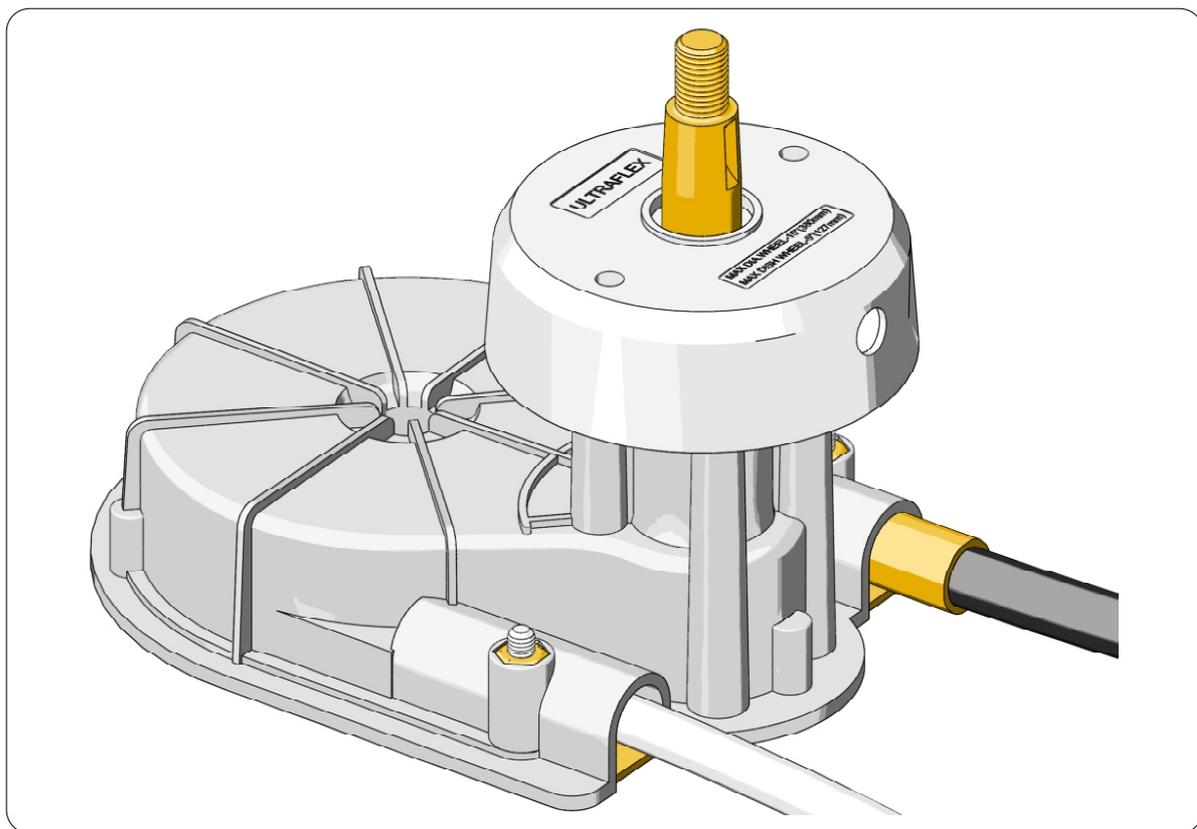
Installation and maintenance manual

T85 STEERING SYSTEM

ENGLISH

ITALIANO

FRANÇAIS



CE



®

ULTRAFLEX

UK

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PARTNER

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Setting Standards for Safer Boating®



Member of CISQ Federation

RINA
ISO 9001:2000
Certified Quality System



Member of CISQ Federation

RINA
ISO 14001
Certified Environmental System

Dear Customer,

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

ULTRAFLEX has been a leader in steering systems for pleasure and professional boats for many years. **ULTRAFLEX** production is since ever synonymous of reliability and safety.

All **ULTRAFLEX** products are designed and manufactured to ensure the best performance. To ensure your safety and to maintain a high quality level, **ULTRAFLEX** products are guaranteed only if they are used with original spare parts.

ULTRAFLEX and **UFLEX** Quality Management Systems are certified CISQ-IQNet by the Italian Shipping Registry (RINA), in conformity with the UNI EN ISO 9001:2008 rule. **ULTRAFLEX** certification No. 6669/02/S (former 420/96). **UFLEX** certification No. 8875/03/S.

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

ULTRAFLEX Environmental Management System is certified CISQ-IQNet by the Italian Shipping Registry (RINA), in conformity with the UNI EN ISO 14001 rule. **ULTRAFLEX** certification No. EMS-1282/S.

Products for pleasure boats are constantly tested to check their conformity with the 2013/53/EU.



"**ULTRAFLEX** has over 80 years of experience in the marine industry and is a world leader in the production of mechanical, hydraulic and electronic steering systems, control boxes and steering wheels for any kind of pleasure, fishing or commercial boats.

The key factors which explain the increasing success of our products all over the world are the reliability of our products and the before and after sale service, the quality of the company organization and of the human resources and the continuous spending in research and development".

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MANUAL USE AND SYMBOLS USED

THE INSTALLATION AND MAINTENANCE MANUAL is the document given with 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.

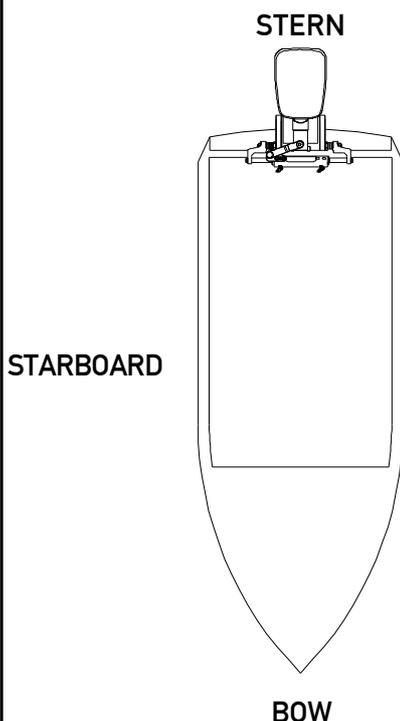
 **WARNING** → Denotes that a hazard exists which can result in injury or death if proper precautions are not taken.

 **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.



→ The symbol aside indicates all the operations which must be carried out by qualified or skilled staff, in order to avoid hazards. We recommend training the staff in charge of the product installation and checking their knowledge.



→ The picture aside explains the meaning of some nautical words contained in this manual.



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.

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

Apart from the essential features of the described product, **ULTRAFLEX** 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 pictures of **ULTRAFLEX** products included in this manual are **ULTRAFLEX** 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 Assistance Service.

TECHNICAL ASSISTANCE SERVICE

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WARRANTY

ULTRAFLEX guarantees that its products are well designed and free from manufacturing and material defects, for a period of two years from the date of manufacturing.

For the products which are installed and used on working or commercial boats the warranty is limited to one year from the date of manufacturing.

If during this period the product proves to be defective due to improper materials and/or manufacture, the manufacturer will repair or replace the defective parts free of charge.

Direct or indirect damage is not covered by this warranty. In particular the company is not responsible and this warranty will not cover the damage resulting from incorrect installation or use of the product (except for replacement or repair of defective parts according to the conditions and terms above).

This warranty does not cover the products installed on race boats or boats used in competitions.

The descriptions and illustrations contained in this manual should be used as general reference only.

For any further information please contact our Technical Assistance Service.

ULTRAFLEX steering system components are marked  according to the Directive 2013/53/EU.

We remind you that only  marked steering systems must be used on the boats marked . We inform you that the **ULTRAFLEX** warranty is null if some **ULTRAFLEX** components are installed on a steering system together with products of other brands.



1 PRODUCT DESCRIPTION

1.1 Description of the product and warnings for the correct use

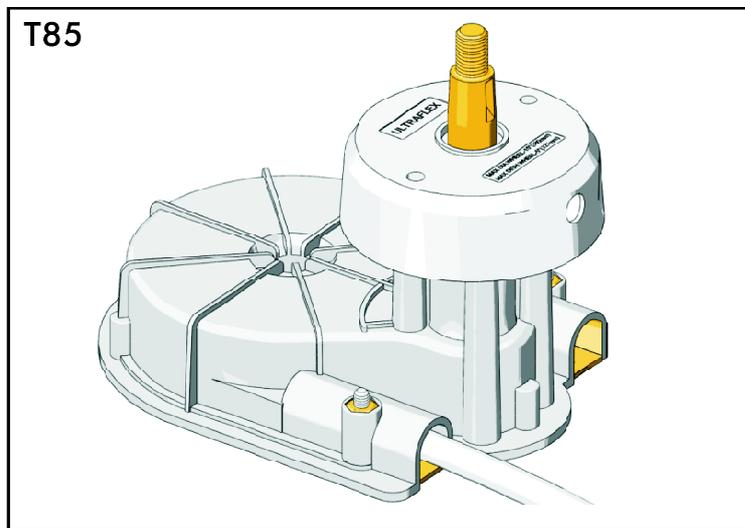
T85 mechanical steering system with steering cable is designed to control boats equipped with outboard, inboard and sterndrive power assisted engines. T85 steering system must be used with Ultraflex M66 steering cable

⚠ WARNING

T85 steering system is not to be used on boats equipped with engines that exceed the maximum horsepower rating of the boat or the speed of 50 knots (57.5 mph).

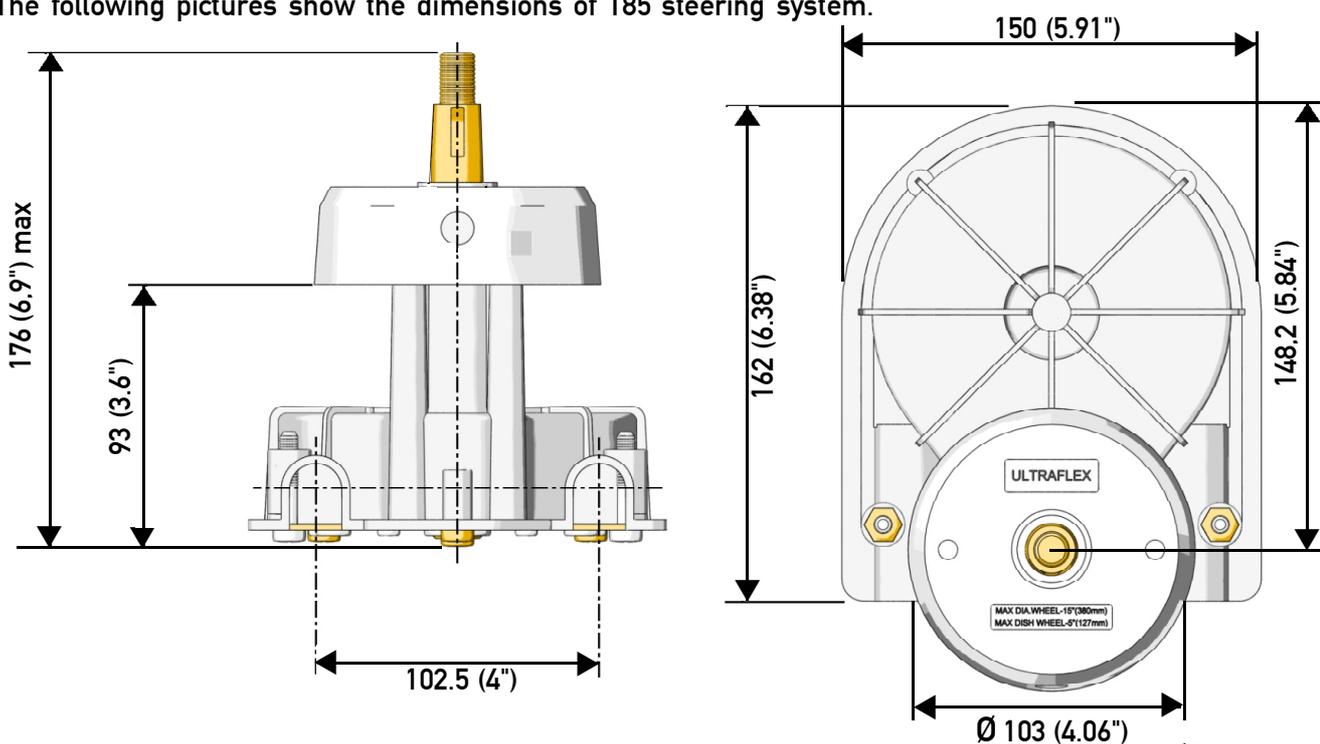
⚠ DANGER

DO NOT DISASSEMBLE ANY PART OF THE STEERING SYSTEM DURING THE INSTALLATION OF THE CABLE. THE DISASSEMBLY OF THE COMPONENTS CAN GENERALLY CAUSE SERIOUS DAMAGE TO OBJECTS OR PEOPLE. THIS PROCEDURE CAUSES THE WARRANTY LOSS OF THE PRODUCT.



1.2 DIMENSIONS

The following pictures show the dimensions of T85 steering system.



2 TRANSPORT

2.1 General warnings

The product weight with its packaging is 2,5 kg (5.5 pounds); therefore, it can be manually handled.

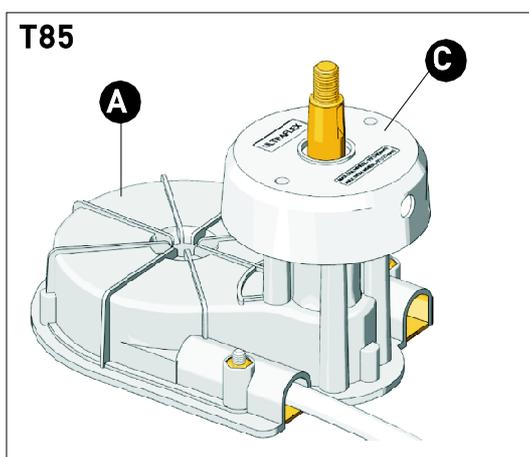
⚠ WARNING

The staff in charge of handling must wear protective gloves and safety shoes.

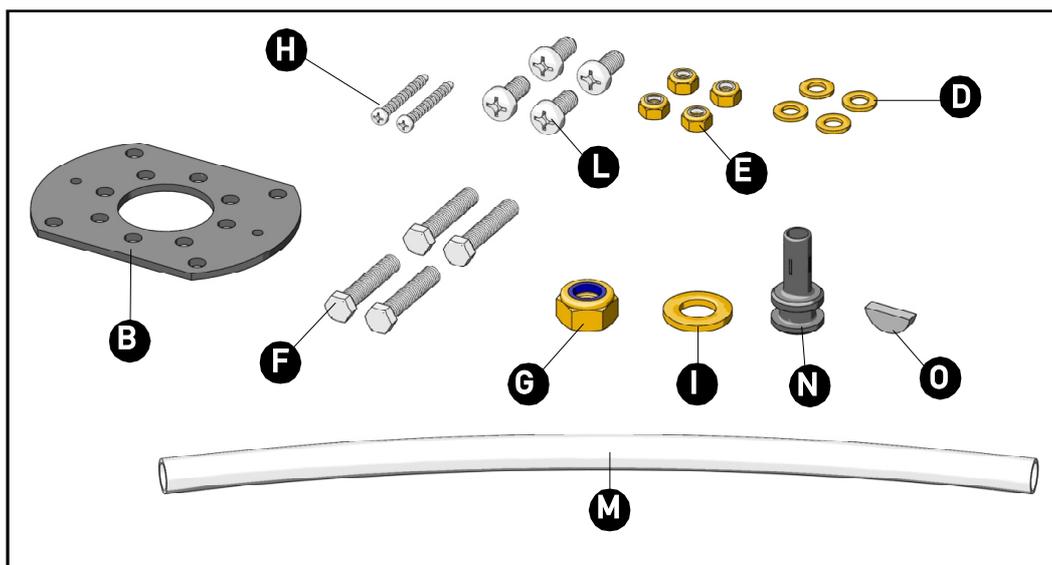
2.2 Packaging contents

Before using the equipment check that the product has not been damaged during transport. Also make sure that all the standard components are in the packaging (see list). In case of damage, notify the claim to the forwarder and inform the supplier.

Contents of the steering system packagings:



REF	T85
A	1 steering system
B	1 bracket
C	1 mounting bezel
D	4 washers 6,4x12,5
E	4 nuts M6
F	4 screws M6x35
G	1 nut M12
H	2 self-threading screws
I	1 washer
L	4 screws M6x12
M	1 tube
N	1 bushing
O	1 woodruff key



⚠ CAUTION

The packaging must be disposed of according to the existing laws.



3 INSTALLATION

3.1 Necessary tools

ENGLISH



Star screwdriver



Pliers



Open end wrench
10mm [0.395"]



Open end wrench
18mm [0.71"]



Drill

3.2 Steering system positioning



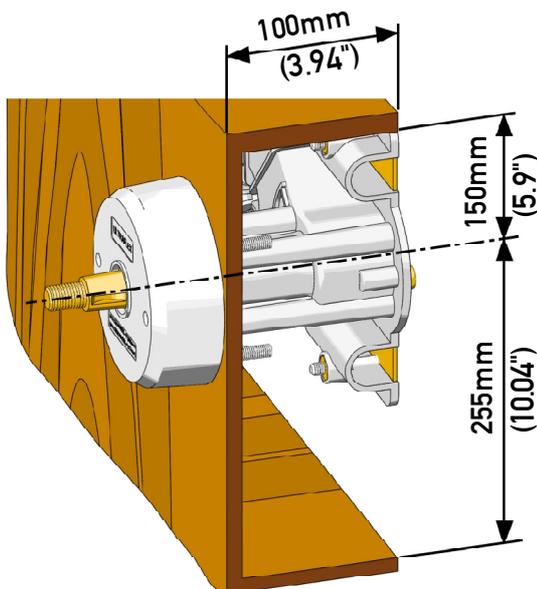
1 The steering cable must be installed on the side of the boat closer to the steering wheel shaft.

2 Select a direct path with a minimal number of bends

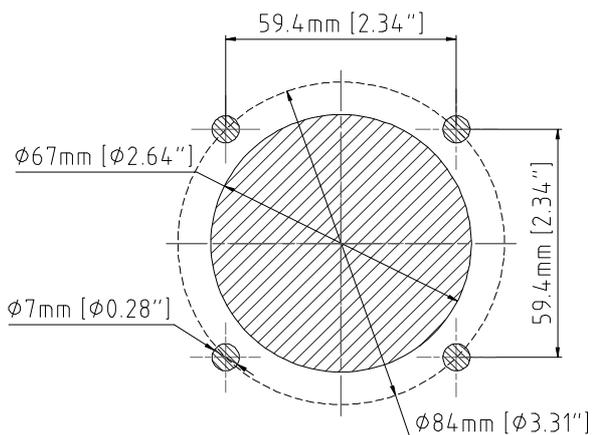
⚠ WARNING

The minimum bend radius for a steering cable is 8" (200mm).
A more severe bend will cause steering friction and reduce cable life.

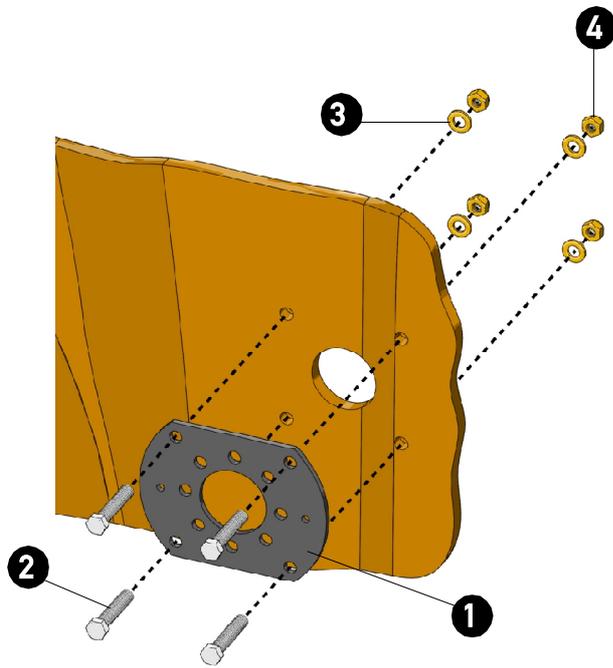
3 Make sure the distances between the axis of the shaft of the steering system and the bulkheads are equal or longer than those indicated in the picture.



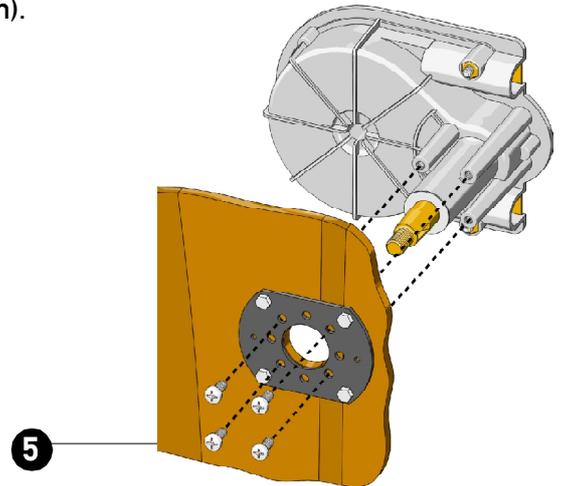
4 By using the supplied drilling template position the steering system in the chosen place and create 4 holes of diameter 7 mm (0.28") and one of diameter 67 mm (2.64")



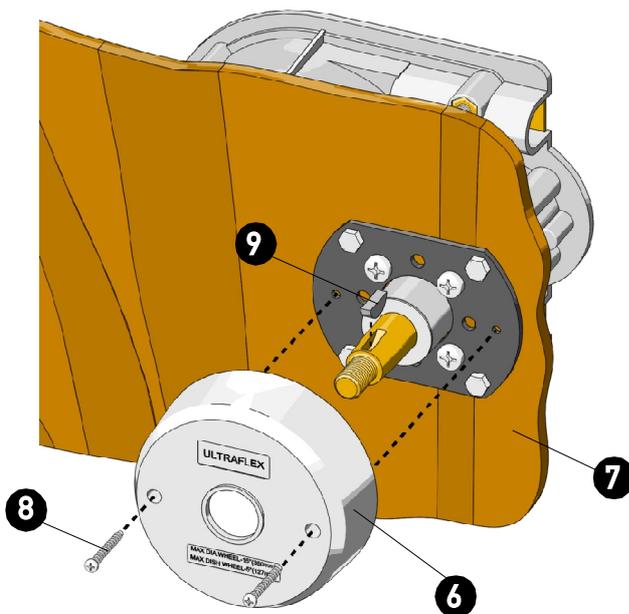
5 Tighten the bracket (1) to the dashboard using four screws M6x35 (hexagonal head) (2), four washers (3) and four self stopping nuts M6 (4) with torque of 6 Nm (53 lbs in).



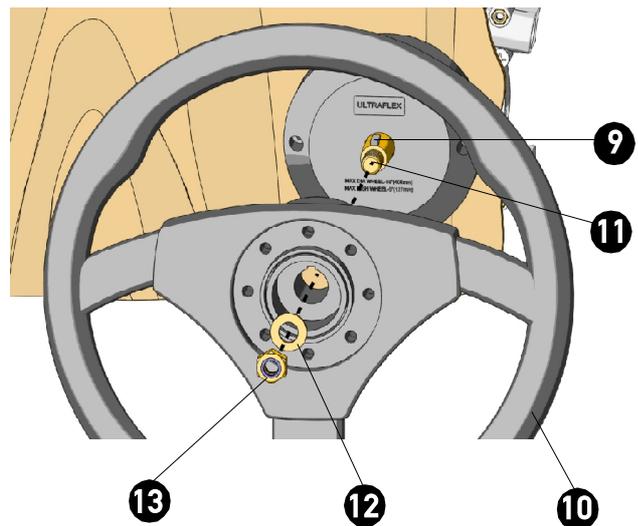
6 Insert the helm shaft from the back side of the dashboard through the hole of the mounting bracket. The helm can be fixed in eight different positions (every 45°). The right position will be determined by the mounting side of the cable. Place the helm in the selected position and align the holes for mounting. Tighten the helm to the bracket with four M6x12 screws (5) with torque of 6 Nm (53 lbs in).



7 Insert the bezel (6) and make it touch the dashboard (7). Fix the bezel (6) to the dashboard (7) with two self-threading screws (8).



8 Insert the steering wheel (10) on the helm shaft (11) aligning the recess of the hub with the key (9) of the shaft. Insert the washer (12), screw the M12 nut (13) on the hub of the steering wheel with torque of 35-40Nm (310-354 lbs in).



⚠ WARNING

Do not use a steering wheel with diameter wider than 16" (406mm) and with depth exceeding 5" (127mm).

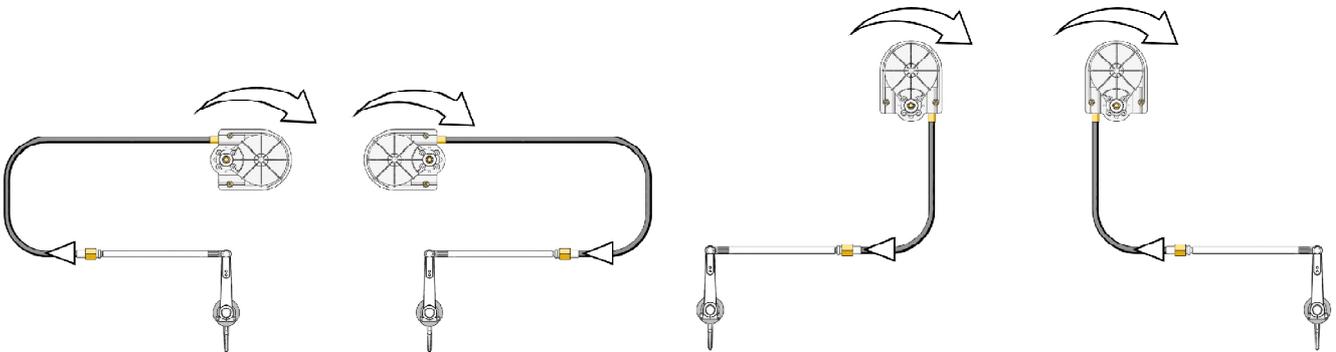


3.3 Cable connection to the steering system



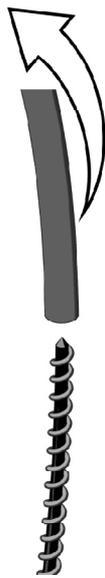
ENGLISH

- 1 Determine the correct cable entry position into the helm according to the proper steering system.

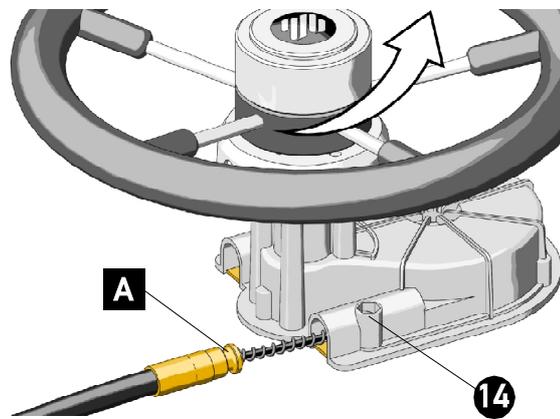


PUSH OR PULL TURNING DIRECTIONS

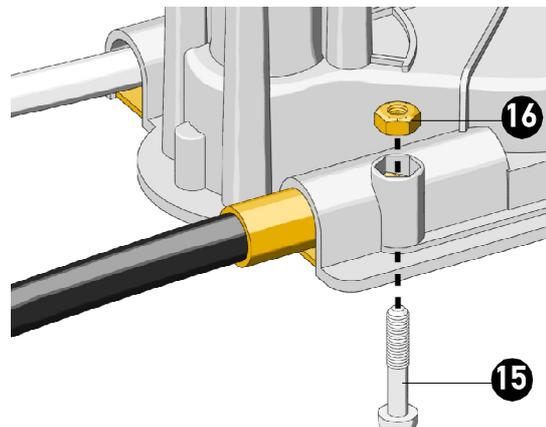
- 2 Remove protective tube from Ultraflex M66 cable end and insert the helix cable into the helm.



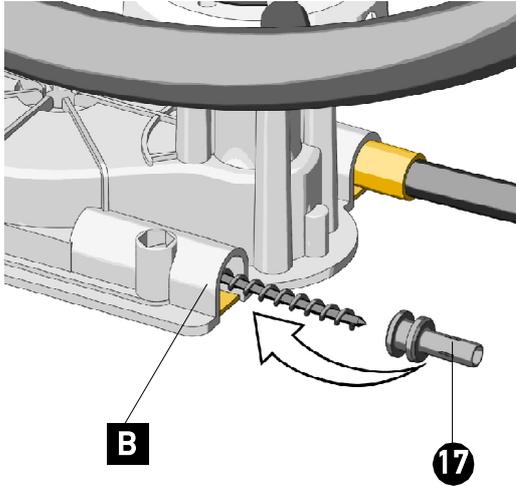
- 3 Turn the steering wheel so as to "pull" the cable into the helm, aligning the end fitting recess A with screw hole in helm base (14).



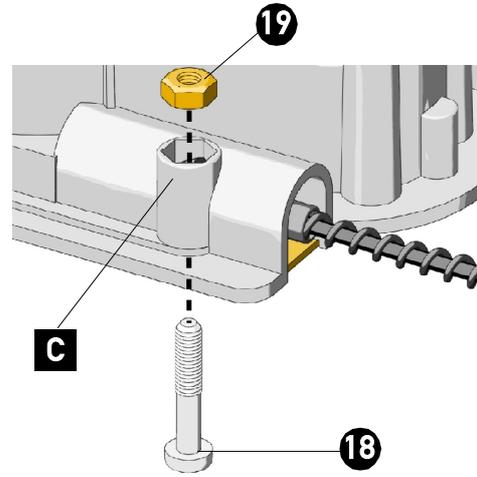
- 4 Lock the end fitting with the screw (15) and nut (16) with torque of 6 Nm (53 in lbs)



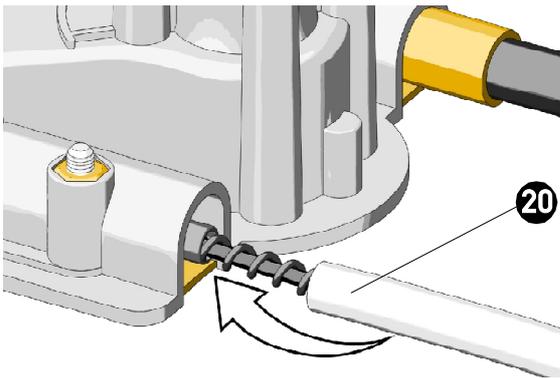
5 Slide the bushing (17) over the helix cable and introduce it into the hole of the helm B.



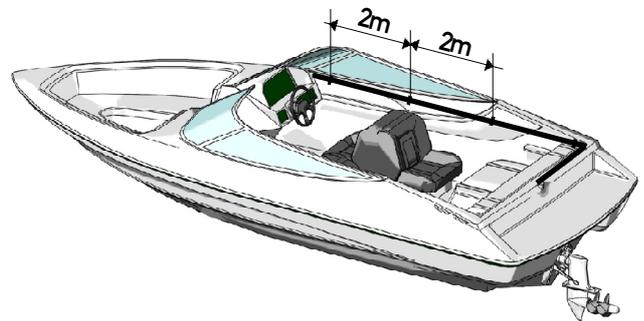
6 Align the bushing recess (17) with C hole and lock it by means of the screw (18) and the nut (19) with torque of 53 in.lbs (6 Nm).



7 Insert the protection tube (20) on to the bushing (17)



8 Fix the conduit every 2 mt (6'). The conduit must not be fixed to electric wires. Bulkhead openings require a minimum 38mm (1 1/2) hole diameter.



⚠ DANGER

Prevent any dust or foreign material from contacting the exposed helix cable end.

⚠ DANGER

Make sure the conduit does not enter in contact with cutting edges that could damage it.

⚠ WARNING

9 Make sure the direction of the steering wheel rotation corresponds to the boat direction. This control must be performed before the boat is operated in the water.



4 SAFETY WARNINGS

This section shows the safety rules which must be followed for the correct equipment operation. We recommend reading carefully this section and also the other manuals supplied with the steering system components.

4.1 Safety rules during installation and use

OBSERVE STRICTLY the following safety rules:

ULTRAFLEX declines all responsibility in case the user does not follow these rules and it is not responsible for negligence while using the system.

! DANGER

- **DO NOT PUT YOUR HANDS BETWEEN MOVING PARTS.**
- Do not disable the safety devices.
- Do not modify or add devices to the system, without **ULTRAFLEX** written authorisation or technical intervention which will prove the modification in the report.
- Do not use this equipment for a purpose different from the one it has been designed for, which is specified in the installation and maintenance manual.
- Do not let unskilled staff perform the installation.

! WARNING

- During installation, keep the system clean, to prevent any foreign body to damage it. Even the smallest object could cause permanent but not immediately perceivable damages.
- Avoid cable bends 200 mm (8")
- Avoid contact of cables with sharpened edges
- Avoid contact with sources of heat.

4.2 Clothing

! WARNING

During installation, inspection or maintenance, IT IS STRICTLY FORBIDDEN to wear necklaces, bracelets or clothes which could get caught in the moving parts.



5 MAINTENANCE

5.1 Ordinary maintenance



⚠ WARNING

Poor installation and maintenance may result in loss of steering and cause property damage and/or personal injury. Maintenance requirements change according to climate, frequency and the use. Inspections are necessary at least every year and must be carried out by specialized marine technicians.

Carry out the following maintenance operations:

- Periodically wash with water and soap the components by removing any salt deposit.
- Every month check and if necessary tighten all the nuts fastening the system.

⚠ DANGER

Release or separation of one of the fasteners can cause failure of steering system resulting in property damage, injury or death.

- Periodically check the absence of corrosion on the metal parts of the cable end fittings and of abrasions on the conduit.
- Replace the damage parts that could compromise the steering system integrity.

5.2 Extraordinary maintenance



Technical Support

For any information or for assistance with unusual applications please contact our technical support staff (See paragraph "Introduction").

6 DISMANTLING

6.1 Dismantling

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

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

