

# Installation and Maintenance Manual

## PUMP FOR HYDRAULIC STEERING SYSTEMS

# UP 18



ENGLISH

ITALIANO

FRANÇAIS

CE



# ULTRAFLEX



PARTNER



**UK**  
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## Dear Customer,

Thank you for choosing one of our products **ULTRAFLEX**.

The **ULTRAFLEX** has long been a landmark in steering systems in the field of both leisure and professional boating.

Always production **ULTRAFLEX** is synonymous with great reliability and safety.

All products **ULTRAFLEX** are designed and manufactured to guarantee the best performance possible, according to the purposes they are designed and intended for.

To protect your safety and to keep a high quality level **ULTRAFLEX** warrants its products only when used with original spare parts (see the "Application Spare Parts" herein attached).

The Quality Management Systems **ULTRAFLEX** and **UFLEX** CISQ-IQNet certified by RINA Italian Naval Register, in accordance with UNI EN ISO 9001:2000 rule. Certified **ULTRAFLEX** No. 6669/02/S (formerly 420/96). Certified **UFLEX** No. 8875/03/S.

The Quality management system involves all the resources and business processes, starting from design, and aimed at:

- ensuring the customer the quality of the product;
- set the actions to maintain and improve over time the quality standards;
- pursuing continuous improvement in the effectiveness and efficiency of the processes to always readily meet the requirements of the market and increase customer satisfaction;
- monitoring compliance with requirements imposed by Directive 2003/44/EC, by UNI EN ISO 10592 rule and ABYC standards (American Boat and Yacht Council).



**ULTRAFLEX** with more than 70 years of experience in the marine industry today is a global leader in the production of mechanical, hydraulic and electronic steering systems, control units and steering wheels for powerboats, as well as fishing and working boats of every size and type of engine.

The reliability of our products and before and after sales service, the quality of the business organization and human resources, together with continuous investment in research and development are key factors to explain the increasingly growing success of our products all over the world.

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## DOCUMENT REVISIONS

REV.	DATE	REVISION DESCRIPTION
0	12/09/2013	First edition
1	07/05/2014	Upgrade to 39kn (45mph)





## USE OF THE MANUAL AND SYMBOLS USED


The **INSTALLATION AND MAINTENANCE MANUAL** is the document accompanying the product from the time of its sale until replacement and disposal. It must be therefore considered an integral part of it.


It is recommended to read the manual before carrying out **ANY ACTIVITIES** involving the product, including its handling and unloading from the vehicle.


In order to protect the user's safety and to ensure the proper operation of the product, in this manual the symbols described below were adopted.

 <b>DANGER</b>	Denotes that an extreme intrinsic hazard exist which would result in high probability of death or irreparable injury if proper precautions are not taken.
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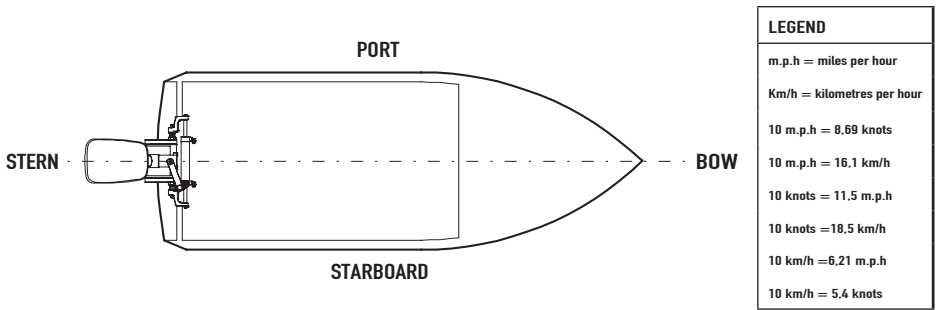
 <b>WARNING</b>	Denotes that a hazard exist which can result in injury or death if proper precautions are not taken.
--	--

 <b>CAUTION</b>	Denotes a reminder of safety practices or unsafe practices which could result in personal injury or damage to the product or to the environment.
--	--

 <b>NOTE</b>	Important information to highlight for adequate installation and maintenance, but not the cause of damage.
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	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.
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The figure below is designed to facilitate the interpretation of some nautical terms contained in this manual.



## INFORMATION LETTER

This installation and maintenance manual is an integral part of the product and must be readily available for use by staff appointed to both use and maintenance.

The user is required to be familiar with the contents of this manual.

The **ULTRAFLEX** disclaims any liability for inaccuracies due to typographical errors in the manual.

Without prejudice to the essential characteristics of the product described, **ULTRAFLEX** reserve the right to make any changes to descriptions, details and illustrations, as it deems them proper to improve the product itself, or to meet manufacturing or commercial nature requirements, at any time and without being required to readily update this publication.

ALL RIGHTS RESERVED. Publishing rights, trademarks, part numbers and product photos **ULTRAFLEX** in this manual are the property of **ULTRAFLEX** which prohibits any reproduction, even partial.

Every care has been applied in compiling and checking the documentation in order to make this manual as complete, comprehensive and clear as possible. Nothing contained in this publication should be construed as a warranty or condition, express or implied, not limited to, for suitability for a special purpose.

Nothing contained in this publication can also be interpreted as modifying or stating the terms of any purchase contract.

### WARNING

In order to ensure the proper operation of the product and its components, it must be installed by trained personnel. In case of breakage of constituting parts or malfunction, please consult qualified service staff or contact our Technical Service Department.

### TECHNICAL SERVICE DEPARTMENT

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## WARRANTY

**ULTRAFLEX** warrants that its products are manufactured in a workmanlike manner and that they are free from defects in workmanship and materials.

This warranty is valid for a period of 2 years from the date of manufacture of the products, with the exception of cases in which they are installed and used on working boats or in any case on boats used for commercial purposes, in which case the warranty is limited to 1 year from the date of manufacture.

This warranty is limited to free replacement or repair of that or those components that, by that established date, will be returned prepaid and deemed by our technicians as actually defective in material and / or workmanship.

The guarantee does not cover any and other direct or indirect damage. In particular, the warranty does not cover and we disclaims any liability (except to replace or repair any defective components under the terms and conditions mentioned above) where their failure or malfunction is attributable to faulty installation, careless or incorrect use.

This warranty does not cover products installed on racing boats or in any case used in competitive environments. The descriptions and illustrations in this manual are given as an indication only.

For detailed information please contact our Service Department.

The components of the steering systems **ULTRAFLEX** are marked **CE** as required by Directive 2003/44/EC and comply with UNI EN ISO 10592 rule and ABYC (U.S.A.) standards.

Please note that on the boats marked **CE** it is required to install steering systems whose components are marked **CE** (See Article 3 and Article 5 of Directive 2003/44/EC.). We inform you that the warranty **ULTRAFLEX** will be automatically voided if any components **ULTRAFLEX** are installed in a steering system together with products of other brands.



# SECTION 1 - PRODUCT DESCRIPTION

## 1.1 Operation of a hydraulic steering system

The hydraulic systems **ULTRAFLEX** are designed in accordance with UNI EN ISO 10592 rule and A.B.Y.C. standards P21.

The steering systems **ULTRAFLEX** are able to operate in an ambient temperature ranging between  $-10^{\circ}\text{C}$  ( $14^{\circ}\text{F}$ ) and  $+60^{\circ}\text{C}$  ( $+140^{\circ}\text{F}$ ), all of their components were specifically manufactured for the marine environment, using materials and applying processes that offer great durability and safety even in extreme conditions.

The hydraulic steering system mounted on a boat schematically consists in:

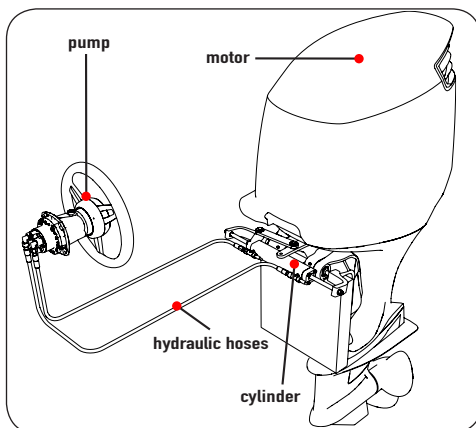
- a pump placed on the dashboard;
- a cylinder positioned at the stern and connected to the motor or to the helm;
- pair of connection hydraulic hoses (see figure).

The rotation of the steering wheel causes the pumping of the oil that, depending on the direction of rotation, flows into the cylinder through the hoses.

The consequent movement of the cylinder makes the oil flow towards the pump through the hoses and at the same time moves the engine or the helm of the boat connected to the cylinder itself.

The pumps are equipped with a non-return valve, which has the function of preventing the flow of oil to the pump if the latter is not running. In unbalanced cylinders the two chambers have different capacities, and therefore require, considering the same displacement in the two directions, a different number of turns of the steering wheel and a different rotation torque on the steering wheel. The balanced cylinders require the same number of turns of the steering wheel to move the helm from the centre to the end of stroke in the two opposite directions.

A balanced and easily manoeuvrable steering system requires a proper choice of the type of pump to be coupled to the cylinder. **ULTRAFLEX** builds different models of pumps, which differ for the flow rate (cm<sup>3</sup> of oil handled at each turn of the steering wheel) and for the type of installation. While choosing the pump you must consider the capacity of the cylinder: the number of steering wheel turns from left to right is in fact determined by the ratio between the volume of the cylinder and the pump flow.





## 1.2 INFORMATION FOR CORRECT USE OF THE PRODUCT

### DANGER

In any case do not make changes to the pump in order to make it better suit your specific application. In this case the pump will not operate safely and endanger the boat and its occupants.

### WARNING

The steering systems **ULTRAFLEX** should not be used on boats equipped with engines that exceed the maximum horsepower rating provided on site.

### WARNING

Pump UP18 must not be used on boats over 39kn (45mph).

### WARNING

Pump UP18 should be used coupled with cylinders UC81 in the GOTECH™ kit and with a single outboard motor with max 115hp.

## 1.3 System configurations

The UP18 pump can **ONLY** be installed on a steering system with single engine, single control unit and can **ONLY** be used in conjunction with the UC81 cylinder supplied with the GOTECH™ kit.

### WARNING

The hydraulic cylinder UC81 must not be used on boats over 39kn (45mph) and/or with outboard motors over 115hp.

### CAUTION

Always ensure the hoses are correctly connected, as indicated in the installation manual of hydraulic cylinder UC81.

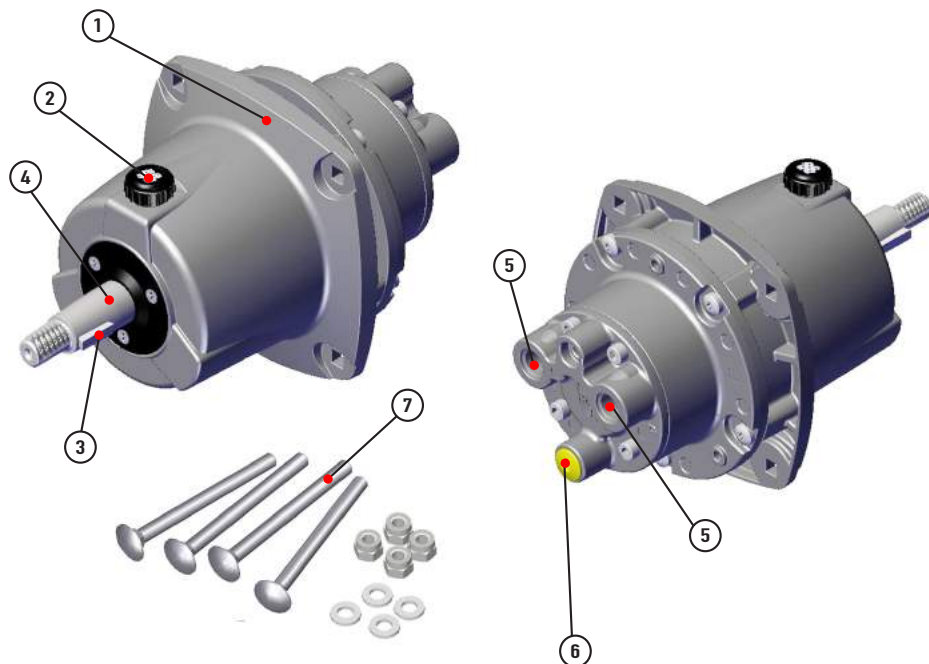


### 1.4 Description pump

The UP18 pump was designed and built to be used as a component of a hydraulic steering system as described in the previous paragraph and mounted on the front dashboard.

The following picture shows the main components of the pump.

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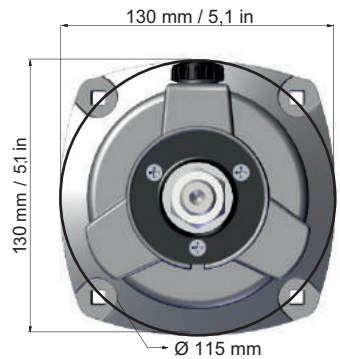
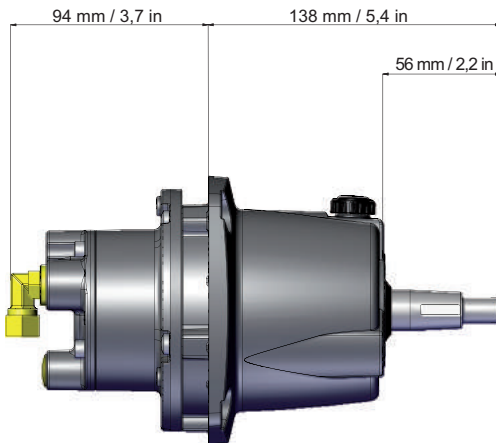


- 1** UP18 pump
- 2** Fuel tank cap
- 3** Key for steering wheel hub
- 4** Shaft for steering wheel connection
- 5** Connections for coupling hoses to the cylinder
- 6** Auto-pilot connection
- 7** Screw kit for fixing to the dashboard



### 1.5 Technical features

SPECIFICATIONS	UP18
Power	18 cc/rev - 1.1 cu. in/rev
Pressure release of maximum pressure relief valves	55 bars (800 psi)
No. of pistons	5
Steering wheel max. diameter	508 mm - (20 in)
Steering wheel max. socket	115 mm - (4.5 in)
Weight	3.8 kg
Oil	see table in the oil filling and bleeding section



#### **⚠ WARNING**

The pressure max. value activating the relief valves does not match the one provided during normal use of the system, but the one reached at its limit point.



## 2 - TRANSPORT

### 2.1 General warnings for product handling

The weight of the product, including the packaging, is 3,8 kg and therefore it can be handled manually.

 **CAUTION**



The staff handling the load must operate using all required PPE (Personal Protective Devices) as required by the applicable standard on accident prevention at the workplace.

### 2.2 PACKAGING CONTENT

Pump UP18 is supplied with the GOTECH™ kit:

- UP18 pump
- UC81 cylinder
- hydraulic hoses kit
- 2 liters of oil "OL150" ULTRAFLEX.

Before use, check that the equipment has not been suffered damage due to transport or storage conditions.

Also make sure that all standard components are actually inside the packaging (see list).

In case of damage or incomplete delivery, notify your claim to the carrier and also to your supplier.

 **CAUTION**

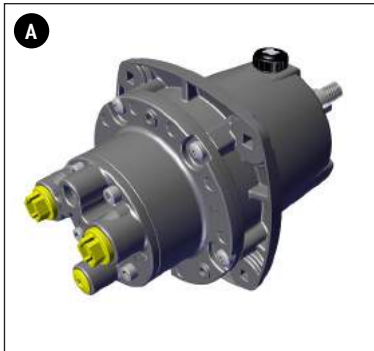


The packaging must be disposed of according to applicable directives.



**CONTENT OF UP18 PUMP PACKAGING:**

- A** No. 1 UP18 pump
- B** No. 1 installation kit:
  - No. 2 elbow fittings to connect the hydraulic hoses
  - No. 4 nuts + No. 4 washers + 4 screws for fastening to the dashboard
  - No. 1 nut + No. 1 washer + No. 1 wrench for tightening the steering wheel
- C** No. 1 oil fill and drain kit:
  - No. 1 pin
  - No. 1 transparent hose
  - No. 1 hose holder fitting
  - No. 1 oil bottle spout



## 3 - INSTALLATION

### 3.1 Tools required for installation



Open end wrench  
7/16"



Open end wrench  
19mm



Open end wrench  
10mm



Torque wrench



MOLYKOTE ® 1000



Joint sealing Loctite  
542/545



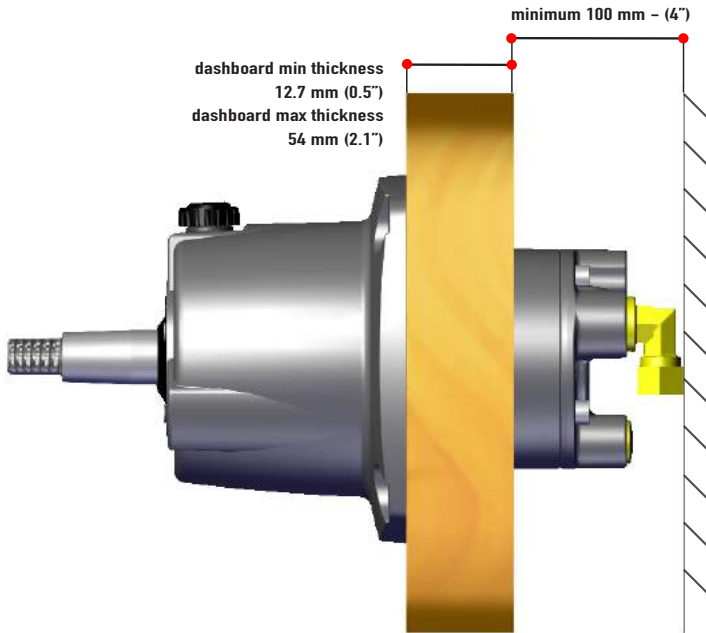
Drill





### 3.2 Pump installation

- 1 Choose a position suitable to install the steering station. Check there is sufficient space to move the steering wheel and enough space for the pump with the hoses and joints assembled.



**WARNING**

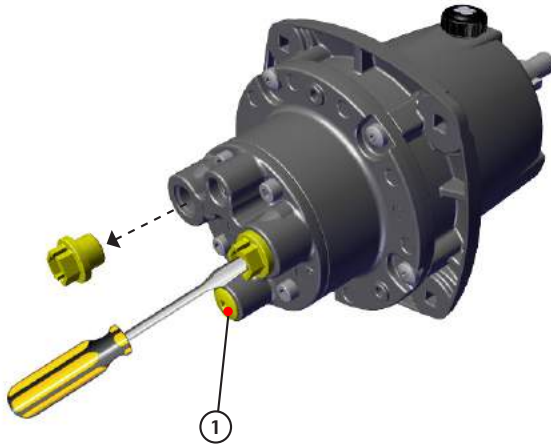
To correctly fasten the pump, the dashboard must be between 12.7mm (0.5") and 54mm (2.1") thick.

Any other thickness could compromise safe steering.

After assembly, ensure the locking ring on the 4 self-locking nuts supplied are properly screwed in.



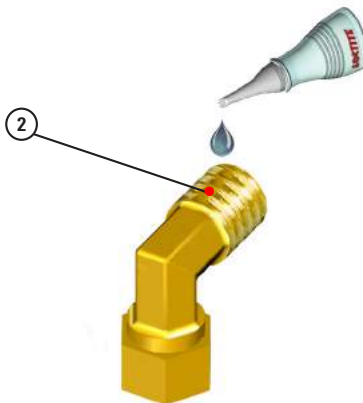
- 2** Remove the yellow protective plugs with a screwdriver.



**⚠ CAUTION**

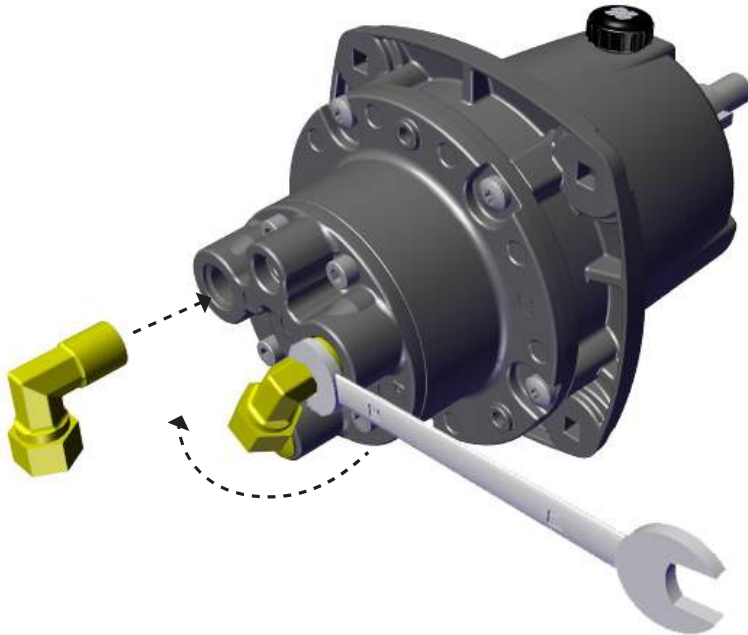
The plug (1) must only be removed during the auto-pilot installation phase.

- 3** Apply a Loctite 542 or Loctite 545 sealant on the threads of the elbow fittings (2).





**3** Insert and tighten by hand the elbow fittings until they are fully seated, then tighten with a 7/16" hex wrench, screwing again from 1.5 to 2.5 turns, up to their best positioning for hoses connection.  
However do not exceed a max. torque of 17.6 Nm (13 lb ft).



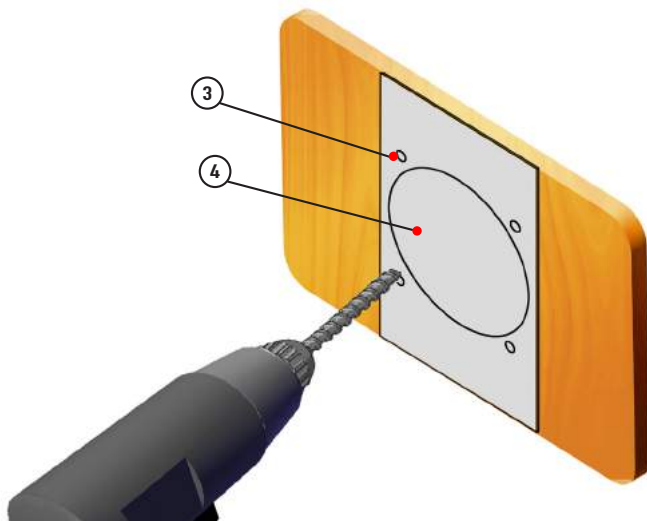
**CAUTION**

Do not use Teflon tape or any other type of tape.  
Pay particular attention in positioning the sealant since, if introduced into the system, it would lead to its breakdown making it completely unusable.

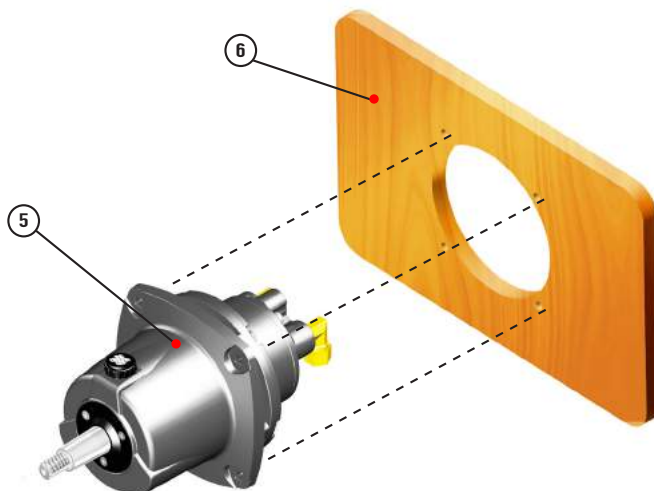


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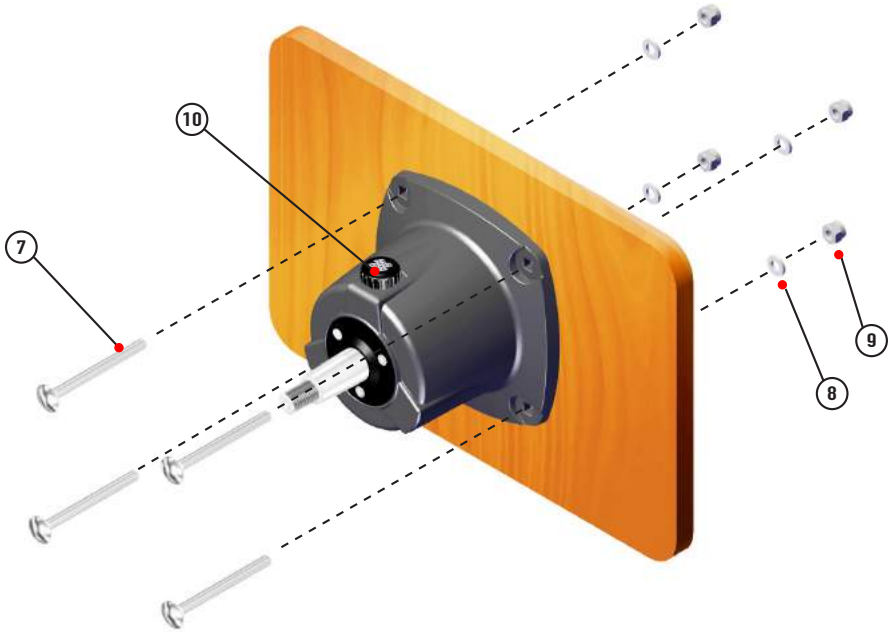
**4** Using the template accompanying this user manual make on the dashboard the 4 holes (3) for the screws and the centre hole (4).



**5** Position the pump (5) from the front of the dashboard (6) with the tank plug turned upwards.



**6** Use the 4 fastening screws (7), the 4 washers (8) and the 4 self-locking nuts (9), to fasten the pump to the dashboard.  
Tighten the nuts using a 10mm wrench with a 10 Nm (7.4 lb ft) torque.



**CAUTION**

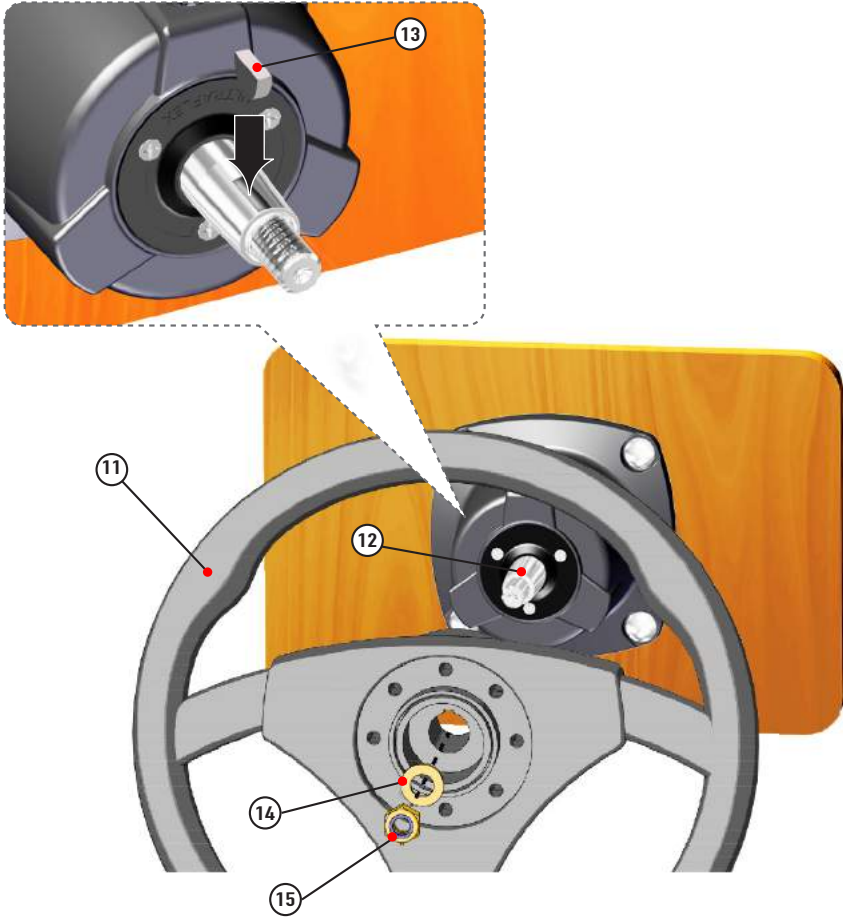
If the self-locking nuts are removed (9), they must be replaced.  
Please contact our service department, see the "INFORMATION LETTER" section.

**WARNING**

Install the pump with the filling hole (10) positioned up high (see figure) to enable complete filling and venting of the system (see par. 3.4 "FILLING AND VENTING").



**7** Fit the steering wheel (11), supplied separately, on the shaft (12) by inserting the specific key (13) in its compartment. Insert the washer (14) and use a 19mm hexagonal wrench to tighten the self-locking nut (15) with a 40 Nm (29.5 lb ft) torque: before screwing in the nut, you are advised to apply some galling-proof grease, such as MOLYKOTE® 1000 or equivalent on the threading.



**CAUTION**

If the self-locking nut (15) is dismantled, it should be replaced. Contact our support service, see the "INFORMATION" section.

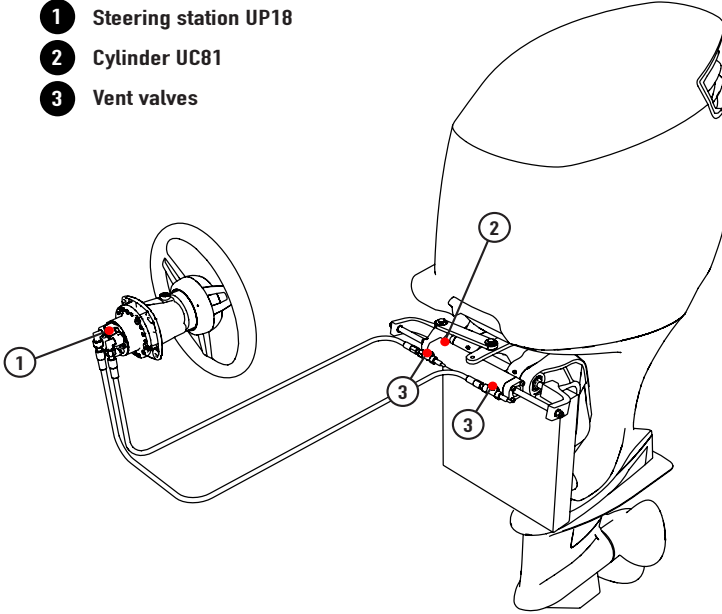




### 3.3 Connecting the hoses to the system

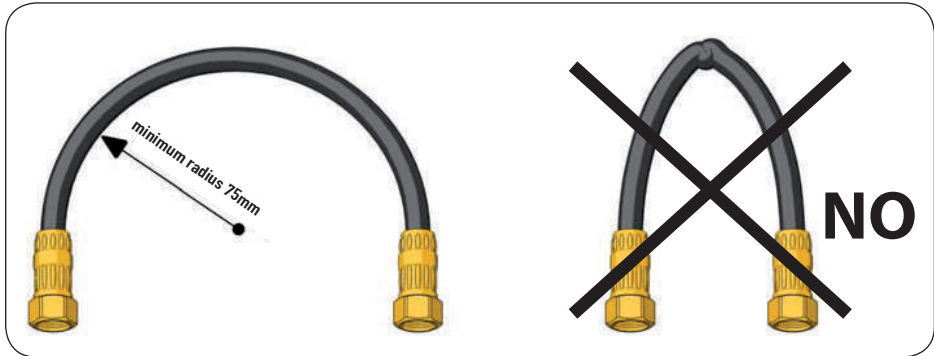
Connect the ULTRAFLEX hydraulic hoses to the pump and the cylinder included in the main GOTECH™ packaging, following the instructions on the hose installation manual.

- 1 Steering station UP18
- 2 Cylinder UC81
- 3 Vent valves



hoses for connection  
to the cylinder included in the main  
GOTECH™ packaging



**⚠ CAUTION**

Excessive bending of the hose may result in an internal breakage compromising the smooth operation of the system. In this case, replace the damaged hose.

**⚠ WARNING**

Always carefully connect the hoses as shown in the following figure.





### 3.4 Filling and bleeding

After the first installation and after any maintenance you must fill the system with hydraulic oil.

This operation is intended to completely remove the air from the system ensuring its proper operation. The hydraulic system must be filled from the highest point of the system.

After filling, wait 24 hours and vent again to eliminate any air bubbles in the hydraulic system.

#### NOTE

To avoid the formation of air bubbles in the oil, you need to slowly fill the tank.

#### NOTE

The filling and bleeding operations must be carry out by at least two operators.

#### NOTE

Such operations can be facilitated using the BUBBLE BUSTER automatic bleeding equipment (supplied separately).

#### CAUTION

Use oil "OL 150" **ULTRAFLEX** or compatible oils.

#### CAUTION

Do not use 5W type engine oil or ATF-Dexron II transmission fluid type.

#### DANGER

Never use brake fluid or other flammable or toxic fluids.

COMPATIBLE OILS
AGIP OSO 15
MOBIL DTE 11M
SHELL TELLUS T15
ESSO NUTO H15
Q8 HAYDN 15

TECHNICAL FEATURES	
Viscosity at 40°C	14,3 cSt
Viscosity at 100°C	3,3 cSt
Viscosity index	96
Flash point (open cup)	190°C
Pour point	-30°C
Density at 15°	0,860 kg/l



In the days immediately following the filling, you need to monitor the oil level in the tank; if necessary, top up the system.

Initially, the oil level may drop, as small amount of air initially emulsified in the fluid may disperse. Perform the different bleeding procedures, as described below.

### 3.4.1 Positioning the oil bottle

- Remove the cap from the pump and insert the filling adapter.
- Attach a nozzle to a new bottle of hydraulic oil, connecting the hose from the fill port to the spout of the bottle.
- Turn the bottle and pierce it with the pin supplied, as indicated in the figure, so as to facilitate the passage of oil to the pump.
- Fill the pump until no air bubbles are no longer visible in the hose.

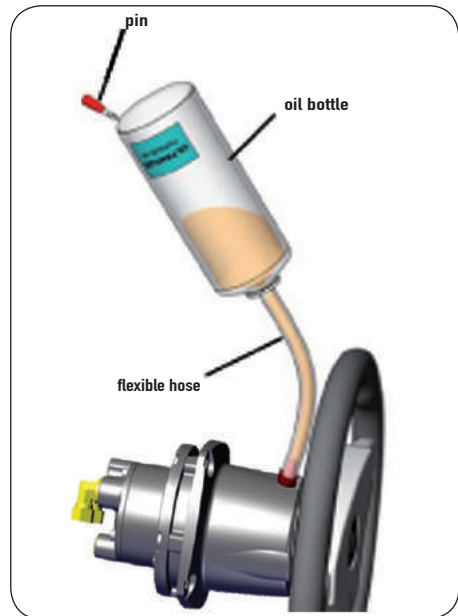
#### **!** NOTE

At the time of oil bottles replacement, during the filling process, close all bleed valves of the cylinder.

To empty the system, make sure the filling hose always contains oil. If during bleeding air gets into the system, the whole process must be repeated from the beginning.

#### **!** NOTE

Replace the bottle before its empties and use recovered oil only after 24 hours.





### 3.4.2 Bleeding procedure

Perform the bleeding procedure as described in the installation and maintenance manual relating to the UC81 cylinder. finally get a proper oil level by turning the steering wheel 1/2 turn and letting the oil bleed from the valve. Close the valve and perform a check of the system.

Once the filling and bleeding procedures are performed reposition the cap (1) and apply the supplied adhesive.



### 3.4.3 General recommendations

**⚠ DANGER**

It is very important to make sure that the air is completely purged from the system before using your boat! We recommend to try manually move the engine/s or helm/s right and left, paying attention to any movement of the cylinder rod.

An excessive relative movement between the body and the cylinder rod means there is air to be purged. The presence of air in the system can lead to incorrect controls, with the consequent risk of damage, injury or death.

**⚠ WARNING**

Check, by moving the pump, the system responds promptly.

**⚠ DANGER**

After 24 hours, repeat the bleeding procedure and make sure there are no leaks.



## 4 - SAFETY WARNINGS

This section aims to illustrate the safety rules to be followed for proper use of the equipment. It is recommended to read this section very carefully. It is recommended to read the manuals supplied with the other components of the steering system.

### 4.1 SAFETY PRECAUTIONS DURING INSTALLATION AND USE

**STRICTLY FOLLOW** the instructions and safety criteria set out below. **ULTRAFLEX** bears no responsibility for failure by the user to comply with these standards or for any negligence committed while using the equipment.

#### DANGER

- DO NOT PLACE HANDS BETWEEN MOVING PARTS.
- Do not disable or in any case disengage the safety devices.
- Do not change or add devices to the system, without prior written authorisation or technical inspection carried out by **ULTRAFLEX** giving evidence, in a description sheet suitably compiled, of the change made.
- Do not use the equipment for a purpose other than that it was designed for, as specified in the installation and maintenance manual.
- Do not appoint unqualified staff to install the system.
- Do not disassemble the hydraulic connections without first having completely drained the oil from the system. The hoses may contain high-pressure oil.

#### CAUTION

- Do not stand with your feet on the cylinder and do not place material on it.
- After installing and bleeding the system, perform a check before start sailing. Turn the steering wheel until the cylinder reaches its end stroke. Repeat the manoeuvre by turning the steering wheel in the opposite direction. Repeat until you are sure about the correct installation and excellent operation of the system.
- Be particularly careful in applying the thread sealant. If the latter accidentally enters into the hydraulic system causes damage and breakage.
- To seal the fittings, do not use, under any circumstances, Teflon tape or any type of adhesive tape, which could be sucked by the system and cause irreparable damage.
- During the installation of the system, take great care in maintaining the highest degree of cleanliness, to prevent any foreign body from entering the system itself. Even the smallest residue may cause permanent damage not immediately noticeable.
- Avoid too tight bending radii of hoses.
- Avoid contact of hoses with border or sharp edges and heat sources.



## 4.2 CLOTHING

**⚠ CAUTION**

During the installation, inspection or maintenance IT IS STRICTLY PROHIBITED wear necklaces, bracelets or clothing that could being caught in moving parts.

**⚠ CAUTION**

The staff handling the load must operate using all required PPE (individual protection devices) as required by the applicable standard on accident prevention at the workplace.



## 5 - MAINTENANCE

### 5.1 Routine maintenance

#### **⚠ WARNING**

Failure to follow the maintenance checks can result in steering failure causing property damage and/or personal injury.

The maintenance requirements vary according to climate, frequency and use. Inspections carried out by an experienced nautical marine technician are required at least every two years. Check the connections and the conditions of both the cylinder and the steering gear to prevent leakage, replace if necessary.

To maintain an appropriate level of oil in the tank, proceed filling and bleeding the system as described in section 3.4 - "Filling and bleeding."

Check every six months the wear status of the hoses and of the entire system, the fixing of nuts and bolts, and make sure of their perfect integrity.

Cleanse the system using water and mild and non-abrasive soap.

#### **⚠ CAUTION**

Use only compatible hydraulic oils, as referred to in "Technical features" and "Filling and bleeding" sections. Do not, under any circumstances, use brake fluids or automatic transmission fluids (ATF).

### 5.2 Removing the steering wheel

Use a specific extractor to remove the steering wheel from the pump shaft.

#### **⚠ CAUTION**

Do not use a hammer or other tools that could cause irreparable damage to the pump.



## 5.3 Troubleshooting

### CAUTION



Whenever the following checks require the removal and / or disassembly of the components of the steering system, request for the assistance of qualified staff. **ULTRAFLEX** provides general guidance and can not be held responsible for any information or consequences resulting from improper disassembly.

PROBLEM	POSSIBLE CAUSE	INTERVENTION
During the filling phase, the steering gear is locked.	<ul style="list-style-type: none"> <li>Blockage in the tubing between the steering gear and the cylinder.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the hoses.</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <b>WARNING</b>                      The damaged hose must be replaced. Failure to replace may result in steering failure causing serious body injury or property damage.                 </div>
PROBLEM	POSSIBLE CAUSE	INTERVENTION
Filling the system is difficult. The air bubbles in the upper part of the tank even after having completely filled the system.	<ul style="list-style-type: none"> <li>Presence of air in the system.</li> </ul>	<ul style="list-style-type: none"> <li>Repeat the filling and bleeding procedures of the system.</li> <li>Install the hoses horizontally and in any case with a maximum inclination of about 3 cm per metre.</li> </ul>
	<ul style="list-style-type: none"> <li>Leakage from the bleed fitting of the cylinder.</li> </ul>	<ul style="list-style-type: none"> <li>Close the bleed nipple on the cylinder.</li> </ul>
	<ul style="list-style-type: none"> <li>Kinked hose.</li> </ul>	<ul style="list-style-type: none"> <li>Uncoil and stretch out the hose.</li> </ul>
	<ul style="list-style-type: none"> <li>Steering gear mounted with the filling hole low positioned.</li> </ul>	<ul style="list-style-type: none"> <li>Install the steering gear with the filling hole high positioned.</li> </ul>



PROBLEM	POSSIBLE CAUSE	INTERVENTION
The steering gear is stiff and difficult to manoeuvre, even when the boat is stationary.	<ul style="list-style-type: none"> <li>Narrowing in the hoses or fittings.</li> </ul>	<ul style="list-style-type: none"> <li>Search for the problem and solve it.</li> </ul>
	<ul style="list-style-type: none"> <li>Presence of air in the oil.</li> </ul>	<ul style="list-style-type: none"> <li>Repeat the filling and bleeding procedures of the system.</li> </ul>
	<ul style="list-style-type: none"> <li>Use of not compliant oil.</li> </ul>	<ul style="list-style-type: none"> <li>Readily drain the filling and bleeding systems.</li> </ul> <p><b>NOTE</b></p> <p>Any damage caused by the use of fluids other than those recommended in this manual are not in any way attributable to <b>ULTRAFLEX</b> and automatically void the warranty.</p>
The steering gear is stiff and difficult to manoeuvre, even when the boat is stationary, if you use unbalanced cylinders.	<ul style="list-style-type: none"> <li>Dirty valves or presence in it of residues.</li> </ul>	<p><b>WARNING</b></p> <p>Contact the support service.</p>
The steering gear can be easily manoeuvred in the dock, but is stiff when the boat is in motion.	<ul style="list-style-type: none"> <li>The steering wheel is too small.</li> </ul>	<ul style="list-style-type: none"> <li>Replace the steering wheel with a larger one.</li> </ul> <p><b>CAUTION</b></p> <p>Only within the maximum dimensions allowed by the steering gear.</p>
	<ul style="list-style-type: none"> <li>The trim adjuster is faulty.</li> </ul>	<ul style="list-style-type: none"> <li>Tune the trim adjuster.</li> </ul>
	<ul style="list-style-type: none"> <li>Presence of air in the oil.</li> </ul>	<ul style="list-style-type: none"> <li>Check the oil level and repeat the bleeding procedure as described in this manual.</li> </ul>



PROBLEM	POSSIBLE CAUSE	INTERVENTION
By turning the steering wheel, the cylinder rod is not moving.	<ul style="list-style-type: none"> <li>• Presence of air in the system.</li> </ul>	<ul style="list-style-type: none"> <li>• Repeat the filling and bleeding procedures of the system.</li> </ul>
	<ul style="list-style-type: none"> <li>• Oil leaks.</li> </ul>	<ul style="list-style-type: none"> <li>• Search for the leak and contact qualified staff.</li> </ul>
	<ul style="list-style-type: none"> <li>• Steering gear mounted with the filling hole low positioned.</li> </ul>	<ul style="list-style-type: none"> <li>• Install the steering gear with the filling hole high positioned.</li> </ul>
	<ul style="list-style-type: none"> <li>• Possible breakage of the component connecting the piston and the rod.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>DO NOT USE THE BOAT!</b> Request the intervention of a qualified technician to replace the cylinder.</li> </ul>
Oil leaks from the fittings of the steering gear.	<ul style="list-style-type: none"> <li>• Fittings incorrectly tightened or with insufficient torque.</li> </ul>	<ul style="list-style-type: none"> <li>• Tighten fittings by applying a maximum torque of 20Nm (15 in lbs).</li> </ul>
	<ul style="list-style-type: none"> <li>• Lack of thread sealant.</li> </ul> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">  <b>CAUTION</b> </div> <p>To seal the fittings do not under any circumstances use Teflon tape or adhesive tape.</p>	<ul style="list-style-type: none"> <li>• Empty the steering gear and disassemble it. Remove the fittings and clean the threads (remove the oil). Place the thread sealant, screw the fittings and install the steering gear.</li> </ul> <div style="border: 1px solid black; padding: 2px; margin-top: 10px;">  <b>NOTE</b> </div> <p>After this operation, it is necessary to carry out a new and complete bleeding procedure.</p>
PROBLEM	POSSIBLE CAUSE	INTERVENTION
Oil leakage from the cap of the tank.	<ul style="list-style-type: none"> <li>• Cap incorrectly screwed.</li> </ul>	<ul style="list-style-type: none"> <li>• Screw the cap correctly.</li> </ul>
	<ul style="list-style-type: none"> <li>• Gasket worn or damaged.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the cap.</li> </ul>
	<ul style="list-style-type: none"> <li>• Too high oil level.</li> </ul>	<ul style="list-style-type: none"> <li>• Apply the oil level maintenance procedure described in the UC81 cylinder use and maintenance manual.</li> </ul>



## 6 - DISMANTLING

### 6.1 Dismantling

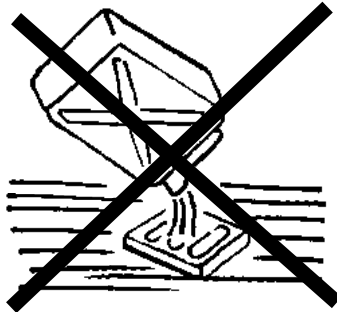
If for any reason the equipment is meant to be disposed of, it is necessary to observe some basic rules aimed at safeguarding the environment.

**⚠ CAUTION**

Sheathings, hoses, conduits and plastic components, or in any case not made with metal, shall be disassembled and disposed of separately.

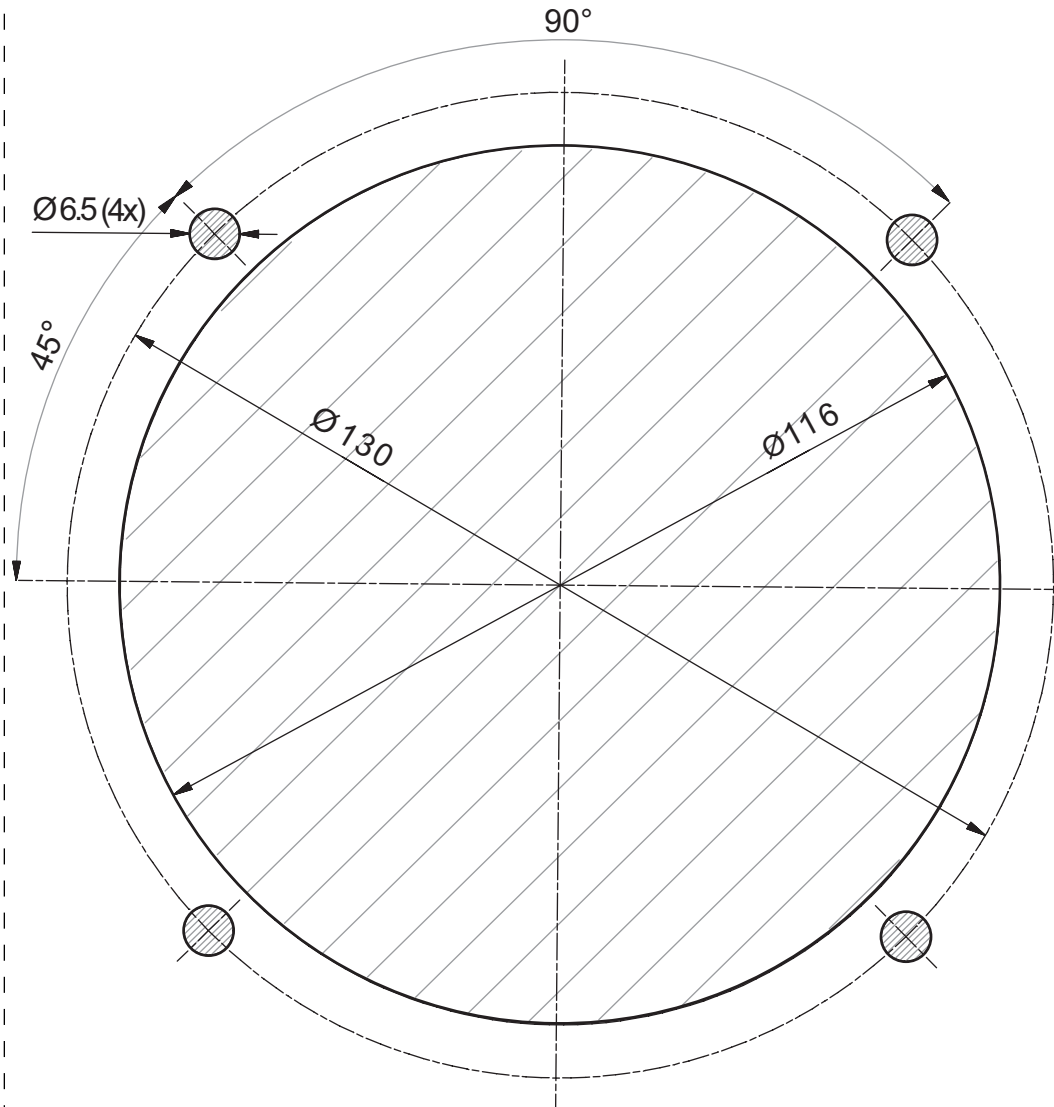
**⚠ CAUTION**

The steering system **CONTAINS POLLUTANT OILS** that must be disposed of according to relevant regulations.





- UK** Drilling template for UP18
- I** Dima di foratura per UP18
- F** Gabarit de perçage pour UP18



**ULTRAFLEX**

(Dr. 30084 - 12/09/2013)

1:1 Scale - 50 mm







**ULTRAFLEX s.p.a.**

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