

Tilt Steering Helm Pump



Manual for Owner, Installer

SFTH Tilt type



SEAFIRST
ENGINEERING

SEAFIRST

Address : 137, Technovalley-ro, Jillye-myeon, Gimhae-Si,
Gyeongsangnam-do, Korea

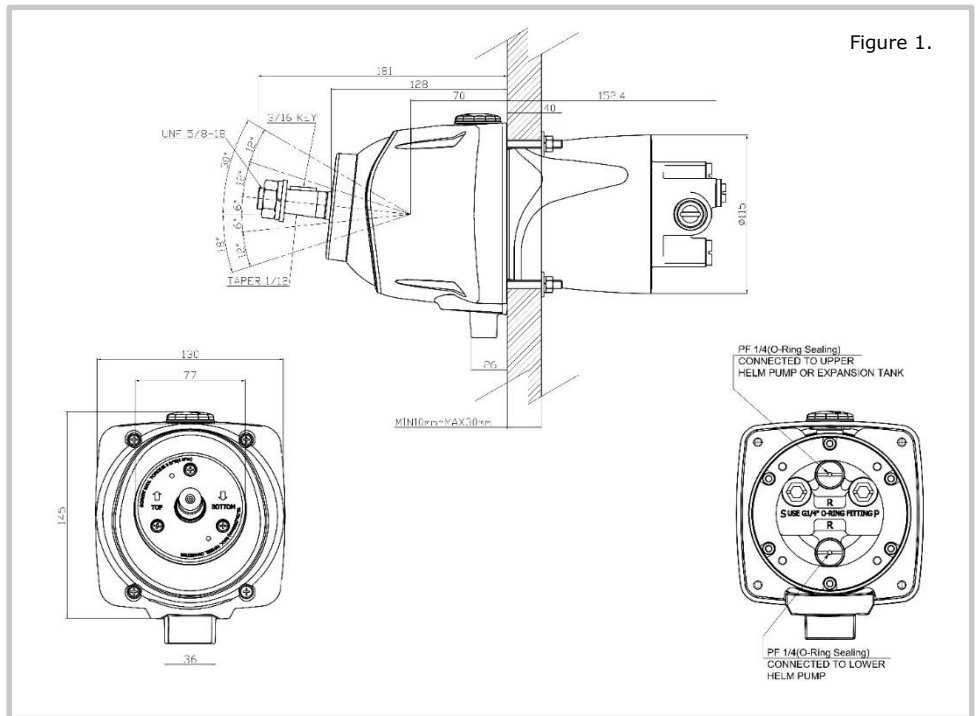
Tel : 82 55 338 1640 Fax : 82 55 338 1641

<http://www.seafirst.co.kr>

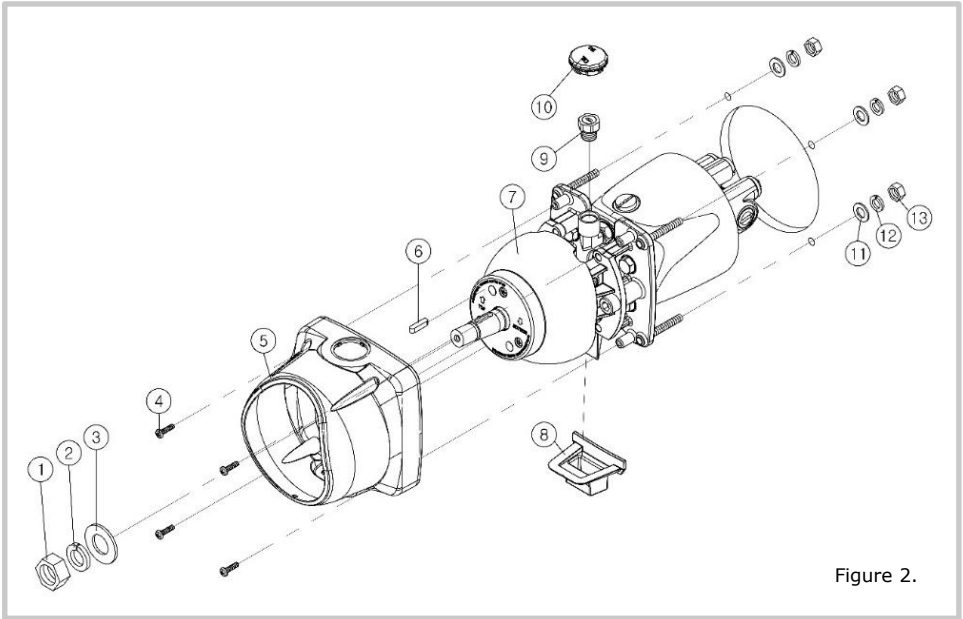
1. SPECIFICATION & FUNCTION

Model	Displacement		Lock valve	Steering Wheel
	cc / rev	cu.in / rev		
SFTH 018	18	1.09	Built-in	Min Dia 260mm
SFTH 020	20	1.22		Min Dia 350mm
SFTH 022	22	1.34		Min Dia 350mm
SFTH 025	25	1.52		Min Dia 350mm
SFTH 030	30	1.83		Min Dia 395mm

- 48 Degrees of Tilt range (30 degree up, 18 degree down) and 5 Positive Lock Positions
- Smooth operation and simple installation
- All tilt components made of stainless steel for maximum durability
- Two ball bearings fits to the tilt shaft.
- At factory, the two ports on the rear are blocked tightly with black plugs while the two ports are blocked loosely with red plugs for an easy open to connect hydraulic hose fittings.
- Fixed displacement
- Lock Valve Inbuilt



2. MOUNTING THE TILT HELM PUMP



Tilt Helm Pump Components and Mounting Hardware Kit

Item No	Description	Q'ty
①	UNF 5/8-18 Nylon Nut	1
②	Spring Washer	1
③	Plain Washer	1
④	Pan Head(+) Screw	4
⑤	Tilt Case	1
⑥	Straight Key 3/16"	1

Item No	Description	Q'ty
⑦	Tilt Helm	1
⑧	Tilt Lever Cover	1
⑨	Oil plug	1
⑩	Tilt Oil Cap	1
⑪	Plain Washer	4
⑫	Spring Washer	4
⑬	Nut	4

Mounting the Tilt Helm Pump to the dash

1. Mark the location of the one big hole and four small holes on dashboard by using Template.
(see the enveloped "Panel Cut Mounting Template Sticker")
2. Drill a hole of diameter 120mm and 4 holes with diameter 7mm on the dash board.
3. Insert the Tilt helm (item ⑦) into the hole and tighten the helm pump with Nut and Washer (item ⑪, ⑫, ⑬).

4. Release the Oil plug (item ⑨) and Tilt Oil Cap (item ⑩) from Tilt helm and Tilt case, in order to make no interference during install the Tilt case.
5. Put Tilt lever cover (item ⑧) fit into the Tilt lever on Tilt helm. And while holding the Tilt lever cover on position, carefully put the Tilt case (item ⑤) into Tilt helm and tighten the bolt (item ④) hand-tight.

Mounting the wheel

1. Make sure that your steering wheel is suitable for 3/16" straight key and taper on 3/4" shaft.
2. Grease the shaft cone and install the wheel on the shaft with key(item ⑥) supplied.
3. Tighten the wheel with UNF 5/8-18 Nylon Nut (item ①) and Washer (item ②, ③) supplied as mounting hardware.

Check for the Tilt mechanism

Before proceed your system connection and oiling process, please check tilt helm is working properly.

While push the Tilt lever, adjust the steering wheel in 5 different angle and check the steering is working well at each angle without any interference with other equipment around steering wheel.

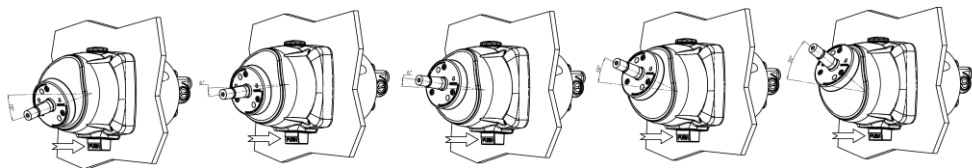
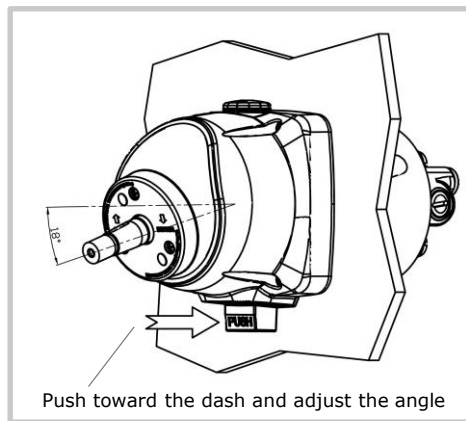


Figure 3.

3. OTHER ATTACHABLE ACCESSORIES

It is possible to attach accessories like blinker type switch on the shaft side of helm pump.

You can remove the rubber UNC plug and there are thread on pre-drilled screw hole that design for suitable switch attach on customer demand.

If you are not using any kind of accessories, don't reveal the UNC plug and keep it sealed.

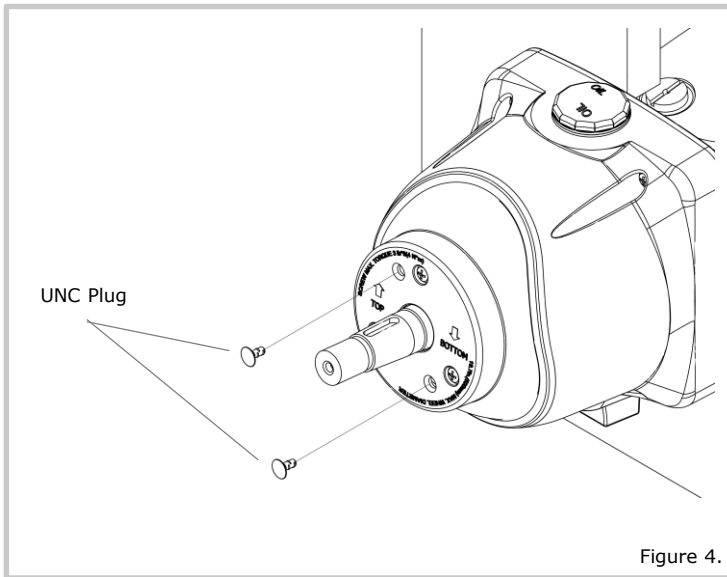


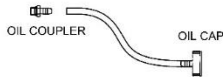
Figure 4.

4. OIL FILLING AND AIR BLEEDING

FILLING & PURGING

1. Filling & Purging Kit (OAK-300) includes

1) Oil coupler, Oil cap, transparent tube (600mm)



2) Transparent tube (1meter) for bleeding from cylinder



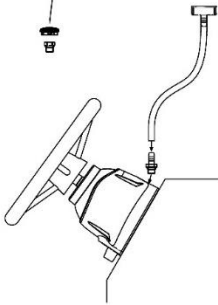
3) Push Pin



How to fill and Purge the system

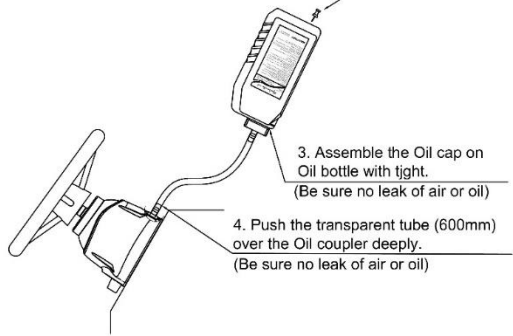
①

1. Remove the Tilt Oil Cap, Tilt Oil Plug (Keep it of reuse) from TILT



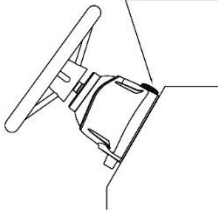
②

5. Make 3~4 holes on the oil bottle byusing Push pin like drawing.

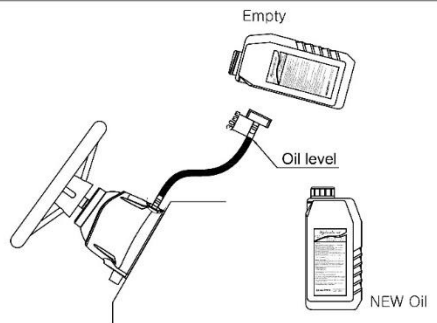


③

6. After Completing Filling & Purging, block TILT with Tilt Oil Cap, Tilt Oil Plug



※ CAUTION



※ Caution

Do not let oil level fall down to 30mm from Oil cap while exchanging new oil bottle.

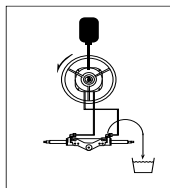
⚠ CAUTION

During the filling the oil, turn the steering wheel slowly. If you turn the steering wheel too fast, foam may grow in the oil. In this case you can continue the filling after 24 hours.

Oil Filling and Air Bleeding Procedure

These instructions show how to fill and purge the manual hydraulic steering system. Incorrect oil supply or incorrect air-vent will cause helm-mans feel heavy of the steering wheel while rotation of the steering wheel and will cause a continuous wheel turn without stopping.

Recommend Hydraulic Fluid : ISO 15.

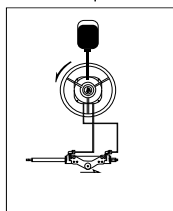


Step 2

Step 1 : Fill the helm pump full of oil.

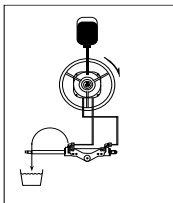
Step 2 : Open the right bleeder.

Slowly turn steering wheel anti-clockwise until a steady stream of air free oil comes out of the right bleeder.



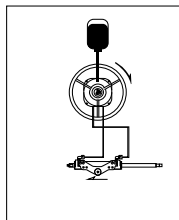
Step 3

Step 3 : Close the right bleeder. Continue to turn steering wheel anti-clockwise until the cylinder tube is fully moved on one side of the rod. Open the left bleeder



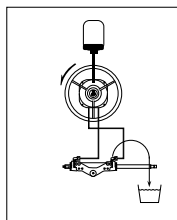
Step 4

Step 4 : Holding the cylinder tube (to prevent it from moving back) slowly turn the steering wheel clockwise until a steady stream of air free oil comes out of the left bleeder . While continuing to turn the wheel, close the left bleeder and let go of the cylinder tube.



Step 5

Step 5 : Continue turning the steering wheel clockwise until the cylinder tube is fully moved at other side of rod. The steering wheel will come to a stop. Open right bleeder .



Step 6

Step 6 : Slowly turn the steering wheel anti-clockwise until a steady stream of air free oil comes out of bleeder. While continuing to turn the steering wheel, close the right bleeder. Now, fill and purge is complete.

