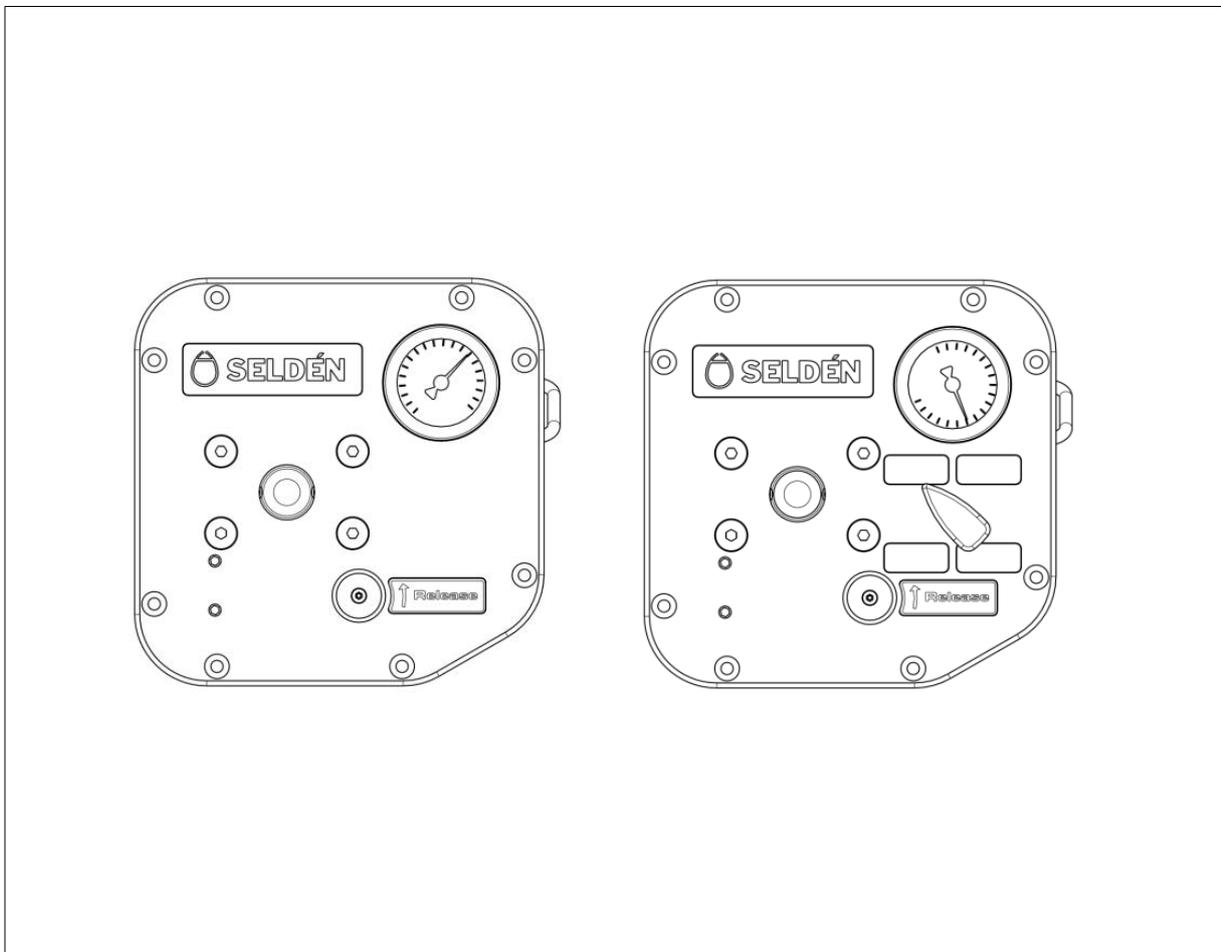


# HAND OPERATED HYDRAULIC PUMP STATION MK1



## General / The manual

To derive the maximum benefit and enjoyment from your Seldén hydraulic pump station, we recommend that you study this manual carefully.

Selden limited warranty applies to this product. For full details please see our general conditions of sale.

The guarantee is only valid if the hydraulic pump station is installed and operated in accordance with this manual.

If the hydraulic pump station is repaired by anyone not authorized by Seldén Mast AB, the guarantee ceases to be valid.

Seldén Mast AB reserves the right to alter the content of the manual and design of the product without prior warning.



This symbol denotes safety related information

For latest update check [www.seldenmast.se](http://www.seldenmast.se) or contact Seldén for your own issue.

## Product Description

The hydraulic pump station is part of a hydraulic system aboard a sailing boat. The pump station is intended to be placed in the cockpit of the boat, connected by hoses to cylinders such as backstay / halyard tensioners as well as boom vang.

The pump is operated with a handle that is moved back and forth in order to pump oil to the cylinders. Oil is pumped into the system for each of the directions that the handle is moved (Dual Action).

A pressure gauge shows the oil pressure in the activated circuit.

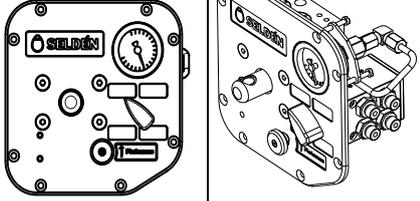
The pump has two flow rates (2-speed). Switching between them takes place automatically. The purpose is to achieve high speed adjustment of a cylinder when the force level is low, and to reduce the necessary force needed to operate the pump when the force level on the cylinder is high. The switching pressure level can be adjusted by the user.

The maximum oil pressure accomplished by pumping can also be adjusted by the user. It is limited by a relief valve.

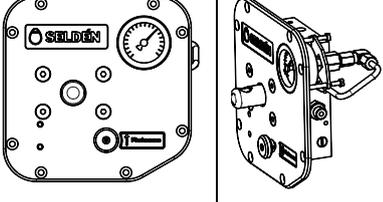
Pressure is released by opening a release valve, letting oil from the cylinder return to a tank.

## Components

### Pump Station 4 FUNCTION

586-500-04	PUMP STN 4-FN ANODIZED NATURE	
586-501-04	PUMP STN 4-FN ANODIZED BLACK	

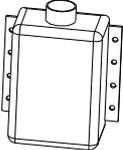
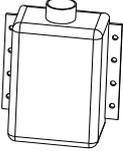
### Pump Station 1 FUNCTION

586-500-01	PUMP STN 1-FN ANODIZED NATURE	
586-501-01	PUMP STN 1-FN ANODIZED BLACK	

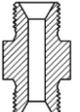
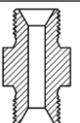
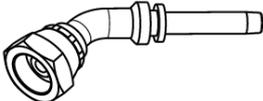
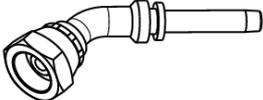
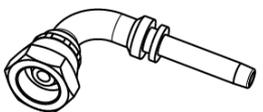
### Pump Handle

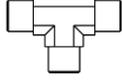
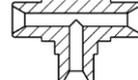
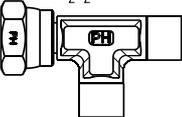
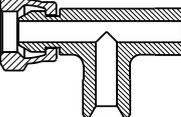
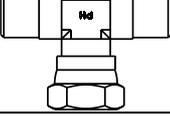
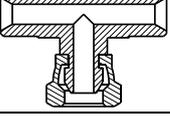
587-101	PUMP HANDLE ø20-500 ST	
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### Tank

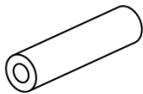
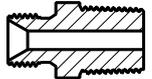
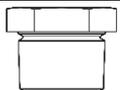
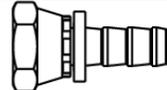
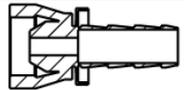
INCL CAP	Parts		
585-300-01	585-300	HYDR RESERVOIR TANK 3,8 LIT	
585-304-01	585-304	HYDR RESERVOIR TANK 5,7 LIT	
	585-301	VENTILATED CAP 2 1/4"	

## High Pressure Hose and Fittings

550-316	PLUG 1/4" ST		
540-885	HYDR.SEAL WASHER 1/4" ST		
585-615	PLUG 1/8" ST		
585-616	HYDR.SEAL WASHER 1/8" ST		
585-600	NIPPLE BSPP 1/8-BSPP 1/8 60° CONE ST		
585-611	NIPPLE BSPP 1/8-BSPP 1/4 60° CONE ST		
540-881	NIPPLE 1/4"-1/4" ST		
585-606	HYDR COUPLING 1/8" NUT HOSE 1/4" 0° ST		
585-607	HYDR COUPLING 1/8" NUT HOSE 1/4" 45° ST		
585-608	HYDR COUPLING 1/8" NUT HOSE 1/4" 90° ST		
540-965	HYDR HOSE 1/4" KEVLAR		
540-919	CLAMP HYDR HOSE 1/4" ST		
540-911	HYDR COUPLING 1/4 NUT 0° ST		
540-912	HYDR.COUPLING 1/4 NUT 45° ST		
540-913	HYDR.COUPLING 1/4 NUT 90° ST		

585-613	T-ADAPTER BSPP 1/4" 60° CONE ST		
585-625	T-ADAPT.MALE-MALE-NUT,1/4 ST		
585-626	T-ADAPT.MALE-NUT-MALE,1/4 ST		

## Low Pressure Hose and Fittings

585-700	PUSH-LOK HOSE 1/4"		
585-623	ADAPTER NPTF 3/8" MALE BSPP 1/4" MALE ST		
585-610	PLUG NPTF 3/8" NYLON		
585-614	NIPPLE P-LOK NUT BSPP 1/4" HOSE 1/4" ST		

## Technical data

PUMP STATION 4-FN / 1-FN	586-501-04 / -01
Maximum working pressure	345 bar
Weight 4-function / 1-function	4100 / 3250 g
Oil volume per stroke high / low speed	20,1 / 5,6 cm <sup>3</sup>
Oil viscosity	ISO VG 46
Oil Quality, standards to be met	DIN 51524 part 3 , HVLP 46
Selden Standard Oil	Statoil Hydraway HVXA 46
Examples of alternative oils with comparable properties	Castrol Hyspin AWH-M 46, Shell Tellus S2 V 46
Hose, high pressure	SAE 100 R8 WP 345 bar

## Installation



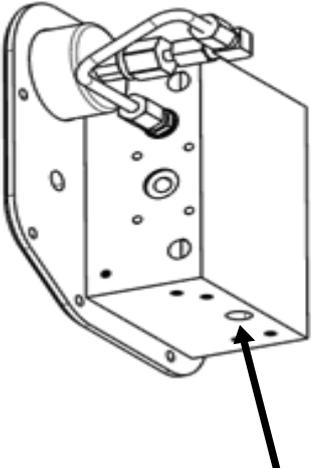
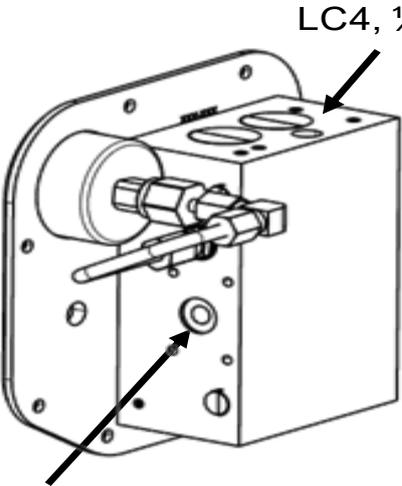
The hydraulic system should be professionally installed.

When planning the installation please make sure that the tank is located as high as possible compared to the pumping station. All hoses shall be mounted securely, and it is important that the length of the hoses allow large radius bends.

Caution: All high pressure hoses must be rated for the working pressure 345 bar and professionally assembled.

**Connection of hoses, single function pump station**

The high pressure hose is connected to the pump station at HC1  
The low pressure hoses are connected to LC4 and LC5



HC1, 1/8" BSP

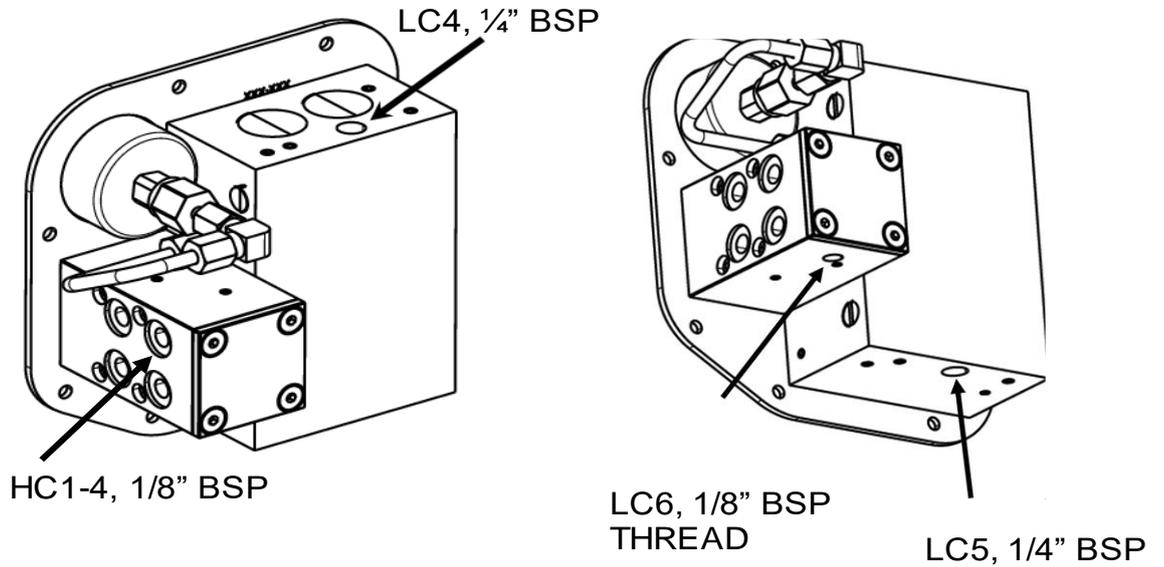
LC5, 1/4" BSP

### Connection of hoses, four function pump station

The high pressure hose is connected to the pump station at HC1-4

The low pressure hoses are connected to LC4, LC5 and LC6

High pressure connections not used are to be plugged with 585-615 + 585-616



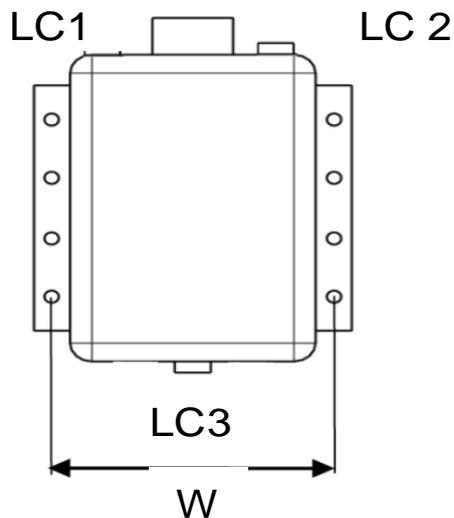
### Connection of hoses, hydraulic fluid reservoir

Connection points on tank, LC1, LC2, LC3 (NPT 3/8)

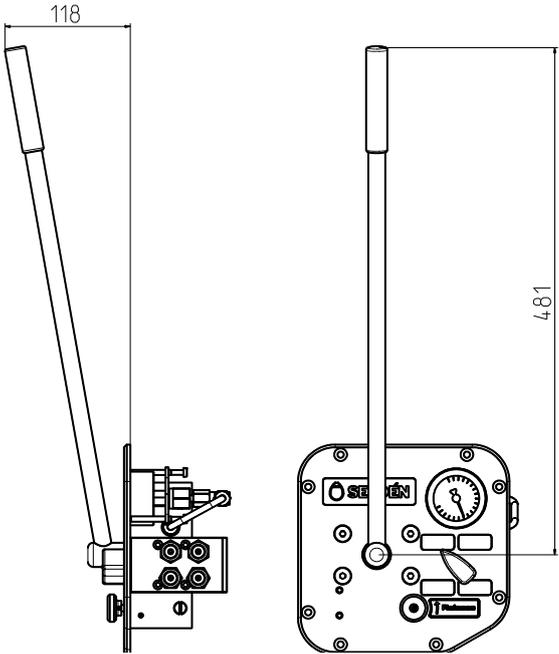
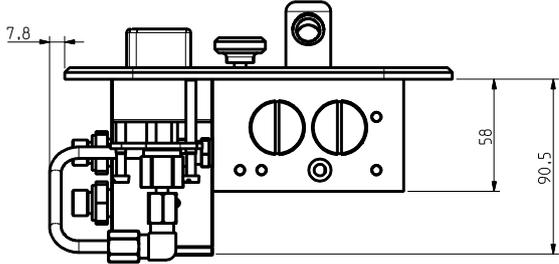
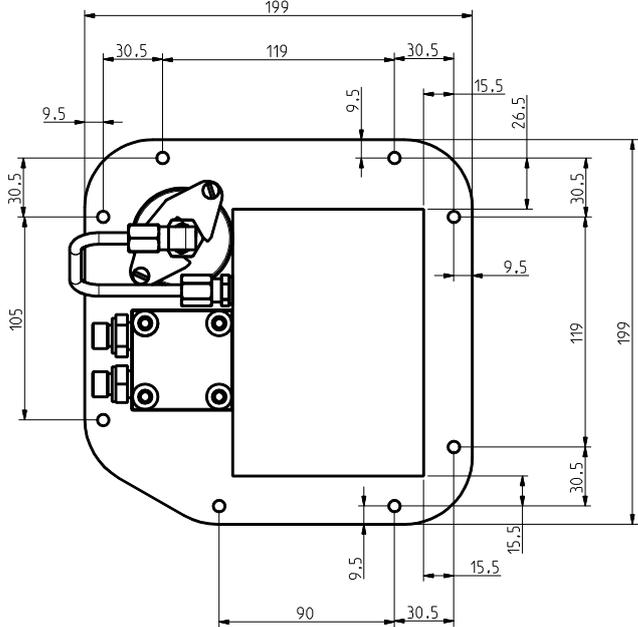
8 mounting holes dia 9mm

W=196 mm, Vertical spacing between holes 47.5 mm

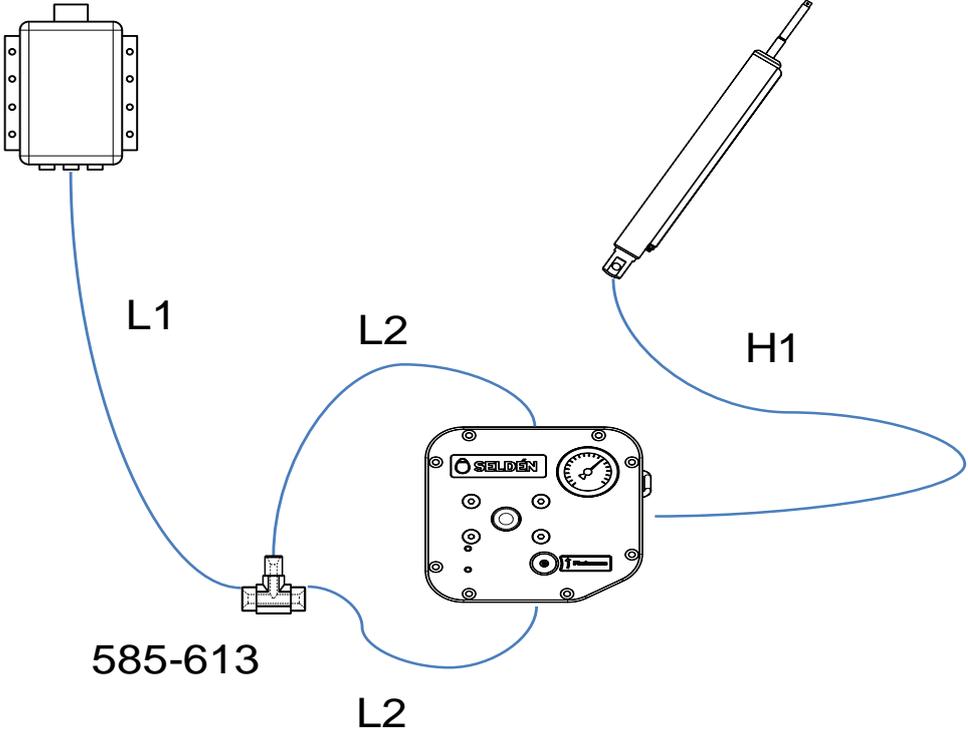
Tank connections not used are to be plugged with PLUG 585-610



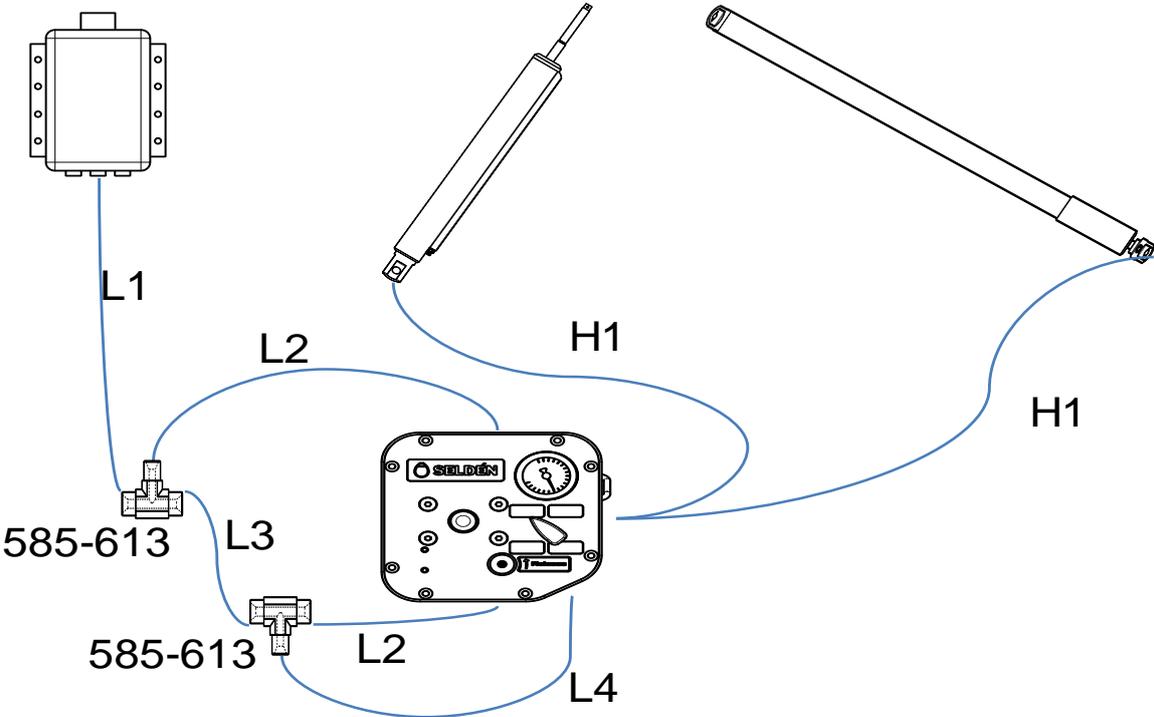
**MAIN DIMENSIONS (NOT TO SCALE)**

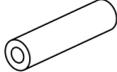


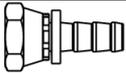
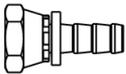
**HOSE LAYOUT WITH ONE FUNCTION PUMP STATION (BOOM VANG OR TENSIONER):**

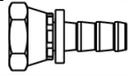


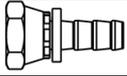
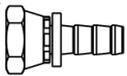
**HOSE LAYOUT EXAMPLE WITH FOUR FUNCTION PUMP STATION, TWO FUNCTIONS USED:**

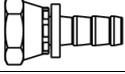
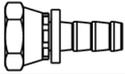


HOSE H1	HIGH PRESSURE HOSE PUMP STATION- TENSIONER / VANG	
	No / Length	
CONNECT TO PUMP HC1,2,3 OR HC 4		
585-616	1	HYDR.SEAL WASHER 1/8" ST 
585-611	1	NIPPLE BSPP 1/8- BSPP 1/4 60° CONE ST 
540-911	1	HYDR COUPLING 1/4 NUT 0° ST 
540-912		HYDR COUPLING 1/4 NUT 45° ST 
540-913		HYDR COUPLING 1/4 NUT 90° ST 
540-919	1	CLAMP HYDR HOSE 1/4" ST 
540-965	L= ___ [mm]	HYDR HOSE 1/4" KEVLAR 
540-919	1	CLAMP HYDR HOSE 1/4" ST 
585-606	1	HYDR COUPLING 1/8" NUT HOSE 1/4" 0° ST 
585-607		HYDR COUPLING 1/8" NUT HOSE 1/4" 45° ST 
585-608		HYDR COUPLING 1/8" NUT HOSE 1/4" 90° ST 
CONNECT TO TENSIONER / VANG		

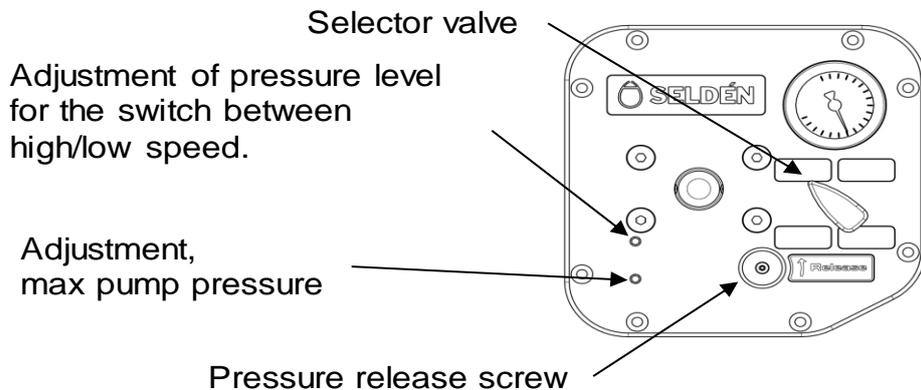
<b>HOSE L1</b>		<b>LOW PRESSURE HOSE TEE CONNECTOR-TANK</b>	
	No / Length		
CONNECTION ON PUMP: LC6, 1/8" BSP THREAD			
585-614	1	NIPPLE P-LOK NUT BSPP 1/4" HOSE 1/4" BRASS	
585-700	L= ___ [mm]	PUSH-LOK HOSE 1/4"	
585-614	1	NIPPLE P-LOK NUT BSPP 1/4" HOSE 1/4" BRASS	
585-623	1	ADAPTER NPTF 3/8" MALE BSPP 1/4" MALE ST	
CONNECT TO TANK: LC3, NPT 3/8 THREAD			

<b>HOSE L2</b>		<b>LOW PRESSURE HOSE PUMP STATION-TEE CONNECTOR</b>	
	No / Length		
CONNECTION ON PUMP STATION: LC4 / LC5			
540-885	1	HYDR.SEAL WASHER 1/4" ST	
540-881	1	NIPPLE 1/4"-1/4" ST	
585-614	1	NIPPLE P-LOK NUT BSPP 1/4" HOSE 1/4" BRASS	
585-700	L= ___ [mm]	PUSH-LOK HOSE 1/4"	
585-614	1	NIPPLE P-LOK NUT BSPP 1/4" HOSE 1/4" BRASS	
CONNECT TO T-ADAPTER			

<b>HOSE L3</b>		<b>TEE CONNECTOR -TEE CONNECTOR</b>	
	No / Length		
CONNECT TO T-ADAPTER			
585-614	1	NIPPLE P-LOK NUT BSPP 1/4" HOSE 1/4" BRASS	
585-700	L= ___ [mm]	PUSH-LOK HOSE 1/4"	
585-614	1	NIPPLE P-LOK NUT BSPP 1/4" HOSE 1/4" BRASS	
CONNECT TO T-ADAPTER			

HOSE L4		LOW PRESSURE HOSE PUMP STATION SELECTOR VALVE DRAIN-TEE CONNECTOR	
	No / Length		
CONNECTION ON PUMP STATION: LC6			
585-616	1	HYDR.SEAL WASHER 1/8" ST	
585-611	1	NIPPLE BSPP 1/8-BSPP 1/4 60° CONE ST	
585-614	1	NIPPLE P-LOK NUT BSPP 1/4" HOSE 1/4" BRASS	
585-700	L= ___ [mm]	PUSH-LOK HOSE 1/4"	
585-614	1	NIPPLE P-LOK NUT BSPP 1/4" HOSE 1/4" BRASS	
CONNECT TO T-ADAPTER			

## Operation



### Increasing pressure

Tighten the pressure release screw by gently turning it clockwise until it reaches its end position. Tightening it too firmly may damage the needle valve seat. In case of the four function pump station, make sure that the correct circuit is activated by turning the selector valve. Operate the pump handle back and forth to increase oil pressure, increasing tension in the connected cylinder.

### Lowering pressure:

Turn the selector valve to activate the circuit whose pressure is to be lowered. Open the pressure release screw by turning it anti-clockwise. The valve opens, letting oil escape from the pressurized cylinder into the tank.

### Setting max pump pressure:

The maximum pumping pressure can be adjusted with a 4mm hex key. The valve is set to 345 bar at delivery. Clockwise rotation increases the setting and anti-clockwise rotation decreases it.

In the clockwise direction, please avoid tightening it too firmly against its end position. Valves inside may otherwise be damaged.

Do not to unscrew more than 3 revolutions from its innermost position, otherwise leakage may occur.

### High speed / low speed switch pressure:

To increase the pressure level at which the valve switches: Using a 4 mm hex key, gently turn the speed switch pressure adjustment valve clockwise. Avoid tightening it firmly against its end position. Valves inside may otherwise be damaged.

To decrease the pressure level at which the valve switches: turn the valve anti-clockwise. Take care not to unscrew it more than 3 revolutions from its innermost position, otherwise leakage may occur.

## **Maintenance**

### **Cleaning**

We recommend rinsing the unit with freshwater at regular intervals.

If detergents are used for cleaning it is important to rinse all traces off with fresh water afterwards. Most detergents contain elements that can corrode aluminium.

Silicone free wax can be used to protect the surfaces.

### **Periodic Servicing**

We recommend that you have the unit serviced at intervals of no more than five years in normal use. For boats used in charter operations or circumnavigation etc. the unit should be serviced on a more frequent basis.

# DINGHIESKEELBOATSYACHTS

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The Seldén Group is the world's leading manufacturer of mast and rigging systems in carbon and aluminium for dinghies, keelboats and yachts. The range was extended with deck hardware in 2008.

The Group consists of Seldén Mast AB in Sweden, Seldén Mast A/S in Denmark, Seldén Mast Ltd in the UK, Seldén Mid Europe B.V. in the Netherlands, Seldén Mast SAS in France, Seldén Mast Inc. in the USA and Seldén Mast Asia Ltd in Hong Kong.

Our well known brands are Seldén and Furlex. The worldwide success of Furlex has enabled us to build a network of over 750 authorised dealers covering the world's marine markets. So wherever you sail, you can be sure of fast access to our service, spare parts and know-how.

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