

# HYDRAULIC CYLINDERS



- BACKSTAY ADJUSTER • CONTROL PANEL • VANG
- HALYARD TENSIONER • MAST-JACK • OUTHAUL



Fast and convenient adjustment of the main trim functions is vital both for the racing sailor and for the cruising sailor. Just being able to tension the forestay and adjust the halyard tension and outhaul will make any boat point higher, sail faster and under better control. Seldén has developed a range of hydraulic cylinders that are easy to use and of a quality that ensures long service life. The rods are marine grade stainless steel and the cylinders black anodized or clear anodized aluminium. The tensioners have long stroke making it possible to try out different mast rakes.

The control panels are available for single function or 4-functions and feature an adjustable relief valve to prevent overload. A 2-speed function permits fast tensioning until a pre-set pressure is obtained. Then the panel shifts down to low speed and reduced resistance in the handle. The level of pressure needed to gear down is easily adjusted to suit the individual trimmer. "Dual Action" means the pump is active both when pushing and when pulling the handle. Releasing the pressure is done by twisting the control of the release valve. The panels can be connected to an electric pump station that replaces manual pumping with the push of a button. Choose between a black anodized panel or clear anodized aluminium.

# Manual hydraulics

Manual hydraulics is exactly what it sounds like. The pumping is done by hand and oil flow in a closed system and makes the cylinders work. The closed system can be more or less extensive depending which functions you want to handle with the help of hydraulics.

Here is a guide to help you find everything for your installation.

## Backstay adjuster, model HTI

"HTI" stands for "Hydraulic Tensioner Integral" and means that the closed hydraulic system is completely integrated into the cylinder and the pump handle is on the product itself. For this tensioner, nothing more is needed. Just choose the right size and suitable connection for your backstay. You may need to adjust the length of your backstay wire. Check that the clevis pin at the lower end of the tensioner fits your chainplate. See page 13.

## Backstay adjuster HT, Hydraulic Vang, Hydraulic halyard tensioner

These functions are connected to a control panel permanently mounted in the cockpit. The control panel consists of a manual pump, a needle valve that releases the pressure and a selector valve with which you decide which function you want to activate. The pump draws oil from a tank and delivers it at high pressure to the cylinder. When the pressure is released, the cylinder is emptied and the oil returns to the tank. The closed system thus consists of a low pressure side between tank and control panel and a high pressure side between control panel and cylinder.

## Mast-jack

The mast jack system consists of a hydraulic cylinder piston that moves down vertically through the heel of the mast, thereby lifting the mast and increasing the rig tension. It also lets you relieve the load on the rig and boat when you are in port.

The "jack" is completely integrated in the keelstepped mast and temporarily connected to a two-stage pump that switches to its lower gear as the pressure increases. When the mast reaches its upper position, shims are placed between the heel and the T-base. Thereafter the pressure is released and the pump removed. Now, the rig is set in accordance with the predetermined requirements. So is the boom height, I-measurement and other rating measurements recorded by the measuring official.

The hydraulic hose is stored in a purpose-designed hose garage to keep it out of the way when not used and the hose garage itself is fitted inside the mast. The T-base can be adjusted in fore and aft direction to obtain the optimal mast rake and pre-bend.

The easiest way to get this function is to specify it when buying a new mast or a new boat.

## Hydraulic outhaul tensioner

Hydraulic outhaul control is available for the larger Seldén boom sections. The hose from the cylinder is connected to a gland at the mast from which a high-pressure hose connects to the control panel. An outhaul cylinder is seldom retrofitted but specified prior to production of the boom.

## Electric motor instead of manual pumping

Manual pumping on the control panel can be replaced with an electric pump (12/24V) which is mounted between the tank and control panel.



Control panel, 4-functions



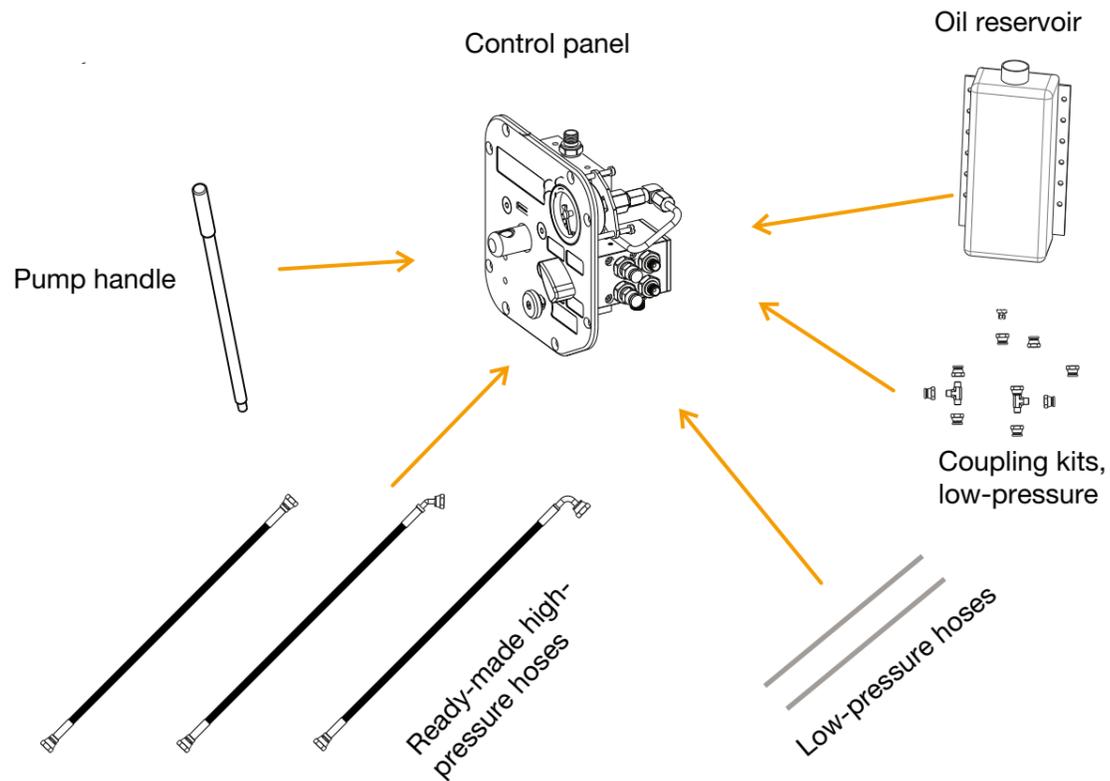
Hydraulic backstay tensioner (HT), operated from a control panel



Mast-jack

## Follow these steps to find the correct parts

1. Do you want to be able to manage more than one function? In that case, you choose the panel that handles up to four functions.
2. Choose between a clear anodized (silver) or black panel.
3. Do you want one or two panels? One point of having two panels is to be able to maneuver the hydraulic functions from each side of the cockpit as opposed to moving down to lee beam just to adjust the trim.
4. Choose the right oil reservoir. Two sizes of reservoirs are available and which one you choose depends on the total volume of the cylinders.
5. Determine the required length of the low-pressure hoses, ie the hoses between the tank and the control panel. You will find part numbers for different lengths on the page 8. Two hoses are needed.
6. Determine which coupling kit you need depending on the number of control panels. See page 8.
7. Determine the length of the high-pressure hose for each function. The function decides which angle of the terminals is needed. Go to page 9 and make your choice.
8. For a high-pressure hose passing through deck a deck-gland is available. See page 10.



Control panel, 1-function



Control panel, 4-function

### Control panels

Art. No.	Number of functions	"2-speed" function	"Dual Action" function	Anodization	Oil flow per stroke, cm <sup>3</sup> , low-pressure	Oil flow per stroke, cm <sup>3</sup> , high-pressure	Connection, low-pressure side	Connection, high-pressure side
586-503-01	1	Yes	Yes	Clear	20,1	5,6	1/4"	1/8"
586-505-01	1	Yes	Yes	Black				
586-504-04	4	Yes	Yes	Clear				
586-506-04	4	Yes	Yes	Black				



Pump handle, Art. No. 587-101 stainless steel, Ø20 x 500 mm

### Oil reservoir

Art. No.	Volume, L	Male thread	For max volume of cylinders, L	Height, mm	Width, mm	Depth, mm
585-300-10	3,8	NPT 3/8"	2,3	280	220	110
585-304-10	5,7		3,4	430	220	110



### Electric pump

Connects to the control panel

Art. No.	Voltage, V	Power consumption, kW	Nominal oil flow, L/min	Max working load, bar (psi)	Connection, low-pressure side	Connection, high-pressure side
587-800-01	24	0,8	1,5	250 (3600)	1/4"	1/8"
587-805-01	12	0,8	1,5	250 (3600)	1/4"	1/8"



### Push button

Art. No.	Color
540-460-05	Red
540-459-05	Green

