



P-22049

## HYDRAULIC CLIMBER T15-S-18

### ***Web version manual***

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## **1. SYSTEM DESCRIPTION**

The lift/lowering system T15 is meant to be used as a lifting-, pulling and lowering device for temporary mobile use on building sites, repair- and installation work within the industry and similar sites where there is a need for a flexible, easily object-adaptable equipment.

The system is made for the work load 12 ton per unit at hanging load, 15 ton per unit at horizontal pulling respectively 6 ton per unit at hanging work platform. The units can be linked together through a universal hydraulic system to handle very heavy loads.

The equipment is in accordance with 89/392 EEG.

## **2. THE SYSTEM CONSISTS OF THE FOLLOWING PARTS**

- 2.1 Climber, basic version for lifting/lowering**
- 2.2 Switch rod, accessory for lowering**
- 2.3 Pc-strand according to BS 5896/3**
- 2.4 Load anchor**
- 2.5 Hydraulic overload protector with valve panel (extra equipment)**
- 2.6 Hydraulic pump unit with three-phase electric operation**
- 2.7 Hose system with quick connections**
- 2.8 Equipment for transport and storage of pc-strands**



### 3. DESCRIPTION OF FUNCTION

3.1 A safe bond between pc-strand and climber respectively load anchor and pc-strand is achieved by conic wedges in three parts with thread pressing action which are fixed by the existing load. The wedges are locked in one direction until they are unloaded with a short movement in the opposite direction. The outside of the wedge is to be lubricated regularly with a lubrication.

Movement is achieved by pumping or draining oil from the hydraulic cylinders.

Repeated movement is achieved by the climber's double set of wedges, one fixed and one hydraulically moveable.

The climber can be positioned for five different functions:

3.2 With both sets of wedges open. This is the standard state of delivery. The pc-strand can be inserted through the climber from either direction.

3.3 With the fixed set of wedges in grip and the moveable set of wedges opened. The pc-strand is locked in place and no movement can be achieved with the hydraulics.

3.4 The moveable set of wedges in grip and the fixed open. Only an oscillating movement can be made with the hydraulics

3.5 Both sets of wedges are locked. This is the state for lifting and pulling.

3.6 The two switch rods assembled, load on the climber and 4 Nos locking screws in "free" position (fully screwed out). This is the state for repeated lowering. Governed by the position of the hydraulics, the switch rods will influence the wedge to switch from open (after a previous unloading with a short stroke) or closed to allow repeated lowering which is controlled from the pump unit's manually influenced valves. At the moment where load over the climber ceases built-in springs will seek to open the wedges irrespective of the position of the hydraulics.

**Caution:** The critical limit is approx. 38 kgs and sharp attention should be paid, when hanging load is put down on blocking support, to make sure that slacked pc-strand does not come crash-down from the climber.



## 4. COMPONENT DESCRIPTION AND INSTRUCTIONS

### 4.1 Climber T15-S-18

Weight 43 kg incl. stop cock.

Width 275 mm over both hydraulic cylinders

Cylinder diameter	70 mm
Piston area (2 x 38,5)	77 cm <sup>2</sup>
Switch rod diameter	40 mm
Stroke length	200 mm
Return area	52 cm <sup>2</sup>

Maximum allowed work pressure	200 bar
Test pressure at revision	250 bar

During operation the return pressure should be limited to 70 bar through a special outer valve and the work pressure through the pump unit's pressure valve should be limited to 130 % of the significant load back-pressure for each task. The latter is obtained by dividing present load in kgs with 77 cm<sup>2</sup>.

#### 4.1.1 Volume

Lifting stroke of hydraulic cylinders	1,54 litre
Retract stroke	<u>1,04</u> "
	2,58 litre/cycle

#### 4.1.2 Effective stroke

Lifting and pulling approx. 190 mm.

At a higher load this is shorter than at a low load owing to elasticity in the pc-strand between the set of wedges.

Lowering: approx. 170 mm (some loss at free-lifting).

High load gives shorter climb length than low load owing to repeated loss of elasticity losses between the set of wedges.

There may also be individual differences between individual climbers owing to variations in wedge setting.



### 4.1.3 *Choice of mode of function:*

- Look at drawing 10-JW01 and note the screws (Art No. 09-3202). Identify these on the climber.

Choose mode of function with these in accordance with chapter 3.

In grip = the screws fully screwed in into the oval slot after being manually pressed against the built-in opening spring (Drawing 11-GW01 & 11-GW02; Art No. 07-3468).

Out of grip or opened = the screws fully screwed out after which the built-in spring presses the release collar (Drawing No. 11-3482) against the wedges so that these are left open.

- Assembly of switch rods for lowering or repeated backstroke:

These are assembled with the hydraulic cylinders partly pumped out (5-15 cm).

Screw (Art No. 09-3202) and nut (Art No. 09-0211) are to be pulled with hand force only. The forks of the switch rods shall run freely. Before assembly check that the switch rods are undamaged. They should run without obstruction like a bicycle pump without being caught on the way. At the end there is a prestressed set of cup springs which can be over won with 40-45 kg axial power.

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