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HEAVY EQUIPMENT JACKS

## OPERATOR'S MANUAL

# HEJ100-15

**100 TONNE**

Heavy Equipment Jack

**Serial Number:**

Scorpion Jacks International

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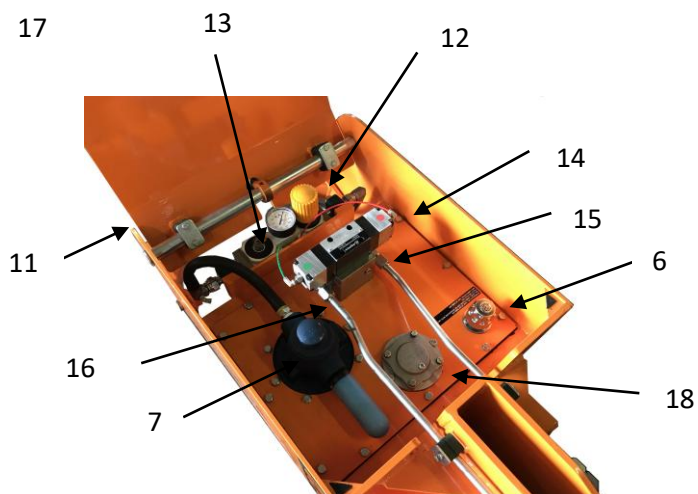
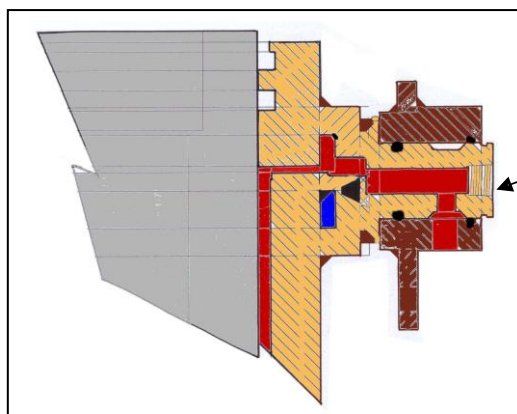
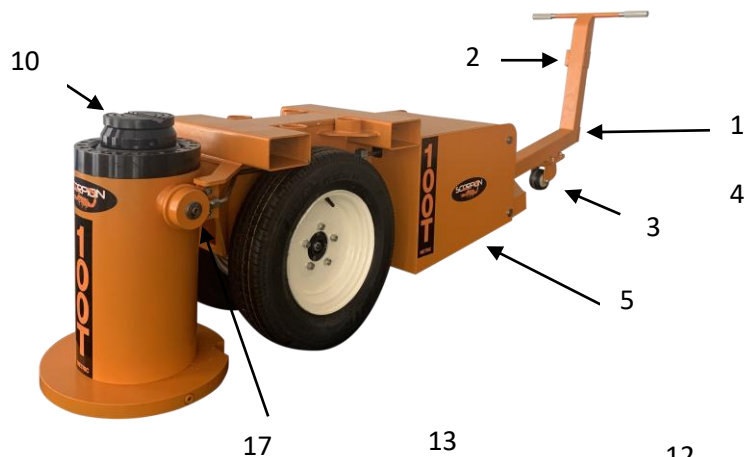
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# HEJ100-15



|    |                              |
|----|------------------------------|
| 1  | Air Connection               |
| 2  | "UP", "HOLD", "DOWN" Control |
| 3  | Castor                       |
| 4  | Handle Adjustment            |
| 5  | Oil Reservoir                |
| 6  | Filler/Breather              |
| 7  | Pump                         |
| 8  | Test Point                   |
| 9  | Lifting Point                |
| 10 | Load Cap                     |
| 11 | Hinged Cover                 |
| 12 | Air Filter/Regulator         |
| 13 | Air Lubricator               |
| 14 | Directional Control          |
| 15 | Hydraulic Relief Valve       |
| 16 | Counterbalance Valve         |
| 17 | Trunnion                     |
| 18 | Hydraulic Return Filter      |

## Specifications

|                            |                                     |
|----------------------------|-------------------------------------|
| Cylinder Max. Lift.        | 100 tonne @ 22,750 kpa (3,3000 psi) |
| Max. Air Pressure          | 655 kpa (95 psi)                    |
| Air Pressure Safety Relief | 689 kpa (100 psi)                   |
| Hydraulic Pressure Relief  | 24,000 kpa (3,5000 psi)             |
| Counterbalance Valve       | 25,500 kpa (3,700 psi)              |
| Tyre Pressure              | 345 kpa (50 psi)                    |
| Hydraulic Oil              | SAE 20 Hydraulic oil/equivalent     |
| Air Lubrication            | SAE 20 Hydraulic oil/equivalent     |

## Description

Reciprocating air operated hydraulic pump **(7)** mounted through lid delivering 22,750 KPA (3,300 PSI) hydraulic pressure at 620 KPA (95 PSI) air pressure (Maximum recommended pressure).

Oil from the pump **(7)** is delivered to a subplate containing a pressure relief **(16)** set to 24,000 KPA (3,500 PSI). The directional control **(14)** is mounted to this subplate; it is a double air pilot operated with closed centre. The valve is activated with a toggle type air valve **(2)** located in the handle. A counterbalance valve **(16)** set at 25,500 KPA (3,700 PSI) is positioned in the "up" line between the directional control and cylinder.

Oil reservoir **(5)** is located behind the wheels, under the hinged lid **(11)**. The filler breather **(6)** is in one corner of Reservoir lid. Oil level when unit is fully retracted should be about 50 mm (2") from the lid.

Air is supplied via the air connection **(1)** at the rear base of the handle, down the inside of the handle to the Air Filter-Regulator **(12)**, and Lubricator **(13)**. Air pressure can be adjusted, **but should not exceed 655 KPA (95 PSI)**. Should this pressure be exceeded the safety valve between the regulator and lubricator will crack and will release air at 689 KPA (100PSI).

**DO NOT TAMPER WITH THIS RELIEF.**

## Assembly

Your Scorpion Jack has been freighted with its handle removed. Refit by removing pins A & B, position handle and refit pins.

The Air hose protruding from the inside of the handle attaches to the inlet of the air filter.

The small white nylon tube "plugs into" the fitting on the outlet of the lubricator (white paint dot). The coloured nylon tubes "plug into" either end of the black directional control. Again, the coloured dot on each fitting is to match the colour of the tubes.

Operate the unit and check for air leaks.

# Adjustments

## Lubrication

With full airflow adjust the airline lubricator **(13)** by rotating the small screwdriver slot in the top of the unit. Observe the oil drops forming in the sight dome (also on top of the lubricator). Rotate the adjustment clockwise for less, anti-clockwise for more, until you have approximately one drop every ten seconds.

## AirPressure

The air filter-regulator **(12)** should be set to **655 KPA (95PSI)** air pressure. To adjust pull up and rotate the yellow knob located on the top of the air filter regulator. Be sure the shop air system exceeded 655 KPA (95 PSI) during this operation.

DO NOT EXCEED 655 KPA (95 PSI) PRESSURE.

## HydraulicPressureReliefValve

This valve **(15)** has been factory set and should not need adjusting. If adjustment is required, remove valve and replace, with new or service exchange valve. Contact Scorpion Jacks International to arrange this.

## CounterbalanceValve

This valve **(16)** has been factory set and should not need adjusting. If adjustment is required, remove valve and replace, with new or service exchange valve. Contact Scorpion Jacks International to arrange this.

## Safe Operating Procedures

- To move this jack, first adjust the handle, using the Turnbuckle **(4)** to a convenient height for the operator. By pushing on the handle, the self-levelling cylinder will be lifted clear of the floor for easy moving of the unit.
- For crane lifting of the unit a lifting lug **(9)** is provided between the chassis just forward of the wheel's axles.
- Select a solid level area on which to jack. Position the jack using the correct load cap, (10) or extension dolly.

**DO NOT JACK DIRECTLY ON THE END OF THE ROD,** as this could cause damage to the rod.

- Ensure the dolly or load cap cannot slip on the surface to be jacked.
- Attach airline to jack.
- Switch the toggle control to "up".
- When desired height is reached, switch to "hold".

To Lower:

- Switch the toggle control to "down". The unit must be powered down and will lower at a fixed rate regardless of the load.

### \*CAUTION:

**DO NOT WORK UNDER EQUIPMENT SUPPORTED ONLY BY A JACK.** Place stands under the equipment and lower onto the stands before working under machine.

**EXTENSION DOLLIES ARE DESIGNED FOR USE WITH A LOAD CAP.** Do not jack directly onto the dollies without having the correct load cap in place.

**DO NOT STACK DOLLIES.** Scorpion Jacks International has designed their range so that only one dolly can be used safely at a time with a jack. SJI believes this represents the highest level of safety achievable whilst jacking under load.

## Maintenance

- Check the reservoir oil level. Fill out about 50 mm (2") from top of reservoir.
- Check oil in air lubricator. **(13)** Remove filler cap (round cap with 2 vertical pins) located on top of lubricator, and add oil until bowl is 2/3 full.
- The air filter-regulator **(12)** has an auto-drain mechanism installed and should not require manual draining.
- Check tyre pressure. Low tyre pressure will make the unit difficult to move. SJI recommends 50 PSI per tyre for maximum ease of movement.
- Change return line filter **(18)** every 250 hours or six months.

CAUTION:

DO NOT USE HIGH PRESSURE CLEANERS ON THE RESERVOIR LID, AS THIS MAY CAUSE CONTAMINANTS TO ENTER THE SYSTEM AND AFFECT NORMAL OPERATION AND OR WARRANTY.

NOTES:

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

# SERVICE NOTES

## Daily/Weekly:

- Ensure there is oil in the pneumatic lubricator... This is perhaps the most critical regular maintenance item and is vital to prolonging the life of the air equipment, (specifically the air over hydraulic pump), and reducing the possibility of premature failure. Oil should be filled to 2/3 full in the bowl.
- Visual Inspection – Check for external oil leaks around the cylinder wiper seal, base plate, and trunnion bearings. Check for damaged or bent steel tubes.

## Every 3 months:

### Check pressure settings on:

- Air Relief
- Hydraulic Relief
- Hydraulic Counterbalance

## Every 6 months:

- Change the air filter element
- Change the hydraulic filter element
- Ensure wheel bearings are greased

## Annually:

- Replace hydraulic cylinder seal kit (Optional – if cylinder is not leaking externally and holding load during test, it may not be required)
- Replace ID Stickers/decals if damaged or faded\*

NOTE: A permanent aluminium compliance plate should be visible on the rear of the hinged cover. This plate notes model no, maximum tonnage and serial number. If this is not present, contact Scorpion Jacks for replacement.

## Generally:

- Check the hydraulic oil level in the reservoir periodically. Oil level should be approx. 50mm below the level of the filler cap, when cylinder is fully retracted.
- Ensure tyres are inflated to 50PSI.
- Ensure no dirt/dust build up occurs in rod spigot

## NOTES:

- The above are suggested frequencies only, and specific on-site requirements or operating conditions may warrant variations on the above frequencies.
- DO NOT use high pressure cleaners to remove exhaust oil/dirt from on top of the reservoir as this could lead to contaminants being introduced to the oil reservoir via the filler breather. The effect of this will be premature clogging of the return line filter, and in turn reduce the maximum working life of all hydraulic components.

## **RECOMMENDED ON-SITE SPARE PARTS**

### **REMOTE MINE SITES**

- Cylinder Seal Kit
- Hydraulic Relief Valve – pre-set
- Hydraulic Counterbalance Valve – pre-set
- Hydraulic Filter Element
- Hydraulic Suction Strainer
- Double air pilot control valve
- Pneumatic filter element
- Filter/Regulator/Lubricator Assembly
- Pneumatic Relief Valve
- Air/Hyd Pump Service kit
- Air/Hyd Pump Air seal kit
- Air/Hyd Pump Hyd seal kit
- Air/Hyd Pump APA valve
- Air/Hyd Pump O-Rings suit APA Valve (not part of soft seal kit)
- Air/Hyd Pump Bumper seal (not part of soft seal kit or repair kit)
- Air/Hyd Pump (Optional)
- Sticker/I.D. Kit
- Wheel Bearing Kits
- Thread Sealing Washers

#### **NOTE:**

For specific part numbers see spare parts manuals or request a quote from Scorpion Jacks.

Some items may have recommended replacement timelines – see service notes in operators manuals.

# SCORPION JACKS INTERNATIONAL

## WARRANTY

Scorpion Jacks International guarantees for 12 months from date of purchase, to correct by repair or parts replacement, without charge, any defects arising from faulty workmanship or material. A Scorpion Jack subject to claim under this guarantee should be returned as a complete unit to Scorpion Jacks International, 3/31 Casey St, Aitkenvale Qld 4814, Australia.

The Scorpion Jacks International Warranty set forth in the previous paragraph above does not apply...

- To any defect of failure attributable to accident, misuse, abuse, negligence, or non-observance of local regulations on the part of the user.
- If the Jack has been serviced by a person not authorised by Scorpion Jacks International to do so, or with non-approved parts.
- To freight costs to and from Scorpion Jacks International.

NOTE: While Scorpion Jacks International believes our Scorpion Jacks are amongst the safest built worldwide, *all normally accepted work and safety practices must be followed.*

