



# Original Instructions

for

## Hydralite Jacks

Revision 2 – Issue 3

(MOD 21237)

Allspeeds Ltd.

Royal Works, Atlas Street  
Clayton Le Moors, Lancashire, UK.

BB5 5LW

01254 615100

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# 1 Scope

This manual covers the operation and maintenance of the Hydralite range of Tangye hydraulic lifting jacks.

The Hydralite range are lightweight, moveable jacks designed to lift heavy loads with low effort and maximum safety. These jacks are not designed to be moved whilst under load.

These jacks are designed in accordance with BS EN 1494:2000 +A1 2008 – the British Standard for “Mobile or moveable jacks and associated lifting equipment”

Please read carefully and work in accordance with this instruction booklet and keep in a safe place for future reference.

It is the responsibility of the purchaser to ensure that operators are properly trained in the safe use of this equipment and have access to this document.

No modification and/or additions may be made to this equipment without the written permission of the manufacturer.

It is expected that the product is used by competent technical personnel who have been properly trained to use hydraulic lifting equipment.

## 2 Technical Data

### 2.1 Jack Weights

**Important:** Ensure the correct Manual Handling procedures are carried out when handling the jacks. Where a jack has a claw attachment, the claw should be removed from the jack and lifted separately.

The weight of the jack is marked on the nameplate affixed to the jack base. All jacks have lifting handles and these should be used during transportation. Larger jacks may need to be moved by two people.

### 2.2 Oil Requirements

The Hydralite range of hydraulic jacks contain nitrile seals and should only be used with good quality hydraulic oil (e.g. Shell Tellus 32). For compatibility with any other fluid, please contact the manufacturer.

### 2.3 Environmental Considerations

The jack is intended for use in industrial environments, inside or outside, between temperatures of  $-20$  to  $+50^{\circ}\text{C}$ . The jack should not be used outside these limits or in explosive atmospheres/areas of nuclear radiation.

### 2.4 Noise and Vibration

By its design, the jack operates slowly under manual effort. There is no noticeable noise or vibration. The noise level does not exceed 70 dB(A).

### 3 Declaration of Conformity

		<h2>DECLARATION OF CONFORMITY</h2>	
<b>Company name:</b>		Allspeeds LTD	
<b>Company address:</b>		Royal Works, Atlas Street, Clayton le Moors, Accrington, Lancashire BB5 5LW, UK	
<b>Machinery covered by this declaration:</b>	<b>Description:</b>	Hydraulic Jack	
	<b>Model:</b>	Hydralite PS620, PS630, PS1220, PS1230, PS620C, PS630C, PS1220C, PS1230C, PS620S, PS630S, PS1220S, PS1230S, PS660, PS660C, PS660S, PS1260, PS1260S, PS1260C, P6100, PS620C1, PS630C1, PS660C1, PS672Z, PS660Z, P6100S, PS1840, PS1840C, PS1840S	
	<b>Type:</b>	Tangye Hydralite Jacks	
The machinery conforms to all the requirements of the Machinery Directive 2006/42/EC.			
<b>The machinery also conforms to the following Directives:</b>		n/a	
<b>The following standards have been applied:</b>		BSEN1494:2000+A1:2008 (excluding 5.5.3.1)	
The technical documentation is compiled in accordance with part A of Annex VII of the Machinery Directive 2006/42/EC			
<b>Person authorised to compile the relevant technical documentation (based in the European Community):</b>	<b>Name:</b>	Authorised Rep Compliance LTD.	
	<b>Address:</b>	71 Baggot Steet Lower, Dublin, D02 P593, Ireland	
The relevant authorised person undertakes to transmit, in response to a reasoned request by the national authorities, relevant information on the machinery. This information will be transmitted by: (email, post)			
<b>Person authorised to make this declaration:</b>	<b>Name:</b>	Keith Elliot	
	<b>Position in company:</b>	Managing Director	
	<b>Signature:</b>		
	<b>Place of Declaration:</b>	Accrington, Lancashire, UK	
	<b>Date of Declaration:</b>	4 <sup>th</sup> January 2021	

## **4 General Safety Rules**

### **4.1 Warnings**

**These warning are provided to improve safety and should be carefully read before using or maintaining the equipment.**

### **4.2 Important Information**

It is vital that these instructions are available to the equipment users. It is also important that they are retained with the equipment if it is sold or transferred to another user.

Allspeeds LTD will not be held responsible for any damage to the equipment or personal injury resulting from unsafe use of the product, lack of maintenance or incorrect operation.

### **4.3 General Safety**

To prevent the risk of injury, the jack should only be used by fully trained and competent operators.

- Make sure that all safety devices are in place and functioning correctly
- Make sure the working area is adequately lit and is free of any obstructions
- Only operate the jack in a safe working environment and not during poor weather conditions. (Do not operate during rain/lightning/excessive heat etc.)
- The jack should not be used for the lifting of persons

Recommended PPE for operation and maintenance includes safety shoes, safety glasses and gloves.

Any spilt oil may create a slipping or tripping hazard. Care must be taken around the work area.

#### 4.4 Warning Symbols

	
<p><b>General Hazard.</b> Hydraulic tool with inherently dangerous moving parts.</p>	<p><b>Crushing Hazard</b> Do not put hand between jack and object being lifted.</p>
	
<p><b>Tipping Hazard</b> Ensure jack is on level, smooth surface to prevent tipping.</p>	<p><b>Lowering Hazard</b> Do not place anything under jack while loaded unless mechanically locked (With screw type jack etc.)</p>

## 4.5 Pinch Points

Care should be taken to avoid the two pinch points between the operating quadrant and the jack body.

Keep all body parts away from these areas when operating the jack to avoid injury.

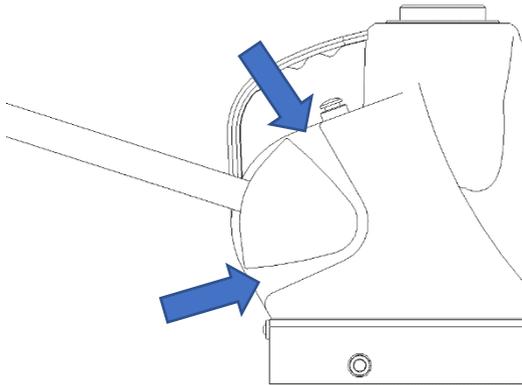


Figure 1 – Pinch Points on the Jack

## **5 Operating Instructions**

### **5.1 Before Use**

- Visually inspect the jack to ensure that it is in good condition.
- Check the external surfaces for mechanical damage and/or oil leaks. If either is present do not use the equipment and have the jack serviced.
- Ensure that the external surfaces are dirt free.
- Ensure the work area is clear and free from obstructions.
- Ensure the operator can watch the lifting device and the load during all movements.

## 5.2 Check Oil Level

The oil level should be checked with the ram fully descended. The dipstick should be screwed fully into position prior to testing to determine the level.

Remove the dipstick and check the oil level as shown in Figure 2. The **maximum** level is marked on the dipstick; the oil level should be between this mark and the bottom of the dipstick.

If oil needs to be added, ensure that the surrounding area is clean. Use high quality hydraulic oil such as Shell Tellus ISO 32 or equivalent.

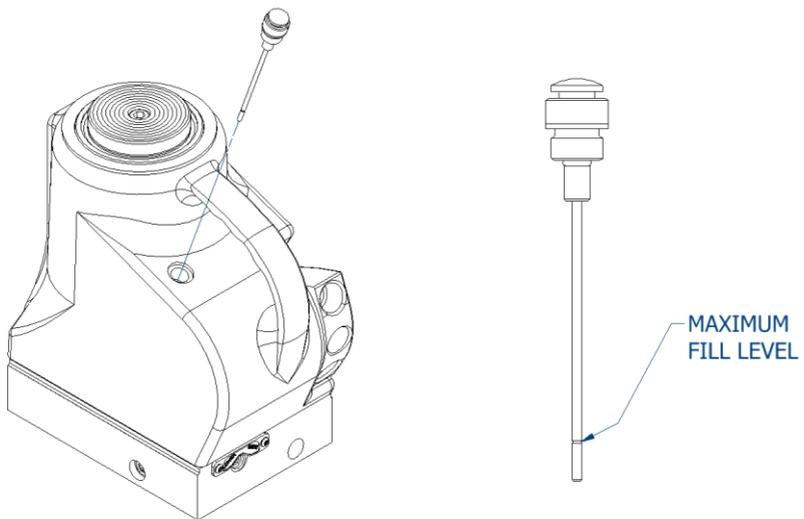


Figure 2 – Removing and Checking the Dipstick

### 5.3 Positioning the Jack

Place the jack on a firm level foundation fully supporting the jack base, and if necessary, place suitable material between the load point and jack ram to avoid damaging the structure to be lifted.

The jack should only be used in the orientations shown below:

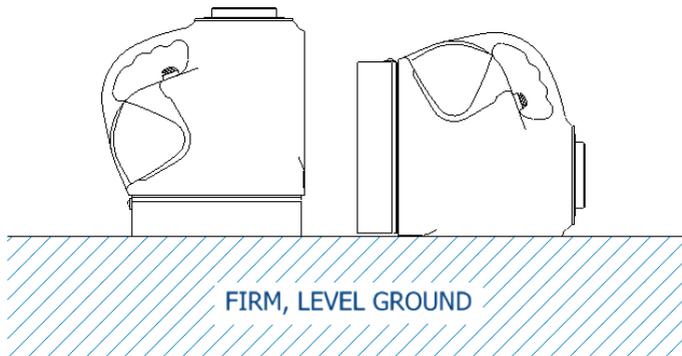


Figure 3 – Jack Positions

**IMPORTANT:** Always ensure that the full base area of the jack is supported when in use.

Position the jack so that the load bears centrally on the top of the ram or on the full extent of the claw, ensuring that the load cannot touch any static part of the jack during lifting.

**Always** ensure that loads are applied centrally to the ram or to the full extent of the claw.

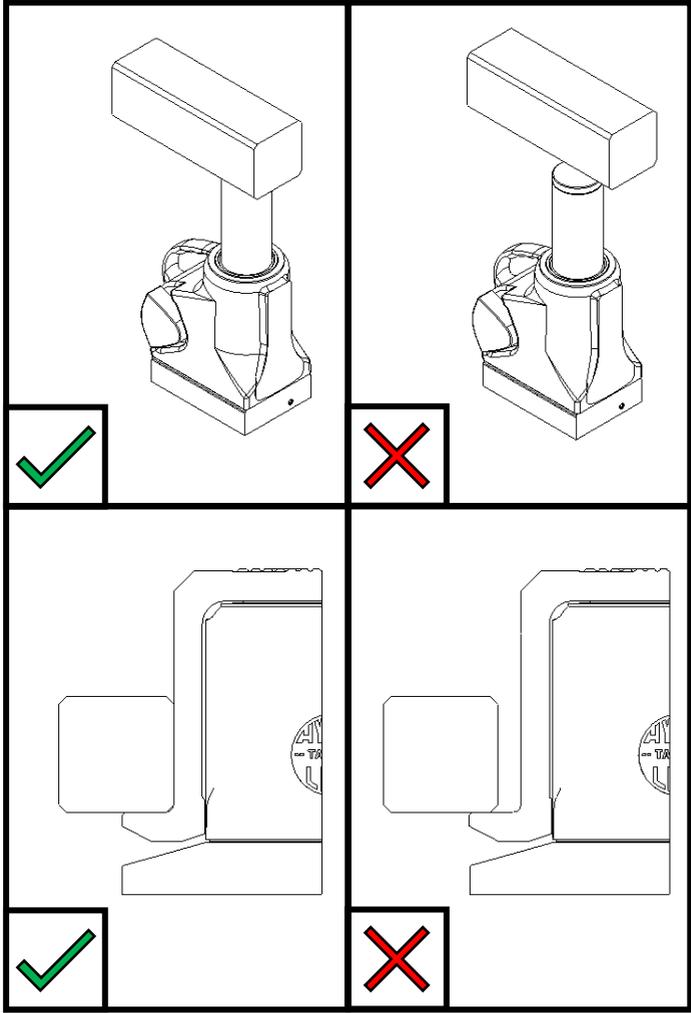


Figure 4 – Applying Loads

**Do Not** position the jack by using the operating lever in the release valve. If the jack is to be placed some distance under the load, use the operating lever in the operating lever/quadrant socket to position the jack.

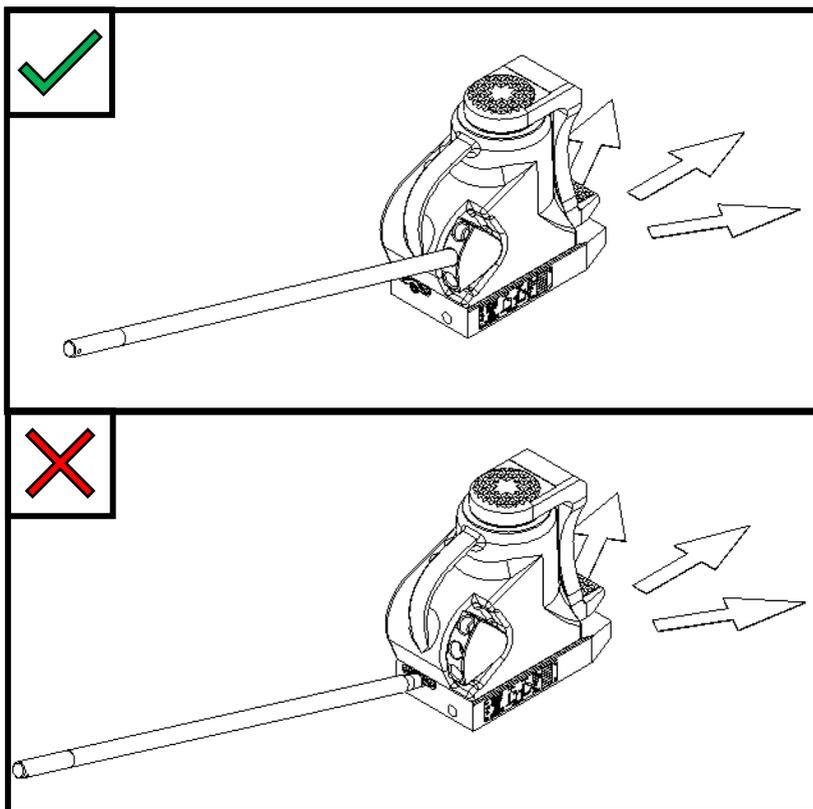


Figure 5 – Manoeuvring the Jack

## 5.4 Raising the Jack

The jack has an in-built hydraulic pump, which is worked by means of an operating lever, under the control of the operator.

The ram should only be extended hydraulically; it should never be pulled out by hand or used to carry the jack.

The permissible working load and the travel of the hydraulic jack is marked on the equipment.

### 5.4.1 Warnings

**Do Not** overload the jack, especially when lowering loads.

**Do Not** under any circumstances go under a load when hydraulic jacks solely support it. Should work under a load be required, a screwed version of the jack (or other means of support – e.g. chocks) should be used in order to mechanically lock the load – see Section 5.6.

**Do Not** extend the ram by any means other than by pumping the jack.

**Do Not** attempt to exceed the rated load of the jack on the head or toe/claw.

### 5.4.2 Tightening the Release Screw

Insert the ball on the end of the operating lever in to the hex of the release valve screw on the base of the jack as shown in the image below. Rotate clockwise until hand tight.

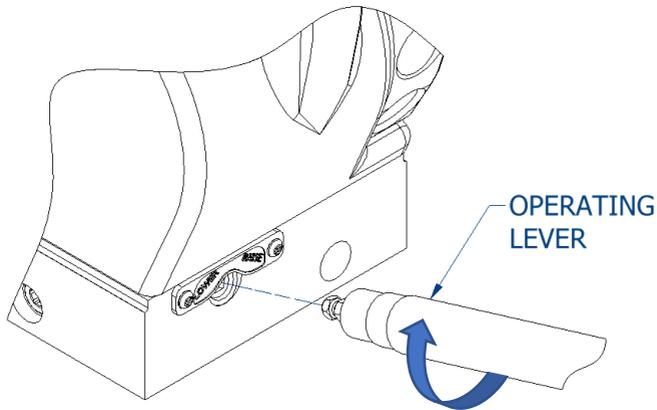


Figure 6 - Tightening the Release Valve Screw

### 5.4.3 Pumping the Jack

Insert the operating lever fully in to the operating quadrant as shown in Figure 7. Three positions are provided to enable the operator to choose the best ergonomic position.

The jack ram is raised on each downward stroke of the lever. The operating lever should be used in a steady controlled movement at a maximum of 30 strokes per minute.

When the full extension has been achieved a positive stop is engaged; further pumping will only circulate oil within the jack. This circulation will be apparent to the operator because

increased effort is necessary to move the operating lever. Do not continue pumping after this has been reached.

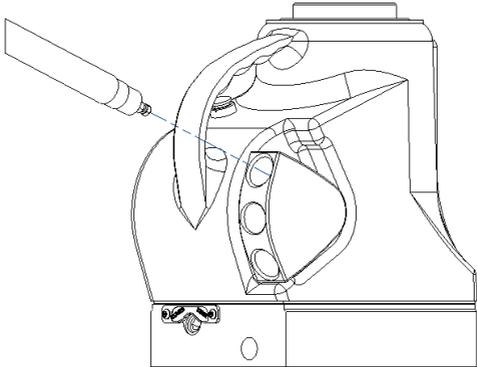


Figure 7 - Inserting the Operating Lever

The table below show the maximum effort required to operate the jack when loaded to the maximum rated load.

Jack Range	Max. Effort (kg)	Max. Effort (N)
20 Tonne	54	530
30 Tonne	52	510
40 Tonne	50	491
60 Tonne	52	510
72 Tonne	50	491
100 Tonne	79	775

Table 1 - Maximum Effort on Operating Lever

Where the generated effort to raise the loaded jack exceeds 400N, the effort shall be lowered by additional persons.

#### 5.4.4 Using Multiple Jacks

If using more than one jack to raise a load, all the jacks must be able to individually raise the load e.g., two PS620 jacks cannot be used to lift a 30T load as it impossible to pump both jacks at exactly the same rate, or lower the jacks at exactly the same rate. One of the jacks will end up with an excess load and is liable to fail. In such case two PS630 jacks should be used to raise a load of 30T.

When using multiple units to lift a load, all jacks **must** be operated at the same time, so that the load is lifted evenly.

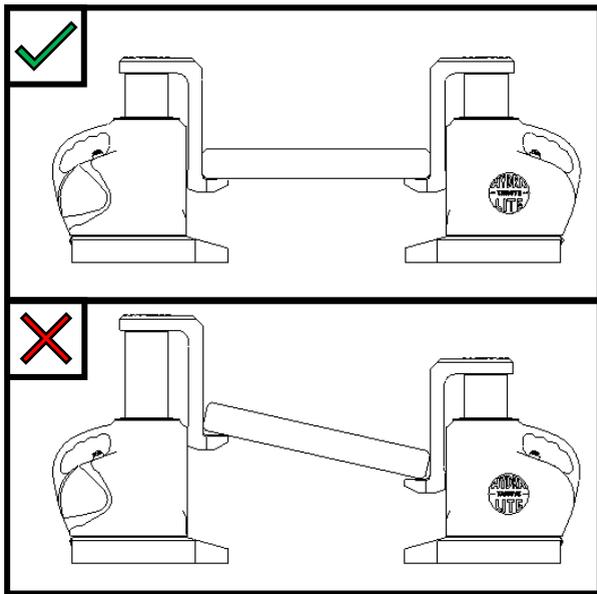


Figure 8 – Jacks Lifting Evenly

## 5.5 Lowering the Jack

**Do not** drop loads onto the jack. If the jack is inadvertently subjected to a shock load, remove from service and have it checked by the manufacturer or service agent.

To lower the jack, first remove the operating lever from the operating quadrant and place it into the release screw.

Turning this anti-clockwise will allow the ram to descend. The amount this is rotated will control the speed of descent; only open a very small amount (approx. 5°) at first.

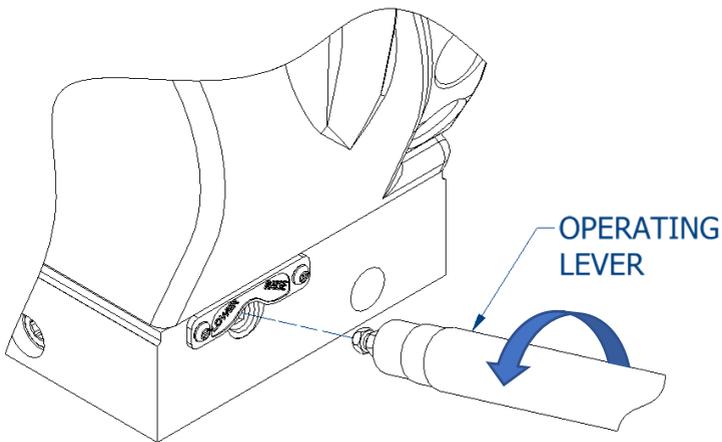


Figure 9 - Closing the Release Valve Screw

## 5.6 Jacks with Screwed Rams (Type S)

All models can be provided with screwed rams and locking collars. The purpose for this is to mechanically support a load at a required position without relying on the hydraulic circuit.

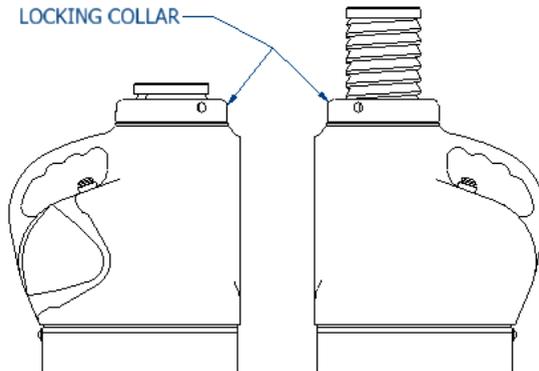


Figure 10 - Locking Collar

When the load is at the required position, rotate the locking collar clockwise until it rests hand-tight on the top of the jack body.

To undo – operate the jack so that the hydraulic circuit just takes the load off the locking collar. Rotate the collar anti-clockwise until it reaches the top of the ram.

**Important Safety Note: Lifting claws must never be used with screwed ram jacks.**

## 5.7 Jacks with Lifting Claws (Type C)

Claws are supplied as an accessory to provide a low height lifting point. The recess in the head of the claw fits around the ram top, and the heel of the claw rests against the front face of the jack. Ensure the claw is seated properly before use and also that the toe is as far under the load as possible.

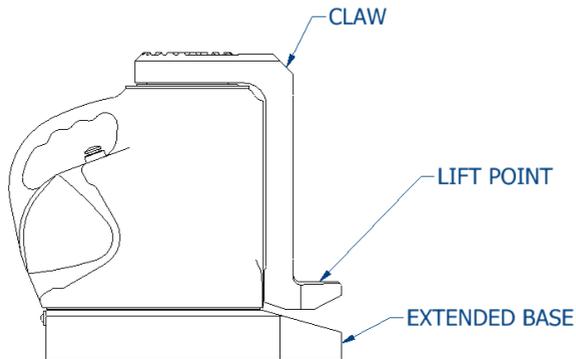


Figure 11 - Claw Jack



The capacity of the claw is **40%** of the capacity of the jack to which it is fitted.

<b>Jack Load (Tonnes)</b>	20	30	40	60
<b>Claw Load (Tonnes)</b>	8	12	16	24

Table 2 – Claw Loads

The “Claw Load” is marked on the jack nameplate. Do not exceed this load on the claw of the jack. If the claw is overloaded it could snap and put the operator in danger. Claws must only be used for vertical movements of loads.

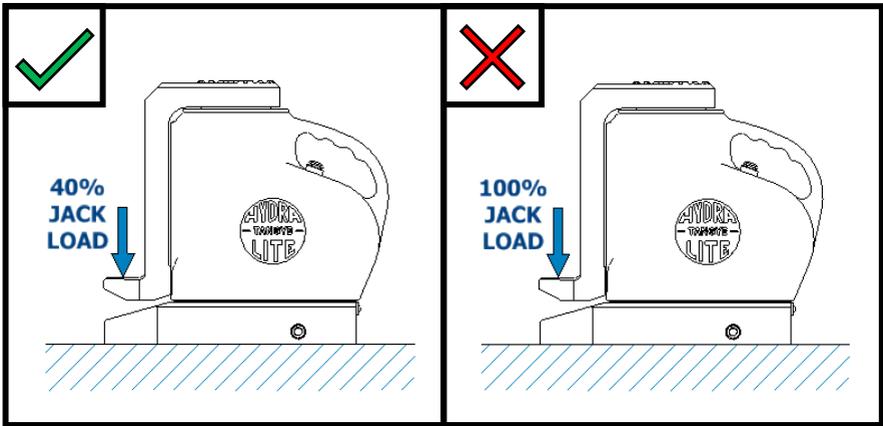


Figure 12 – Claw Load

Jacks intended for use with claws have extended bases which prevent the jack from tipping over when a load is applied to the claw. **Never attempt to use a claw on a jack without an extended base.**

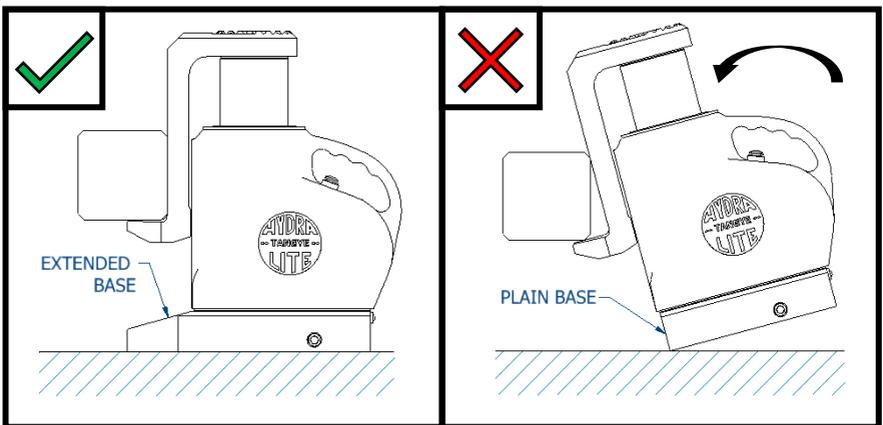


Figure 13 – Always Use an Extended Base with a Claw

## 5.8 100 Tonne Jacks Only

The 100T jack is fitted with an additional low-pressure pump intended for faster movement of the ram under no load (i.e. to close daylight). The low-pressure quadrant is on the right hand side of the jack as shown in Figure 14 and operates in the same manner as the high-pressure pump.

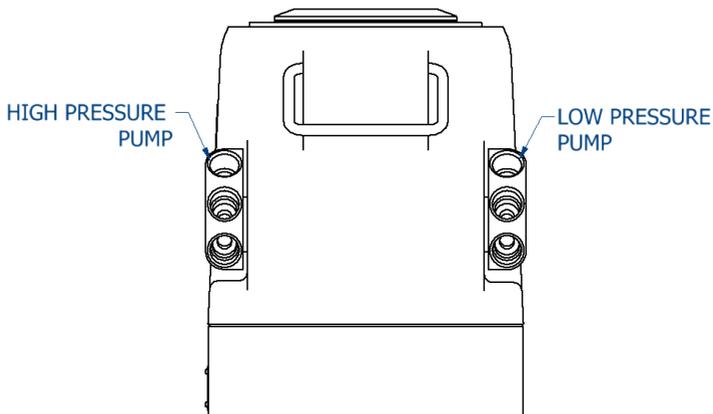


Figure 14 – High and Low-Pressure Pumps

Insert the operating lever in to the low-pressure pump and raise the ram until the ram head is in contact with the item to be lifted. Then, remove the operating lever from the low-pressure pump and insert it in to the high-pressure pump in order to lift the load.

**Important: The jack will not lift the rated load unless the high-pressure pump is being used.**

## 6 After Use

After use, store the jack in an upright position with the ram fully descended and the operating quadrant in the 'up' position.

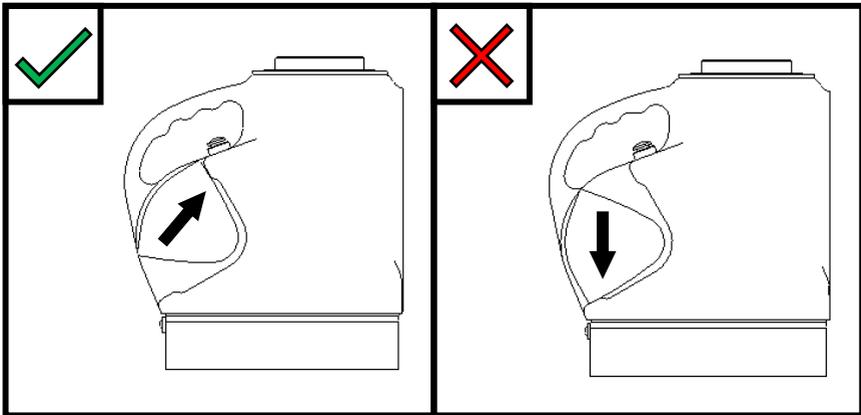


Figure 15 - Storing With the Quadrant "Up"

**Always** close the release valve, to ready the jack for the next operation (see Figure 6).

**Always** clean the ram and retract after use.

**Always** remove the jack operating handle when not in use as this can cause a trip hazard if left in the jack.

**Always** ensure any oil spills are cleaned up after use.

## 7 Maintenance

As the jacks can be used in a variety of different applications, the life time of the jack may vary. To prolong the life time, regular inspection of the jack should be undertaken.

In the normal course of service, no routine maintenance should be required, but attention to the following will assist in obtaining satisfactory service.

The oil level should be periodically checked; the reservoir should not be overfilled. Always use clean oil of the type specified in Section 2.2.

Always wipe the claw/ram extension clean before retracting for storage.

Inspect and clean ram and jack after every use, if subjected to abnormal or shock loading inspect for damage immediately.

Refer to the manufacturer or an authorised service centre for testing and service.

**IMPORTANT** – This jack should only be serviced by qualified personnel. If in any doubt please contact Allspeeds Ltd or a distributor.

**IMPORTANT** - Replacement parts must always be sourced from Allspeeds Ltd. The use of unofficial components will invalidate the warranty and may lead to damage or jack failure.

Most maintenance task can be carried out with standard tools.

All servicing operations should be carried out in a clean environment to prevent contamination of the oil and mating components.

Before carrying out any maintenance tasks ensure that the equipment is fully isolated and that there is no residual pressure in the system.

**IMPORTANT** – The hydraulic jack is a pressure vessel and should not be drilled, machined, mutilated or damaged in any way for mounting purposes or to assist in its removal for servicing, any warranty will be invalidated by such actions.

## 8 Parts List

### 8.1 Seal Kit Components

Each jack has a seal kit available and the kit required can be determined from Table 3.

<b>Jack Model</b>	<b>Seal Kit</b>
PS620, PS620C, PS620C1, PS1220, PS1220C, PS1220C1	133506
PS620S, PS1220S	133930
PS630, PS630C, PS630C1, PS1230, PS1230C, PS1230C1	133511
PS630S, PS1230S	133932
PS660, PS660C, PS660C1, PS660Z, PS672Z, PS1260, PS1260C, PS1260C1	133518
PS660S, PS1260S	133935
PS1840, PS1840C	133529
PS1840S	133934
P6100S	995058

Table 3 – Seal Kits

## 9 Decommissioning

Major components are made from the following recyclable materials:

<b>Description</b>	<b>Material</b>
Base	Aluminium
Cistern	Aluminium
Ram	Aluminium
Liner	Aluminium
Liner (72 Tonne)	Stainless Steel
Ram Cap	Carbon Steel
Operating Lever	Carbon Steel

Table 4 – Part materials

Remaining components should be disposed of in accordance with local current regulations.

Hydraulic fluid should be drained into a suitable container and disposed of in accordance with current local regulations.