

Note that if the pump is positioned vertically during use, the hose end **MUST** be facing down or the system will be filled with air.

To raise the load, firstly check that the pressure release valve is closed (finger tight only), turn fully clockwise.

Next push the pump handle up and down until the required height is attained, constantly observe the reading on the pressure gauge as it can help to alert you to what is happening throughout the operation.

Take care as the pump handle can 'kick back' sometimes. For your own safety, always keep your body to the side of the pump.

Do not use any form of extension to the pump handle, you will not gain extra leverage and the pump will become unstable and dangerous.

Do not use the cylinder as a load holding device or a means of support, where the load is being raised to gain access underneath, the load **MUST** be supported using suitably rated blocks or similar.

Do not go under a load which is supported by a cylinder.

Now carefully lower the load until the main supports take the weight then remove the hydraulic cylinder/s.

To lower the load, carefully turn the pressure release valve anticlockwise. The further the valve is turned, the faster the hydraulic cylinder/s will lower, so start slowly.

As the load descends under its own weight, it can be held at any point by turning the pressure release valve clockwise.

Where the pressure reaches maximum, but the load is not at the height you require, support the load with suitable supports and reposition the hydraulic cylinder/s again on suitable supports and continue the lift.

## EQUIPMENT CARE

**Never push the equipment beyond its design limits.** If it will not do what you want with reasonable ease and speed, assume you have the wrong tool for the job. Contact your local HSS Lift & Shift Depot for advice.

**Keep the equipment clean,** you will find this less of a chore if you clean it regularly, rather than wait until the end of the hire period.

When not in use, **store the equipment somewhere clean, dry and safe** from thieves and unauthorised users.

## FINISHING OFF

Fully lower the load and make sure the system is **NOT** under pressure, if you are unable to depressurise the system **DO NOT DISCONNECT ANY COMPONENTS**, contact your local HSS Lift and Shift Depot for advice.

If the system is depressurised, disconnect all parts and give the equipment a final clean ready for return to your local HSS Lift & Shift Depot.



## ...any comments?

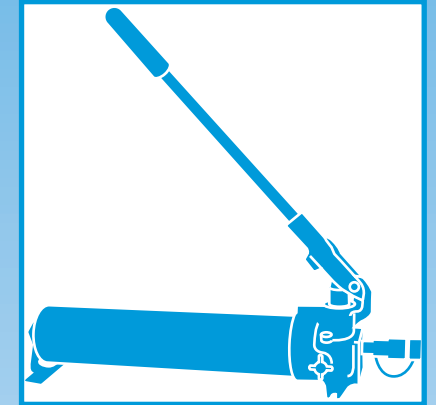
If you have any suggestions to enable us to improve the information within this guide please fax your comments or write to the Product Manager at the address below

**Fax: 020 8687 5001**

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Group Office: 25 Willow Lane, Mitcham, Surrey CR4 4TS

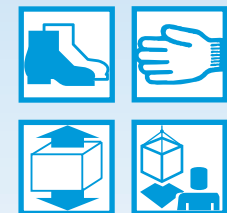
Web Site: <http://www.hss.co.uk/liftandshift>

## HSS Lift & Shift



# Hydraulic Cylinders & Pumps

A range of hydraulically operated cylinders, suitable for a wide range of jacking operations.



Code 000000

## GENERAL SAFETY

For advice on the safety and suitability of this equipment contact your local HSS Lift & Shift Depot.


There is a serious risk of personal injury if you do not follow all instructions laid down in this guide.


The hirer has a responsibility to ensure that all necessary risk assessments have been completed prior to the use of this equipment.


This equipment should only be used by an operator who has been deemed competent to do so by his/her employer.


This equipment is designed to be used by an able bodied, competent adult who has read and understood these instructions. Anyone with either a temporary or permanent disability should seek expert advice before using it.

Keep children, animals and bystanders away from the work area. Cordon off a NO GO area using cones and either barriers or tape, available for hire from your local HSS Lift & Shift Depot.

 Never use this equipment if you are ill, feeling tired, or under the influence of alcohol or drugs.

 Wear practical, protective clothing, gloves, footwear and a hard hat. Avoid loose garments and jewellery that could catch in moving parts, tie back long hair.

 Use this equipment for vertical lifts only and use on a level area able to take the combined weight of the load and the equipment.

 Ensure the load is balanced, stable and that personnel stand clear of the raised load.

## SAFETY WARNING

This equipment **MUST NOT** be used to lift personnel.

Make sure you know how to operate this equipment safely and are aware of its limitations before you use it.

Make sure that anyone in the immediate work area is warned of what you are doing.

Be aware of the raised load when close to ceilings or other overhead obstructions.

Never exceed the equipment's safe working load.

Ensure the work area is well lit and ventilated, if in doubt, ask about lighting and ventilation equipment at your local HSS Lift & Shift Depot.

## Warning

Damaged hoses are extremely dangerous.

This equipment operates at a pressure high enough to inject hydraulic fluid through the skin. If you are injected, seek IMMEDIATE medical attention at the nearest Accident & Emergency Unit.

Failure to do so could result in serious permanent disability or death.

Hydraulic cylinders are designed to lift, not support. Never leave them loaded for longer than necessary, and never leave them loaded and unattended.

Do not use this equipment as the main support of a load. Never work under a load that is merely jacked up, it can be extremely dangerous.

Use the equipment only on a hard, level surface capable of supporting the load.

Never lift or drag the equipment by its hydraulic hoses.

Check the condition of the equipment before use. If it shows signs of damage or excessive wear, return it to your local HSS Lift & Shift Depot.

## GETTING STARTED

Select the correct pump and cylinders to suit the task you are performing. Our staff will be happy to assist you in the correct selection.

For safety reasons you are advised to select cylinders and pumps which have a greater Safe Working Load rating that required. Work on a factor of eight, for example; where the load is 8 tonne, use a cylinder who's SWL is rated @ 10 tonne.

HSS supply the equipment 'ready to use' but for your own safety check that the pump, hoses and cylinders are NOT under pressure.

If the hoses are, or you have reason to believe they are, under pressure, DO NOT attempt to use them, contact your local HSS Lift and Shift Depot for advice.

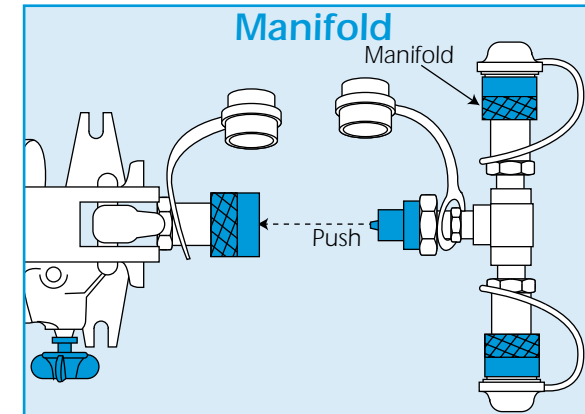
NEVER operate the pump unless it is connected to a cylinder.

All hydraulic couplings used with this equipment connect together in the same way.

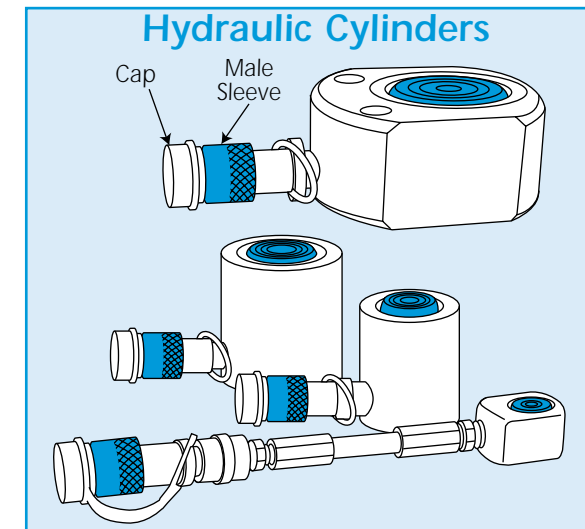
To make a connection remove the protective caps on both the male and female coupling, make sure the connecting surfaces are clean.

Using firm pressure, push the two together until the sleeve of the female and the thread on the male meet. Using hand pressure only, screw the two couplings together until tight, DO NOT use any tools to tighten the connections.

Connect the hydraulic pump to a pressure gauge followed by the hydraulic supply hose.



If connecting more than one hydraulic cylinder to the pump, connect a two or four way manifold.



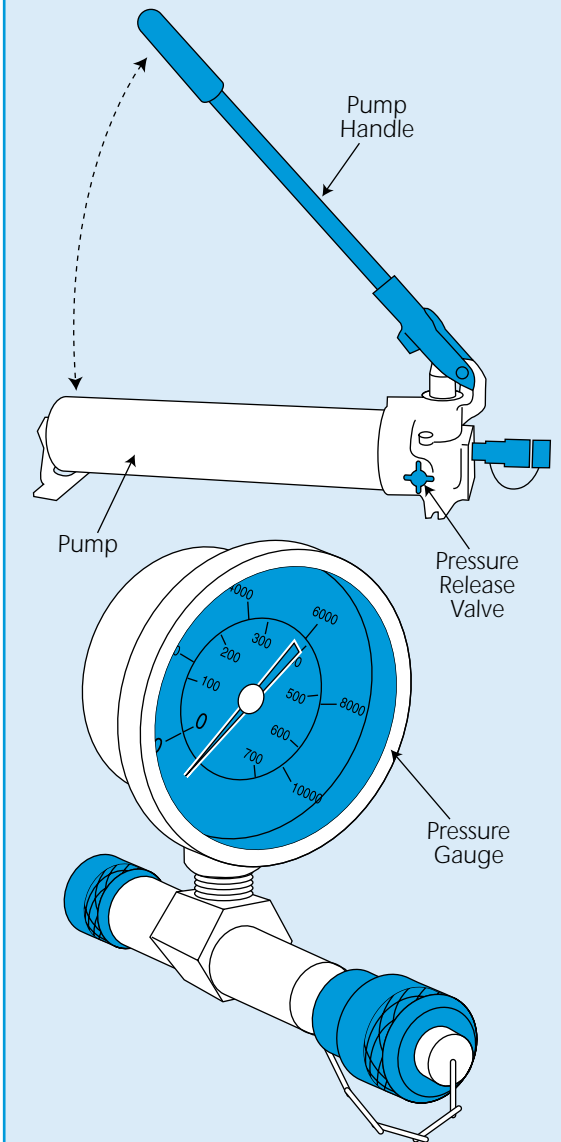
Finally, connect the hydraulic cylinder/s to the manifold using a hydraulic hose of a suitable length.

The system is now ready to use.

## BASIC TECHNIQUES

Place the hydraulic cylinder/s under a suitable jacking point.

## Hydraulic Pump



Double check that each hydraulic cylinder is set upright and that its base is in full contact with the floor surface.

Check also that the hoses are not kinked, twisted or tightly turned. Pay special attention to the hose ends where they connect to the pump, pressure gauge, manifold or cylinder.

Once fully satisfied you may start to raise the load.