DESCRIPTION

The Hi-Force SJS10 hydraulic spreader offers the ideal solution for spreading, wedging and prising operations in a wide variety of industrial applications. The compact, low weight, spring assisted return SJS10 design offers a 13 tonne spreading capacity. Manufactured from high strength steel, the low height jaw tips can easily fit within an 8mm gap and can provide a total spreading distance of 60mm in 5 operations. Suitable for operation up to 700 Bar maximum working pressure, and supplied complete with a female half quick connect coupler for easy attachment to a Hi Force manually operated or powered hydraulic pump.

Many applications require two tools, operated simultaneously, to achieve an even spread of a flange joint during gasket replacement. The SJS10-TK comprehensive kit offers the solution for this and comprises of the following:

- 2 x SJS10 spreaders
- 1 x HP212 pump
- 2 x HC3C hoses
- 1 x HM2C manifold
- 2 x HG63G gauges
- 2 x HGA1-25 gauge blocks
- 1 x MSB1 metal box

SJS10 TECHNICAL DATA

Model Number	Capacity Tonnes	Stroke mm	Min. Height mm	Max. Spread mm	Oil Capacity cm^3	Weight kg
SJS10	13	50	8	60	74	5.5

INSPECTION UPON RECEIPT OF GOODS

On initial receipt of goods visually check for transit damage. If found contact the carrier immediately.

Hi-Force does not necessarily know the circumstances of use of a particular tool. Always refer to operating instructions for pumps, valves etc. used with the tool. If in doubt consult your Hi-Force distributor.

SAFETY

Read these instructions and safety warnings fully. Failure to do so could result in Death, Personal injury or equipment damage.

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- Wear suitable personal protection equipment when operating hydraulic equipment. Keep all body parts away from tool and work piece / load.

- Do not work on an assembly held open only by hydraulic means. Always use the safety block provided to keep a joint open. When using the SJS10-TK ensure that both safety blocks are used.

- Do not exceed rated capacity of the tool. Hi-Force SJS10 tools are designed for 700 bar maximum working pressure. Do not connect to a pump with a higher rated pressure.

- Ensure that all components in the system are rated for 700 bar.

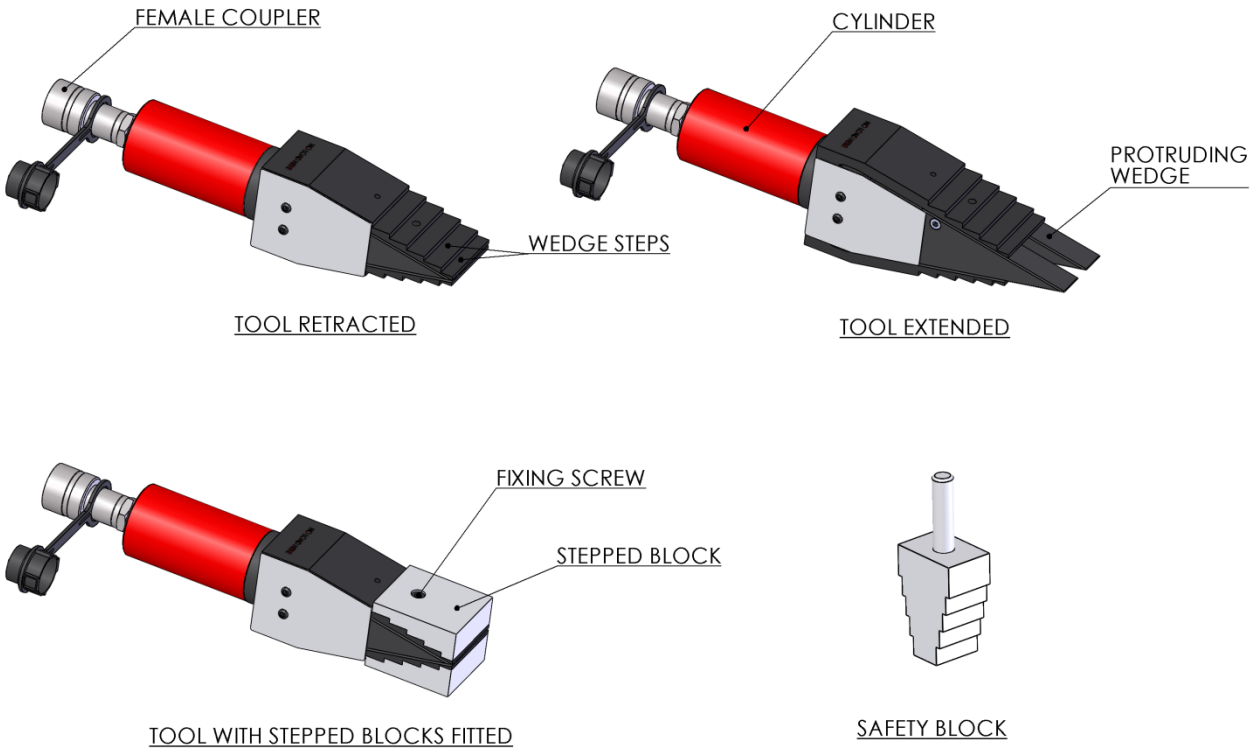
- Use a pressure gauge in the system whenever possible.

- Do not handle pressurised hoses. Oil escaping under pressure from a ruptured hose can penetrate the skin. If oil is injected under the skin it is a serious medical emergency. See a doctor immediately.

- Avoid damaging hydraulic hoses. Always route hoses to ensure they are free from sharp bends and kinks.

- For further safety information and typical connection diagrams consult the Hi-Force catalogue or website. www.hi-force.com

Fig 1.



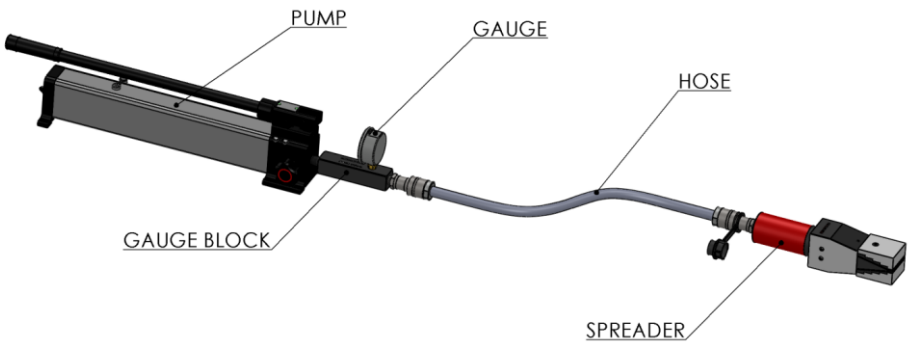
CONNECTION

SJS10 (SINGLE)

Ensure that the pump being used is suitable for the tool. A pump with a 2 way or three way valve and one hose should be used for single acting tool such as this. Refer to Fig 2 for typical single SJS10 connection. **Note:** The SJS10 does not come complete with pump, gauge, gauge block and hose, they will need to be purchased separately.

Connect hoses between the tool and pump ensuring that the couplers, where used are fully tightened – by hand only.

Fig 2

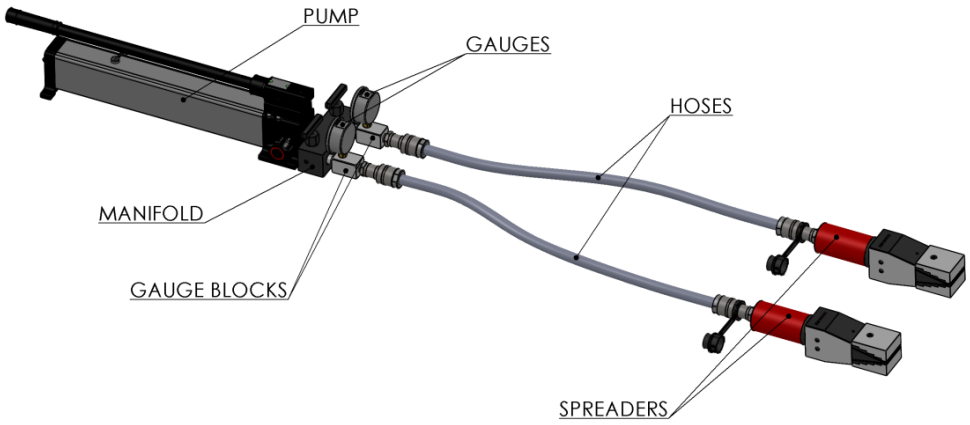


SJS10-TK (TWIN KIT)

The pump, manifold, gauge blocks and gauges are pre-assembled at manufacture to reduce connection time. Refer to Fig 3 for SJS10-TK connection.

Connect hoses between the tool and pump ensuring that the couplers, where used are fully tightened – by hand only.

Fig 3



Note: A loose coupler will slow or stop the oil flow and is the most common cause of faulty operation.

BLEEDING

Before putting the cylinder into service it is important to bleed air from the system. New hoses and cylinders are not always completely full of oil. Remove this air as follows. Single acting cylinders: Locate cylinder below the pump with the wedge pointing downwards (coupler uppermost) Operate the pump to fully extend and retract the tool several times. **Note:** For the SJS10-TK ensure that the valves are fully open on the manifold and that both cylinders fully extend and retract.

CAUTION: In the case where very long hoses are used this procedure may not fully remove the air. Contact your Hi-Force distributor for advice on pre-filling of hoses with hydraulic oil.

OPERATION

A pump is used to advance and retract the tool. Refer to hydraulic pump operating instructions for details of operation of the pump.

- Hi-Force SJS10 wedges can be used in any orientation.
- In instances where the tool is used for separating a pipe flange, for example to replace the gasket, it is often advantageous to use two spreading wedges opposite each other controlled by the same pump (SJS10-TK), refer to Fig 4.
- Be aware that as the tool expands, the wedge protrudes out of the end of the tool as shown in the diagram. The maximum protrusion of this wedge is 49mm. Ensure there will be no obstruction beyond the tips of the jaws as the tool is operated. This will damage the tool and the equipment being worked upon.

Fig 4

Ensure that the wedge step is inserted as far as possible into the components to be separated. **Do not** hammer the tool into a gap which is too small.

Operate the pump to expand the wedge, refer to Fig 5 & 6. When using the SJS10-TK ensure that both valves are fully open on the manifold prior to operating the pump. During advancing if one spreader advances quicker than the other then adjust the valve on the spreader that is advancing quicker to restrict the oil flow to ensure they advance evenly, refer to Fig 3 & 5.

Fig 5

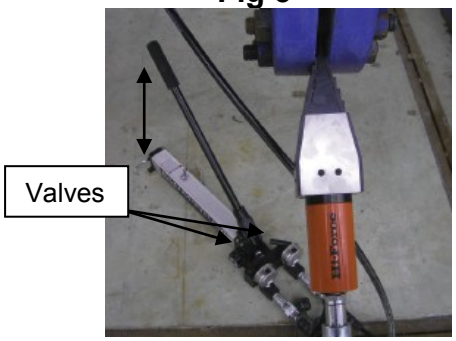
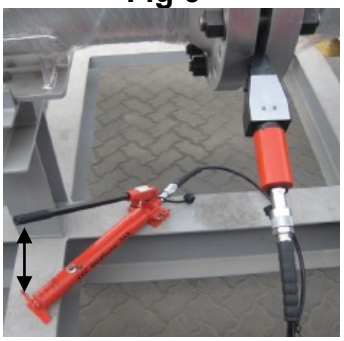


Fig 6



Insert a safety block into the gap and release hydraulic pressure so the gap is held open by the safety block whenever it is required to work within the opened space. When using the SJS10-TK ensure that both safety blocks are in place prior to releasing the pressure. **Do not** rely on hydraulic means to keep a gap open.

Keep fingers and other body parts clear of closing gaps as the wedge contracts.

When it is necessary to increase the spreading capacity of the tool, one or two stepped blocks can be added as required (one each side as shown in Fig 1). Attach the stepped blocks with fixing screws as shown.

Note: in certain circumstances when the hydraulic pressure is released and the tool is under external load, the tool will not retract. A gentle blow on the side of the wedge from a soft mallet is usually enough to free up the tool. If this occurs repeatedly it may be that the wedge is un-lubricated or possibly has been damaged in use.

CARE AND MAINTENANCE

Before each use fully expand the tool and grease the exposed protruding wedge surfaces with molybdenum disulphide grease. This will help to ensure smooth operation and prolong the life of the tool.

Always use genuine Hi-Force hydraulic oil. The use of other fluids may invalidate your warranty.

After use, always fully retract the tool. When hoses are disconnected, always fit dust caps to couplers.

Protect tools from the elements when not in use. If storing for prolonged periods, grease exposed metal parts. Never store the tool in an expanded condition.

To protect your warranty, have your equipment serviced and repaired by an authorised Hi-Force repairer. Only use genuine Hi-Force spare parts. Spare parts sheets can be downloaded from our website www.hi-force.com

TROUBLESHOOTING

Refer to the following table to help identify the most common faults:-

PROBLEM	POSSIBLE CAUSE
Tool will not expand.	Coupler not fully tightened Pump release valve open Pump oil level too low Pump malfunctioning Pump pressure relief valve set too low Load too great for tool Tool already at full stroke
Tool only advances part way	Pump oil capacity insufficient External obstruction
Tool does not advance smoothly.	Air in system
Tool advances but will not hold load.	Leaking seals Pump or valve malfunctioning Leaking connection
Tool leaking	Cylinder damage Seal damage Loose connection
Tool slow to retract/does not retract	Broken retract spring Damaged wedge Valve malfunction Coupler not fully tightened

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