

Prepared by:-	Mark Dalley	Approved by:-	Matthew Hughes	Date: 12/10/2012
REV NO:-002				
ECO:- 3936				

This operating and safety instruction manual covers both the HFS50H and HFS100H. For these models there is a choice of two kits. The HFS kit is a single spreader complete with pump and accessories and the HFS-TK kit is a twin spreader arrangement incorporating two flange spreaders operated from a single pump with a T-piece and twin hose connection (Fig 2).

### **INSPECTION UPON RECEIPT OF GOODS**

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

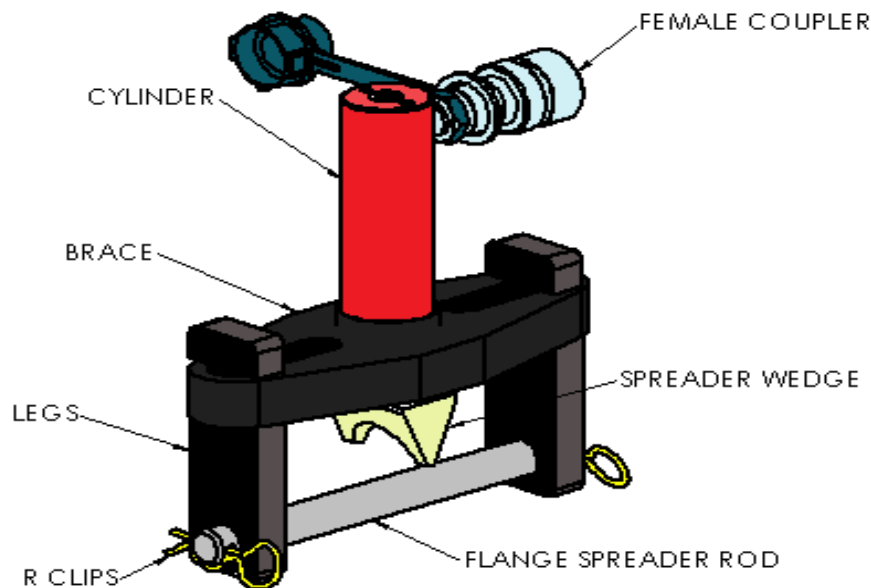
Hi-Force does not necessarily know the circumstances of use of a particular tool. Always refer to operating instructions for pumps, valves etc. used with the tool. If in doubt please consult your Hi-Force distributor.

### **SAFETY**

#### **READ THESE INSTRUCTIONS AND SAFETY WARNINGS FULLY. FAILURE TO DO SO COULD RESULT IN DEATH, PERSONAL INJURY OR EQUIPMENT DAMAGE**

- 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 a safety block to keep a joint open.
- Do not exceed rated capacity of the tool. Hi-Force HFS tools are designed for 700Bar maximum working pressure. Do not connect to a pump with a higher rated pressure.
- Ensure that all components in the system are rated for 700Bar.
- 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](http://www.hi-force.com)

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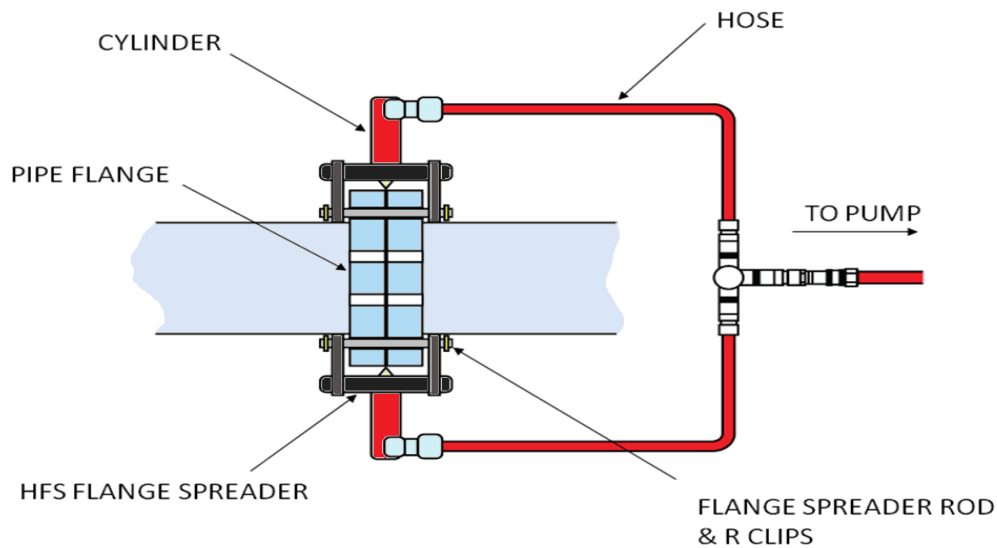
**Fig 1: Identification of components**

### **CONNECTION AND BLEEDING**

- 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.
- Connect hoses between the tool and pump ensuring that the couplers, where used are fully tightened – by hand only. A loose coupler will slow or stop the oil flow and is the most common cause of faulty operation.
- 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. Locate cylinder below the pump with the wedge pointing downwards (coupler uppermost) Operate the pump to fully extend and retract the tool several times.

**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.

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**Fig 2: Set up when used as a twin spreader kit**

## **OPERATION**

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

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 (HFS-TK). Please consult your distributor for details.

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

1. Ensure pipe flange is safe to work on.
2. Loosen all bolts in the flange and remove at least one completely, for a twin spreader arrangement (Fig 2) remove two. Note that in some cases it is necessary to remove all bolts depending on the nature of the work being carried out, but it is often beneficial to leave 1 or 2 in place to assist with re-alignment. Consult qualified personnel to determine the appropriate procedure.
3. Align the HFS Flange spreader with the empty bolt hole and fit the flange spreader rod and secure with R clips (Fig 2).
4. Connect pump hose - for a two spreader arrangement (Fig 2), for a single spreader arrangement only one continuous hose would be required between the pump and the spreader.
5. Align the tapered sides of the wedge with the gap in the flange and operate the pump until the wedge contacts the flange faces. It is beneficial to lubricate the faces of the wedge if permissible in the work area to reduce the effort required.

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- Operate the pump to force the joint apart. Do not force the wedge into the joint beyond the tapered faces as this has no beneficial effect and can make the tool hard to remove.
- To withdraw the tool from the joint open the hand pump valve and the wedge will retract (spring assisted return cylinder). Once retracted and the spreader is loose uncouple the hydraulic hose and then release the R clip and remove the spreader.

### **CARE AND MAINTENANCE**

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

To protect your warranty, have your cylinder 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](http://www.hi-force.com)

### **TROUBLESHOOTING**

Refer to the following table to help identify the most common faults.

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>
Tool will not extend.	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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