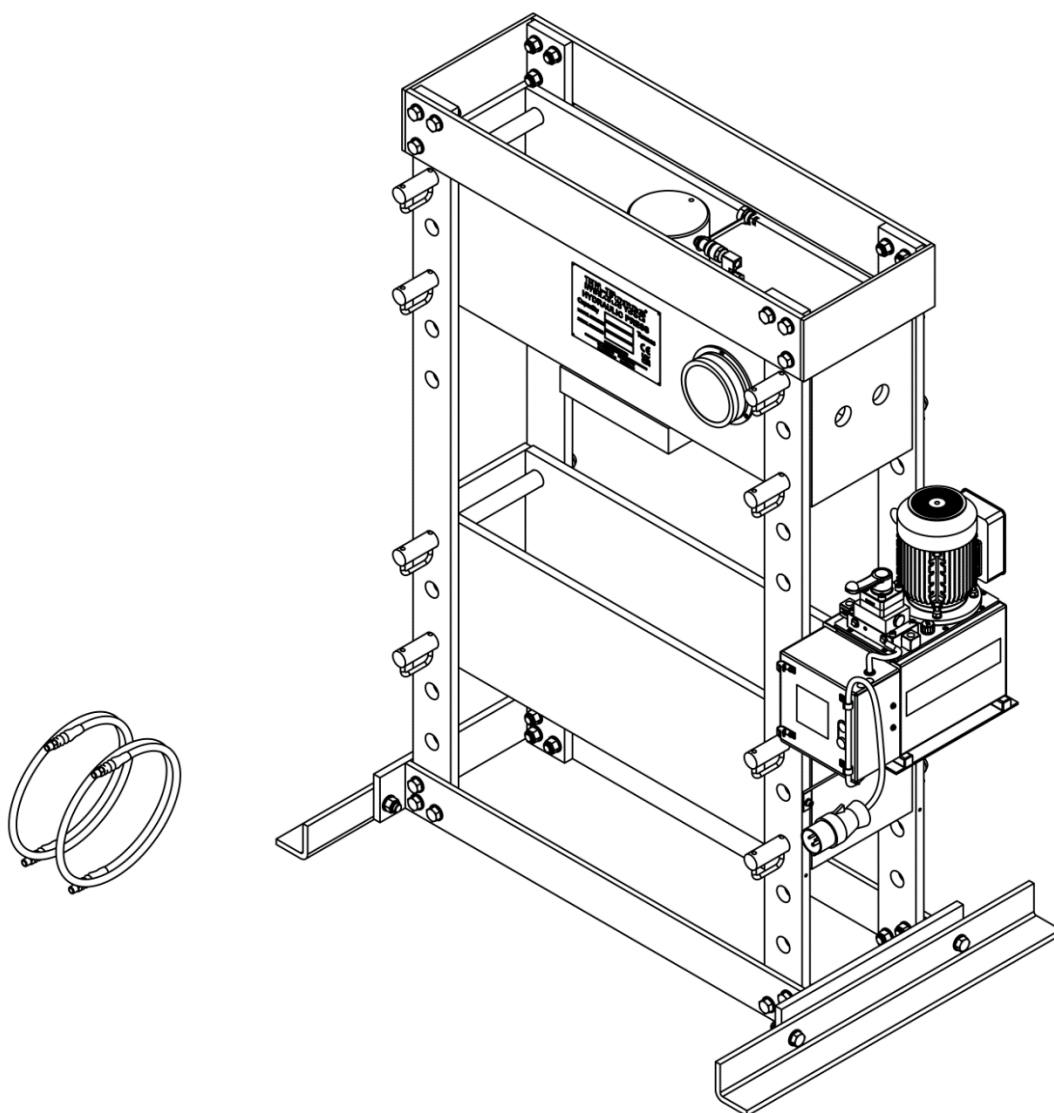


This 'original instructions' document assumes that the operator carrying out any operation with this product is trained and competent to do so. This manual does not attempt to cover all details or variations in the equipment. Nor does this manual claim to provide for every possible contingency met in connection with the installation, operation, or maintenance thereof. Should further information be desired, or should a particular problem arise which is not covered in sufficient detail, the matter should be referred to Hi-Force.

## **OPERATING INSTRUCTION MANUAL**

### **HPF SERIES | HYDRAULIC WORKSHOP PRESSES**



Hi-Force HPF Workshop Presses come in multiple configurations, suitable for a wide variety of pressing applications. They are designed to operate at a maximum working pressure of 700Bar. This manual applies to the Hi-Force HPF series of Hydraulic Workshop Presses. It contains the latest product information available at the time of publication and approval. Hi-Force reserves the right to make changes to this document at any time without notice.

## Table of Contents

<b>1.0 Inspection upon Receipt .....</b>	<b>3</b>
<b>2.0 Safety Precautions.....</b>	<b>3</b>
2.1 Introduction.....	3
2.2 General Hydraulic System Safety Precautions.....	3
2.3 Hydraulic Press Specific Safety Precautions .....	5
<b>3.0 Declaration of Incorporation / Conformity .....</b>	<b>6</b>
<b>4.0 Component Identification.....</b>	<b>6</b>
<b>5.0 Installation/Setup .....</b>	<b>7</b>
5.1 Before First Use.....	7
5.2 Placing the Press ( <i>Prior to use</i> ).....	7
5.3 Adjusting the Press Bed/Head Position ( <i>Prior to use</i> ).....	7
<b>6.0 Operation.....</b>	<b>8</b>
<b>7.0 Maintenance and Storage .....</b>	<b>8</b>
<b>8.0 Specifications.....</b>	<b>9</b>
8.1 Oil Specifications.....	9
Refer to the relevant pump and cylinder operating instructions for oil specification. .	9
8.2 HPF Specifications .....	9
<b>9.0 Accessories.....</b>	<b>11</b>
<b>10.0 Trouble Shooting .....</b>	<b>12</b>

## 1.0 Inspection upon Receipt

Upon receipt of the product, visually inspect the item for any evidence of shipping damage. Please note: the warranty does not cover shipping damage. Notify the courier immediately if shipping damage is found and refrain from putting the product into service. The carrier is responsible for repair and replacement costs resulting from damage that occurred in transit.

## 2.0 Safety Precautions

### 2.1 Introduction



Read and follow all the instructions and safety warnings carefully before handling, installation or use of any hydraulic equipment. Failure to do so could lead to equipment damage, equipment failure, personal injury or even death. Hi-Force will not be held responsible for any damage to the equipment, injury or death resulting from the unsafe use of, lack of maintenance to, or incorrect operation of the product. If in doubt on the correct use of any Hi-Force equipment, contact your nearest Hi-Force office or distributor. Only qualified personnel should be allowed to operate hydraulic equipment. If an operator has not been trained on high-pressure hydraulic equipment and its safe usage, consult your local Hi-Force sales office or distributor who can offer training courses for operators.

### 2.2 General Hydraulic System Safety Precautions



**WARNING!** Failure to observe and obey the following safety precautions could result in property damage, significant personal injury or death;



- When operating any hydraulic equipment, all operators should ensure that all necessary personal protective equipment (PPE) is worn, as specified by their employer. Steel toe-cap safety shoes, safety glasses/visor, and protective gloves should be worn at all times. All relevant risk assessments should be completed before the use of the equipment.
- Keep hydraulic equipment away from open flames and direct heat.
- **NEVER** handle a pressurised hydraulic hose. Hydraulic oil escaping under pressure from a ruptured hose can penetrate the skin and lead to a significant medical emergency, and in some cases, death. Should this incident occur, seek out medical attention immediately.
- The system operating pressure **MUST NOT** exceed the pressure rating of the lowest-rated component in the system. It is good practice to use a pressure gauge to monitor the entire system.
- Only use hydraulic cylinders in a complete and tested, coupled system. **NEVER** attempt to use a cylinder that is not correctly coupled to its operational pump. **NEVER** pressurise uncoupled couplers.
- **NEVER** attempt to disconnect a hose from a hydraulic system until the systems pressure has been completely released. Doing so can result in that pressure becoming trapped in the system and relieving trapped pressure can be dangerous.

- **NEVER** try to relieve trapped hydraulic pressure in the system by loosening or attempting to remove the coupler. Trapped hydraulic pressure can cause a loosened coupler to dislodge unexpectedly with great force. This action could result in serious personal injury or death, as the coupler could become a projectile and hit operatives in the working area.
- Loosening a coupler under pressure can result in the escape of hydraulic oil at high pressure, which can penetrate the skin and cause significant injury or death.
- **NEVER** use a hammer and punch to unseat a coupler check valve that is under pressure. Doing so could result in the sudden, uncontrolled release of hydraulic oil at high pressure, which could cause significant injury or death.
- Immediately replace any worn or damaged parts using genuine Hi-Force parts only.
- **DO NOT** remove any labels from the product. Replace any damaged or unreadable label immediately.



## CAUTION!

Failure to observe and obey the following safety precautions could result in property damage, equipment damage or minor/moderate personal injury;

- **NEVER** lift or carry any hydraulic components by the hose or hoses connected to them.
- Avoid damaging hydraulic hose. **ALWAYS** route hoses to ensure that they are free from sharp bends and kinks. Using a bent or kinked hose will result in severe back-pressure, which can lead to hose failure.
- **ALWAYS** operate the system under no-load conditions before the actual operation, to ensure there is no air trapped in the hydraulic circuit.
- Servicing of hydraulic equipment must only be undertaken by a qualified technician.



- **DO NOT** drop or place heavy objects on a hydraulic hose, as this may cause internal damage, which could result in rupture of the pressurised hose. A ruptured hose could cause significant damage to components and possible severe injury to personal operating nearby.

## 2.3 Hydraulic Press Specific Safety Precautions



### **WARNING!**

Failure to observe and obey the following safety precautions could result in property damage, serious personal injury or death;

- **DO NOT** weld any items to the press or modify it in any way from its delivered condition. Your warranty may be invalidated, and it could lead to serious personal injury.
- **NEVER** exceed the maximum rated capacity of any hydraulic press. Hi-Force manufactures its hydraulic press components to operate at a maximum working pressure of 700 BAR (10,000 PSI).
- Ensure that all body parts are clear of the press cylinder and workpiece during operation of the press. Extra care is required when more than one person is in the work area. Maintain adequate communication between personnel.
- Monitor the pressure gauge constantly to keep track of the load being applied.
- Make sure the press bed and press head are fully supported by the load pins and that the 'R' clips are fitted to the load pins to prevent accidental movement.
- **DO NOT** attempt to remove the load pins with the press in operation.
- The press bed and head are heavy items. Suitable lifting/ handling equipment should be employed when adjusting the working height.
- **ALWAYS** ensure that work pieces are adequately supported and cannot move laterally under load. V-blocks are available as an optional extra to restrain cylindrical work pieces.
- **ALWAYS** ensure that the load is applied vertically through the work piece.
- Hydraulic presses present a projectile hazard. This can be the result of a workpiece that has been incorrectly loaded and ejected from the press or as a result of a workpiece fracturing under stress. **ALWAYS** make sure you are wearing the correct safety equipment and that appropriate guards are in place.
- Only use press accessories with a capacity rating greater than or equal to that of the press.



### **CAUTION!**

Failure to observe and obey the following safety precautions could result in property damage, equipment damage or minor/moderate personal injury;

- **BEWARE** of hot surfaces on the motor. Do not obstruct the flow of cooling air around the motor.
- To protect your warranty, only use the hydraulic oil grade as specified in the relevant pump operating instruction.

### 3.0 Declaration of Incorporation / Conformity

Hi-Force declares that this product has been tested and complies with the standards set out in the relevant EU directives. The EU Declaration of Incorporation / Conformity is included as Annex A to this instruction document and is supplied with all shipments of this product.

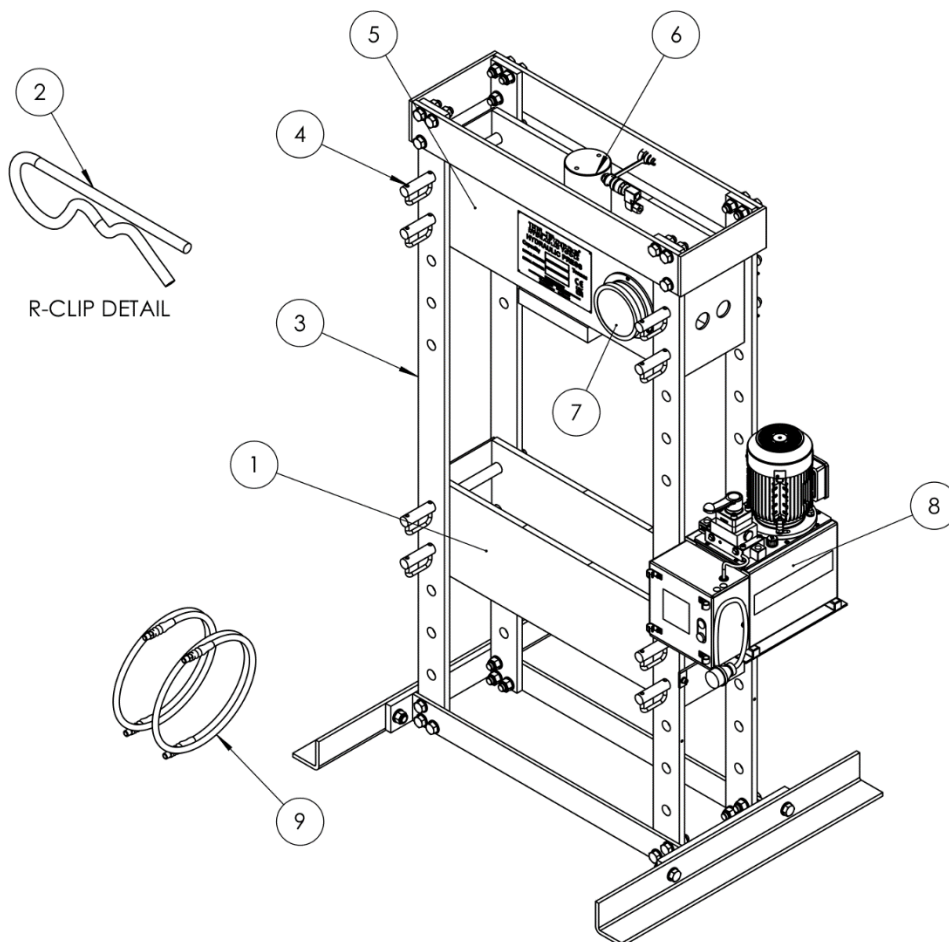
### 4.0 Component Identification

No.	Description	No.	Description
1	Press Bed	6	Hydraulic Cylinder*
2	'R' Clip	7	Pressure Gauge
3	Press Upright	8	Pump Unit**
4	Load Pin	9	Hoses***
5	Press Head	-	

\* Type Varies (See section 8.2)

\*\* Type Varies (See section 8.2)

\*\*\* 1 or 2 Depending on pump and cylinder (See Section 8.2)



## 5.0 Installation/Setup

### 5.1 Before First Use

1. Place press in position securely.
2. Refer to required pump operating instruction for installation/setup.

### 5.2 Placing the Press (*Prior to use*)

Make sure the appropriate lifting equipment (e.g. Forklift, crane) is on hand when unloading and positioning the press.

**NOTE:** Hydraulic presses have a relatively high centre of gravity and are therefore at increased risk of toppling when being moved. Ensure all risks are identified and all necessary safety measures / safeguards (e.g. strapping/rigging) are in place prior to any lifting and moving.

The press should be installed in a restricted access area and adequate barriers / guarding should be employed to prevent unauthorised approach and protection during use.

Install the press on a firm, level surface. Should the work to be carried out on the press include large or irregular items which could affect its stability, the press should be permanently fixed to the floor by a suitable means.

### 5.3 Adjusting the Press Bed/Head Position (*Prior to use*)

1. Before making any adjustments to the position of the bed or head, make sure the cylinder piston is fully retracted, the system has been full depressurised and the pump is switched off.
2. Support the press bed (1) and/or press head (5) with suitable lifting equipment.

**NOTE:** If the press bed (1) and/or press head (5) has not been moved in some time, it may be necessary to free it from the load pins (4) and/or the press uprights (3) by gently tapping with a rubber mallet.

3. Remove the 'R' Clips (2) that lock the load pins in place.
4. Pull out the load pins (4).
5. Adjust the press bed (1) and/or press head (5) vertically to suit the job. Take care when raising or lowering the press bed (1) and/or press head (5) that it does not become jammed between the press uprights, or any other obstruction.
6. Replace load pins (4).
7. Replace 'R' Clips (2).
8. Remove lifting equipment.



## 6.0 Operation

Operation of the press is dependent upon its specific configuration (i.e. the type/model of cylinder and pump used).

A general operating procedure, covering the basic operation of a press, is described below. For fully comprehensive safety and operating instructions for the press pump and cylinder, refer to their corresponding operating manuals.

Pump and cylinder models can be identified using the press model number. Refer to section 8.2 for HPF Press, model identification and specifications. The pump model can also be identified by the nameplate on the pump and the cylinder model by the engraved detail on the cylinder. The relevant Hi-Force pump and cylinder operating instruction manuals will be supplied with the press and can also be downloaded from the Hi-Force website.

### **General Operation:**

1. Load the component onto the press bed. Make sure it is properly supported (if necessary) and properly positioned so that the load will be applied vertically through the workpiece.
2. Advance the cylinder by operating the pump until the cylinder engages the component, and the required load is achieved, and displayed on the pressure gauge. The applied load can be held at the required pressure, through the pump (if required).
3. Retract the cylinder by operating the pump.

**IMPORTANT: ALWAYS** fully retract the cylinder at the end a job/operation.

## 7.0 Maintenance and Storage

- Regularly inspect the press frame for signs of damage, and check that all frame bolts are tight and secure. Should damage be found, remove the press from operation until it has been serviced/repared and returned to its correct operating condition. **NB:** Servicing/repair of hydraulic equipment must only be undertaken by a qualified technician using genuine Hi-Force parts.
- Lubricate any moving parts (where fitted), as needed.
- Prevent corrosion by touching-up or repainting segments of the frame where paintwork has been badly chipped or worn, exposing bare metal.
- Maintain the press pump, and cylinder as detailed in their corresponding operating manuals.
- Should the press be placed into long term storage, fully depressurise the system and disconnect all hoses. Fit dust caps to all disconnected couplers. Place and secure the press bed and head (if possible) in their lowest position.



## 8.0 Specifications

An average A-Weighted sound pressure level of 75dB was measured for undefined workspaces, as per EU Directive 2006/42/EC Section 1.7.4.2 (u).

### 8.1 Oil Specifications

Refer to the relevant pump and cylinder operating instructions for oil specification.

### 8.2 HPF Specifications

Refer to the nameplate on the press for model identification.

For pump electrical characteristics refer to the relevant pump operating manual.

Model Number	Capacity (tonnes)	Stroke (mm)	Cylinder Model	Cylinder Principle	Pump Model	Pump Operation	Weight (kg)
HPF1020	10	250	HSS1010	single acting	HP110	single acting hand pump	180
HPF1030	10	250	HSS1010	single acting	AHP1120	single acting air foot pump	180
HPF2520	25	250	HSS2510	single acting	HP227	single acting hand pump	180
HPF2530	25	250	HSS2510	single acting	AHP1120	single acting air foot pump	180
HPF2541	25	250	HSS2510	single acting	HPF207311	110v 50hz, 3 - way valve	210
HPF2541H	25	250	HSS2510	single acting	HPF207311H	120v 60hz, 3 - way valve	210
HPF2542	25	250	HSS2510	single acting	HPF207312	230v 50hz, 3 - way valve	210
HPF2542H	25	250	HSS2510	single acting	HPF207312H	220v 60hz, 3 - way valve	210
HPF2544	25	250	HSS2510	single acting	HPF207314	400v 50hz/460v 60hz, 3 - way valve	210
HPF2541S	25	250	HSS2510	single acting	HPF207311S	110v 50hz, solenoid 3 - way valve	210
HPF2541HS	25	250	HSS2510	single acting	HPF207311HS	120v 60hz, solenoid 3 - way valve	210
HPF2542S	25	250	HSS2510	single acting	HPF207312S	230v 50hz, solenoid 3 - way valve	210
HPF2542HS	25	250	HSS2510	single acting	HPF207312HS	220v 60hz, solenoid 3 - way valve	210
HPF2544S	25	250	HSS2510	single acting	HPF207314S	400v 50hz/460v 60hz, solenoid 3 - way valve	210
HPF5020	50	330	HDA5013	double acting	HP252D	double acting hand pump	520
HPF5041	50	330	HDA5013	double acting	HPF207411	110v 50hz, 4 - way valve	550
HPF5041H	50	330	HDA5013	double acting	HPF207411H	120v 60hz, 4 - way valve	550
HPF5042	50	330	HDA5013	double acting	HPF207412	230v 50hz, 4 - way valve	550
HPF5042H	50	330	HDA5013	double acting	HPF207412H	220v 60hz, 4 - way valve	550
HPF5044	50	330	HDA5013	double acting	HPF207414	400v 50hz/460v 60hz, 4 - way valve type	550
HPF5041S	50	330	HDA5013	double acting	HPF207411S	110v 50hz, solenoid 4 - way valve	550
HPF5041HS	50	330	HDA5013	double acting	HPF207411HS	120v 60hz, solenoid 4 - way valve	550
HPF5042S	50	330	HDA5013	double acting	HPF207412S	230v 50hz, solenoid 4 - way valve	550
HPF5042HS	50	330	HDA5013	double acting	HPF207412HS	220v 60hz, solenoid 4 - way valve	550
HPF5044S	50	330	HDA5013	double acting	HPF207414S	400v 50hz/460v 60hz, solenoid 4 - way valve	550
HPF10041	100	330	HDA10013	double acting	HPF207411	110v 50hz, 4 - way valve	1050
HPF10041H	100	330	HDA10013	double acting	HPF207411H	120v 60hz, 4 - way valve	1050
HPF10042	100	330	HDA10013	double acting	HPF207412	230v 50hz, 4 - way valve	1050

HPF10042H	100	330	HDA10013	double acting	HPF207412H	220v 60hz, 4 - way valve	1050
HPF10044	100	330	HDA10013	double acting	HPF207414	400v 50hz/460v 60hz, 4 - way valve	1050
HPF10041S	100	330	HDA10013	double acting	HPF207411S	110v 50hz, solenoid 4 - way valve	1050
HPF10041HS	100	330	HDA10013	double acting	HPF207411HS	120v 60hz, solenoid 4 - way valve	1050
HPF10042S	100	330	HDA10013	double acting	HPF207412S	230v 50hz, solenoid 4 - way valve	1050
HPF10042HS	100	330	HDA10013	double acting	HPF207412HS	220v 60hz, solenoid 4 - way valve	1050
HPF10044S	100	330	HDA10013	double acting	HPF207414S	400v 50hz/460v 60hz, solenoid 4 - way valve	1050
HPF20041	200	305	HDA20012	double acting	HPF207411	110v 50hz, 4 - way valve	3250
HPF20041H	200	305	HDA20012	double acting	HPF207411H	120v 60hz, 4 - way valve	3250
HPF20042	200	305	HDA20012	double acting	HPF207412	230v 50hz, 4 - way valve	3250
HPF20042H	200	305	HDA20012	double acting	HPF207412H	220v 60hz, 4 - way valve	3250
HPF20044	200	305	HDA20012	double acting	HPF207414	400v 50hz/460v 60hz, 4 - way valve	3250
HPF20041S	200	305	HDA20012	double acting	HPF207411S	110v 50hz, solenoid 4 - way valve	3250
HPF20041HS	200	305	HDA20012	double acting	HPF207411HS	120v 60hz, solenoid 4 - way valve	3250
HPF20042S	200	305	HDA20012	double acting	HPF207412S	230v 50hz, solenoid 4 - way valve	3250
HPF20042HS	200	305	HDA20012	double acting	HPF207412HS	220v 60hz, solenoid 4 - way valve	3250
HPF20044S	200	305	HDA20012	double acting	HPF207414S	400v 50hz/460v 60hz, solenoid 4 - way valve	3250

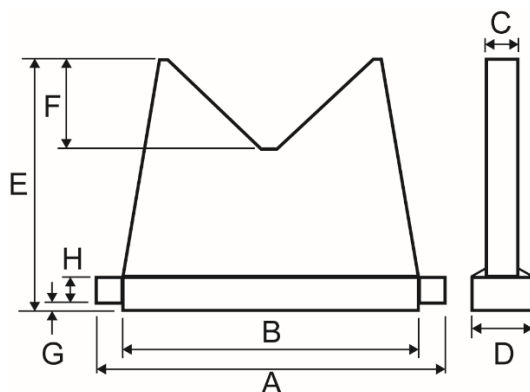
## 9.0 Accessories

### V-Blocks

Multi-position V-blocks with flat bed and V-shaped press surfaces.

Available as standard for 10, 25, 50 and 100 tonne presses.

V-BLOCKS									
Model Number	Capacity per Set (tonnes)	Dimensions (mm)							
		A	B	C	D	E	F	G	H
HVB2500	10-25	204	154	20	45	155	45	8	20
HVB5000	50	246	206	25	50	190	60	10	25
HVB10000	100	326	276	35	60	265	85	10	35



## 10.0 Trouble Shooting

Hi-Force HPF hydraulic workshop presses should be serviced and repaired only by a qualified technician using genuine Hi-Force parts. The following table gives possible causes and solutions for common problems.

For further troubleshooting advice relating to the components in the hydraulic system, refer to the relevant pump or cylinder operating instructions manual.

TROUBLESHOOTING GUIDE		
Problem	Possible Cause	Solution
1. Load pins cannot be, or are difficult to remove.	a. 'R' Clips still engaged.	Remove 'R' Clips
	b. Load pin/s and bed/upright have become temporarily bonded over time.	Use a rubber mallet or similar to gently strike the load pin and un-bond it from the frame/bed.
2. Press bed/head has become jammed/stuck while adjusting its position.	a. Obstruction between bed/head and frame.	i. Identify the obstruction. ii. Slowly relieve the tension/pressure being applied by the lifting device used to move the bed/head. iii. If the bed remains jammed on the obstruction, use a rubber mallet or similar to gently strike the bed/head and free it from the obstruction. iv. Remove the obstruction, check the press for signs or damage and continue the bed adjustment when safe to do so.
	b. Bed/head has been lifted/lowered at an angle and become jammed on the frame uprights.	i. Identify the high side of the bed/head. (See note below) ii. Slowly release the tension/pressure applied by the lifting device being used to move the bed/head. (High side only) iii. If the bed remains jammed on the frame, use a rubber mallet or similar to gently strike the bed/head and free it from the frame. iv. Level out the bed/head and continue with the adjustment.
3. Cracked, distorted or damaged structural member.	a. Maximum rated capacity exceeded. b. Press not set or adjusted correctly.	Cease all operation immediately and contact your local Hi-Force Office / Distributor.
4. Loose frame structure	a. Loose or missing structural bolt	Tighten or replace immediately.

**NOTE:** When the bed/head is lifted or lowered at an angle and becomes jammed, the bed/head will be caught on the frame in 2 places, diagonally opposite. Identify the highest point on the bed/head.

**IMPORTANT:** When freeing a bed/head that has become jammed, make sure that it is fully supported and that the bed/head cannot fall uncontrolled, thereby damaging the press or shock loading the lifting device.

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