

# Instruction Manual

## HHP-8 Mechanical Wedge Spreader HHP-1481 Hydraulic Wedge Spreader



## 1.0 RECEIVING INSTRUCTIONS

Visually inspect all components for shipping damage. Shipping damage is not covered by warranty. If shipping damage is found notify carrier at once. The carrier is responsible for all repair and replacement costs resulting from damage in shipment.

## SAFETY FIRST

Read all instructions, warnings and cautions carefully. Follow all safety precautions to avoid personal injury or property damage during system operation.

A **CAUTION** is used to indicate correct operating or maintenance procedures and practices to prevent damage to, or destruction of equipment or other property.

A **WARNING** indicates a potential danger that requires correct procedures or practices to avoid personal injury.

## 2.0 SAFETY ISSUES



Failure to comply with the following cautions and warnings could cause equipment damage and personal injury.



**IMPORTANT:** Minimum age of the operator must be 18 years. The operator must have read and understood all instructions, safety issues, cautions and warnings before starting to operate the equipment. The operator is responsible for this activity towards other persons.



**WARNING:** To avoid personal injury and possible equipment damage, make sure all hydraulic components withstand the maximum pressure of 700 bar [10,000 psi].



**IMPORTANT:** Minimize the risk of overloading. Use hydraulic gauges in each hydraulic system to indicate safe operating loads. It is your window to what is happening in the system.



**WARNING:** Do not overload equipment. Overloading causes equipment failure and possible personal injury.



**CAUTION:** Make sure that all system components are protected from external sources of damage, such as excessive heat, flame, moving machine parts, sharp edges and corrosive chemicals.



**CAUTION:** Avoid sharp bends and kinks that will cause severe back-up pressure in hoses. Bends and kinks lead to premature hose failure.



**WARNING:** Immediately replace worn or damaged parts.



**WARNING:** Always wear safety glasses. The operator must take precaution against injury due to failure of the tool or workpiece



**DANGER:** Do not handle pressurized hoses. Escaping oil under pressure can penetrate the skin, causing serious injury. If oil is injected under the skin, see a doctor immediately.



**WARNING:** Never pressurize uncoupled couplers. Only use hydraulic equipment in a coupled system.



**IMPORTANT:** DO not lift hydraulic equipment by the hoses or couplers. Use the carrying handle or other means of safe transport.



**WARNING:** Never place fingers in a joint held by activated wedge unless a safety block is located into the joint.



**CAUTION:** The handle of the wedge is there to stop operators holding spread plates as the wedge is retracted. This will stop fingers becoming jammed between plates.



**CAUTION:** Never hammer or force wedge to access gap.



**CAUTION:** Don't operate the equipment without lubricating the wedge and the 4 slide pins. Use high quality grease.

### 3.0 PRODUCT DESCRIPTION

The wedge spreader HHP-8 is a manual operated tool. The wedge spreader HHP-1481 is a hydraulic operated tool. Both wedge spreaders use the integrated wedge concept. They are used to spread flanges in order to create space for cleaning and repairing flange surfaces and gasket replacement.

The HHP-8 is actuated by a ratchet spanner. The HHP-1481 is actuated by a single acting cylinder. The HHP-1481 must be powered by an 700 bar hand pump.

### 3.1 Applications

Wedge spreaders can be used for: pipe and flange repair, removing of elbows, couplers, gasket and metal seals replacement, maintenance/ replacement of valve and control equipment.

### 4.0 OPERATING INSTRUCTIONS

It is recommended that two wedges be used in tandem. This will give an even spread to the joint. The wedges should be set at 180° apart (see fig. 1).

Fig. 1a HHP-8

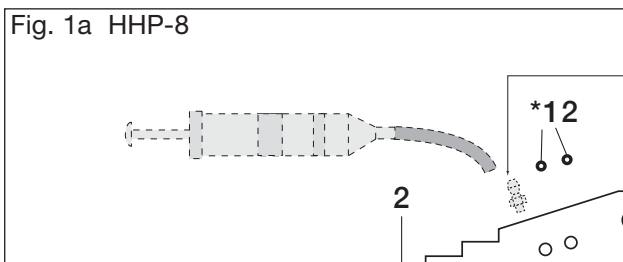
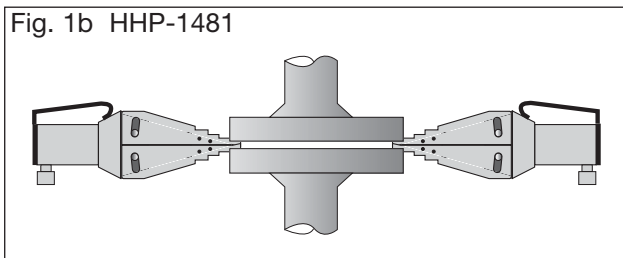


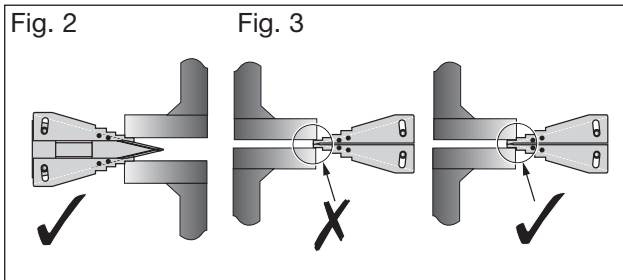
Fig. 1b HHP-1481



The wedge should be used only if the full step area is located into the gap, and the object requiring spreading is in contact with the heel of the next step (see fig. 2).

Fig. 2

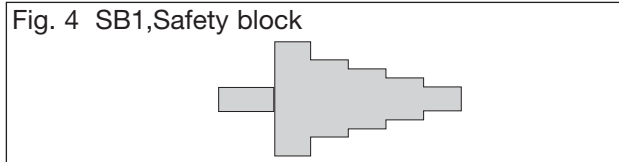
Fig. 3



**IMPORTANT:** Ensure wedge is fully located on the step selected to spread (see fig. 2 and 3). Minimum hold should be 15 mm.

**IMPORTANT:** The safety block (see fig. 4) may be inserted into the joint and the pressure released onto the block.

Fig. 4 SB1, Safety block



**IMPORTANT:** A fresh hold on a new step can then be chosen to open the joint further if required.

**IMPORTANT:** The operator must ensure that the wedge and the 4 slide pins are lubricated each and every time the equipment is used. This will give maximum efficiency and prolong the working life of the wedge.

**WARNING:** Never place fingers in a joint held by activated wedge unless a safety block is located into the joint.

**CAUTION:** The handle of the wedge is there to stop operators holding spread plates as the wedge is retracted. This will stop fingers becoming jammed between plates.

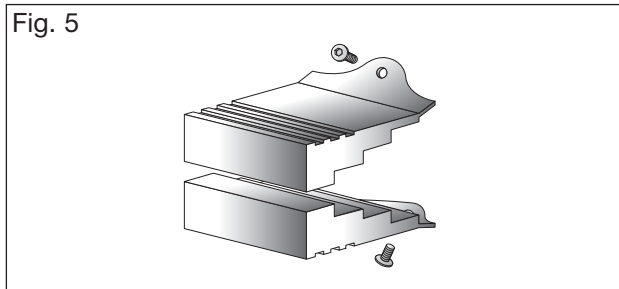
**CAUTION:** Never hammer or force wedge to access gap.

**CAUTION:** Don't operate the equipment without lubricating the wedge and the 4 slide pins.

### 5.0 USE OF STEPPED BLOCKS (FSB-1)

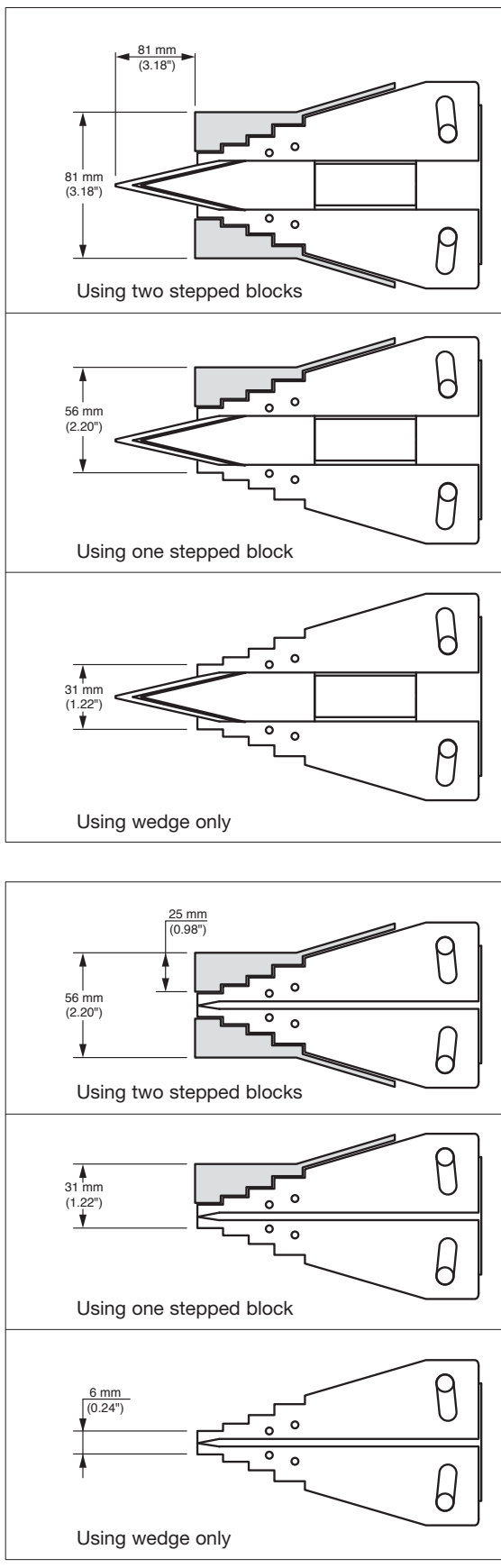
The maximum opening of the wedge spreaders can be increased from 61 to 81 mm when used in combination with the optional FSB-1 stepped blocks (see fig. 5 and 6).

Fig. 5



The FSB-1 give more access to replace ring joints, metal seals and cleaning of flange surfaces. The use of stepped blocks reduce the amount of penetration of the wedge point into the joint.

Fig. 6 Wedge head dimensions while using the FSB-1 stepped block(s).



When using stepped blocks ensure a hold of 15 mm minimum is obtained prior to spreading.

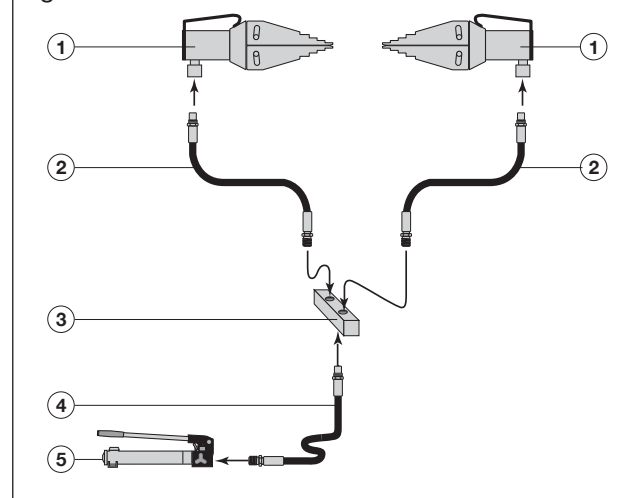
## 6.0 WEDGE USED IN TANDEM.

It is recommended that two wedge be used in tandem

This will give an even spread to the joint. The wedge should be set at 180° apart (see fig. 1).

Two hydraulic wedge spreaders can easy be used simultaneously when used in combination with hand pump, a split-flow manifold and hydraulic hose (see fi g. 7).

Fig. 7



- 1= HHP-1481
- 2= Hydraulic hose
- 3= Split-flow manifold
- 4= Hydraulic hose
- 5= Hand pump

## 6.1 Unique interlock Design

The unique shape and design of the teeth of the wedge accommodates high separating force, even at low-height of 6 mm for easy access.

**IMPORTANT:** Always engage fully to the heel of the step on the wedges. This ensures full grip when separating flanges.



**WARNING:** Do not exceed maximum force rating.



**CAUTION:** Do not use impact tool on screw bolt.

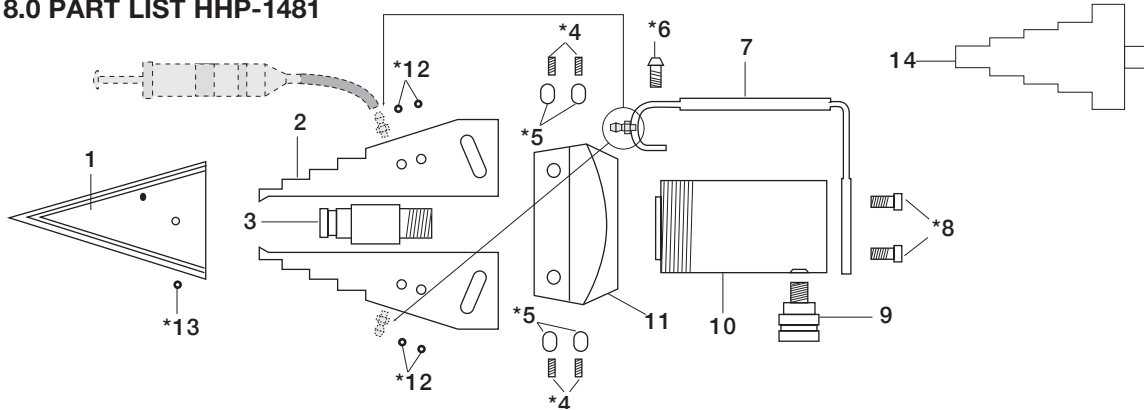
## 7.0 MAINTENANCE/ SERVICE

Regularly inspect all components to detect any problem requiring service and maintenance. To prolong the life of equipment, follow points below:

- Always clean and lubricate after usage.

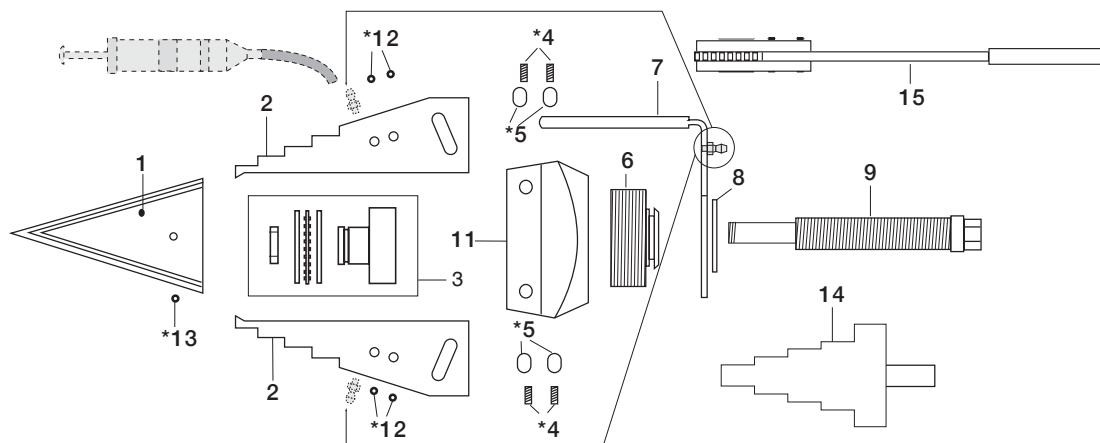
- Clean and grease contact surface between wedge and jaws with high quality grease.
- Grease the pins (No. 5)
- Keep pushrod (No. 9 of HHP-8) clean.

## 8.0 PART LIST HHP-1481



No.	Description	Qty.	No.	Description	Qty.
1.	Wedge	1	*8.	Base Screw	1 set of 2
2.	Jaws	1 set of 2	9.	Female Coupler	1
3.	Connector	1	10.	Cylinder	1
*4.	Set Screws	1 set of 4	11.	Body	1
*5.	Pin	1 set of 4	*12.	Split Pins	1 set of 8
*6.	Handle Screw	1	*13.	Set Screws	1 set of 2
7.	Handle	1	14.	Safety Block	1

## 9.0 PART LIST HHP-8



No.	Description	Qty.	Part No.	No.	Description	Qty.	Part No.
1.	Wedge	1	EN300101	8.	Circlip	1	EN302101
2.	Jaws	1 set of 2	EN300201	9.	Pushrod	1	EN301802SR
3.	Thrust Bearing Assy.	1	EN301802SR	11.	Body	1	EN301101
*4.	Set Screws	1 set of 4	*	*12.	Split Pins	1 set of 8	*
*5.	Pins	1 set of 4	*	*13.	Set Screw	1 set of 2	*
6.	Male/Female Coupling	1	EN301901	14.	Safety Block	1	SB1**
7.	Handle	1	EN302001	15.	Spanner	1	SW22**