



# RenQuip

## OPERATION MANUAL

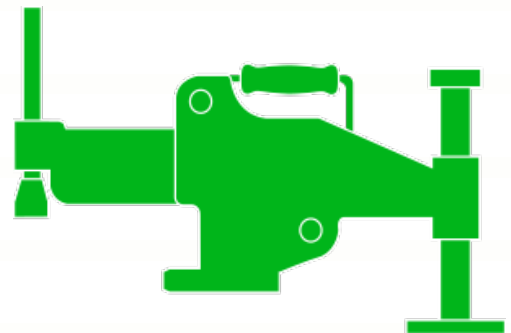
FSW17K

FSW17H

FSW17D

FSW17M

Hydraulic Flange  
Spreading Wedge



Engineered Energy Equipment

[www.renquip.com](http://www.renquip.com)



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## 1.0 Introduction

The RenQuip FSW range of Flange Spreading Wedges are designed to open flange joints with a minimum access gap of 6mm. The Jaws of the tools open in a parallel motion which maintains a safe, full step contact between the tool and the flange.

The parallel Jaw motion also ensures spreading forces are perpendicular to the flange face.

It is highly recommended that 2 or more Flange Spreading Wedges are used together to maintain a parallel Flange joint gap during spreading.

## 2.0 Safety Information

### User Safety



1. The User must be competent in Operating High Pressure Hydraulic Equipment.
2. The User must read and understand the relevant Instruction Manual for the Equipment.
3. The User must wear the correct Personal Protective Equipment .
4. Do not lift or hold pressurised equipment

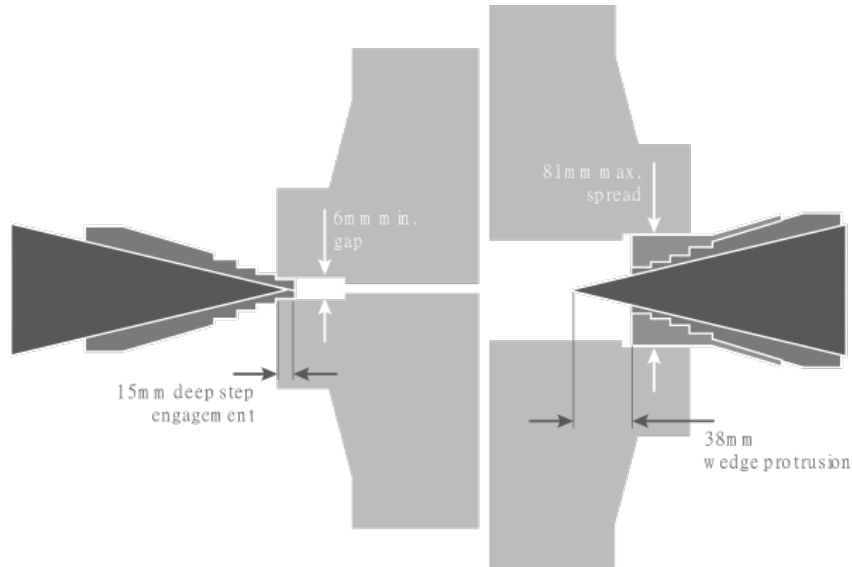
### Equipment Safety



1. Inspect all equipment prior to use for any signs of damage or wear.
2. Ensure all components have a safe working pressure of 10,000psi (700Bar).
3. Do not pressurise equipment over its safe working pressure.
4. Never insert fingers or hands into an open flange joint.
5. Ensure all couplers are fully connected before pressurising the system.
6. Ensure system is fully depressurised before disconnecting couplers.
7. Ensure the working area is free from hazards to the equipment such as sharp objects, heat sources , moving machinery or vehicles.
8. Carry / transport equipment by the handles / cases provided.
9. Store Equipment in a cool dry environment .
10. Ensure the correct oil is used in the hydraulic system and maintenance procedures are followed.

### 3.0 Technical Specification

#### Application Diagram



**Max Spreading Force: 163Kn**

**Max working Pressure : 10,000psi / 700 Bar**

#### **Model : FSW17RC**

**Kit weight:** 8Kg

**Kit Dims:** 305mm x 230mm x 130mm

**Tool Weight:** 7Kg

**Tool Dims:** 76mm x 155mm x 280mm

**Product ordering code:** FSW17RC

#### **Kit Content**

- 1 x FSW17RC Tool
- 1 x Safety Block
- 1 x Instruction Manual
- 1 x Cardboard Packaging



#### **Model : FSW17K**

**Kit weight:** 12Kg

**Kit Dims.:** 580mm x 340mm x 180mm

**Tool Weight:** 7Kg

**Tool Dims.:** 76mm x 155mm x 350mm

**Product ordering code:** FSW17K

#### **Kit Content**

- 1 x FSW17 Tool
- 1 x Safety Block
- 1 x Safety Lanyard
- 2x Stepped Blocks with securing screws and allen key
- 1 x Instruction Manual
- 1 x Robust moulded carry case



**Model : FSW17H**

**Kit weight:** 17Kg

**Kit Dims:** 580mm x 340mm x 180mm

**Tool Weight:** 7Kg

**Tool Dims:** 76mm x 155mm x 350mm

**Product ordering code:** FSW17H

**Kit Content**

- 1 x FSW17 Tool
- 1 x PH300S Hydraulic Hand Pump
- 1 x Hydraulic Pressure Gauge.
- 1 x 2M hydraulic Hose with couplers
- 1 x Safety Block
- 2 x Stepped Blocks
- 1 x Instruction Manual
- 1 x Cardboard Packaging



**Model : FSW17D**

**Kit weight:** 20Kg

**Kit Dims.:** 580mm x 340mm x 180mm

**Tool Weight:** 7Kg

**Tool Dims.:** 76mm x 155mm x 350mm

**Product ordering code:** FSW17D

**Kit Content**

- 2 x FSW17 Tool
- 2 x Safety Block
- 2 x Safety Lanyard
- 4x Stepped Blocks with securing screws and allen key
- 1 x Instruction Manual
- 1 x Robust moulded carry case



**Model : FSW17M**

**Kit weight:**  
31Kg

**Kit Dims.:**  
920mm x 510mm x 210mm

**Tool Weight:**  
7Kg

**Tool Dims.:**  
76mm x 155mm x 350mm

**Product ordering code:**  
FSW17M

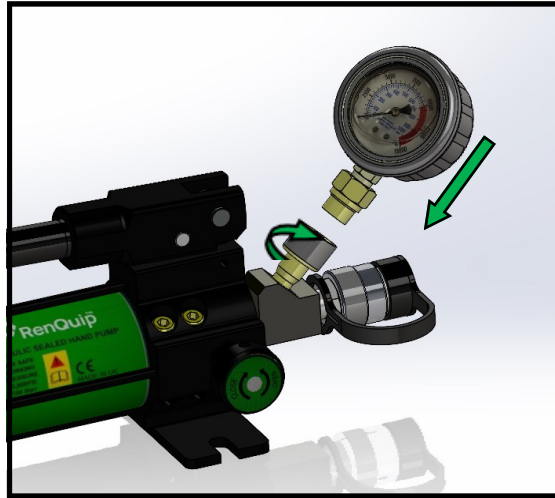
**Kit Content**

- 2 x FSW17 Tool
- 2 x Safety Block
- 2 x Safety Lanyard
- 4 x Stepped Blocks with securing screws and allen key
- 1 x PH300T Sealed Hydraulic Hand Pump with twin outlets and screw couplers.
- 2 x Hydraulic Pressure Gauges complete with gauge adaptors.
- 2 x 2M hydraulic hoses complete with screw couplers.
- 1 x Instruction Manual
- 1 x Robust moulded carry case

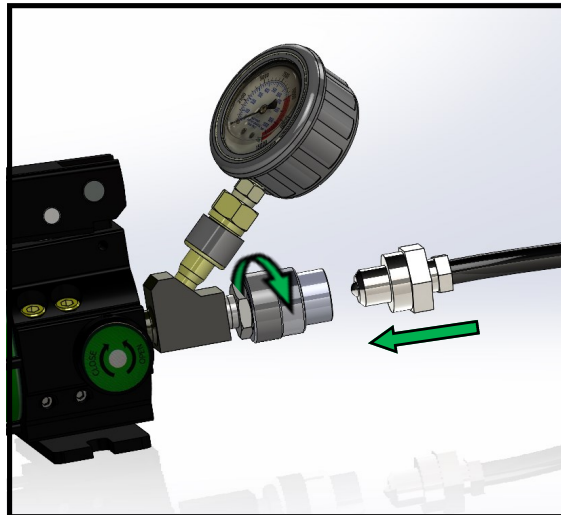


## 4.0 Operation of the FSW range

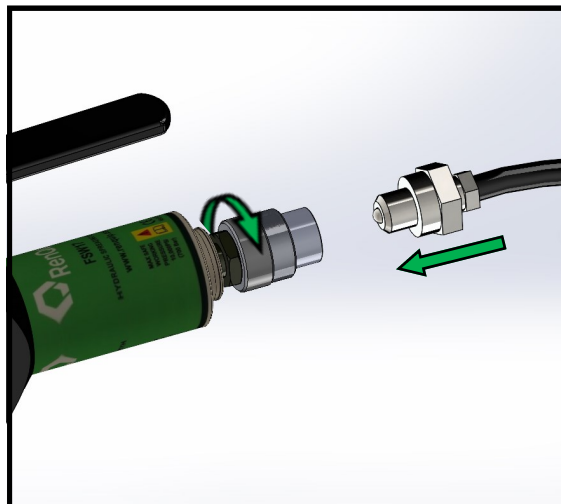
1. Connect the Gauge to the Pump.



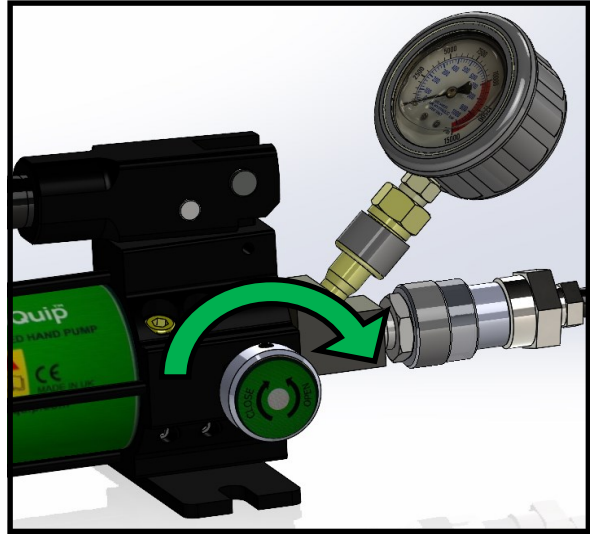
2. Connect the Hose to the Pump.



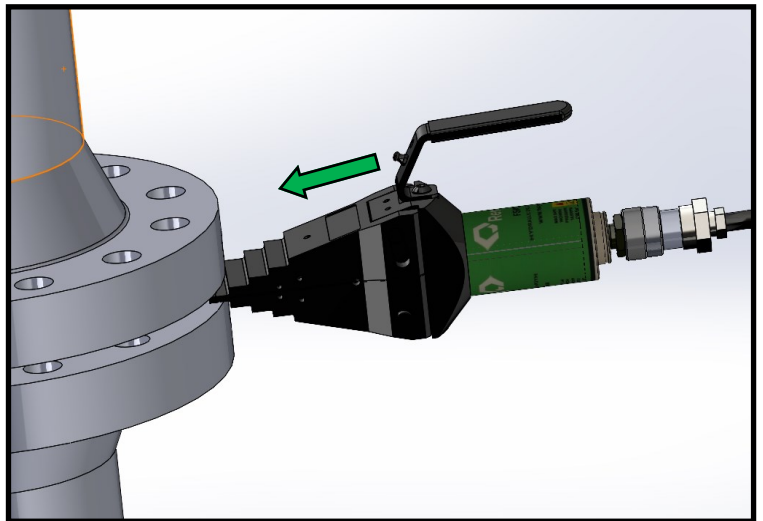
3. Connect the Hose to the Tool.



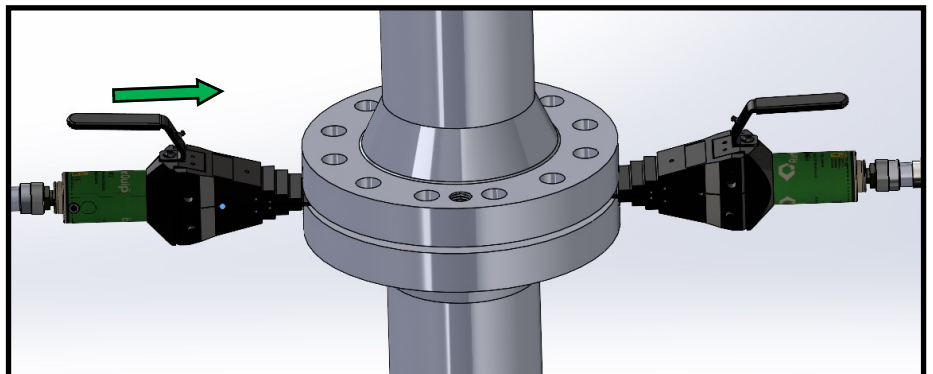
4. Close the Pressure Release Valve.



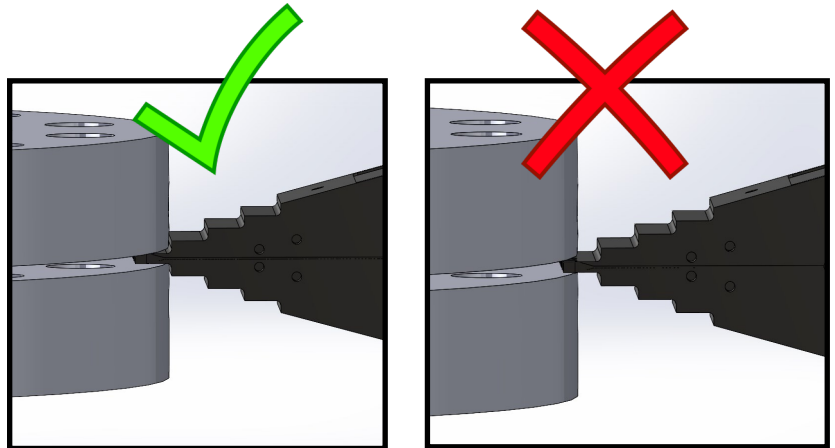
5. Insert the FSW in to the Flange Joint access gap.



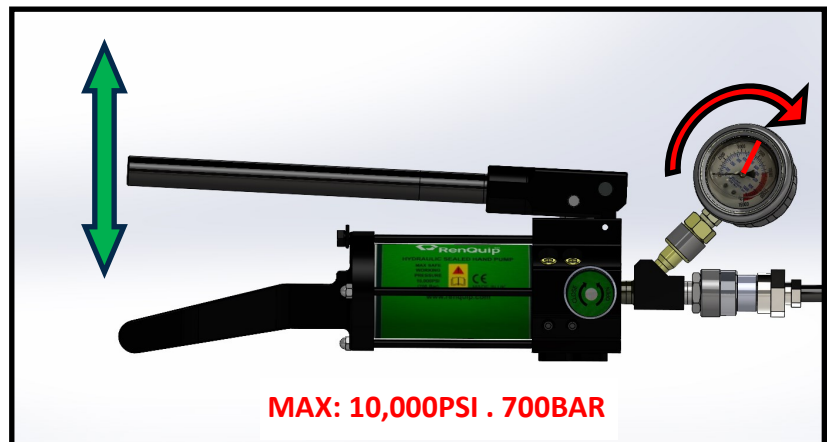
6. Insert the second FSW to create an even spreading force on the flanges.



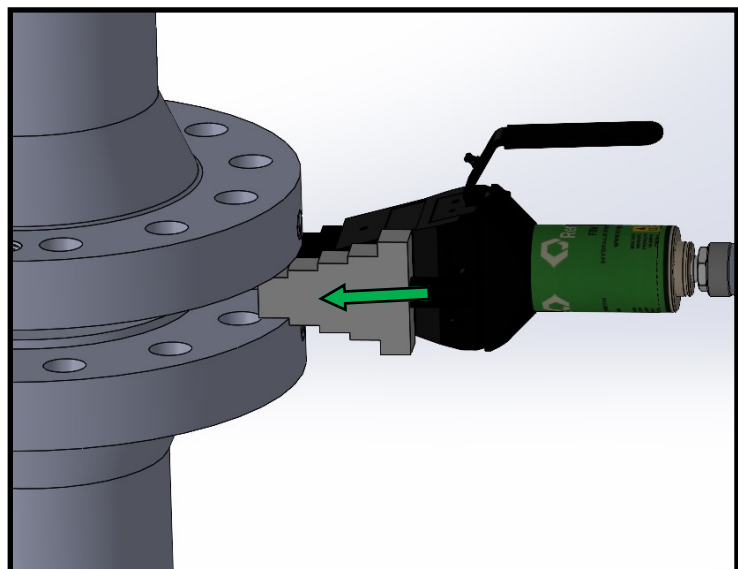
7. Fully Insert tool on each step.



8. Operate the Pump handle to pressurise system.

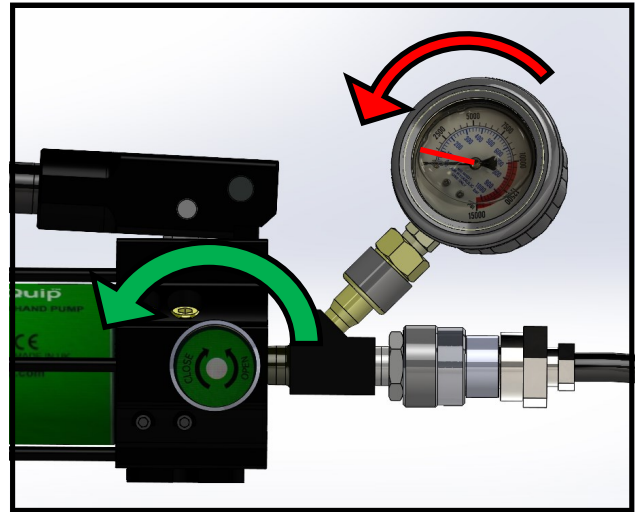


9. When the tool has reached its full stroke or the required flange gap is reached insert the safety block

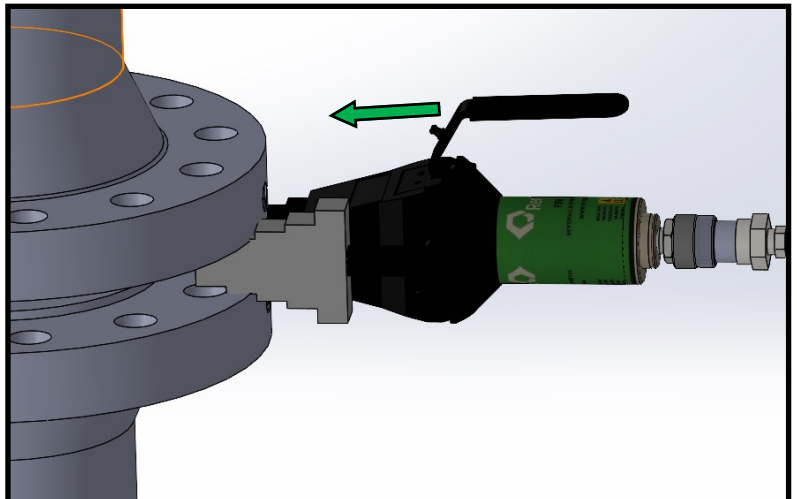




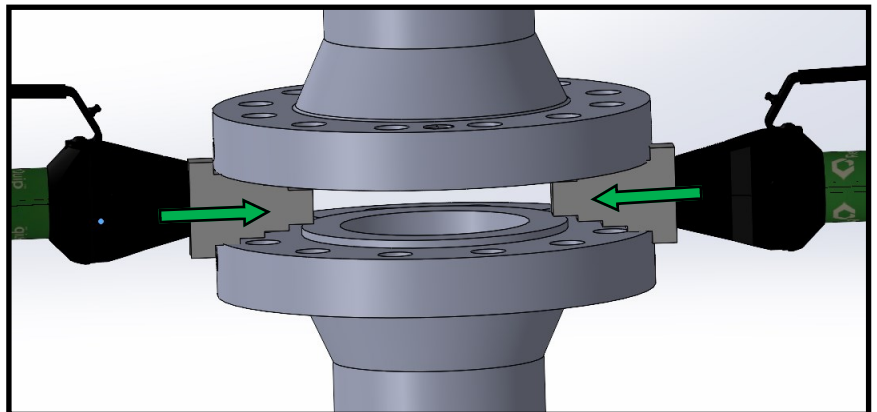
10. Release the pressure



11. If a larger flange gap is required insert the FSW further into the Flange joint and repeat steps 6 to 9.

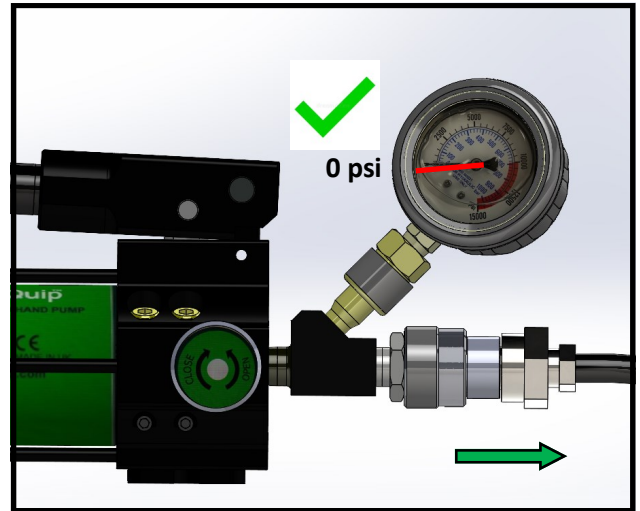


12. When the required Flange gap is achieved, fully insert the safety blocks. The pressure can then be released from the system and the FSW tools removed before starting any flange works.



13. Reverse the spreading procedure to close the Flange Joint .

14. Ensure the system is fully de-pressurised before disconnecting couplers.

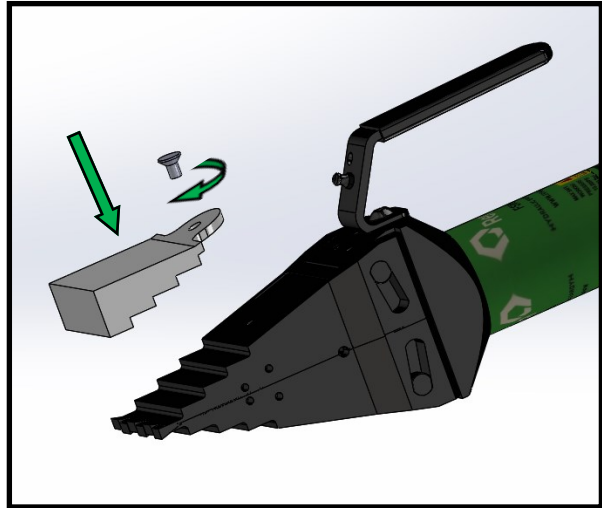


15. Clean equipment and package for storage

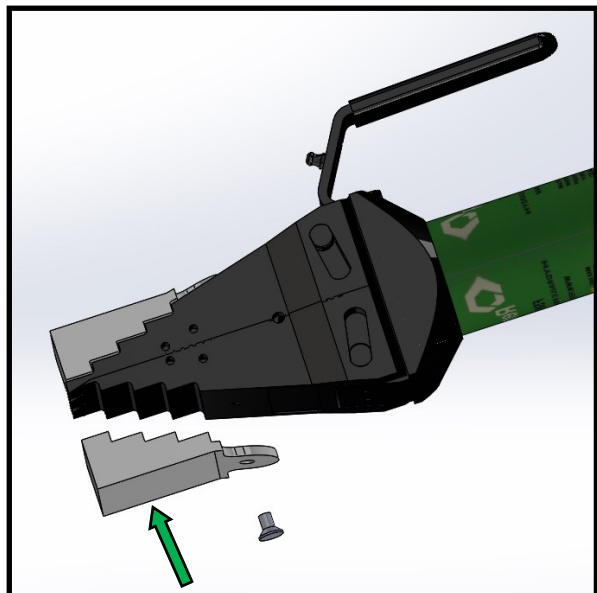
## 5.0 Stepped Block attachment

1. When required, a stepped block can be attached to the FSW to increase the spreading distance.

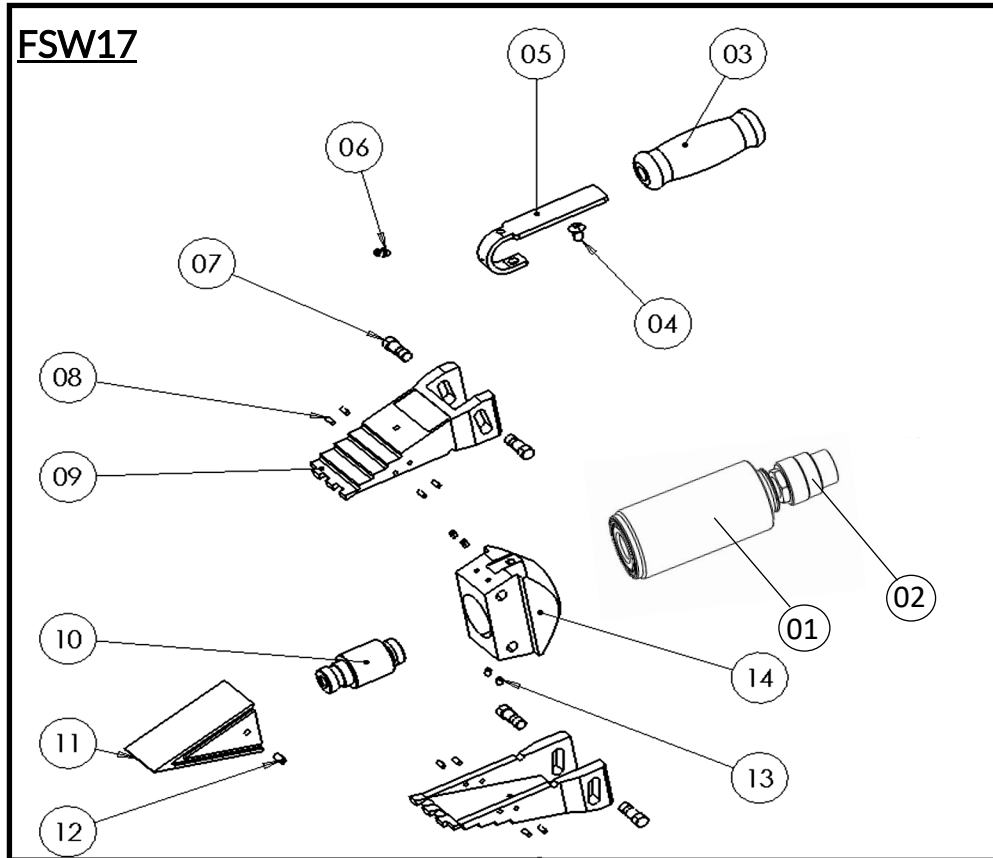
2. Use the retaining screw and hex key provided to attach the stepped block.



3. A second stepped block can be attached to increase the spreading distance to a maximum of 81mm (3.19”).



## 6.0 Parts List



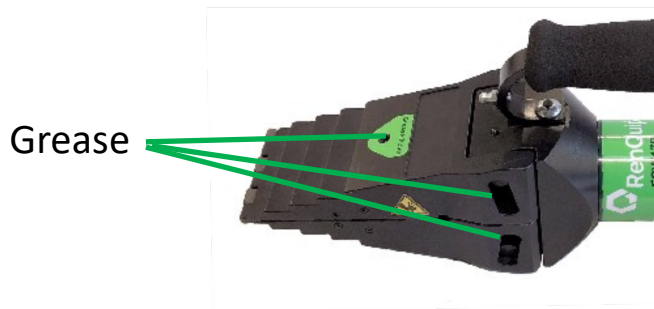
Item No	Part No	Description	Qty
01	150112001	FSW17 Hydraulic Cylinder c/w coupler	1
02	101000021	FSW17 Hydraulic Coupler	1
03	100500011	FSW17 Foam Handle Grip	1
04	100200021	Handle Retaining Screw	1
05	100500051	FSW Steel Profile Handle	1
06	100200121	Grease Nipple	1
07	150111031	FSW17 Slide Pin	4
08	100200041	FSW17 Jaw Retaining Roll Pin	8
09	150111011	FSW17 Jaw (complete with Jaw Retaining Roll Pins)	2
10	150110011	FSW17 Push Pin	1
11	150111021	FSW17 Driving Wedge	1
12	100200031	Driving Wedge retaining screw	1
13	100200141	Slide Pin Retaining Screw	4
14	N/A	FSW17 Main Body (not available as spare part)	1

## FSW17 Accessories

Item No	Part No	Description	Qty
01	150200001	FSW17 Stepped block Kit (2 x Blocks + 2 x Retaining screws)	1
02	150300001	FSW17 Safety block	1
03	100310001	FSW17 Safety Lanyard	1

## 5.0 Maintenance

- Visually Inspect the FSW, pump, gauges and couplers for any damage.
- Replace any worn or damaged parts.
- Clean and degrease surfaces , couplers and gauges.
- Ensure protective caps are fitted to cleaned couplers.
- Grease tools with a quality High load bearing grease as indicated below.



- Top up hydraulic oil in the pump as required with a high quality 32cSt hydraulic oil.
- Store tools in a cool, dry, and low humidity location.

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