



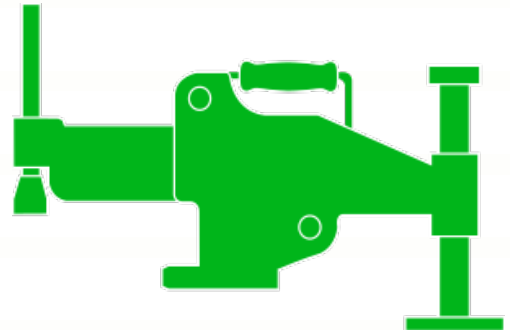
RenQuip

OPERATION MANUAL

FSW9K

FSW9D

Mechanical Flange
Spreading Wedge



Engineered Energy Equipment

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.

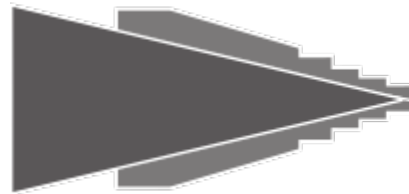
2.0 Safety Information

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

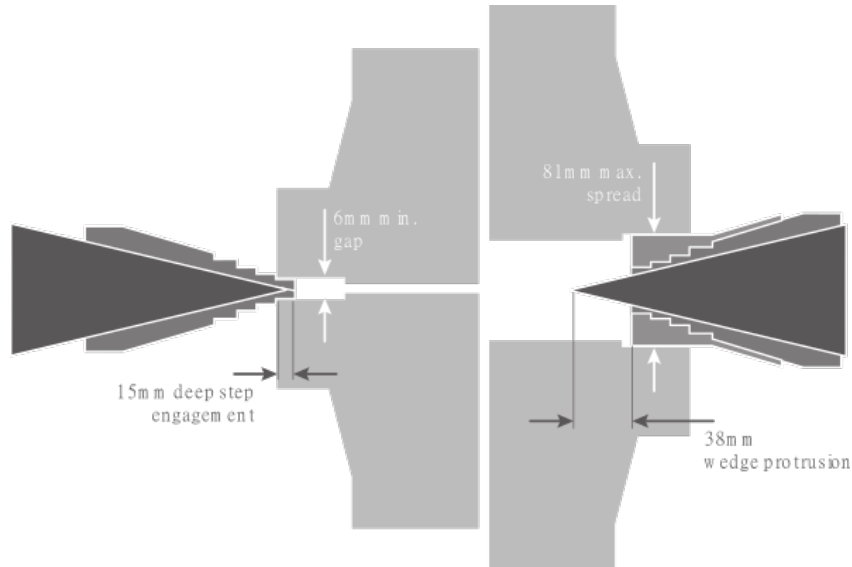
Equipment Safety



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: 94Kn

Max Applied Torque : 200 Nm (150 ft.lb)

Model : FSW9K

Kit Content

- 1 x FSW9 Tool
- 1 x Safety Block
- 2 x Stepped Blocks with securing screws and allen key
- 1 x 200Nm Torque Wrench
- 1 x 22mm Drive socket
- 1 x Instruction Manual
- 1 x Robust Moulded Carry Case with foam insert
- 1 x Safety Lanyard

Model : FSW9D

Kit weight: 22Kg

Kit Dims: 580mm x 340mm x 180mm

Tool Weight: 5.5Kg

Tool Dims: 80mm x 160mm x 290mm

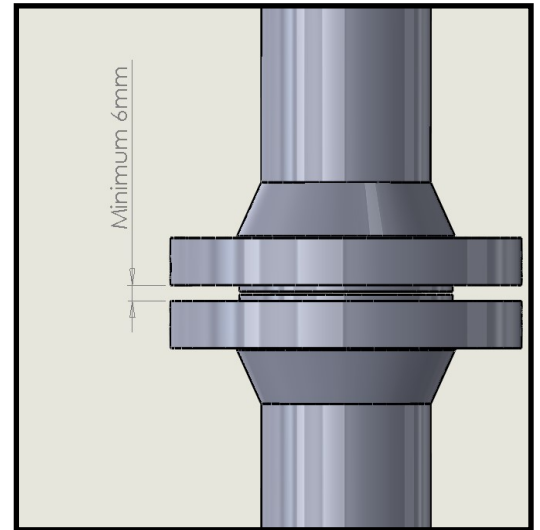
Product ordering code: FSW9D

Kit Content

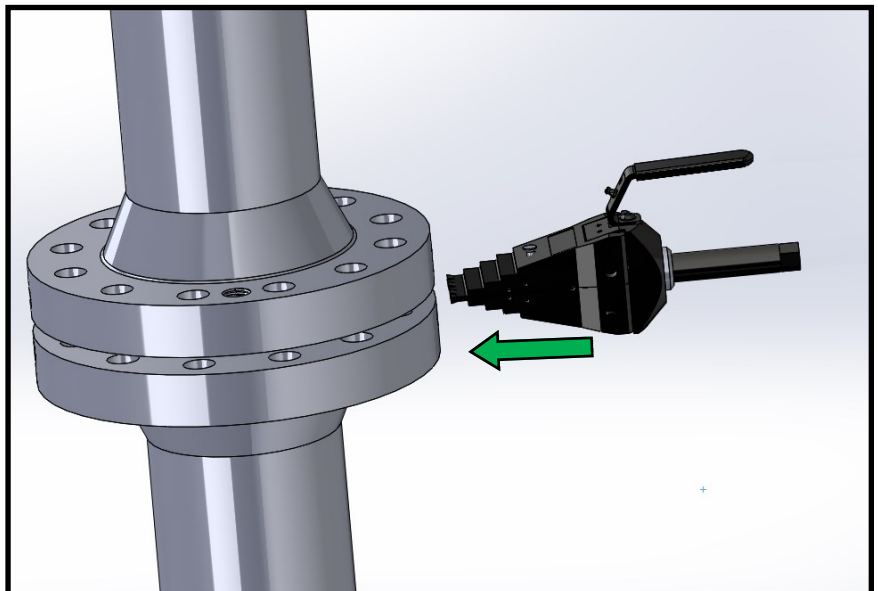
- 2 x FSW9 Tool
- 2 x Safety Block
- 4 x Stepped Blocks with securing screws and allen key
- 2 x 200Nm Torque Wrench
- 2 x 22mm Drive socket
- 1 x Instruction Manual
- 1 x Robust Moulded Carry Case with foam insert
- 2 x Safety Lanyard

4.0 Operation of the FSW 9 tool

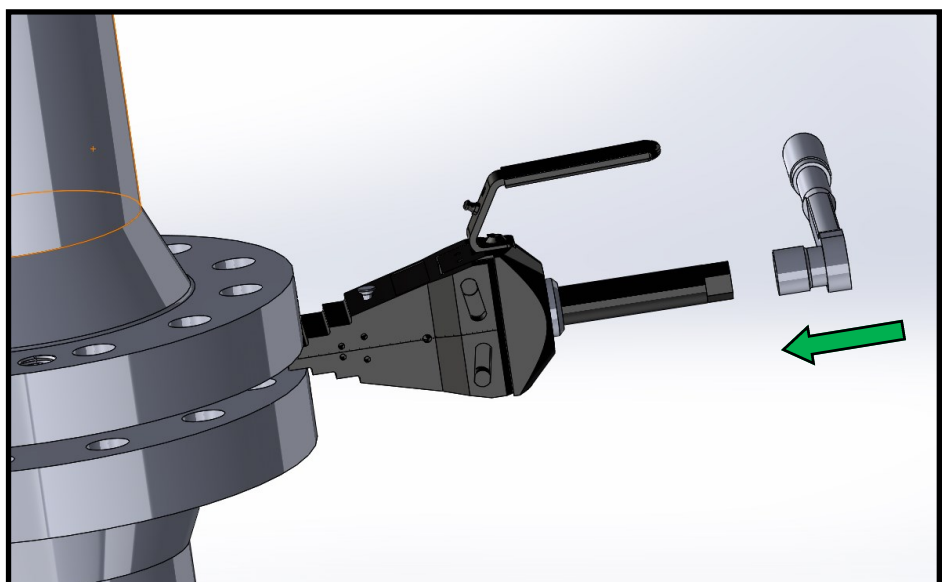
1. Ensure the flange access gap is 6mm minimum.



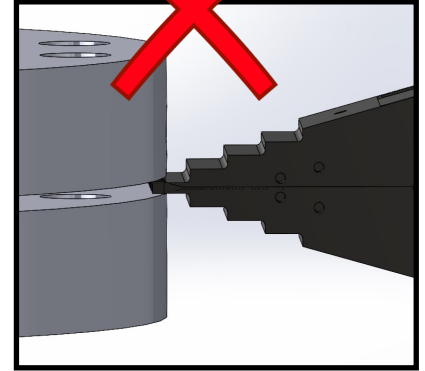
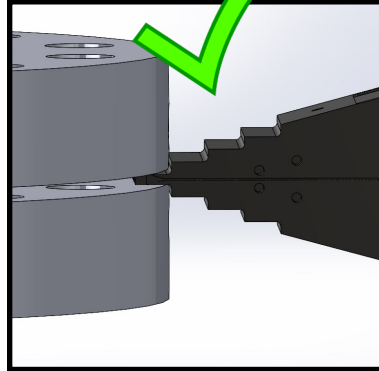
2. Insert the FSW 9 in to the Flange Joint access gap.



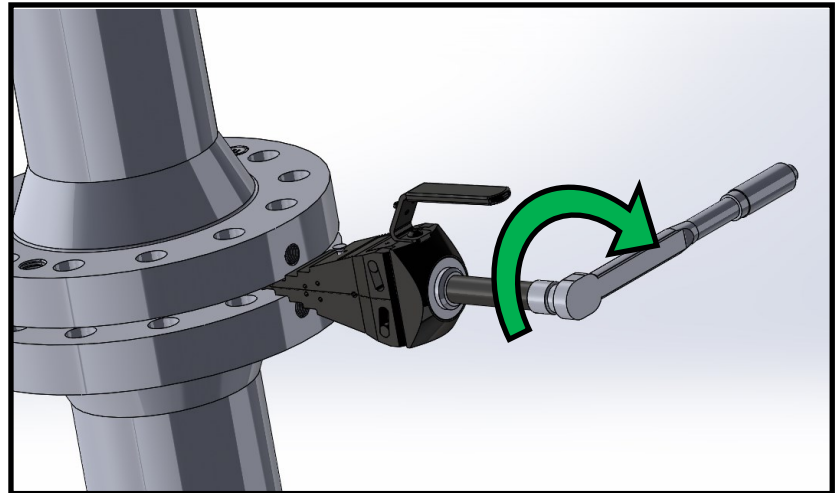
3. Set the Torque to 200Nm then attach the Torque wrench and socket to the FSW9 tool.



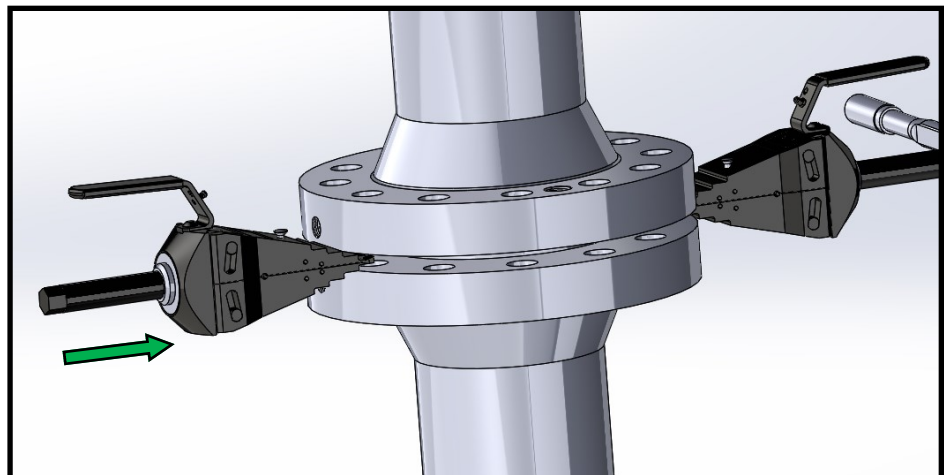
4. Fully Insert tool on each step.



5. Actuate the tool until the jaws grip and hold the tool in the flange joint.

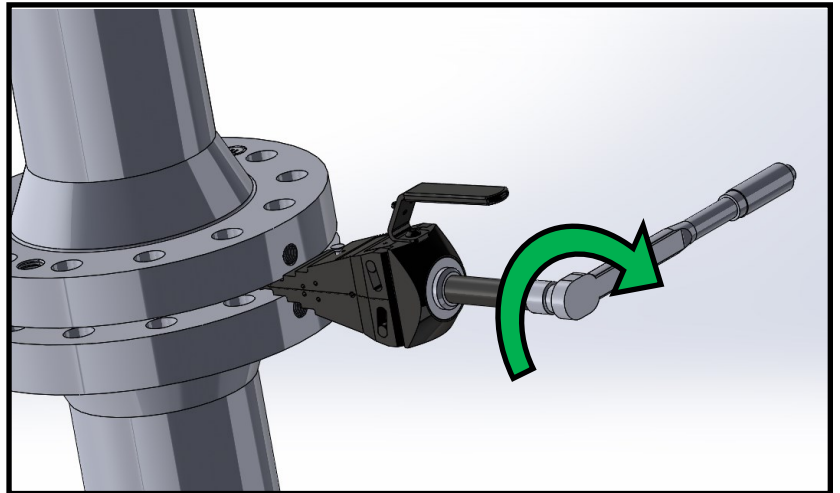


6. Insert the second Tool opposite the first Tool and repeat steps 2-5.

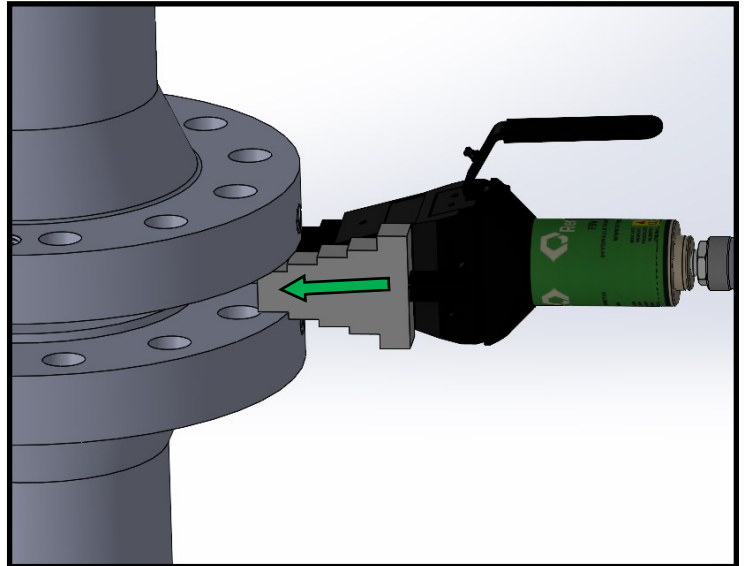


7. Actuate both Tools maintaining an even gap until the desired gap has been achieved.

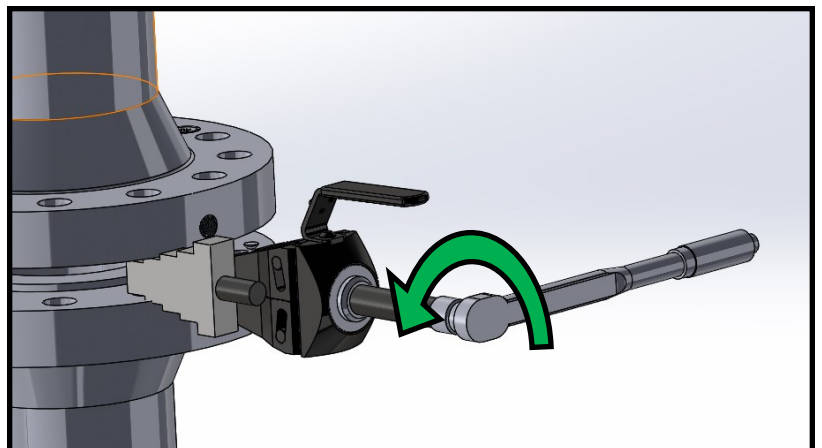
If the Torque Wrench Clicks then the tool has reached its maximum spreading force or has reached its maximum spread—**Do not apply more than 200Nm of Torque** .



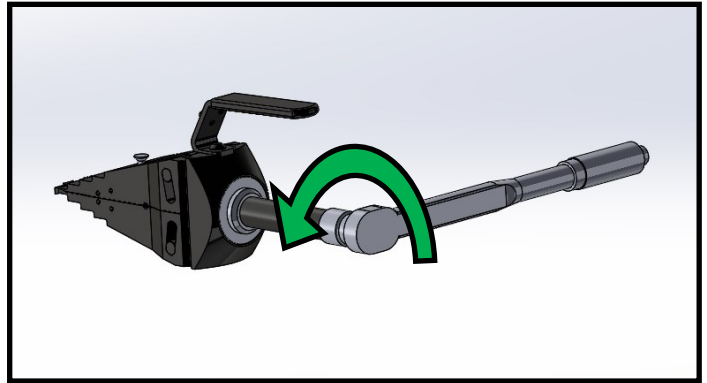
8. Insert the safety blocks in to the flange gap.



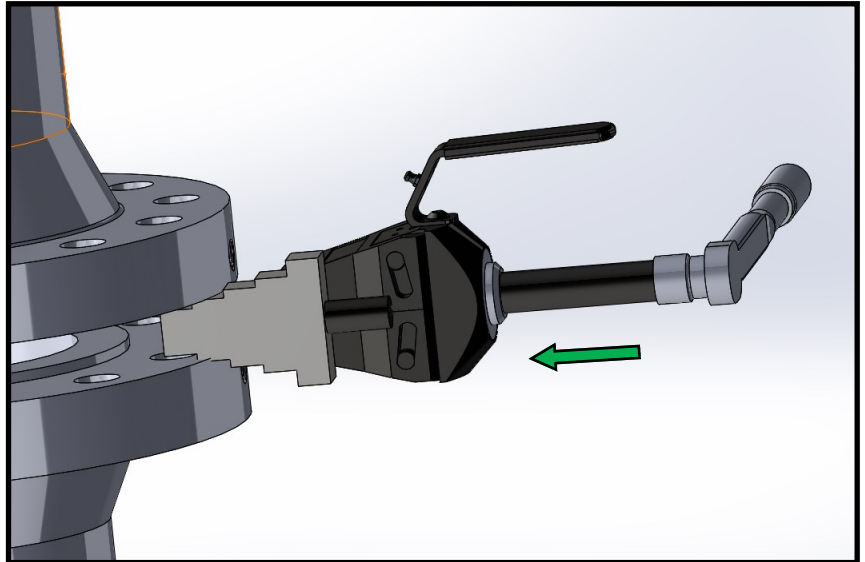
9. Reverse the rotation of the Torque Wrenches and slowly release the tools to transfer the load on to the safety blocks.



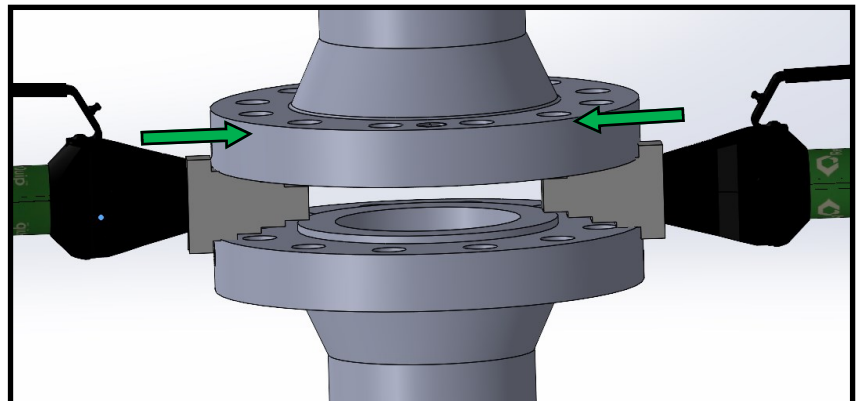
10. Remove the tool and fully retract to close the Jaws .



11. If a larger flange gap is required reinsert the FSW 9 further into the Flange joint and repeat steps 4 to 9.

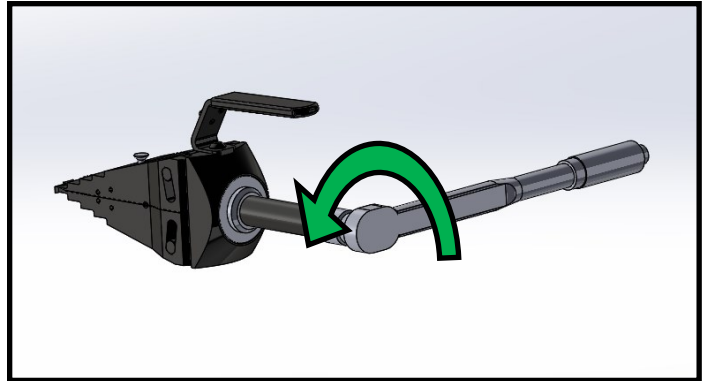


12. When the required Flange gap is achieved, fully insert the safety blocks. The load can then be released from the tools and the tools removed before starting any flange works.

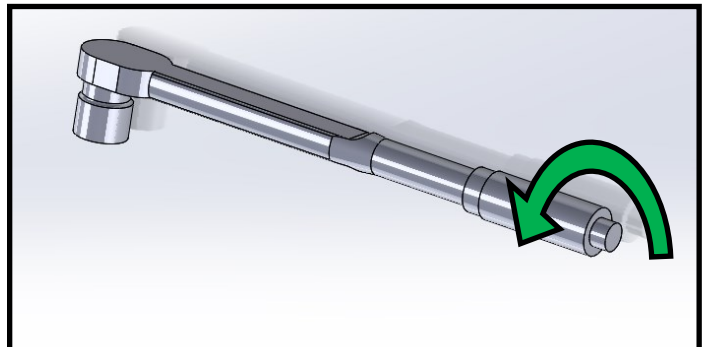


13. Reverse the spreading procedure to close the Flange Joint .

14. Ensure the tool is fully retracted.



15. Ensure the Torque Wrench is set to zero Nm.

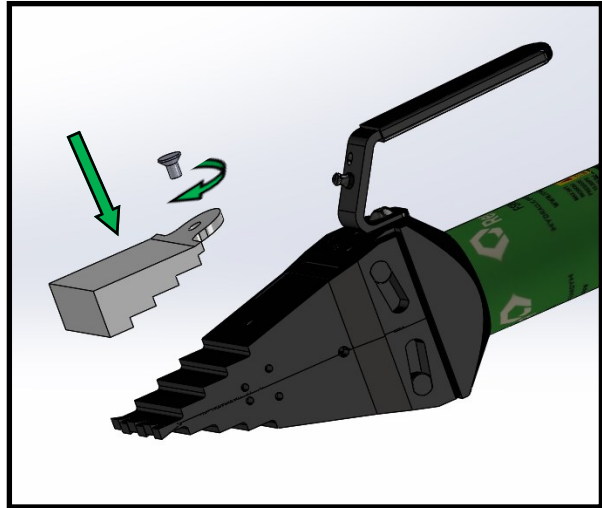


16. Clean equipment and package for storage

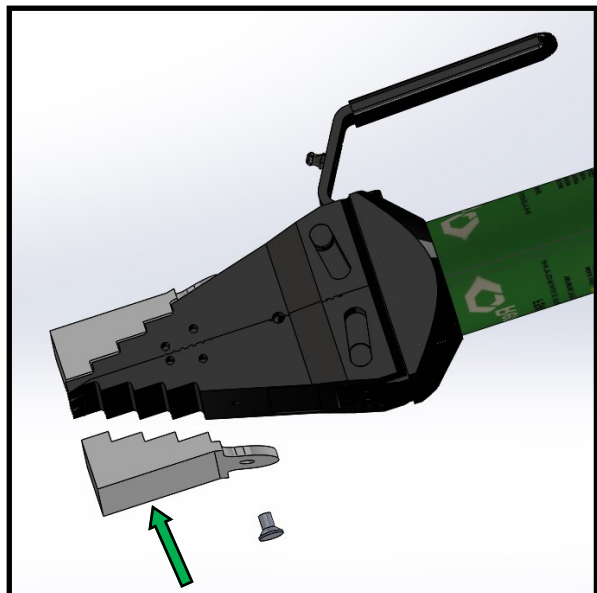
5.0 Stepped Block attachment

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.

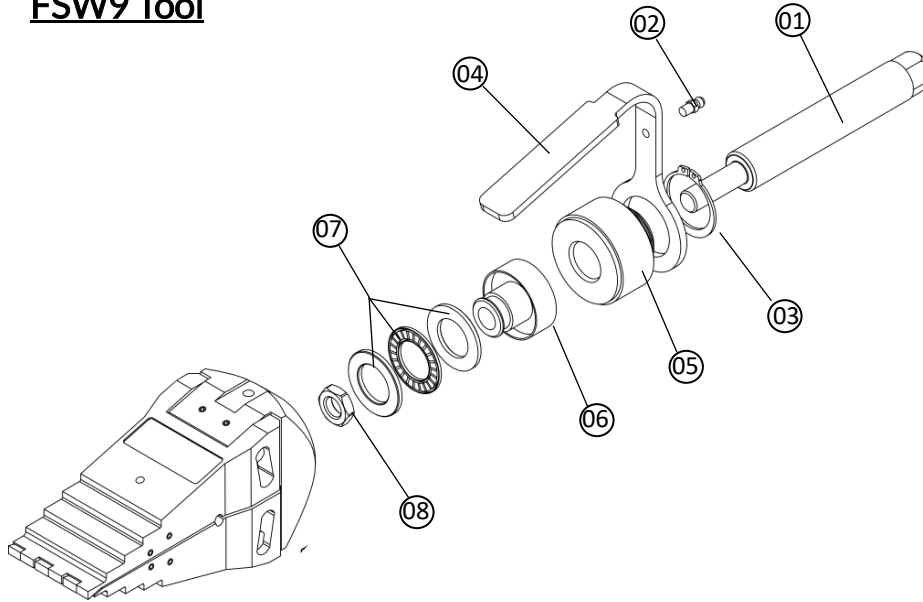


3. A second stepped block can be attached to increase the spreading distance to a maximum of 81mm (3.19”).



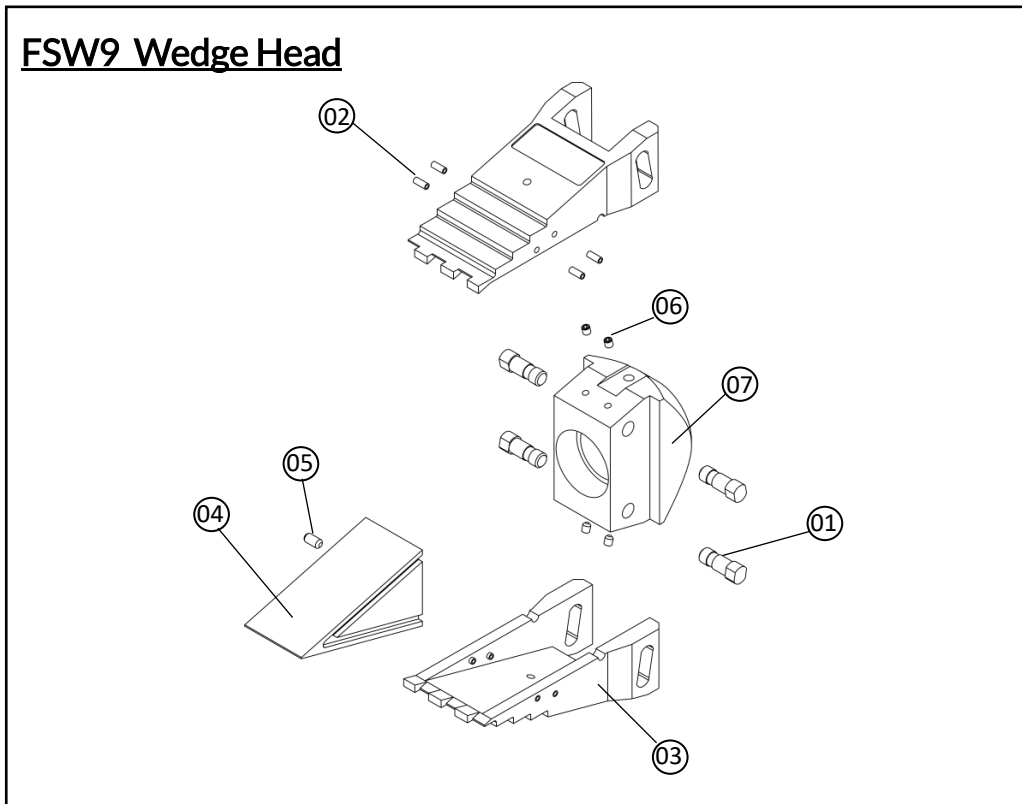
6.0 Parts List

FSW9 Tool



Item No	Part No	Description	Qty
01	150510031	FSW9 Push Rod	1
02	100200121	Straight grease nipple	1
03	100200161	external circlip carbon spring steel	1
04	150510041	FSW9 SWIVEL HANDLE	1
05	150510011	FSW9 Male / Female Adaptor	1
06	150510021	FSW9 Thrust Bearing Carrier	1
07	150510051	FSW9 Thrust Bearing Kit	1
08	100200061	Half Nut BZP	1

6.0 Parts List



Item No	Part No	Description	Qty
01	150111031	FSW17 Slide Pin	4
02	100200041	FSW17 Jaw Retaining Roll Pin	8
03	150111011	FSW17 Jaw (complete with Jaw Retaining Roll Pins)	2
04	150111021	FSW17 Driving Wedge	1
05	100200031	Driving Wedge retaining screw	1
06	100200141	Slide Pin Retaining Screw	4
07	NA	FSW9 Main Body (not available as spare part)	1

FSW9 Accessories

Item No	Part No	Description	Qty
01	150200001	FSW Stepped block Kit (2 x Blocks + 2 x Retaining screws)	1
02	150300001	FSW Safety block	1
03	100310001	FSW Safety Lanyard	1
04	190100001	FSW9 Manual Torque Wrench Assembly	1

5.0 Maintenance

- Visually Inspect the FSW9, the Torque wrench and accessories for any damage.
- Replace any worn or damaged parts.
- Clean and degrease surfaces .
- Grease tools with a quality High load bearing grease as indicated below.



- Store tools in a cool, dry, and low humidity location.

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