

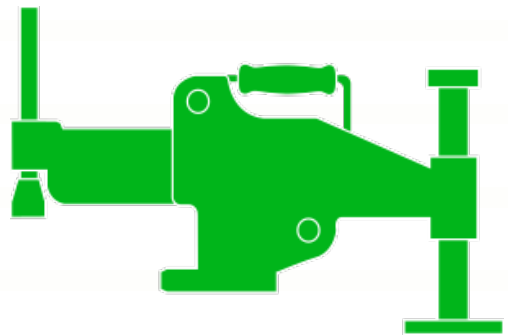


RenQuip

OPERATION MANUAL

AT9K

Flange Alignment Tool



Engineered Energy Equipment

www.renquip.com



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1.0 Introduction

The RenQuip AT9 Flange Alignment Tools are designed to resolve both linear and rotational misalignment in bolted flange joints.

The AT9 uses a hydraulic cylinder to apply a force to the outside diameter of one flange and creates a reaction force on the bolt hole of the opposite flange. These forces push and pull the flanges into Alignment.

A maximum reaction force of 90kN is produced when 10,000psi (700Bar) of pressure is generated in the hydraulic system.

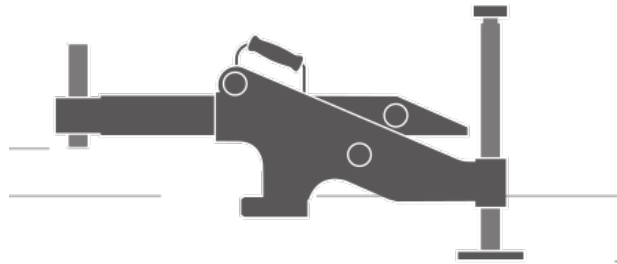
2.0 Safety Information

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



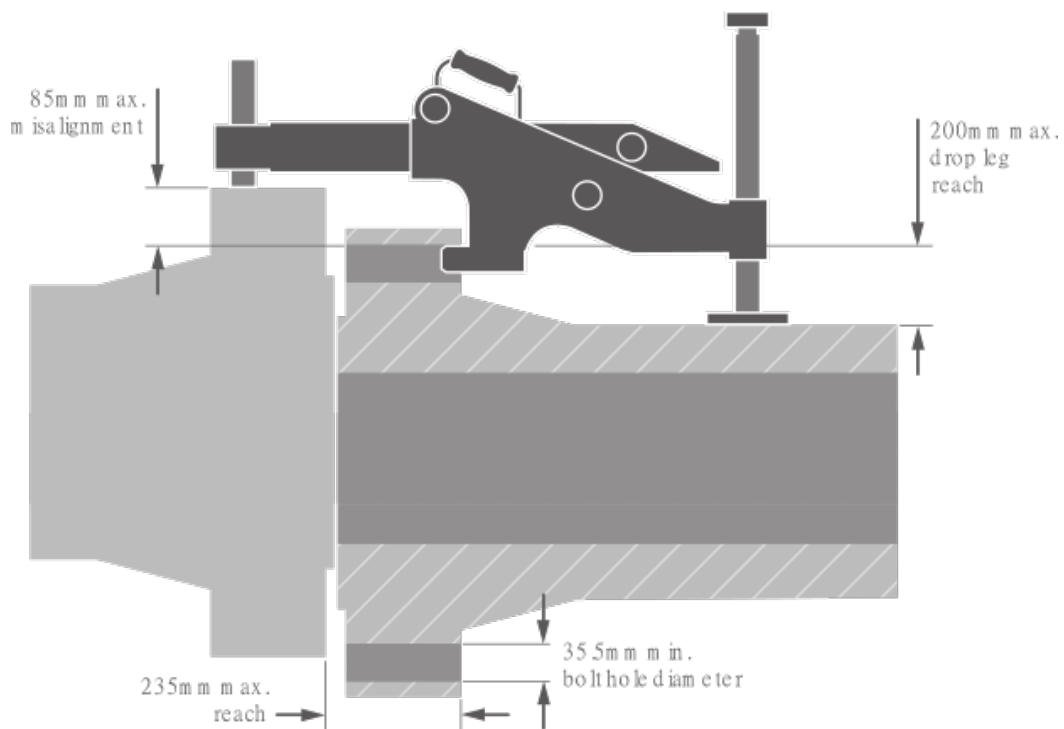
1. Inspect all equipment prior to use for any signs of damage or wear.
2. Ensure all components have a safe working pressure of 10,000psi (700Bar).
3. Do not pressurise equipment over its safe working pressure.
4. Ensure all couplers are fully connected before pressurising the system.
5. Ensure system is fully depressurised before disconnecting couplers.
6. Ensure the working area is free from hazards to the equipment such as sharp objects, heat sources , moving machinery or vehicles.
7. Carry / transport equipment by the handles / cases provided.
8. Store Equipment in a cool dry environment .
9. Ensure the correct oil is used in the hydraulic system and maintenance procedures are followed.

3.0 Technical Specification AT9

Max Hook Force: 90 Kn

Max working Pressure :10,000psi / 700 Bar

AT9 Application Diagram



Kit weight : 26Kg

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

Tool Weight: 14.5Kg

Tool Dims.: 100mm x 230mm x 540mm

Product ordering code: AT9K

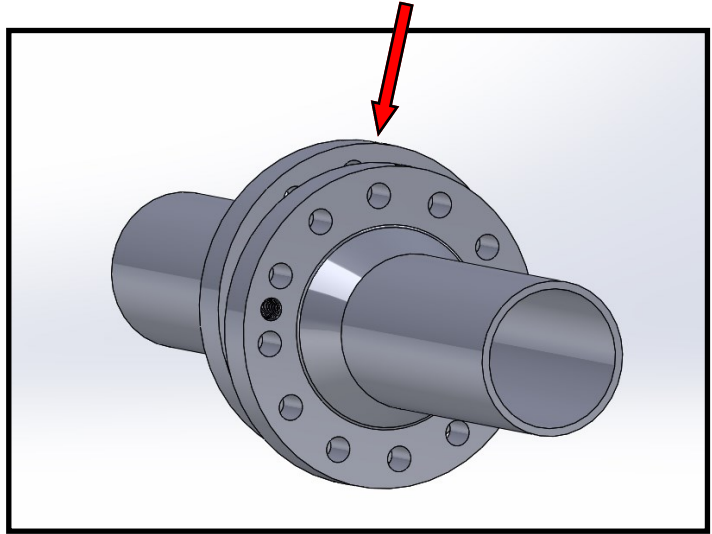
Kit Content

- 1 x AT9 Tool
- 1 x 10,000psi (700 Bar) Hydraulic Sealed Hand Pump
- 1 x 10,000psi (700 Bar) Hydraulic Hose 2.1M long
- 1 x 10,000psi (700 Bar) Hydraulic Gauge
- 1 x Ratchet and Strap
- 1 x Instruction Manual
- 1 x Robust moulded carry case

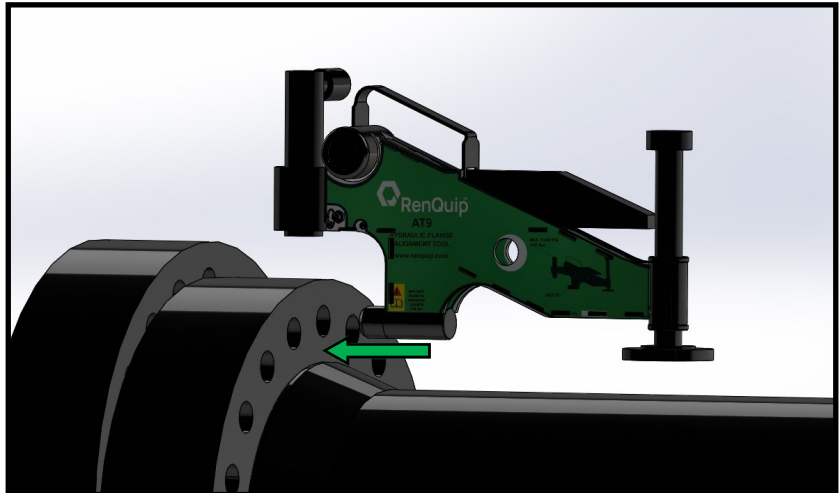


4.0 Operation of the AT9 Alignment Tool

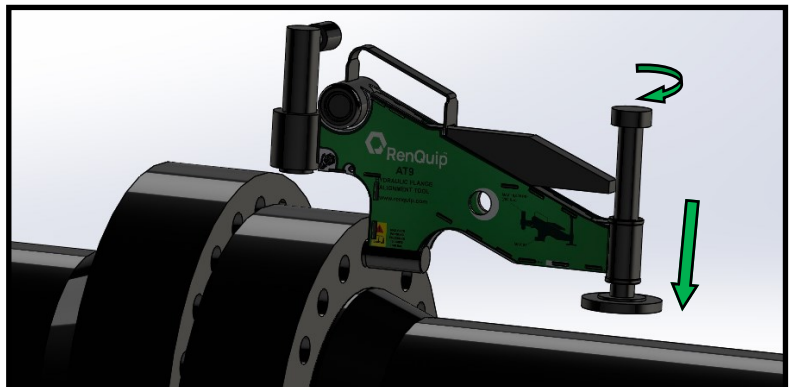
1. Identify the point of maximum axial misalignment.



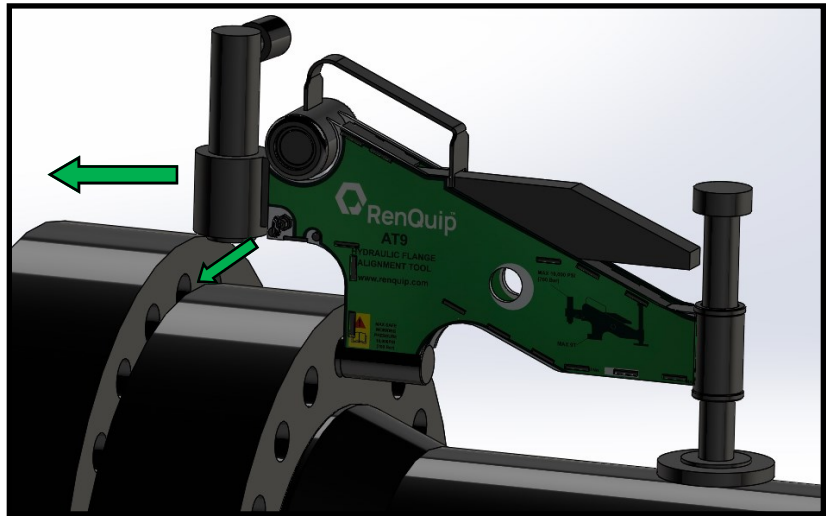
2. Insert the tool hook into the flange bolt hole at the point of maximum misalignment.



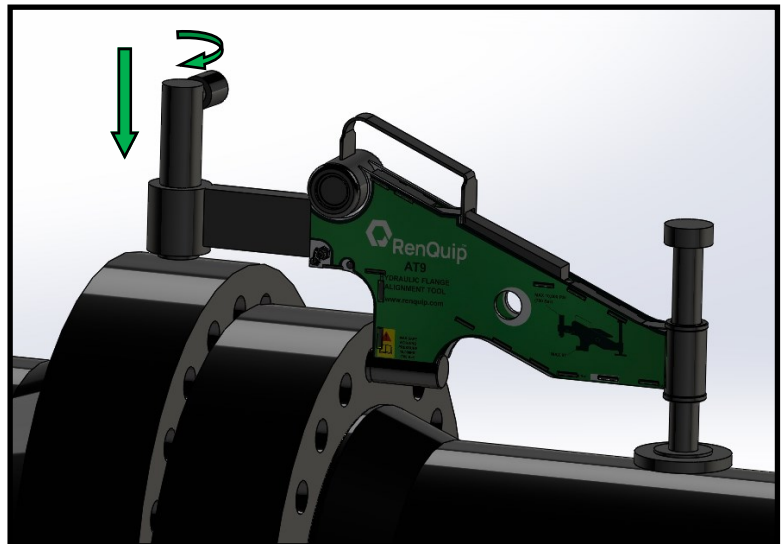
3. Lower the drop leg down to contact the pipeline. Keep the tool parallel to the pipe line.



4. Pull out the wing lock pin and slide the wing over the opposing flange.

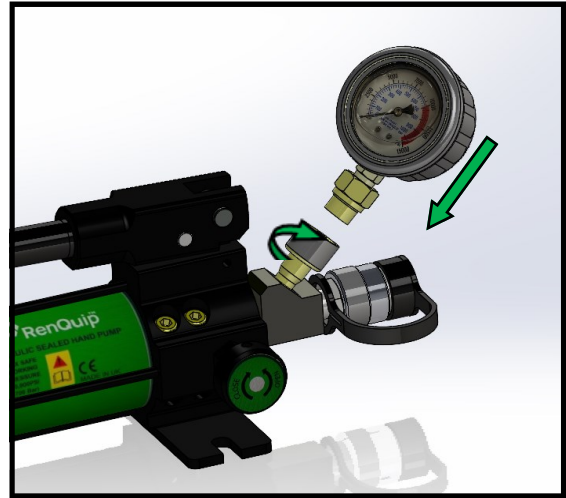


5. Screw the alignment cylinder down until it contacts the flange.

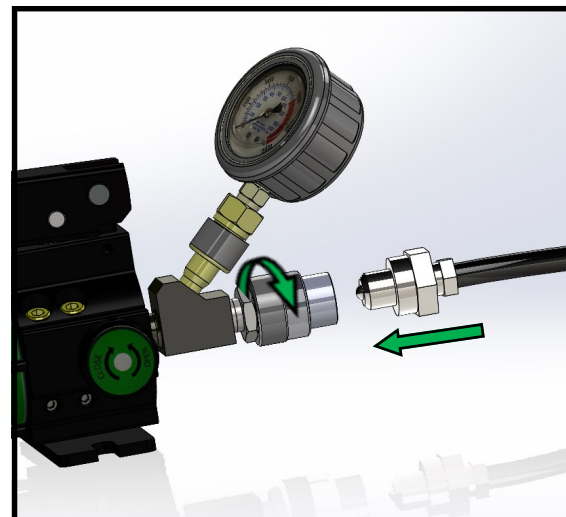


6. Attach the ratchet straps to the base plate of the drop leg and secure the tool to the pipe line.

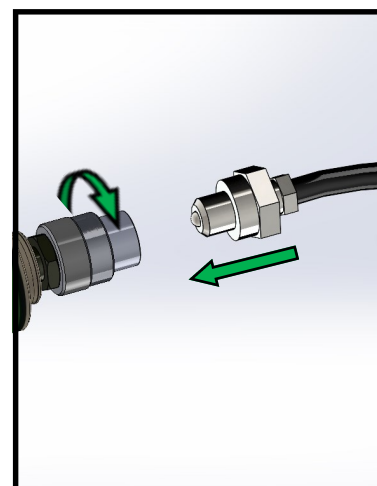
7. Connect the Gauge to the Pump.



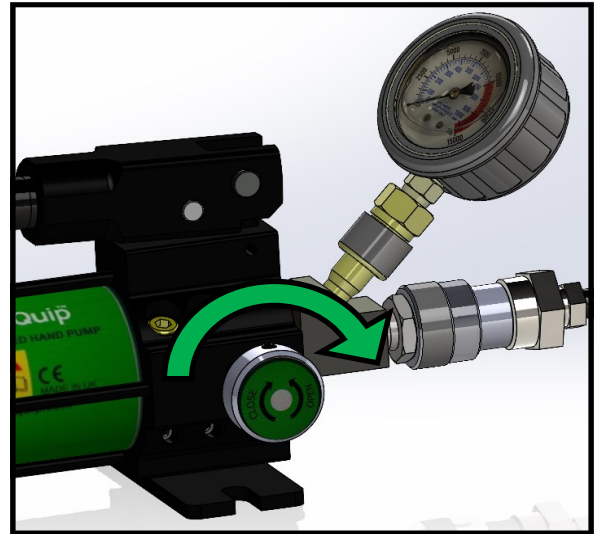
8. Connect the Hose to the Pump.



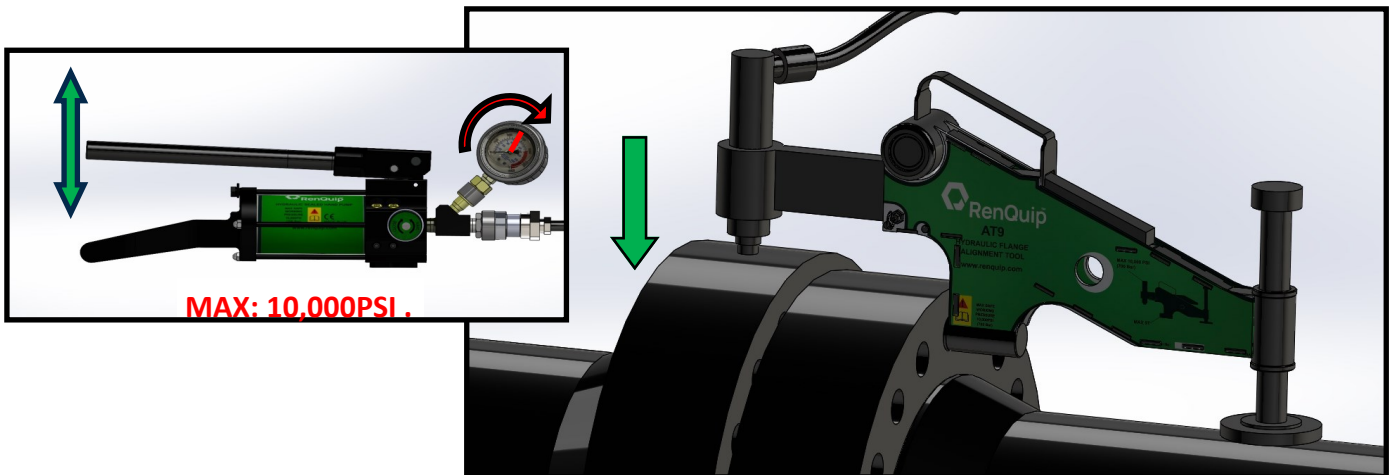
9. Attach the Hose to the coupler on the alignment cylinder.



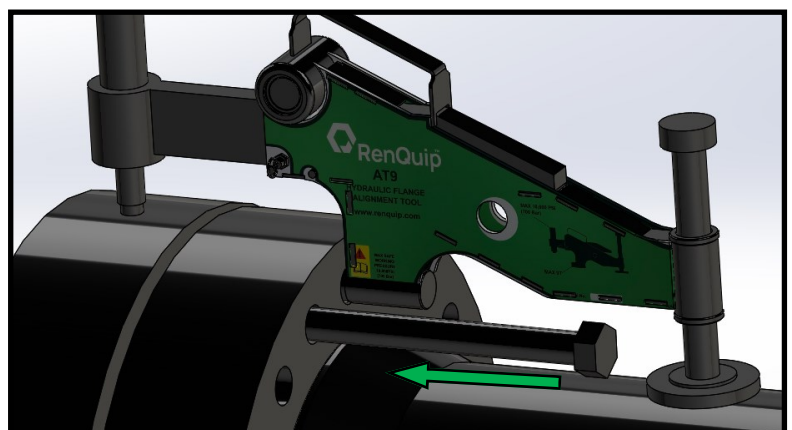
10. Close the relief valve on the Pump.



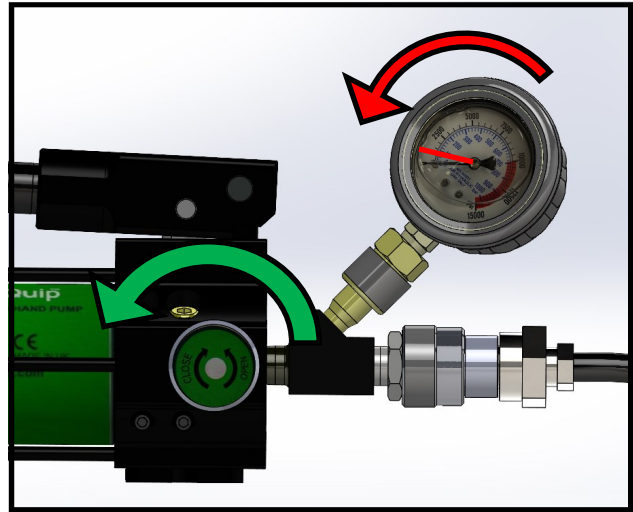
11. Operate the Pump handle to pressurise the system and push the flanges into alignment.



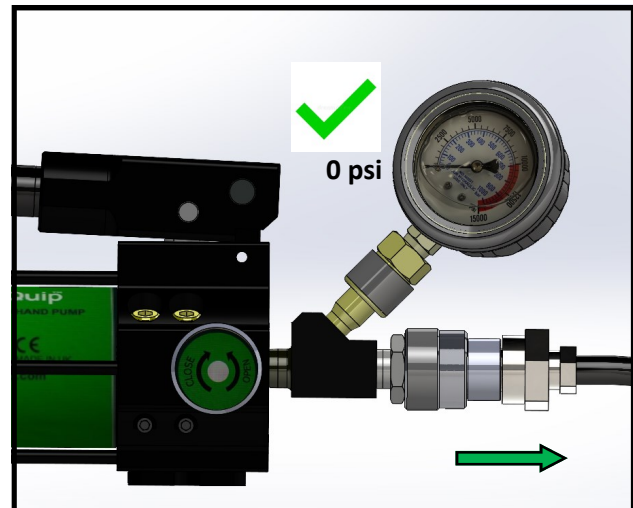
12. When the flanges are aligned the flange bolts can be inserted.



13. When more than 50% of the flange bolts have been installed the pressure can be released and the tool removed.

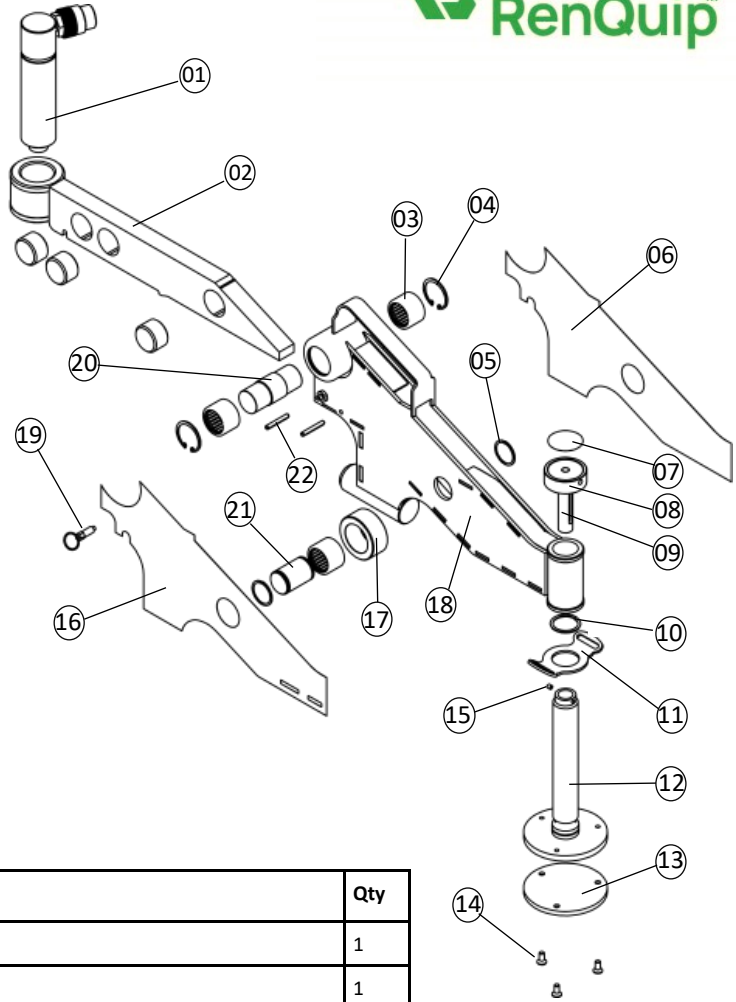


14. Ensure the system is fully depressurised before disconnecting couplers.



15. Clean equipment and package for storage

5.0 AT9 Parts List



Item No	Part No	Description	Qty
01	150711001	AT9 ACTUATOR CYLINDER	1
02	150712001	AT9 WING ASSEMBLY	1
03	100100051	AT9 NEEDLE ROLLER BEARING	3
04	100200321	AT9 BEARING RETAINING CIRCLIP	2
05	100200311	RETAINING RING	2
06	150700021	AT9 BODY DECAL RH	1
07	100400031	DOWN/UP - ROTATION DECAL	2
08	180410041	DOWN/UP KNOB	1
09	150615101	DROP LEG EXTENSION	1
10	100200311	RETAINING RING	1
11	150615011	DROP LEG BUCKLE	1
12	150615201	DROP LEG SCREW	1
13	150615021	DROPLEG PAD	1
14	100200011	CNSK SCREWS	3
15	100200031	GRUB SCREW	1
16	150700011	AT9 BODY DECAL LH	1
17	150710011	AT9 REAR WING ROLLER	1
18	N/A	AT9 BODY ASSEMBLY	1
19	150613001	AT9 WING INDEX PLUNGER	1
20	150710021	AT9 FRONT WING ROLLER PIN	1
21	150710031	AT9 REAR WING ROLLER PIN	1
22	100200331	AT9 WING ROLL PIN	2

6.0 Maintenance

- Visually Inspect the AT9 Tool, pump, gauge 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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