

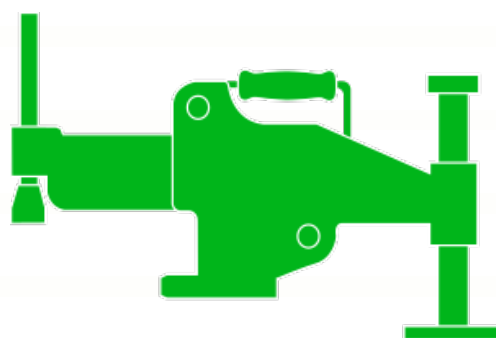


RenQuip

OPERATION MANUAL

AT4K

Flange Alignment Tool



Engineered Energy Equipment

www.renquip.com



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1.0 Introduction

The RenQuip AT4 Flange Alignment Tools are designed to resolve both linear and rotational misalignment in bolted flange joints.

The AT4 uses a mechanical push rod 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 40kN is produced when 68N.m (50ft.Lb) of Torque is applied to the push rod.

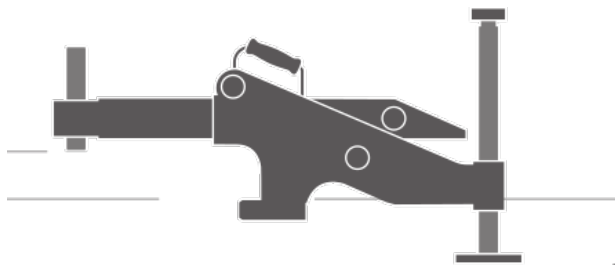
2.0 Safety Information

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

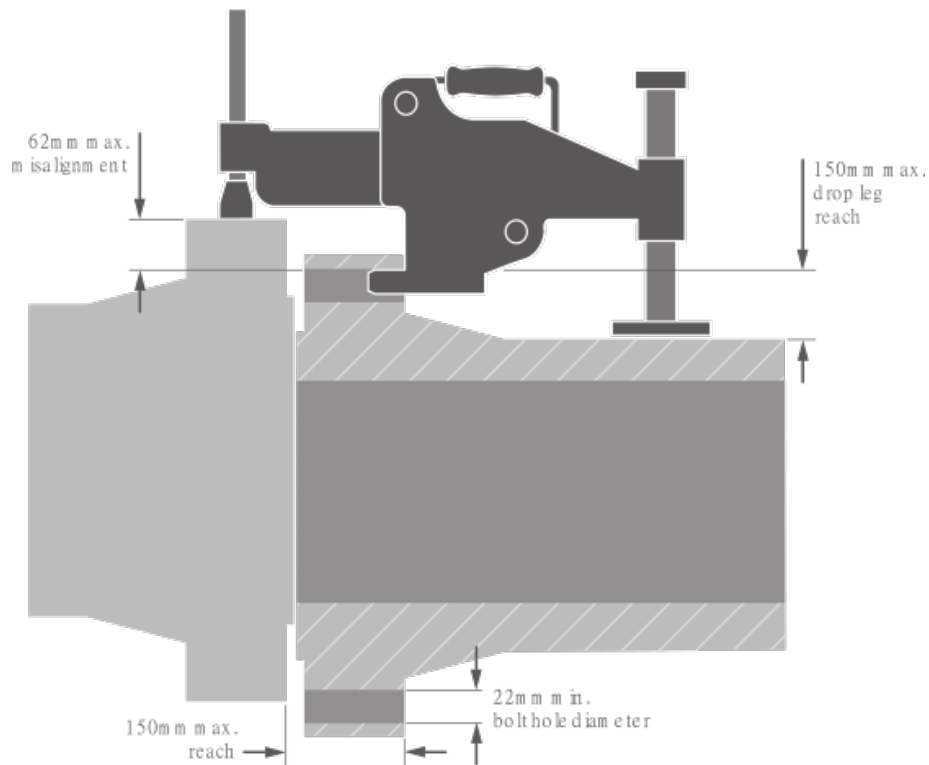
Equipment Safety



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 AT4

AT4 Application Diagram



Max Hook Force: 40 Kn

Max Applied Torque : 68 N.m (50 ft.lb)

Kit weight: 12Kg

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

Tool Weight: 8Kg

Tool Dims.: 100mm x 285mm x 380mm

Product ordering code: AT4K

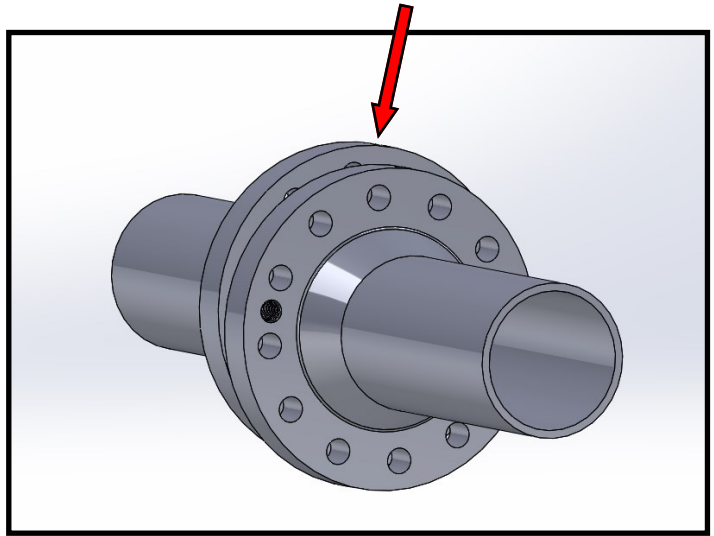
Kit Content

- 1 x AT4 Tool
- 1 x Torque wrench
- 1 x Ratchet and Strap
- 1 x Instruction Manual
- 1 x Robust moulded carry case

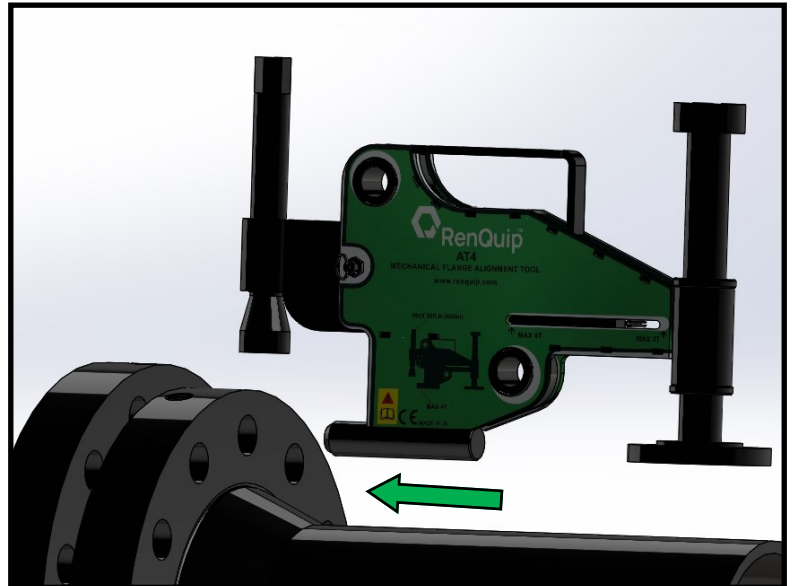


4.0 Operation of the AT9 Alignment Tool

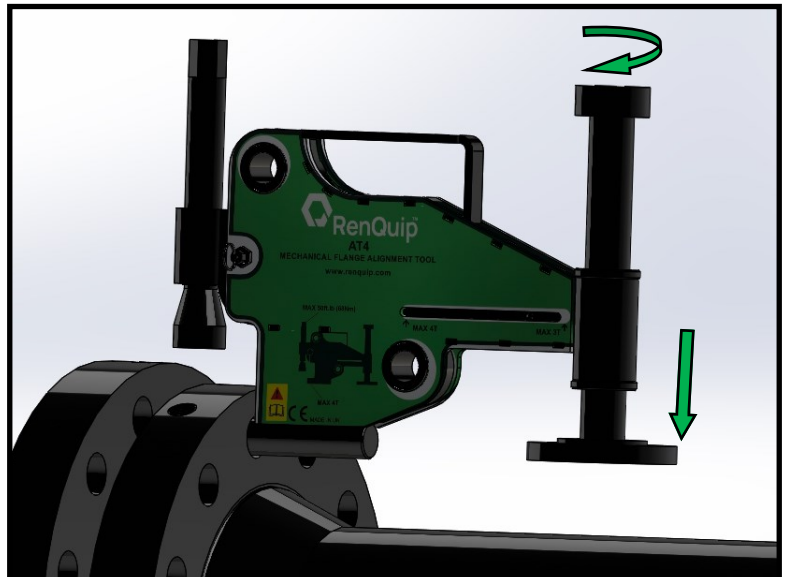
1. Identify the point of maximum axial misalignment.



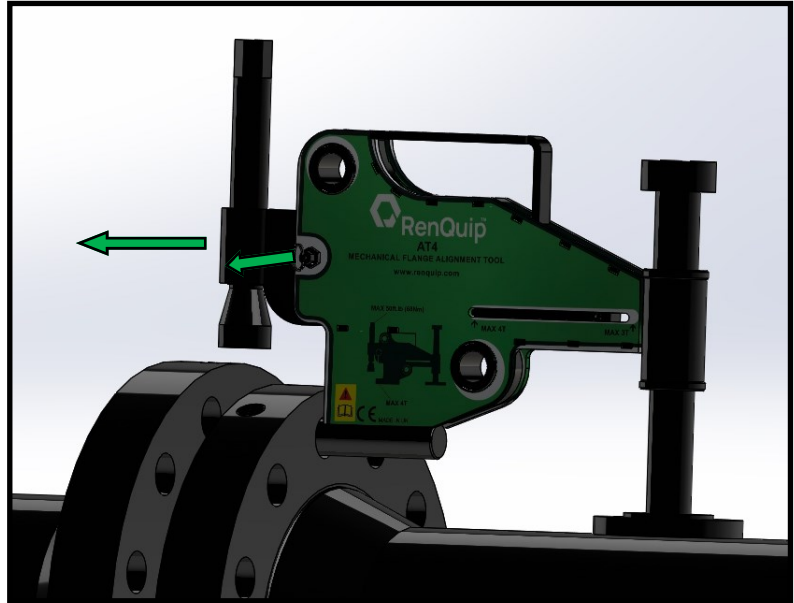
2. Insert the tool hook into the flange bolt hole at the point of maximum misalignment.



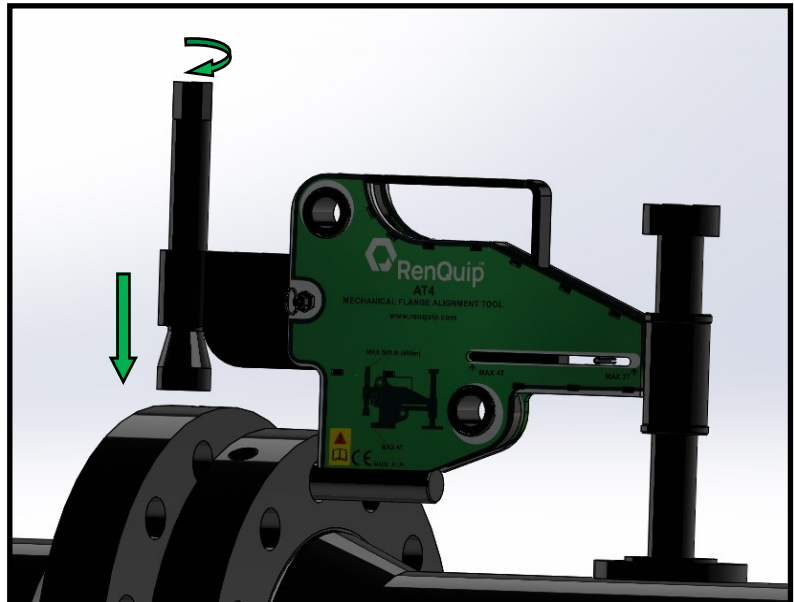
3. Lower the drop leg down to contact the pipeline. Keep the tool parallel to the pipe line.



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



5. Screw the alignment push rod down until it contacts the flange.

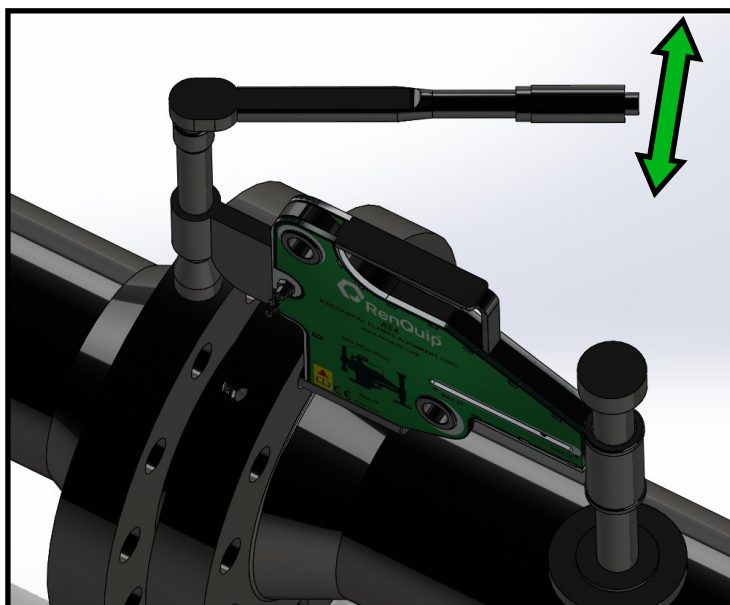


6. Attach the ratchet straps to the base plate of the drop leg and secure the tool to the pipe line.

7. Set the Torque wrench to 68N.m (50ft.Lb) and engage the socket on to the end of the push rod.

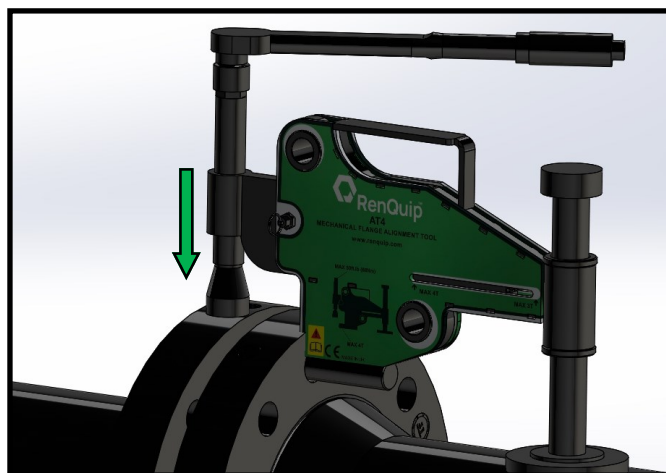


8. Ratchet the torque wrench to rotate the push rod and apply an alignment force to the flange joint.

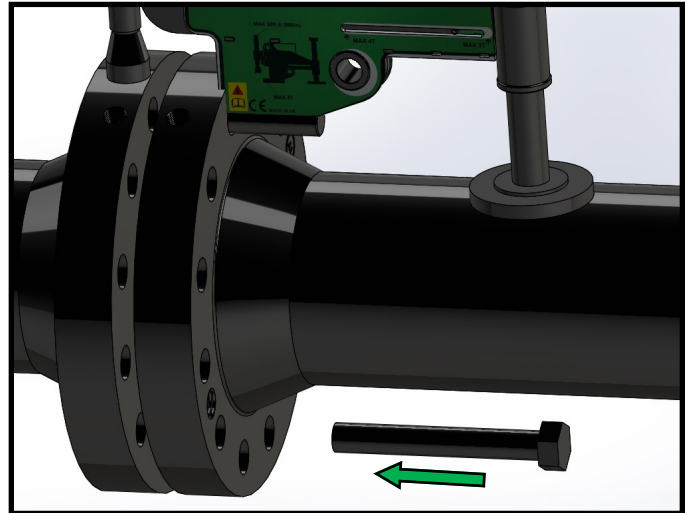


9. Continue to ratchet the torque wrench until the Flanges are aligned.

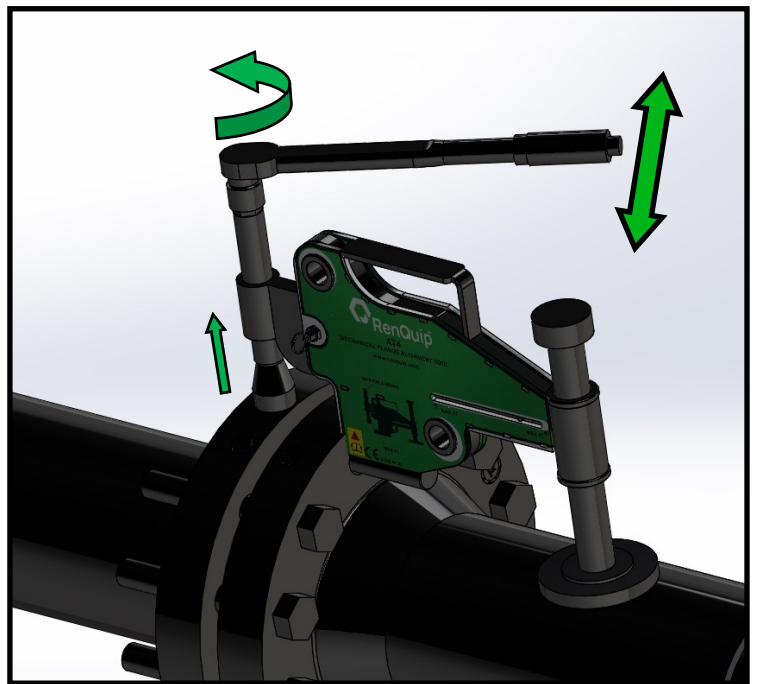
If the torque wrench clicks before the flanges are aligned the tool has reached its maximum working load - multiple tools will be required to align this joint.



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

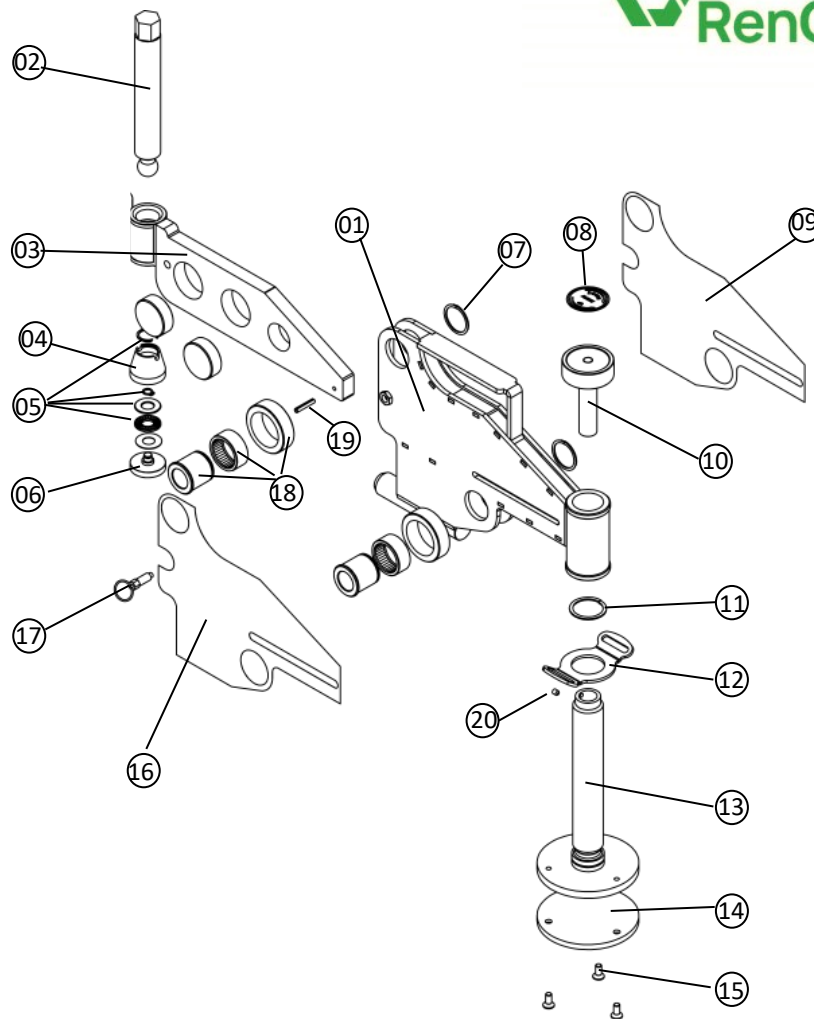


11. When more than 50% of the flange bolts have been installed the Torque wrench ratchet can be reversed and the torque wrench ratcheted to slowly remove the load from the AT4.



12. The tool can then be removed from the flange joint cleaned and packaged for storage. Reset the torque wrench to 0 N.m .

5.0 AT4 Parts List



Item No	Part No	Description	Qty
01	N/A	AT4 TOOL BODY (not available as spare part)	1
02	150610011	AT4 ACTUATOR SCREW	1
03	150614001	AT4 WING ASSEMBLY	1
04	150612011	AT4 SWIVEL BODY	1
05	150612031	AT4 SWIVEL REPAIR KIT	1
06	150612021	AT4 SWIVEL REACTION PAD	1
07	100200311	RETAINING RING	2
08	100400031	DOWN/UP - ROTATION DECAL	1
09	150600021	AT4 BODY DECAL RH	1
10	150615101	AT4 DROP LEG EXTENSION	1
11	100200311	RETAINING RING	1
12	150615011	AT4 DROP LEG BUCKLE	1
13	150615201	AT4 DROP LEG SCREW	1
14	150615021	AT4 DROPLEG PAD	1
15	100200011	CNSK SCREWS	3
16	150600011	AT4 BODY DECAL LH	1
17	150613001	AT4 WING INDEX PLUNGER	1
18	150616001	AT4 WING BEARING ASSEMBLY	2
19	150614021	AT4 WING RETAINING PIN	1
20	100200031	GRUB SCREW	1

6.0 Maintenance

- Visually Inspect the AT4 Tool, and Torque wrench 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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