



SXD
SERIES OPERATION AND
MAINTENANCE MANUAL



This manual contains IMPORTANT WARNINGS, CAUTIONS and other instructions. Read and understand the instruction manual Carefully, before use and retain it for reference

**OPERATION AND MAINTENANCE MANUAL
FOR ROARK TOOLS SXD LOW PROFILE HYDRAULIC
TORQUE WRENCHES**

NOTICE

Roark Tools SXD Series Low Profile Hydraulic Torque Wrenches are designed for installing and removing large bolts having minimal wrench clearance at offshore platforms, power plants, steel erection sites and other locations requiring precise high torque during bolt makeup and maximum torque for bolt breakdown.

Roark Tools Inc. is not responsible for customer modification of tools for applications on which Roark Tools Inc. was not consulted. Any warranty claims or liabilities claims against Roark Tools/Dekksem become invalid in the following situations: a) If any unauthorized parts or accessories are used with any Roark Tool Products. b) If any Roark Tools/Dekksem equipment is obtained, purchased, rented, used or serviced from an unauthorized Roark Tools/Dekksem distributor, representative or reseller. c) Not following the Roark Tools SSD manuals guidelines and procedures. *Please contact Roark Tools Directly to verify certifications.

WARNING

**IMPORTANT SAFETY INFORMATION ENCLOSED. READ THIS MANUAL BEFORE
OPERATING TOOL. IT IS THE RESPONSIBILITY OF THE EMPLOYER OR
DISTRIBUTOR TO PLACE THE INFORMATION IN THIS
MANUAL INTO THE HANDS OF THE OPERATOR.
FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.**

PLACING TOOL IN SERVICE

- Always operate, inspect and maintain this tool in accordance with American National Standards Safety Code for Hydraulic Rams and Jacks (ANSI B30.1)
- This tool will function using an air or electric powered hydraulic pump. Adhere to the pump safety requirements and follow instructions when connecting the pump to the tool.
- Use only equipment rated for the same pressure and torque.
- Use only a hydraulic pump capable of generating 10,000 psig (681 bars) maximum pressure with this tool.
- Use only twin line hydraulic hose rated for 10,000 psi (681 bars) pressure with this tool.
- Do not interchange the male and female swivel inlets on the tool or the connections on one end of the hose. Reversing the inlets will reverse the power stroke cycle and may damage the tool.
- Do not use damaged, frayed or deteriorated hoses and fittings. Make certain there are no cracks, splits or leaks in the hoses.
- Use the quick connects system to attach the hoses to the tool and pump. Make certain the spring-loaded retaining rings are fully engaged to prevent the connectors from disengaging under pressure.
- When connecting hoses that have not been pre-loaded with hydraulic oil, make certain the pump reservoir is not drained of oil during start-up.
- Do not remove any labels. Replace any damaged label.

USING THE TOOL

- 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.
- Never pressurize uncoupled couplers. Only use hydraulic equipment in a coupled system.
- Always wear eye protection when operating or performing maintenance on this tool.
- Always wear head and hand protection and protective clothing when operating this tool.

NOTICE

The use of other than genuine Roark Tools replacement parts may result in safety hazards, decreased tool performance, and increased maintenance, and may invalidate all warranties.

Roark Tools requires all tools, hoses and pumps to be inspected on a daily basis by the end user for any signs of damage or worn items.

Roark Tools also requires all tools to be factory inspected every 6 months by an authorized Roark Tools Representative or Repair Center.

Repairs should be made only by authorized personnel. Consult your nearest Roark Tools Authorized Service center. Refer All Communications to the Nearest Roark Tools Office or Distributor.

WARNING

FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY

USING THE TOOL

*Keep hands, loose clothing and long hair away from the reaction arm and working area during operation. Do not attempt to support the tool with your hands during operation.

*This tool will exert a strong reaction force. Use proper mechanical support and correct reaction arm positioning to control these forces. Do not position the reaction arm so that it tilts the tool off the axis of the bolt and never use the swivel inlets as a reaction stop.

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

*Use accessories recommended by Roark Tools.

*Use only impact sockets and accessories. Do not use hand (chrome) sockets or accessories.

*Use only sockets and accessories that correctly fit the

Bolt or nut and function without tilting the tool off the axis of the bolt.


*This tool is not designed for working in explosive atmospheres

*This tool is not insulated against electric shock. When using this tool with a pump having an electrical power source or circuits, follow the pump instructions for proper grounding. * Use only impact sockets and accessories that are appropriately rated for the output of the tool.

*Always use retaining pin and ring to engage the socket to the square drive.

*Inspect sockets for signs of overuse before utilizing with tool.

***Do not use overly worn impact sockets and Accessories.**

Always wear eye protection when operating or performing maintenance on this tool	Always wear ear protection when operating this tool	Operating at 10,000 Psi (681 bar) maximum pressure
The torque Reaction Arm must be positioned against a positive stop. Do not use the Arm as a dead handle. Take all precautions to make certain the operator's hand cannot be pinched between the arm and solid objects.		All ways Turn up the Pump and disconnect the power before installing. Removing, or adjusting any accessory on this tool, or before performing any maintenance on this tool.
Keep body stance balanced and firm. Do not overreach when operating this tool.	Do not carry the tools by the hose	Do not use damaged, frayed or deteriorated hydraulic hoses and fittings.

PLACING THE TOOL IN SERVICE

LUBRICATION

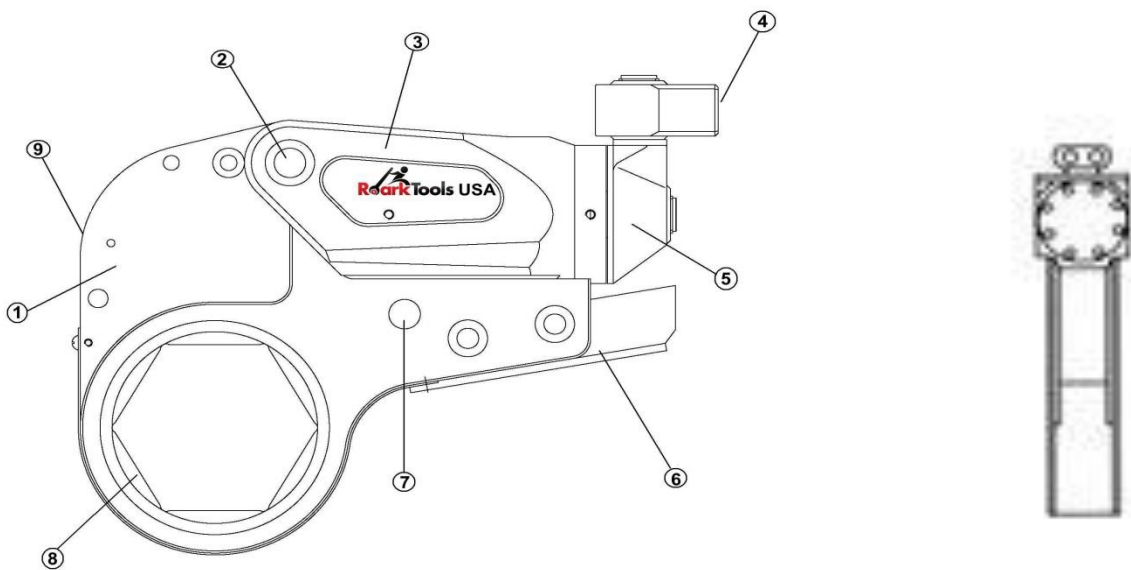
Marine Moly Grease

Lubrication frequency is dependent on factors known only to the user, critical lubrication is imperative every 20-40 hours of continuous duty cycling. The amount of contaminants in the work area is one factor. Tools used in a clean room environment will obviously require less service than a tool used out-doors and dropped in loose dirt or sand. Marine Moly Grease is formulated not to wash out of the tool in areas where lubrication is critical.

SXD DESCRIPTION

The material of SXD Hydraulic Torque Wrenches are Aluminium-Titanium alloy and super high strength alloy steel for increased strength, intensity and durability of the tool. High repeatability, a precise design is with accuracy $\pm 3\%$.

SXD Hydraulic Torque Wrenches:



FLG 2

ITEM	NAME
①	CASSETTE
②	PIN
③	POWER HEAD
④	QUICK COUPLING
⑤	360° × 245° SWIVEL JOINT
⑥	REACTION ARM
⑦	LINK PIN
⑧	RATCHET
⑨	QUICK RELEASE ARM

WARNING AND CAUTION

WARNING

To avoid personal injury and equipment damages, be sure that every hydraulic component can rated for 10,000PSI (700kg/cm²) Operating Pressure.

WARNING

Try to minimum the danger of overload: Using hydraulic gauge to indicate the working pressure. Hydraulic gauge is a window to show what happened in the hydraulic system.

WARNING

To replace the worn components with the Roark Tools's new components as soon as possible.

CAUTION

Do not subject the components to potential hazard such as fire, sharp surfaces, extreme heat or cold, or heave impact.

CAUTION

Never attempt to grasp a leaking pressurized hose with your hands. The force of escaping hydraulic fluid could cause serious injury.

Do not let the hose kink, twist, curl or bend so tightly that oil flow within the hose is blocked or reduced.

Do not use the hose to move attached equipment. Stress can damage the hose, causing personal injury.

WARNING

To avoid personal injuries and equipment damages, do not remove the shroud of the wrench.

Do not modify any component of the wrench. Do not change the relief valve which is inside the swivel couplings.

CAUTION

The incorrect system connection will cause failure and danger. Before connection, make sure the swivel couplings being clean. After application, the swivel couplings must be put on the dust caps.

CAUTION

Do not use worn socket and square drive.

CAUTION

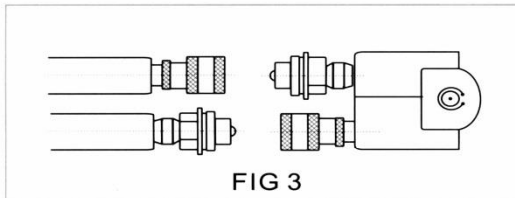
Please use the socket of good performance. The quality should be according with the standard of ISO-2725 or ISO-1174 or DIN3129 or DIN3121 or ASME-B107.2/1995.

SXD OPERATION

CONNECTING THE TOOL

The wrench and power pump are connected by a 700 BAR operating pressure, twin-line hose assembly. Each end of the hose will have one male and one female connector.

Assure proper interconnection between pump and wrench.



Insure the connectors are fully engaged and screwed snugly and completely together.

SETTING THE TORQUE

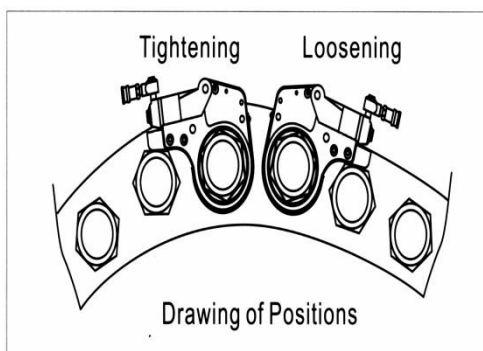
After determining the desired torque, use the torque conversion charts to determine the pressure that is necessary to achieve that torque.

1. Connect the tool to the power supply and turn the tool located on the floor and not the application.
2. Depress the advance remote control button causing the pressure to be shown on the gauge.
3. Adjust the pressure by first loosening the nut that locks the pressure adjustment handle and then rotate the handle clockwise to increase the pressure and counter clockwise to decrease the pressure. When decreasing pressure, always lower the pressure below the desired point and then bring the pressure gauge back up to the desired pressure.
4. When the desired pressure is reached, retighten the lock nut and cycle the tool again to confirm that the desired pressure setting has been obtained.



SXD SERIES WRENCH POSITIONS

The position of the tool relative to the nut determines whether the action will tighten or loosen the nut. The power stroke of the piston assembly will always turn the ratchet hex toward the shroud



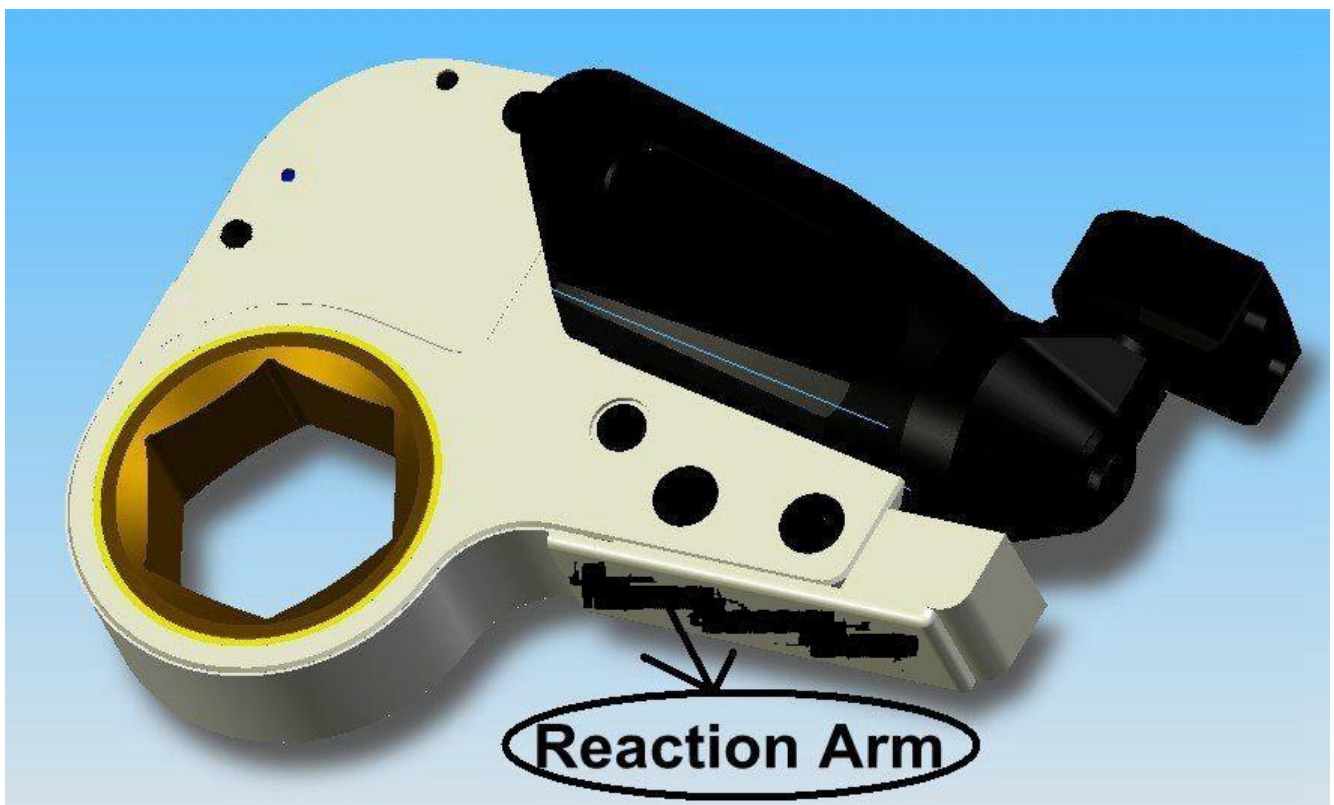
SETTING THE TORQUE

After determining the desired torque, use torque conversion charts to determine the pressure that is necessary to achieve that torque.

1. Connect the tool to the power supply and turn the pump on.
2. Depress the advance remote control button causing the pressure to be shown on the gauge.
3. Adjust the pressure by first loosening the nut that locks the pressure adjustment handle and then rotate the handle clockwise to increase the pressure and counter clockwise to decrease the pressure. When decreasing pressure, always lower the pressure below the desired point and then bring the pressure gauge back up to the desired pressure.
4. When the desired pressure is reached, retighten the lock nut and cycle the tool again to confirm that the desired pressure setting has been obtained.

OPERATING THE WRENCH

1. Place the ratchet hex on the nut. Make certain it is the correct size for the nut and that it fully engages the nut.
2. Position the reaction surface against an adjacent nut, flange or solid system component. Make certain that there is clearance for the hoses, swivel, and inlets. Do not allow the tool to react against the hoses, swivels or inlets.



3. After having turned the pump on and presetting the pressure for the correct torque, depress the remote control advance button to advance the piston assembly. If the notch in the piston rod did not engage the retract pin in the ratchet engage the pin automatically during the first advance stroke.
4. When the cassette is connected to the housing and the wrench is started, the reaction surface of the wrench will move against the contact point and the nut will begin to turn. Once the piston reaches the end of its stroke depress the remote control return button to retract the piston.

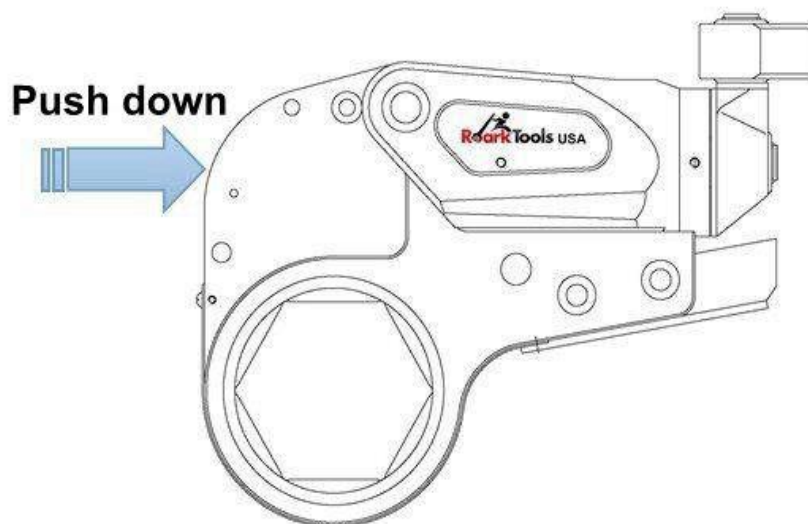
5. Continue this cycling operation of advance and retract until the nut is no longer turning and the pump gauge reaches the preset pressure. The piston rod will retract when the retract button is pressed and under normal conditions, an audible “click” will be heard as the tool resets itself.
6. Continue to cycle the tool until it “stall” and the preset psi/torque has been attained.
7. Once the nut stops rotating, cycle the tool one last time to achieve torque.

WARNING

Tools must be used with the supplied handle on the SXD-4, SXD-8, SXD-14, SXD-16 and SXD-32 Models.

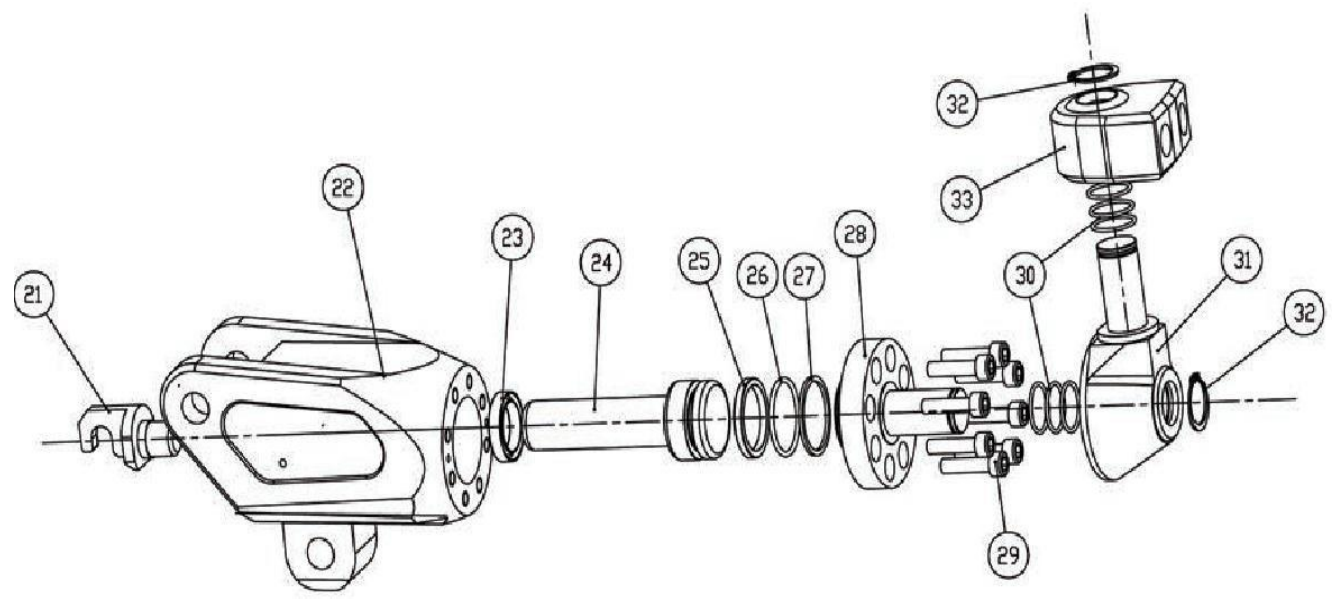
CAUTION

During the operation, if the tool locks onto the nut, press advance button on remote and build pressure-continue to press down on remote while pushing down on the reaction pawl-release remote while continuing to push down on reaction pawl, then the tool will be released from the nut.



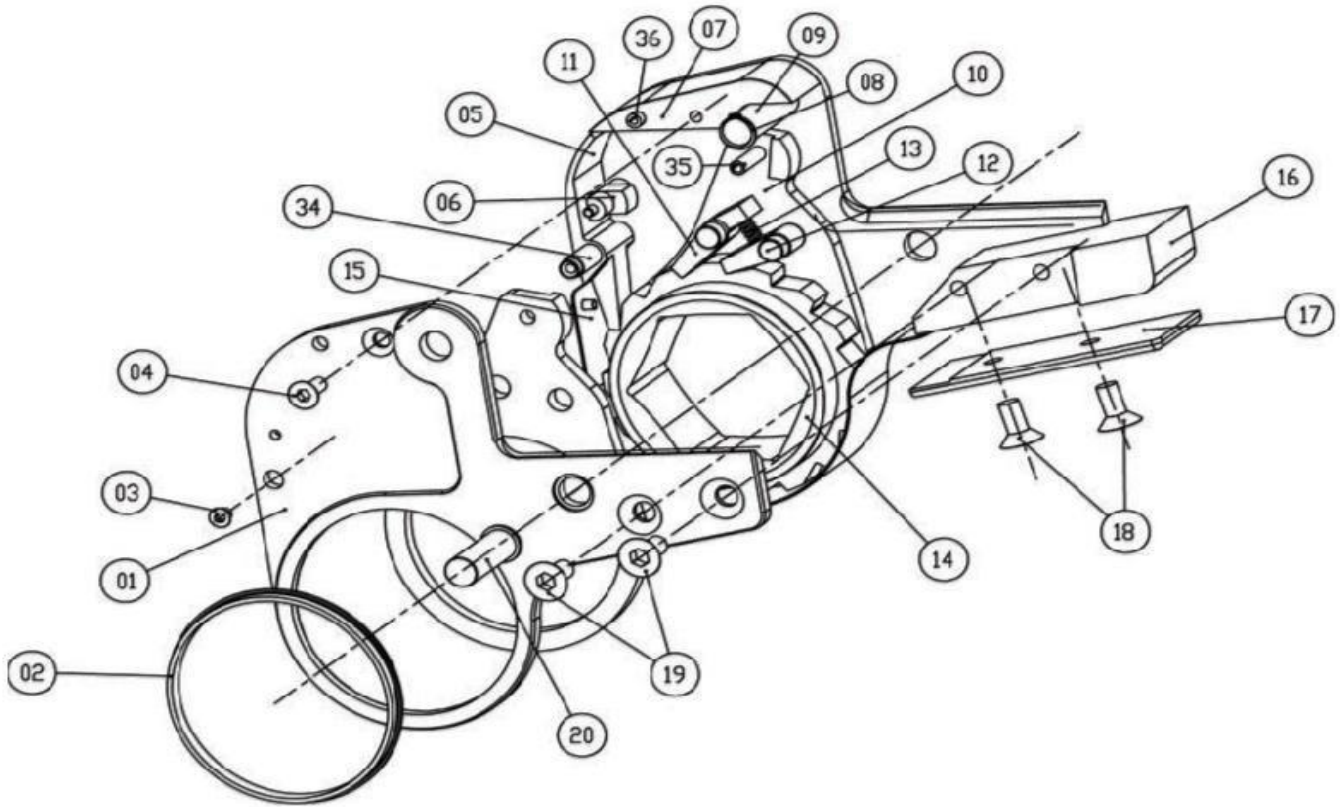
Calibration

Roark Tools Recommends tools to be calibrated every 6 months.
Calibration however may depend on each individual user's requirements.



Cylinder Parts	
21	Hook
22	Cylinder
23	U-ring for cylinder
24	Piston
25	Seal ring for piston
26	O-ring
27	Retaining ring for end cap
28	End cap
29	End cap screw
30	Seal kit for swivel joint
31	Swivel Jonit (270°)
32	Circlip for swivel jonit
33	Swivel jonit (360°)

SXD Link Parts List



Ratchet Link Parts	
1	Side plate
2	Copper belt
3	Small shaft screw
4	Screw for side plate link top spacer
5	Reaction Pawl
6	Spring retaining sleeve
7	Top spacer
8	Circlip for guide pin
9	Long link pin
10	Drive plate
11	Drive pawl primary
12	Drive pawl secondary
13	Compressed spring
14	Ratchet spline
15	Shroud
16	Reaction arm
17	Reaction arm cover
18	Reaction arm cover screw
19	Screw for side plate link reaction arm
20	Short link pin
34	Small shaft
35	Drive pin
36	Pin for top spacer link side plate

TROUBLE SHOOTING GUIDE

TROUBLE	PROBABLE CAUSE	SOLUTION
Piston will not advance or retract	Couplers are not securely attached to the tool or pump	Check the coupler connections and make certain that they are connected.
	Coupler is defective	Replace any defective coupler
	Defective remote control unit	Replace the button and/or control pendent
	Dirt in the direction-consol valve o the pump unit	Disassemble the pump and clean the direction-control valve
Piston will not retract	Hose connections reversed	Make certain the advance on the pump is connected to the advance on the tool and retract on the pump is connected to the retract on the tool
	Retract hose not connected	Connect the retrance hose securely
	Retrace pin and/or spring broken	Replace the broken pin and/or spring
Cylinder will not build up pressure	Piston seal and/or end plug seal leaking	Replace any defective o-ring
	Coupler is defective	Replace
Square Drive will not turn	Grease or dirt build up in the teeth of the ratchet and segment pawl	Disassemble the Ratchet and clean the grease or dirt out of the teeth
	Worn or broken teeth on ratchet and/or Segment Pawl	Replace any worn or damaged parts
Pump will not build up pressure	Defective relief valve	Inspect, adjust or replace the relief valve
	Electric power source is too low	Make certain the amperage, voltage and any extension cord size comply with the pump manual requirements
	Defective gauge	Replace the Gauge
	Low oil level	Check and fill the pump reservoir
	Clogged filter	Inspect, clean and/or replace the pump filter
Nut Return with retract stroke	Ball Plngers are not engaging the Drive Sleeves	Thread the Ball Plungers to the correct depth in the Housing

NOTICE

SAVE AND KEEP THESE INSTRUCTIONS WITH THE TOOL AT ALL TIMES. DO NOT DESTROY.



How to change Hex Link on a
SXD Cylinder

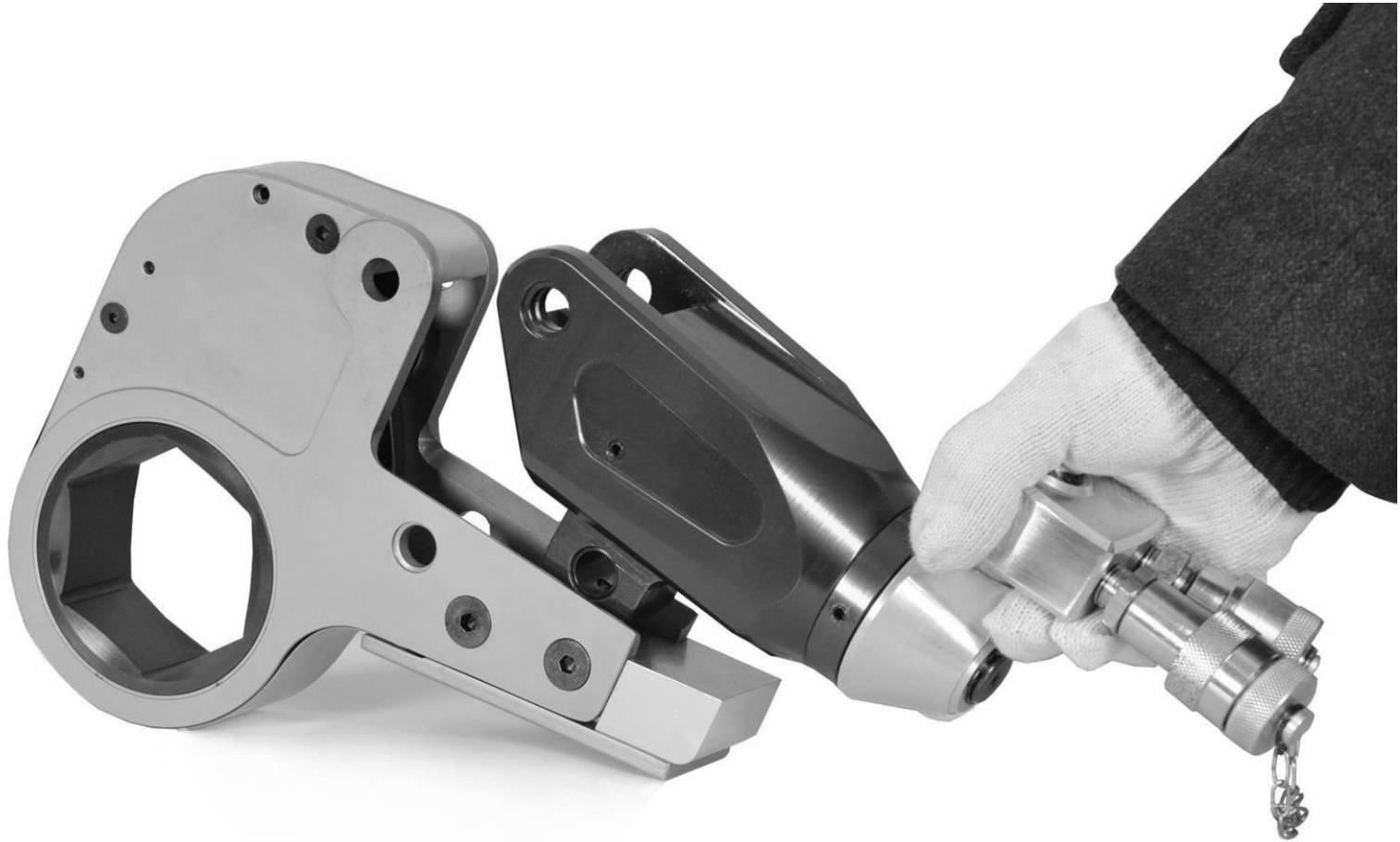
1. Remove long link pin



2. Remove short link pin



3. Separate power head from hex link



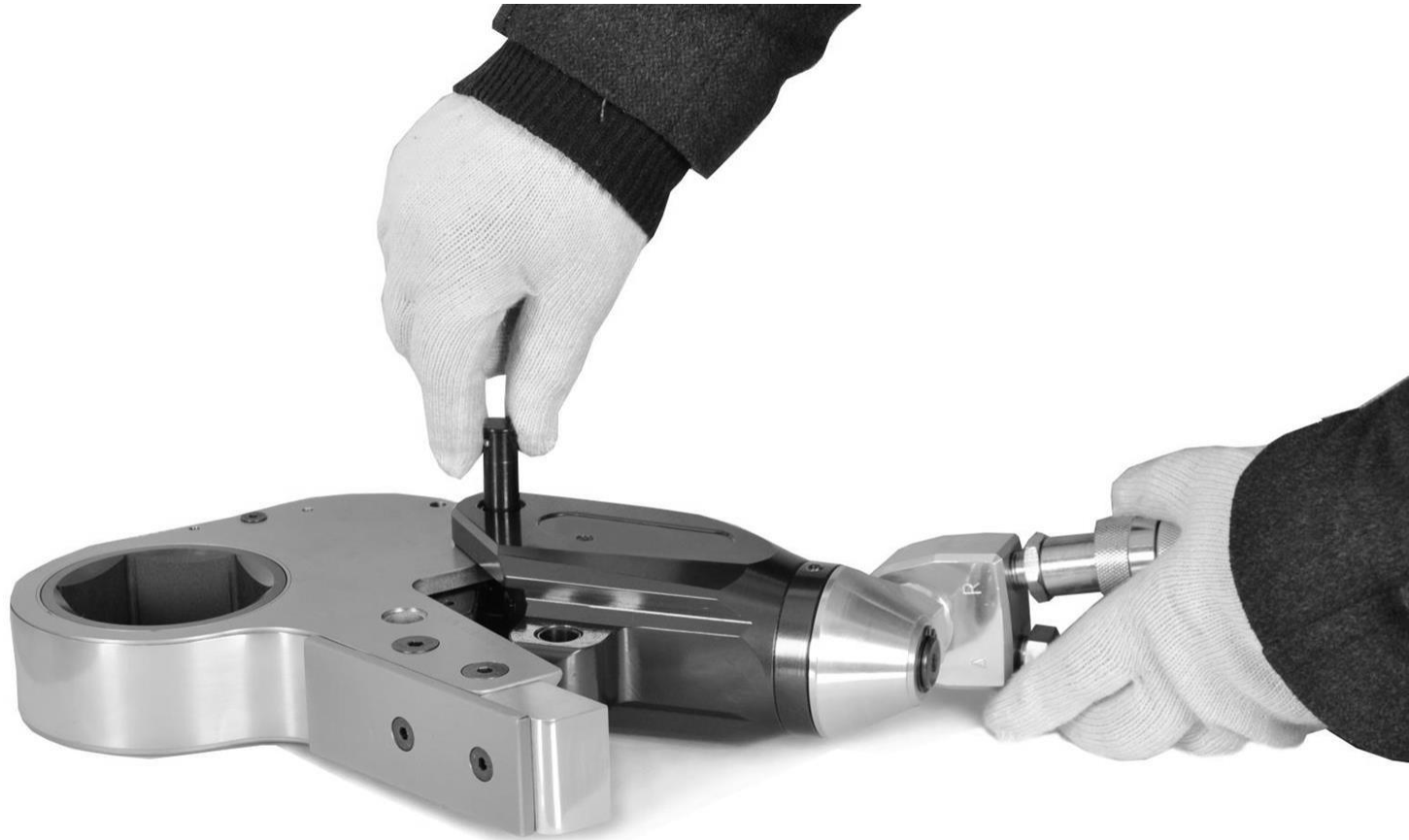
4. Place the hex link on the table



5. Pull the drive plate



6. Insert long link pin to connect power head and hex link



Important:make the drive pin is on the top of piston hook



7. Place cylinder at about a 40 degree angle from the hex link



Hold Cylinder, in order to keep this
position



8. Use your finger to push drive plate towards piston.



Do not stop stressing the drive plate until it is almost on the same plane with the side plate





9. Push Cylinder and Ratchet Link together



10. Insert short link pin

