JHJX

Hydraulic/electric/pneumatic

SAFETY INSTRUCTIONS AND MAINTENANCE MANUAL FOR

JHX HYDRAULIC TORQUE WRENCES

It is operating manual of JHX wrenches, please read carefully follow instructions. Warnings and cautions before using the tools.

I SECURITY GUIDE

Special emphasis: JHJX hydraulic torque wrench is the power tool for any power tool, indeed, a reliable security prevention are very important, the following is important to note a few suggestions.

- **Read all the technical documents.**
- **Try to make the working environment clean and bright.**
  If the environment in the workplace air explosion could have any potential, you may not use electric pumps, pneumatic pumps should be used. If metal crash sparks, should take preventive measures.
- **To avoid the tools (hydraulic wrench) misuse**
  Pumps operate the remote control just for the wrench to use, to avoid separating the operator and the pump is too far.

- **Ensure operation of space**
  Hydraulic wrench is not in use most of the hand, if you must use the hand or in the case of the fixed wrench, should think of other ways to achieve their goals.
- **Avoid electric shock**
  With electric pump to ensure a good grounding and proper power supply voltage.
- **Hydraulic wrench should be saved without good**
  Temporarily unused hydraulic wrench and wrench accessories should be properly stored to avoid damage.
- **Using the appropriate hydraulic wrench**
  Not with a small torque wrench or hydraulic accessories to replace the hydraulic torque wrench work, not unsuitable to work the hydraulic wrench.
- **Wear appropriate labor protection products**
  When using the manual / motorized hydraulic equipment, you should use gloves, helmets, safety shoes, ear protection, labor insurance and other protective clothing.
- **Safety glasses**
- **Mobile Devices**
  Do not drag through the hydraulic tubing, rotary joints, hydraulic power cord or external cables, etc. to move the unit. Hydraulic wrench comes with handles, can be used to move equipment.
- **High-pressure tubing**
  Do not bend, fold tubing, always check the tubing, if damaged, should be replaced.
- **Dust cover and side cover**
  All tools have dust cover and side cover, so that internal moving parts and the separation of the external environment, in addition to Roark Tools professional maintenance staff, users do not want to disassemble or use tools without guards.
- **Careful to maintain the hydraulic wrench**
  To ensure the best performance tool, should always check the tool itself, the power source, tubing, quick connectors, wires, attachments to prevent some common damage occurs. Should be in the proper hydraulic wrench, hydraulic pump unit to repair the maintenance guide.
  More detailed maintenance instructions please refer to maintenance section.

- **Vigilance**
  To maintain attention at work, can not be used in an unstable state of power equipment.
- **Preparation before operation**
  Ensure that all hydraulic couplings are indeed connected. Check the hydraulic tubing is not entangled, to determine the square head drive shaft and maintain the cap is secure, reliable joint then. Ensure that all connectors, elbows, swivels without distortion or damage.
- **Preparation before use**
  Rotate the drive shaft of hydraulic wrench square head is observed with good function. Looking for a fixed surface, choose a good spot, make sure the reaction arm to support reliable, to ensure that the hydraulic tubing is not suppressed. System pressure, if the hydraulic wrench beating or shaking, stop and then re-adjust the reaction arm and the anchor, to make it more solid and safe.

Note: The operation, reaction arm should be kept clean, and the role of anti-surface between the arms cannot have a foreign body.

- **Please stick with quality accessories**
  Use high strength sleeve because the sleeve has the exact size of high-quality, and nuts are a good match. Hidden crack has the potential to rupture the sleeve in use, so proper maintenance of the sleeve, the sleeve in operation to keep clean and manipulation.
  Do not use force, but do not use a hammer sleeve, as well as tools to increase the force, if you are not using a hydraulic wrench turn the nut, use a larger device Roark Tools hydraulic wrench.

Note: Roark Tools designed only to drive the hydraulic pump Roark Tools hydraulic wrench; improper use may cause damage to the hydraulic pump or hydraulic wrench.

WARNINGS

Write tips (box checked)

Carefully check the product for damage. If you find that due to shipping damage,

shall promptly report to the freight operators; shipping damage is not included in the quality assurance within the freight business has the responsibility to bear the cost of repair or replacement items.

Security Alert

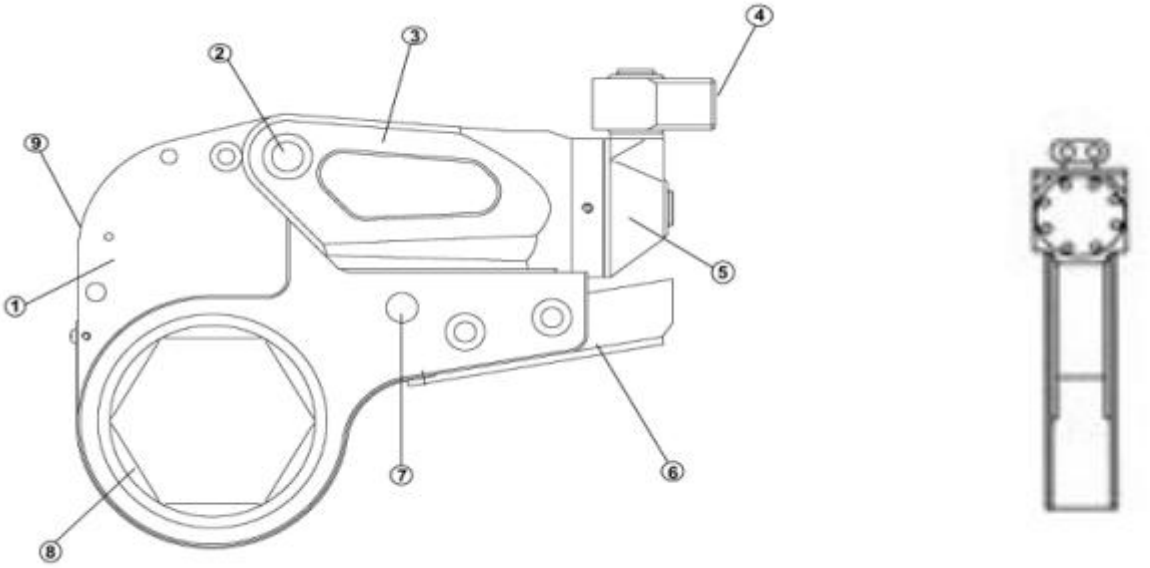
High pressure hydraulic torque wrench is a tool that should be read carefully before using all of the instructions, warnings and precautions, comply with safety measures to avoid when operating the equipment or personal injury or equipment damage! Roark Tools for operation and error operation because of insecurity due to equipment damage and personal injury irresponsible!

II OPERATING DIRECTIONS FOR USE

One: DESCRIPTION

The material of JHX 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 ±3%.

1. JHX, Hydraulic Torque Wrenches:



FLG 2

ITEM	NAME
①	CASSETTE
②	PIN
③	POWER HEAD
④	QUICK COUPLING
⑤	$360^0 \times 245^0$ SWIVEL JOINT
⑥	REACTION ARM
⑦	LINK PIN
⑧	RATCHET
⑨	QUICK RELEASE ARM

TWO: WARNING AND CAUTION

WARNING

To avoid personal injury and equipment damages, be sure that every hydraulic component can rated for 10,000PSI (700kg/cm^2) 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.

Three: BOLTING TIGHTENING FORCE RECOMMENTED CHART

The belows are DIN (For you reference) FORM1

Strength Grade		4.8		6.8		8.8		10.9		12.9	
Min breaking strength		392MPa		588MPa		784MPa		941MPa		1176MPa	
Material		Q235(SS41)		35(S35C)		35CrMo(SCM3)		42CrMo(SCM4)		40GrNiMoA(SNCM)	
Bolting	Thread	Torque		Torque		Torque		Torque		Torque	
		KGM	N.M	KGM	N.M	KGM	N.M	KGM	N.M	KGM	N.M
M14	22mm	7	69	10	98	14	137	17	165	23	225
16	24	10	98	14	137	21	206	25	247	36	363
18	27	14	137	21	206	29	284	35	341	49	480
20	30	18	176	28	296	41	402	58	569	69	480
22	32	23	225	34	333	55	539	78	765	93	911
24	36	32	314	48	470	70	686	100	981	120	1176
27	41	45	441	65	637	105	1029	150	1472	180	1764
30	46	60	588	90	882	125	1225	200	1962	240	2352
33	50	75	735	115	1127	150	1470	210	2060	250	2450
36	55	100	980	150	1470	180	1764	250	2453	300	2940
39	60	120	1176	180	1764	220	2156	300	2943	370	3626
42	65	155	1519	240	2352	280	2744	390	3826	470	4606
45	70	180	1764	280	2744	320	3136	450	4415	550	5390
48	75	230	2254	350	3430	400	3920	570	5592	680	6664
52	80	280	2744	420	4116	480	4704	670	6573	850	8330
56	85	360	3528	530	5149	610	5978	860	8437	1050	10290
60	90	410	4018	610	5978	790	7742	1100	10791	1350	13230
64	95	510	4998	760	7448	900	8820	1224	11998	1530	14994
68	100	580	5684	870	8526	1100	10780	1392	13645	1740	17053
72	105	660	6468	1000	9800	1290	12642	1584	15527	1980	19405
76	110	750	7350	1100	10780	1500	14700	1800	17644	2250	22050
80	115	830	8143	1250	12250	1850	18130	1992	19547	2489	24429
85	120	900	8820	1400	13720	2250	22050	2160	21172	2699	26459
90	130	1080	10584	1650	16170	2500	24500	2593	25407	3241	31752
100	145	1400	13720	2050	20090	2800	27440	3361	32935	4200	41160
110	155	1670	16366	2550	24990	3340	32732	4009	39287	5010	49098
120	175	2030	19894	3050	29890	4060	39788	4873	47756	6090	59682

NOTE:

The figure of the chart is the Max torque of the bolting, the recommended torque is 70~80% of chart figure

For instance: M48, strength grade is 8.8, the torque is 3920×80%=3136N.m

Four: 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.

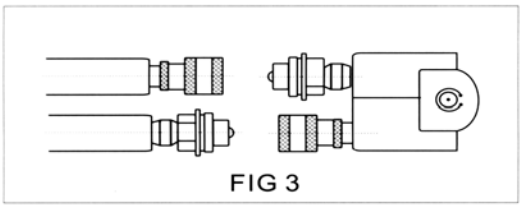


FIG 3

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 pump on.
2. Depress the advance remote control button causing the pressure to be shown on the gauge.
3. Adjust the pressure by first loosing 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.

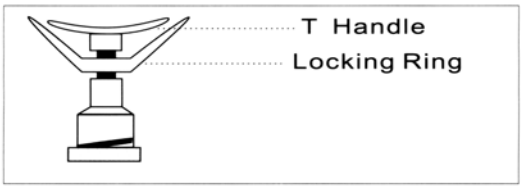


FIG 6

JHX 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

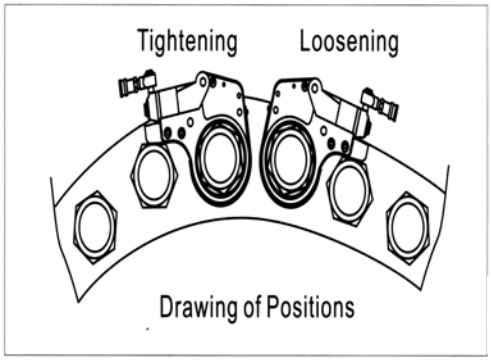


FIG8- 9

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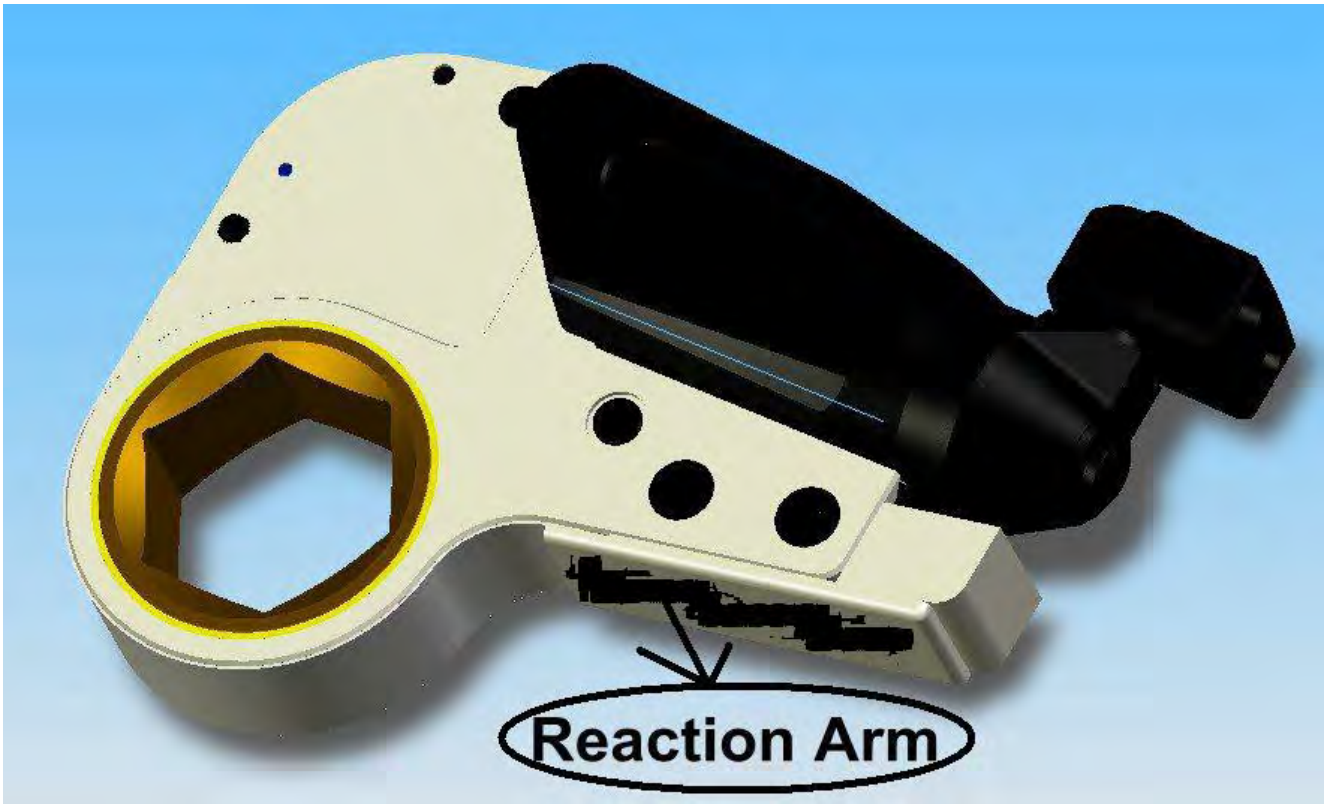
OPERATING THE WRENCH

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.

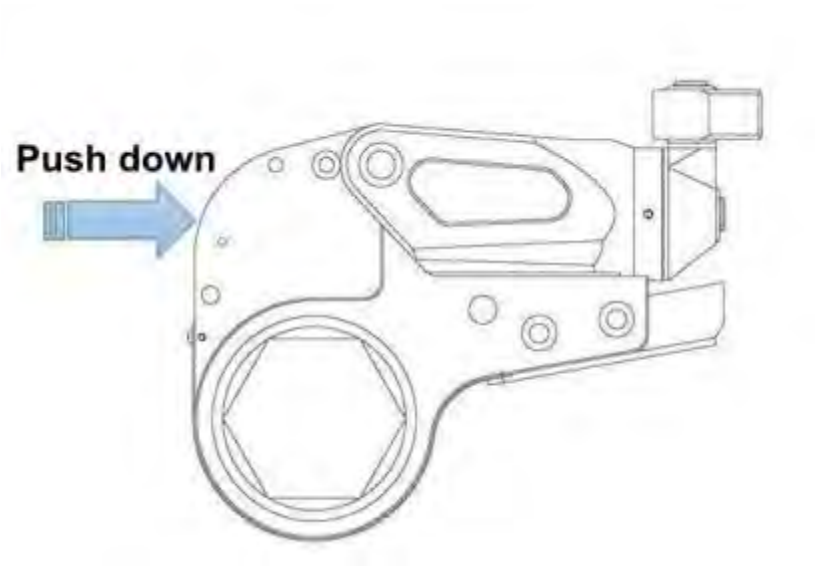
5. Continue this cycling operation of advance and retract until the nut is no longer turning and the pump gauge reaches the preset pressure. The piston rod will retract when the retract button is pressed and under normal conditions, an audible “click” will be heard as the tool resets itself.

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.

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.



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 retrace 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 aord 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 Plungers are not engaging the Drive Sleeves	Thread the Ball Plungers to the correct depth in the Housing