W212

The original version of the Chinese Translation

WREN

S and H Serises Hydraulic Torque Wrench

Operation Manual

Hangzhou WREN Hydraulic Equipment Manufacturing Co.Ltd
Add:No 24 xingxing Road, Xingqiao, Yuhang district, Hangzhou, China
TEL: 0571-88110295 FAX：0871-88110210
Post Code：311100
Http: www.wrenchina.com
EMAIL：info@wrenchina.com

Catalog

OPERATION AND MAINTENANCE MANUAL

FOR S AND H HYDRAULIC TORQUE WRENCHES

It is operating manual of S series and H series wrenches, please read carefully follow instructions、warnings and cautions before using the tools.

IMPORTANT RECEIVING INSTRUCTIONS

Carefully inspect all components for shipping damage. If any shipping damage is found, please notify carrier at once. Shipping damage is not covered by warranty. The carrier is responsible for all repair or replacement cost resulting from damage in shipment.

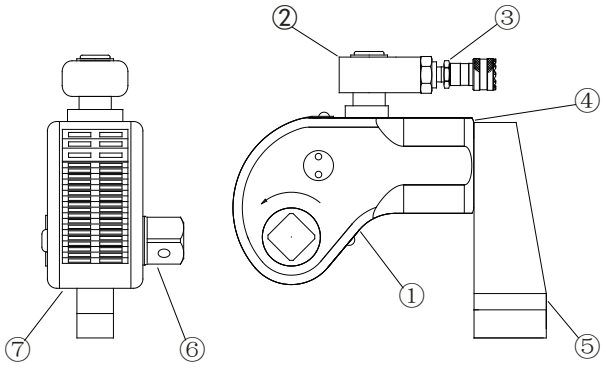
SAFTY FIRST !!

Please read carefully follow instructions, warning and caution. Please observe the safety precautions so that it can avoid personal and equipment to injury when you operate the equipment. WREN is not responsible for any damage resulting from the operation of irregularity.

DESCRIPTION

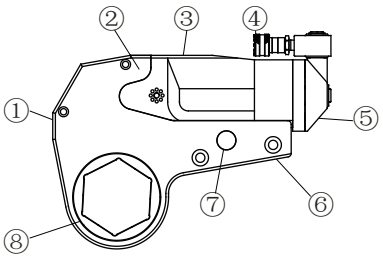
The material of S series and H series Hydraulic Torque Wrenchs are Aluminium-Titanium alloy and superhigh strength alloy steel for increased strength, intensity and durability of the tool. High repeatability, a precise design is with accuracy ±3%.

S series, Square Drive Torque Wrenches:

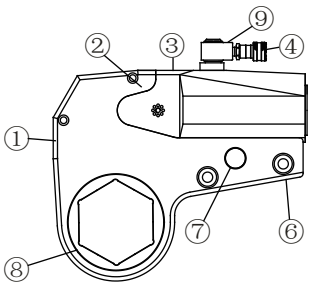


ITEM	NAME
①	BODY
②	360° SWIVEL JOINT
③	QUICK COUPLING
④	FIXING HOOK
⑤	360° SWIVEL REACTION ARM
⑥	SQUARE DRIVE
⑦	DRIVE RETAINER

H series, Low Profile Torque Wrenches:



H27/H54/H120/H210



H430

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

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 WREN new components as soon as possible.

CAUTION

Do not subject the components to potential hazard such as fire, sharp surfaces, extremeheat 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 com ponent of the wrench. Do not change the relief valve which ithe swivel couplings.s inside

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.

Warning Plate

Warning plate is shown in table 1

warning table	Meaning	Affixed Position
	NO HAND	REVERSE LEVER

BOLTING TIGHTENING FORCE RECOMMENTED CHART

FORM 1

The belows are DIN(For you reference)

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)		40 GrNiMoA(SNCM)	
Bolting	Thread	KGM	N.m	KGM	N.m	KGM	N.m	KGM	N.m	KGM	N.m
M	mm										
14	22	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	680
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				
68	100	580	5684	870	8526	1100	10780				
72	105	660	6468	1000	9800	1290	12642				
76	110	750	7350	1100	10780	1500	14701				
80	115	830	8143	1250	12250	1850	18130				
85	120	900	8820	1400	13720	2250	22050				
90	130	1080	10584	1650	16170	2500	24500				
100	145	1400	13720	2050	20090						
110	155	1670	16366	2550	24990						
120	175	2030	19894	3050	29890						

NOTE:

The figure of the chart is the Max torque of the bolting, the recommended torque is 80% of chart figure For instance:M52,strength grade is 8.8,the torque is 4704×80%=3763N.m

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 to assure proper interconnection between pump and wrench.

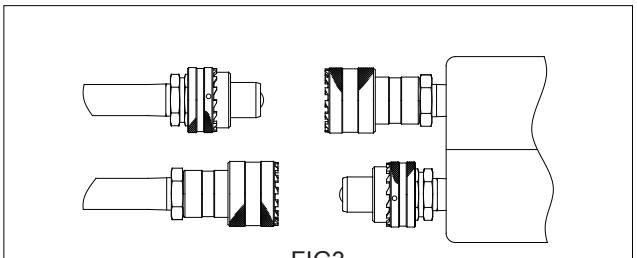


FIG3

S SERIES

DRIVE DIRECTION CHANGE

To remove the square, disengage the drive retainer assembly by depressing the center round button and gently pulling on the square end of the square drive. The square drive will slide easily out.

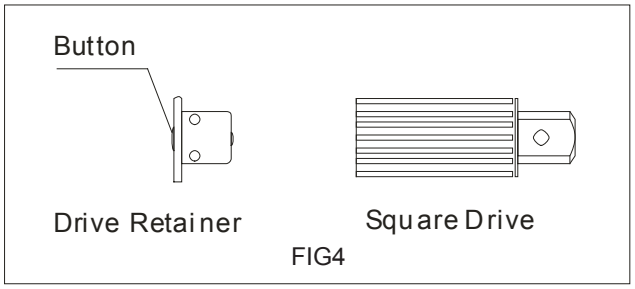


FIG4

To insert the drive in the tool, place the drive in the desired direction, engage drive and bushing splines, then twist drive and bushing until ratchet spline can be engaged. Push drive through ratchet. Depress drive retainer button, engage retainer with drive and release button to lock.

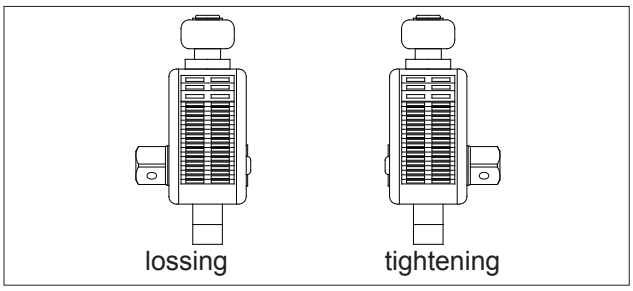


FIG5

SETTING THE REACTION ARM

All WREN's Torque wrenches are equipped with a universal reaction arm. These reaction arms are employed to absorb and counteract forces created as the unit operates. The reaction arm should extend in the same direction of the square drive; However, slight adjustments may be made to suit your particular application. The function of a reaction device is to hold the tool in position against the forces generated to tighten or loosen bolts or nuts. Hydraulic wrenches generate tremendous force. The reaction arm can be

positioned in numerous places within a 3600 circle. However, for the arm to be correctly positioned, it must be set within a 900 quadrant of that circle. That quadrant is the area located between the protruding square drive and the bottom of the housing away from the swivel inlets. It will always be toward the lower half of the housing and on one side of the housing when tightening and the other side when loosening.

SETTING THE SQUARE DRIVE FOR ROTATION

The position of the square drive when looking toward the shroud will determine if the tool is set to tighten or loosen the nut. When the square drive extends to the left when looking at the shroud with the inlets away from you, the tool is set to loosen the nut. When the square drive extends to the right, the tool is set to tighten the nut. To change the direction of rotation for MXTA series wrenches simply push the square drive into the housing until the drive projects out the opposite side of the tool.

SETTING THE TORQUE

After determining the desired torque, use the torque conversion charts on page 5 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.

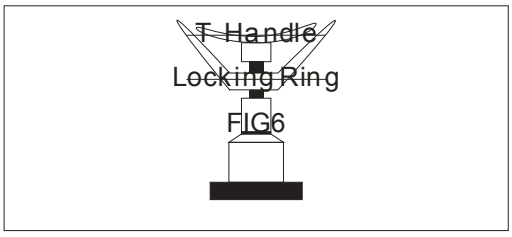


FIG6

OPERATING THE WRENCH

1.Place the square Drive in the socket, insert the socket retainer ring and pin, and place the socket on the nut. Make certain the square drive and socket are the correct size for the nut and that the socket fully engages the nut.

2.Position the reaction arm against an adjacent nut, flange or solid system component.Make certain that there is clearance for the hoses and swivel couplings.Do not allow the tool to react against the hoses, or swivel couplings.When reacting directly off the tool body with reaction arm removed. Do not react off the exposed end plug spigot.

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.

4.When the wrench is started, the reaction surface of the wrench or reaction arm 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 “Stalls”and the preset psi/torque has been attained.
7.Once the nut stops rotating, cycle the tool one last time to achieve total torque

H SERIES

CONNECTING THE POWER HEAD WITH THE LOW PROFILE CASSETTE

Both the square drive cartridge link and the low clearance ratcheting link are inserted and removed from the power head in the same way. The “Hook”described by the link's drive plates is inserted around the fixed pin of the power head, and the link is swung down to rest along the base of the power head cylinder. At this point, the link pin holes of the power head and link will align. Insert the link pin to secure.

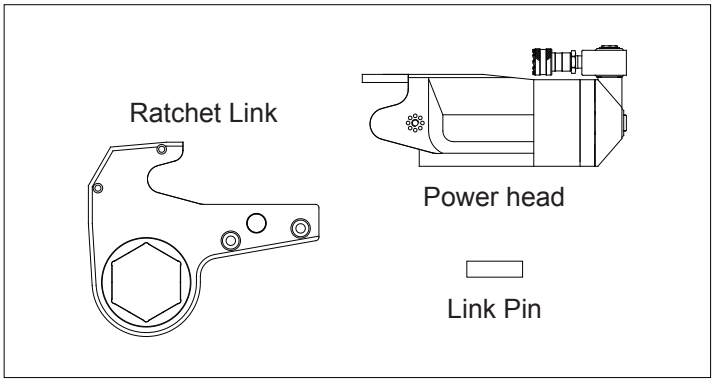


FIG7

LOW PROFILE WRENCH POSITIONS

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

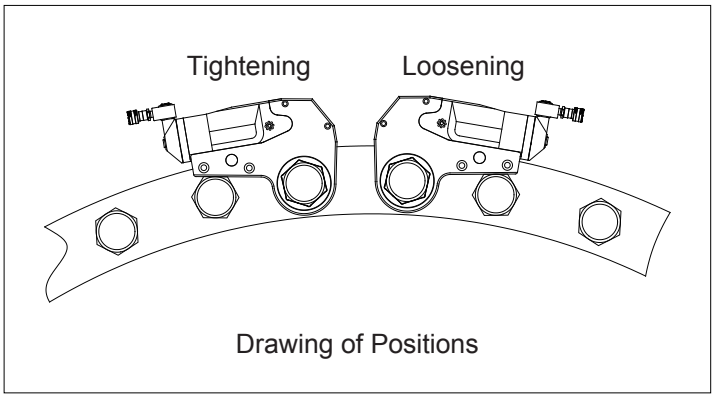


FIG8

SETING THE TORQUE

After determining the desired torque, use torque conversion charts on page 5 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.

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 low profile 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.

Routine Maintenance and transport ofhydraulic torque wrench

Maintenance of the hydraulic torque wrench.

1、Before and after use, should check the screws are loose or not on the torque wrench, if loose should be tightened. If you do not tighten, it may cause damage to the equipment.

2、Inside of the Torque Wrench, all parts should be regularly smear NLGI # 2, in complex environmental conditions, should be cleaned and lubricated.

3、The coupler should be kept clean after work, tighten the dust cap to prevent dust entering the hydraulic system failure to make the equipment damage.

4、Connecting devices, switch direction control valves, check the pressure with or without exception.

5、Check for leakage, if a similar situation, please identify the reasons and processed.

6、The parts of inside torque wrench are connected, if one part fails, it is bound to affect other parts caused by wear, so regular inspection and maintenance are very important.

Hydraulic torque wrench noise declaration.

Hydraulic torque wrench noise value:≤ 70db.

Hydraulic torque wrench transport information.

1、Handle with care.

2、The shipment should be vertical upward, as shown in the figure 9-1.

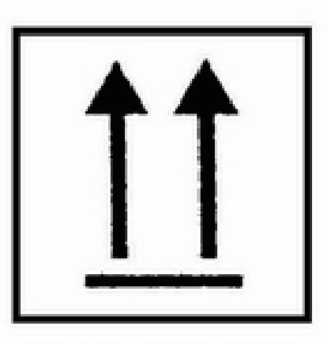


FIG 9-1

3、Product handling, generally using portable, car handling and lifting and moving, as shown in the figure 9-2.

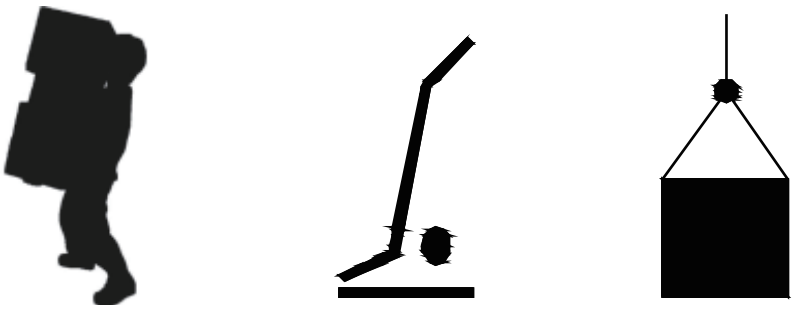
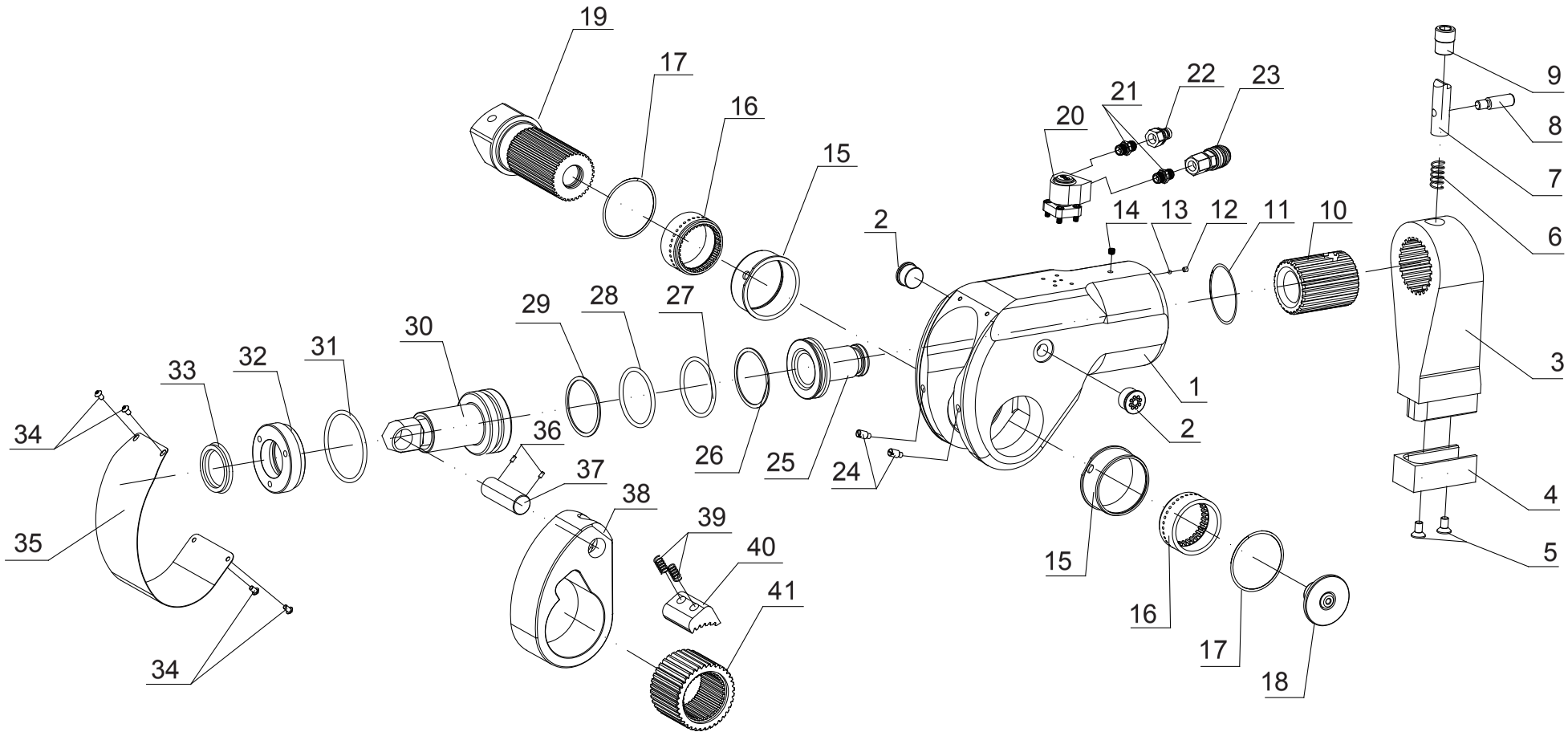


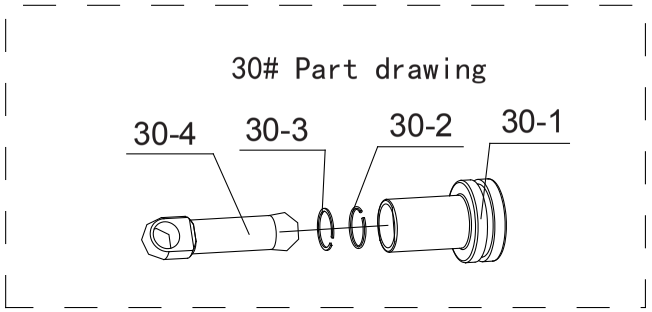
FIG 9-2

S series drawing

S17、S45、S100、S150、S370 series



NOTE: 30# can not part from the piston rod assembly

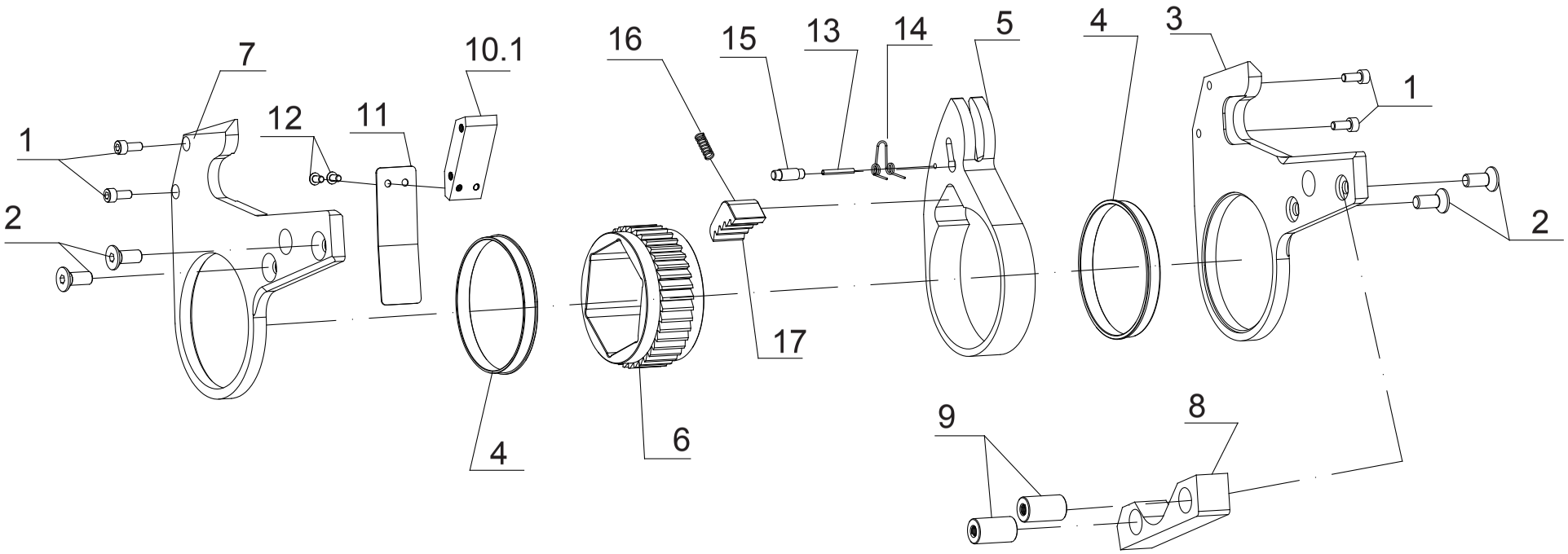


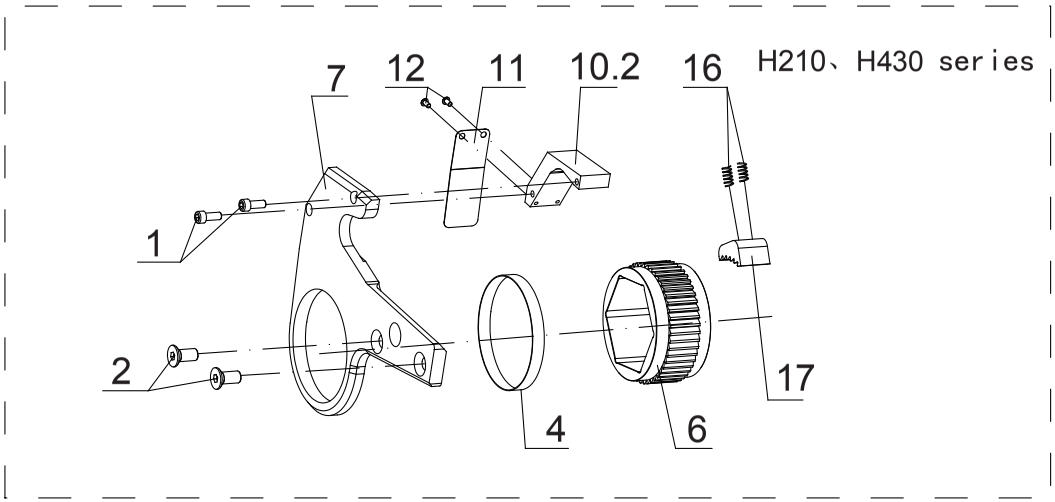
S series partlist

		S17	S45	S100	S150	S370
ITEM	NAME	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER
1	BODY	1	1	1	1	1
2	SCREW	2		2	2	2
3	REACTION ARM	1	1	1	1	1
4	REACTION ARM COVER	1	1	1	1	1
5	(REACTION ARM) SCREW	2	2	2	2	2
6	(REACTION ARM) SPRING	1	1	1	1	1
7	PIN	1	1	1	1	1
8	SCREW	1	1	1	1	1
9	SCREW	1	1	1	1	1
10	SIDE RATCHET DRIVER	1	1	1	1	1
11	(BODY) REATINING RING	1	1	1		1
12	(BODY) SCREW	1	1	1	1	1
13	STEEL BALL	1	1	1	1	
14	(BODY) SCREW		1	1	1	1
15	BUSHING		2	2	2	2
16	SIDE RATCHET DRIVER	2	2	2	2	2
17	REATINING RING	2	2	2	2	2
18	DRIVE RETAINER	1	1	1	1	1
19	SQUARE DRIVE	1	1	1	1	1
20	SWIVEL JOINT	1	1	1	1	1
21	COUPLER	2	2	2	2	2
22	QUICK COUPLER(MALE)	1	1	1	1	1
23	QUICK COUPLER(FEMALE)	1	1	1	1	1
24	SCREW	2	2	2	2	2
25	PISTON HOUSING	1	1	1	1	1
26	BACK UP RING	1	1	1	1	1
27	O RING	1	1	1	1	1
28	O RING	1	1	1	1	1
29	BACK UP RING	1	1	1	1	1
30	PISTON ASSEMBLY	1	1	1	1	1
31	O RING	1	1	1	1	1
32	RETAINING SCREW	1	1	1	1	1
33	U RING	1	1	1	1	1
34	SCREW	2	2	3	3	4
35	BODY COVER	1	1	1	1	1
36	PIN SCREW	2		2	2	2
37	PIN	1	1	1	1	1
38	RATCHET PLATE	1	1	1	1	1
39	DRIVE PAWL SPRING	2	2	2	2	2
40	DRIVE PAWL	1	1	1	1	1
41	RATCHET	1	1	1	1	1
30-1	PISTON COVER	1	1	1	1	1
30-2	RETAINING RING	1	1	1	1	1
30-3	RETAINING RING	1	1	1	1	1
30-4	PISTON HOOK	1	1	1	1	1

H series drawing

H27、H54、H120 series



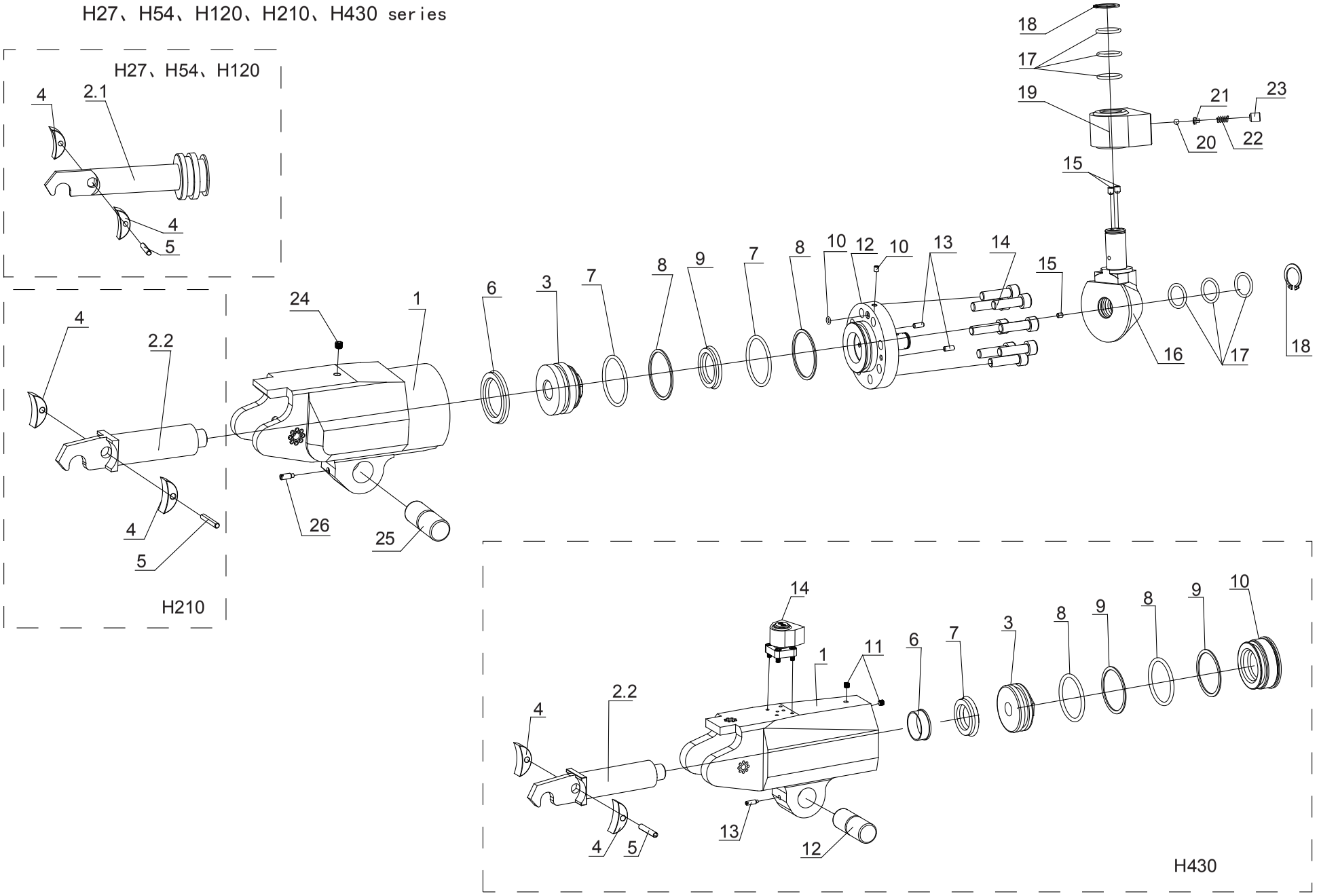


H series work-head partlist

		H27	H54	H120	H210	H430
ITEM	NAME	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER
1	SCREW	4	4	4	4	4
2	SCREW	4	4	4	4	4
3	RIGHT OUTER PLATE	1	1	1	1	1
4	COPPER BELT	2	2	2	2	2
5	DRIVE PLATE	1	1	1	1	1
6	RATCHET	1	1	1	1	1
7	LEFT OUTER PLATE	1	1	1	1	1
8	REACTION ARM	1	1	1	1	1
9	PIN	2	2	2	2	2
10.1	REACTION PAWL	1	1	1		
10.2					1	1
11	SHROULD	1	1	1	1	1
12	SHROULD SCREW	2	2	2	2	2
13	PIN	1	1	1	1	1
14	SPRING	1	1	1	1	1
15	DRIVE PIN	1	1	1	1	1
16	SPRING	1	1	1	1	2
17	RATCHET PAWL	1	1	1	1	1

H series power-head drawing

H27、H54、H120、H210、H430 series



H series power-head partlist

		H27	H54	H120	H210			H430
ITEM	NAME	NUMBER	NUMBER	NUMBER	NUMBER	ITEM		NUMBER
1	BODY	1	1	1	1	1	BODY	1
2.1	PISTON HOOK	1	1	1			PISTON HOOK	
2.2					1	2.2		1
3	PISTON COVER				1	3	PISTON COVER	1
4	SLIDE BLOCK	2	2	2	2	4	SLIDE BLOCK	2
5	PIN	1	1	1	1	5	PIN	1
6	(BODY) U RING	1	1	1	1	6	BUSHING	1
7	O RING	2	2	2	2	7	(BODY) U RING	1
8	RETAINING RING	2	2	2	2	8	(PISTON)O RING	2
9	(PISTON) U RING	1	1	1	1	9	REATINING RING	2
10	O RING	2	1	1	1	10	PISTON HOUSING	1
11	BODY SCREW	4	1	1	1	11	SCREW	2
12	PISTON HOUSING	1	1	1	1	12	PIN	1
13	SCREW		2	2	2	13	SCREW	1
14	SCREW	8	8	8	8	14	HOSE SWIVEL JOINT	1
15	SCREW	6	3	3	3			
16	SWIVEL JOINT	1	1	1	1			
17	O RING	6	6	6	6			
18	REATINING SPRING	2	2	2	2			
19	HOSE SWIVEL JOINT	1	1	1	1			
20	STEEL BALL	1	1	1	1			
21	SPRING SEAT	1	1	1	1			
22	SPRING	1	1	1	1			
23	(SWIVEL JOINT) SCREW	1	1	1	1			
24	(BODY) SCREW		1	1	1			
25	SCREW	1	1	1	1			
26	PIN	1	1	1	1			

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/orcontrol pendent
	Dirt in the direction-contol 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 retract hose securely
	Retract 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 any defective Coupler
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 te teeth
	Worn or broken teeth on Ratchet an /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 Returns with retract stroke	Ball Plungers are not engaging the Drive Sleeves	Thread the Ball Pungers to the correct depth in the Housing