



ATWH SERIES
Hydraulic Torque Wrenches
Operation and Maintenance Manual

Use the ATWH Series Torque Wrenches install and remove threaded fasteners requiring precise high torque during bolt makeup and maximum torque during bolt breakout.

Read and understand this Operation and Maintenance Manual before using WREN Torque Wrenches. Use only genuine WREN replacement parts. Other parts may result in safety hazards, decreased tool performance, increased maintenance and an invalidated warranty.

Important Safety Instructions

UPON RECEIPT OF THIS TOOL, INSPECT THE PACKAGE FOR DAMAGE.

Carefully inspect all components for damage incurred during shipping. If any shipping damage is found, notify the carrier at once. Shipping damage is NOT covered by warranty. The carrier is responsible for all repair or replacement costs resulting from damage in shipment.

The hydraulic torque wrench is a power tool. Read all instructions, warnings and precautions before every operation. Comply with the safety precautions to avoid personal injury or equipment damage while operating this tool.

Neither WREN , nor its distributors are responsible for damages caused by unsafe and/or faulty operations. If a problem arises during use, shut off the power immediately and consult your ATWH distributor.

ALL OF OUR PRODUCTS MAY HAVE UPGRADES AND MODIFICATIONS WITHOUT NOTICE.

Warnings and Cautions: Safety First!

▲ WARNING

Never use a hydraulic torque wrench without a hydraulic gauge to indicate the working pressure.

▲ WARNING

To avoid personal injuries and/or equipment damage, be sure that all hydraulic components are rated for 10,000PSI (700bar) operating pressure.

▲ WARNING

DO NOT exceed the allowable maximum torque of the hydraulic torque wrench.

▲ WARNING

Immediately replace any worn or damaged parts with genuine WREN replacement parts.

▲ WARNING

To avoid personal injuries, equipment damage and/or warranty invalidation:
DO NOT remove the shroud from the hydraulic torque wrench.
DO NOT modify any component of the hydraulic torque wrench.
DO NOT adjust the hydraulic torque wrench safety relief valve located inside the swivel couplings.

▲ WARNING

Only use a high quality socket. The socket must measure up to standard ISO-2725 and ISO-1174 or DIN3129 and DIN3121 or ASME-B107.2/1995. Never use a chrome plated socket.

▲ WARNING

Always use a pin to lock the socket with the square drive in order to avoid the socket from falling off or damaging the square drive.

▲ CAUTION

Keep all hydraulic torque wrench components away from excessive heat, flame, moving machine parts, sharp edges and chemicals.

▲ CAUTION

Avoid sharp bends and kinks when routing the hydraulic hose assembly. A bent or kinked hydraulic hose assembly will cause severe back-pressure. They will also damage the internal lining of the hose leading to premature failure. Replace a kinked or damaged hydraulic hose assembly immediately.

▲ CAUTION

DO NOT drive over, crush or drop heavy objects onto the hydraulic hose assembly. Crush forces may damage hose wire strands and applying pressure to a damaged hose assembly may cause it to rupture. Replace all crushed hydraulic hose assemblies immediately.

▲ CAUTION

DO NOT expose the hydraulic hose assembly to high temperatures.

▲ CAUTION

DO NOT use old or damaged sockets.

DO NOT use the wrong size sockets.

Other Safety Notes

- Loose or dirty couplers will cause tool not to operate properly.
- To avoid personal injuries and/or equipment damage, be sure that all hydraulic components are rated for 10,000PSI (700bar) operating pressure.
- Always inspect the hydraulic hose assembly for damage and wear before using it
- Make sure the hydraulic torque wrench swivel couplings, hose couplings and hydraulic power pack couplings are clean and free of debris prior to connecting the hydraulic torque wrench and hydraulic hose assembly to the assembled power pack.

Personal Protective Equipment (PPE)

When operating hydraulic equipment, use proper safety equipment and clothing.

Consult with your company's safety representative for this information.

Operate Precondition

Reference the Operation and Maintenance Manual of the electric or air powered hydraulic power pack before using.

Preparation

Prior to use determine:

- Nut or bolt head size
- Material and strength grade
- Determine the desired torque

Appendix I, presented for reference only, gives typical torque values specified for the most commonly encountered fasteners. You should always abide by established procedures for the job site. Torque sequence may vary from manufacturer to manufacturer and even on job sites depending on the gasket material etc. Refer to your company's engineering department for this information.

Hydraulic Torque Wrench Set Up

1. Inspect the components of the hydraulic torque wrench set.
2. Connect the hydraulic torque wrench, hydraulic hose assembly and the hydraulic power pack to a hydraulic circuit.
3. Ensure all hydraulic connections are securely connected.
4. Verify that the hydraulic hose assembly is not kinked, crushed or damaged.

Torque value

Determine the corresponding pressure of the hydraulic power pack to achieve the required torque value.

You can find this information in the Pressure - Torque Conversion Chart provided with the hydraulic torque wrench.

Important

To avoid hydraulic torque wrench malfunction:

- DO NOT reverse connectors.
- DO NOT tamper with the set screw on the swivel assembly. (It is factory preset for safety purposes and adjustments should only be made by trained personnel.)

Connect the hydraulic hose assembly to the swivel as shown below:

Ensure the connectors are fully engaged and screwed snugly together.

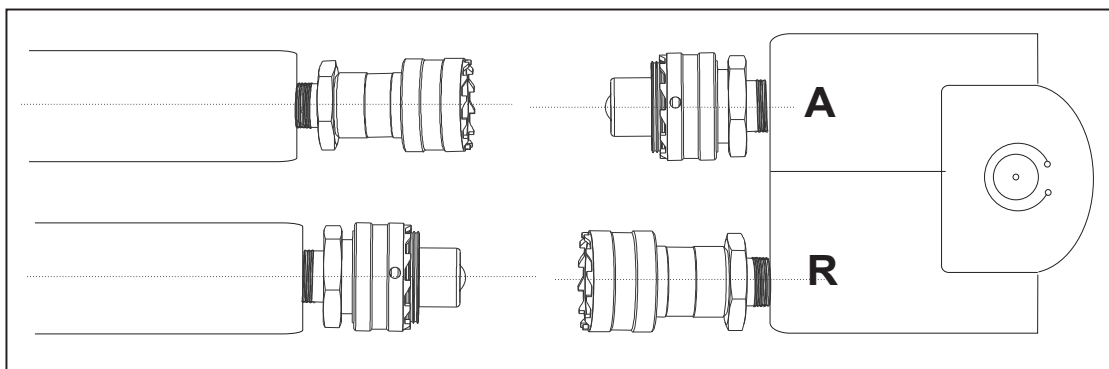


Figure1

CAUTION



Figure 2

Setting the pressure on the hydraulic power pack:

1. Loosen the locking ring below the "T" handle on the hydraulic power pack external pressure regulator.
2. Turn the "T" handle counterclockwise until it turns freely and easily.
3. Turn the hydraulic power pack on.
4. Push the advance switch (or button on the air hydraulic power pack) on the hydraulic power pack remote pendant and hold it.
5. Keep the hydraulic power pack in advance mode and slowly turn the "T" handle clockwise.
6. Observe the hydraulic power pack pressure gauge rise.

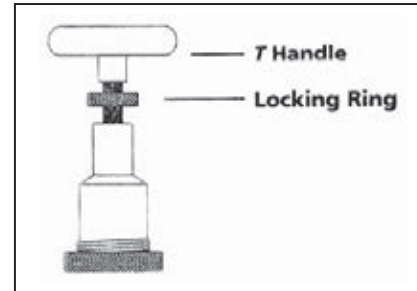


Figure 3

Note: Always adjust the regulator pressure UP-never down.

7. When the gauge reaches the correct predetermined pressure, stop turning the "T" handle.
8. Let the gauge settle.
9. If pressure goes up over predetermined value, please use the "T-Handle" to regulate in counterclockwise to make pressure at predetermined value. Lock regulator by fixed screw. Try operating by pressure up and down and make sure to achieve predetermined value.
10. When the pressure is correct, turn the pump off and tighten the locking ring under the "T" handle.
11. This sets the pump pressure, controlling the torque wrench output.
12. Cycle the hydraulic power pack to ensure the pressure setting did not change as you tightened the locking ring.

Important:

The reading of full preset pressure after the cylinder is extended DOES NOT INDICATE this pressure (torque) is applied to the bolt /nut . It only indicates that the cylinder is fully extended and cannot turn the socket further until the tool automatically resets itself.

- Releasing the remote control button automatically retracts the cylinder.
- The hydraulic torque wrench will automatically reset itself.
- You will hear an audible "click" indicating that you can again push the remote control button and the socket will turn.
- Each time the cylinder is extended and retracted, it is called a cycle.
- Successive cycles are made until the tool "stalls" at the preset Torque/PSI with an accuracy of $\pm 3\%$. Repeatability is $\pm 1\%$.
- Cycle the tool one last time to achieve total torque.

The Loosening Process:

1. Set the hydraulic power pack to 10,000 PSI.
2. Reposition the tool so the reaction surface abuts squarely on a solid reaction point.
3. Press and hold hydraulic power pack's remote control advance button.
4. Pressure will decrease as the nut begins to turn.
5. When the cylinder is fully extended, you will hear an audible "click".
6. Release the remote control advance button and the hydraulic torque wrench's cylinder will automatically retract
7. Listen again for the audible "click".
8. Repeat this process until you can remove the fastener by hand.

After the operation

1. Upon completing the project; turn off the power to the hydraulic power pack.
2. First disconnect the coupler connections between the hydraulic torque wrench and hydraulic hose assembly.
3. Then disconnect the hose addembly from the hydraulic power pack.
4. Loosen the locking ring below the "T" handle on the hydraulic power pack external pressure regulator.
5. Turn the "T" handle counterclockwise until it turns freely and easily.
6. When not in use, store tools and accessories properly to avoid damage.

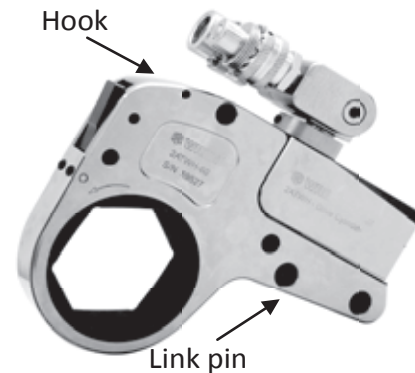
Operating For ATWH Series LOW Profile Torque Wrench

Before every operation, always read and follow the operations instructions.

Inserting hex ratchet links

Low profile hex ratchet links are inserted and removed from the power head as follows:

1. Insert the “hook” described by the link’s drive plate around the fixed pin of the power head.
2. Swing the link down to rest along the base of the power head cylinder.
3. The link pin holes of the power head and link will align.
4. Insert the link pin to secure.



Operation position

Loosening and tightening the nut:

Position the tool relative to the nut to tighten or loosen the nut. The nut turns clockwise for tightening and counterclockwise for Loosening.

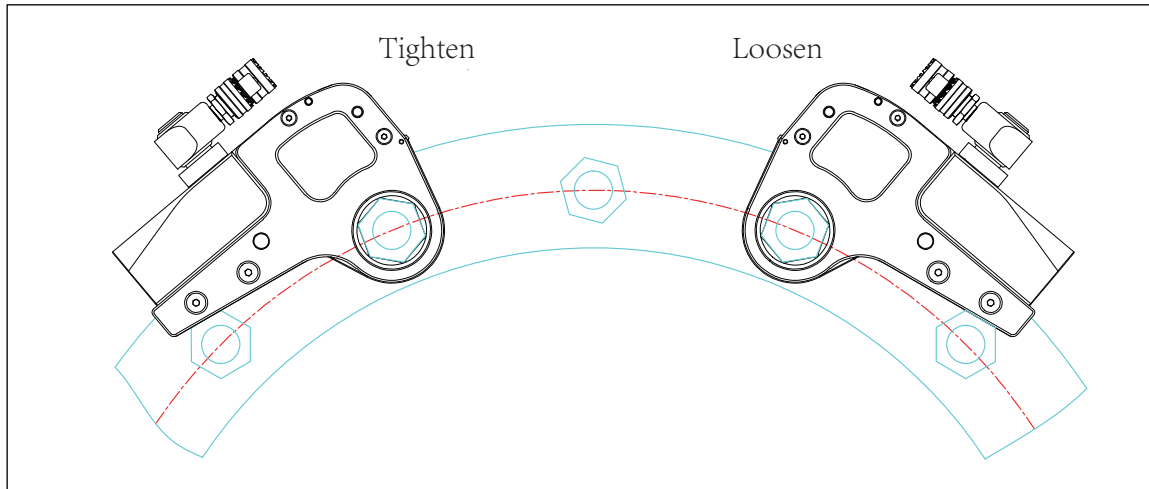


Figure 9

“Locked-On”

Should the hydraulic torque wrench be “locked-on” after the final cycle:

1. Push the remote control advance button to build pressure.
2. Maintain this pressure and push the release lever located on the front of the ratchet link.
3. Release the remote control advance button, while continuing to push down on the release lever. (Figure 10)
4. Remove the hydraulic torque wrench.

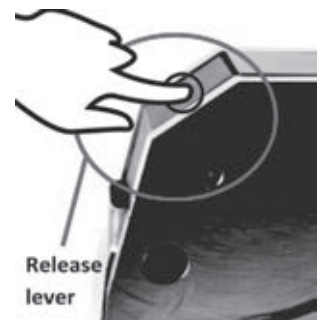


Figure 10

After the operation

1. Upon completing the project, turn off the power to the hydraulic power pack.
2. First disconnect the coupler connections between the hydraulic torque wrench and hydraulic hose assembly.
3. Then disconnect the hose assembly from the hydraulic power pack.
4. Loosen the locking ring below the "T" handle on the hydraulic power pack external pressure regulator.
5. Turn the "T" handle counterclockwise until it turns freely and easily.
6. When not in use, store tools and accessories properly to avoid damage.

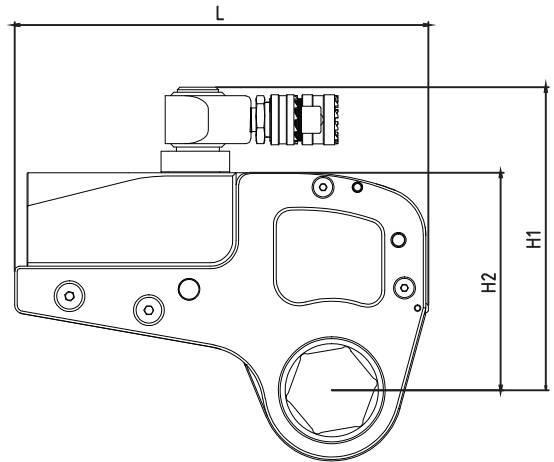
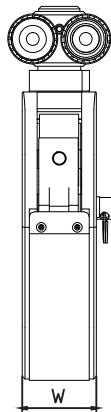
Trouble Shooting Chart For LOW Profile Torque Wrench

SYSTEM	PROBLEM CAUSE	REMEDY
Cylinder will not advance	Couplers are loose or damaged Directional control valve on pump Couplers not mated securely	Tighten/Replace Assemble and clean Tighten
Cylinder will not retract	See above	See above
Cylinder will not build pressure	Piston seal leaks Pump coupling may be broken, not mated properly or coupler is defective Gauge	Replace seals Replace coupling Replace gauge
Cylinder leaks	Leaking Seals	Replace housing seal kit
Cylinder operates backwards	Couplers are reversed on hoses, pump or tool	Reverse couplers
Ratchet returns on retract stroke	Broken reaction pawl Defective reaction pawl spring	Replace Replace
Ratchet will not make successive strokes	Defective drive pawl spring Defective drive pawl Cylinder is not retracting completely	Replace Replace Remove tool from job, cycle freely once or twice, and return to job
Tool cannot be removed from nut	Reaction pawl is engaged	Begin forward cylinder stroke. While applying pressure, push the reaction pawl release (on front ratchet link). While pressing release mechanism, allow the cylinder to retract. Remove tool
No pressure reading on gauge	Gauge not tight Pump coupling broken Gauge defective Defective cylinder seals	Tighten gauge coupler Replace Replace Inspect and replace all cylinder seals
Pump will not build pressure	Defective high pressure relief valve Electric power source is too low Gauge Filter is clogged	Inspect and replace Ensure suitable electric power source – 25amps – 12 gauge or larger cord Replace Inspect and clean, or replace
Pressure reading erratic	Defective gauge Differential Control Valve Bad	Replace Replace

ATWH Series Low Profile Wrenches Spec Sheet

MODEL	TORQUE	SW	Power Head	Work Head	Size(inch)			
	ft.lbs	inch	lbs	lbs	L	H1	H2	W
2ATWH	164~1638	3/4"~ 2 - 3/16"	2.0	3.3	7.32	5.20	3.74	1.26
	170~1698	2 - 3/8"	2.0	3.7	7.32	5.31	3.86	1.26
4ATWH	378~1823	1 - 5/16"~ 1 - 7/16"	4.6	8.6	9.49	6.93	5.00	1.69
	378~3783	1 - 1/2"~ 2 - 9/16"	4.6	8.6	9.49	6.93	5.00	1.69
	417~4170	2 - 3/4"~ 3 - 1/8"	4.6	9.5	9.69	7.32	5.39	1.69
8ATWH	758~7582	1 - 5/16"~ 2 - 15/16"	8.2	13.0	11.42	8.11	6.14	2.09
	758~7582	3 - 1/8"~ 3 - 3/4"	8.2	13.4	11.65	8.11	6.14	2.09
	816~8160	3 - 15/16"~ 4 - 1/8"	8.2	13.9	11.69	8.46	6.50	2.09
14ATWH	1346~13456	2"~4 - 5/8"	14.1	25.1	14.21	9.41	7.44	2.52
30ATWH	3043~30426	4 - 1/4"~ 6 - 1/8"	28.7	39.7	16.54	11.81	10.12	3.35
	3240~32396	6 - 5/16"~6 - 7/8"	28.7	45.2	16.93	12.28	10.59	3.35

MODEL	TORQUE	SW	Power Head	Work Head	Size(inch)			
	N.m	mm	Kg	Kg	L	H1	H2	W
2ATWH	225~2255	19~55	0.9	1.5	186	132	95	32
	233~2338	60	0.9	1.7	186	135	98	32
4ATWH	520~2510	34~36	2.1	3.9	241	176	127	43
	520~5208	41~65	2.1	3.9	241	176	127	43
	575~5755	70~80	2.1	4.3	246	186	137	43
8ATWH	1043~10438	41~75	3.7	5.9	290	206	156	53
	1043~10433	80~95	3.7	6.1	296	206	156	53
	1123~11233	100~105	3.7	6.3	297	215	165	53
14ATWH	1852~18521	50~117	6.4	11.4	361	239	189	64
30ATWH	4188~41882	110~155	13	18	420	300	257	85
	4459~44593	160~175	13	20.5	430	312	269	85



ATWH SERIES HYDRAULIC TORQUE WRENCH PRESSURE-TORQUE CHART

MODEL	2ATWH		4ATWH		8ATWH		14ATWH	30ATWH	
SW	19-55	60	34-65	70-80	41-95	100-105	50-117	110-155	160-175
PSI	ft. lbs	ft. lbs	ft. lbs	ft. lbs	ft. lbs	ft. lbs	ft. lbs	ft. lbs	ft. lbs
1000	164	170	414	457	768	827	1346	3043	3240
1200	197	204	497	549	921	992	1615	3651	3888
1400	229	238	580	640	1075	1158	1884	4260	4535
1600	262	272	663	731	1229	1323	2153	4868	5183
1800	295	306	745	823	1382	1489	2422	5477	5831
2000	328	340	828	914	1536	1654	2691	6085	6479
2200	360	374	911	1006	1689	1819	2960	6694	7127
2400	393	408	994	1097	1843	1985	3229	7303	7775
2600	426	442	1077	1189	1996	2150	3499	7911	8423
2800	459	476	1160	1280	2150	2315	3768	8519	9071
3000	491	510	1242	1371	2303	2481	4037	9128	9719
3200	524	543	1325	1463	2457	2646	4306	9736	10367
3400	557	577	1408	1554	2611	2812	4575	10345	11015
3600	590	611	1491	1646	2764	2977	4844	10953	11663
3800	622	645	1574	1737	2918	3142	5113	11562	12310
4000	655	679	1657	1829	3071	3308	5382	12170	12958
4200	688	713	1739	1920	3225	3473	5652	12779	13606
4400	721	747	1822	2011	3378	3639	5921	13387	14254
4600	754	781	1905	2103	3532	3804	6190	13996	14902
4800	786	815	1988	2194	3686	3969	6459	14604	15550
5000	819	849	2071	2286	3839	4135	6728	15213	16198
5200	852	883	2154	2377	3993	4300	6997	15822	16846
5400	885	917	2236	2469	4146	4466	7266	16430	17494
5600	917	951	2319	2560	4300	4631	7535	17039	18142
5800	950	985	2402	2651	4453	4796	7804	17647	18790
6000	983	1019	2485	2743	4607	4962	8074	18256	19438
6200	1016	1053	2568	2834	4761	5127	8343	18864	20086
6400	1048	1087	2650	2926	4914	5292	8612	19473	20733
6600	1081	1121	2733	3017	5068	5458	8881	20081	21381
6800	1114	1155	2816	3109	5221	5623	9150	20690	22029
7000	1147	1189	2899	3200	5375	5789	9419	21298	22677
7200	1179	1223	2982	3291	5528	5954	9688	21907	23325
7400	1212	1257	3065	3383	5682	6119	9957	22515	23973
7600	1245	1291	3147	3474	5836	6285	10227	23124	24621
7800	1278	1325	3230	3566	5989	6450	10496	23732	25269
8000	1310	1359	3313	3657	6143	6616	10765	24341	25917
8200	1343	1393	3396	3749	6296	6781	11034	24949	26565
8400	1376	1427	3479	3840	6450	6946	11303	25558	27213
8600	1409	1461	3562	3931	6603	7112	11572	26166	27861
8800	1442	1495	3644	4023	6757	7277	11841	26775	28508
9000	1474	1529	3727	4114	6911	7443	12110	27383	29156
9200	1507	1563	3810	4206	7064	7608	12380	27992	29804
9400	1540	1596	3893	4297	7218	7773	12649	28600	30452
9600	1573	1630	3976	4389	7371	7939	12918	29209	31100
9800	1605	1664	4059	4480	7525	8104	13186	29817	31748
10000	1638	1698	4141	4571	7678	8269	13456	30426	32396

ATWH SERIES HYDRAULIC TORQUE WRENCH PRESSURE-TORQUE CHART

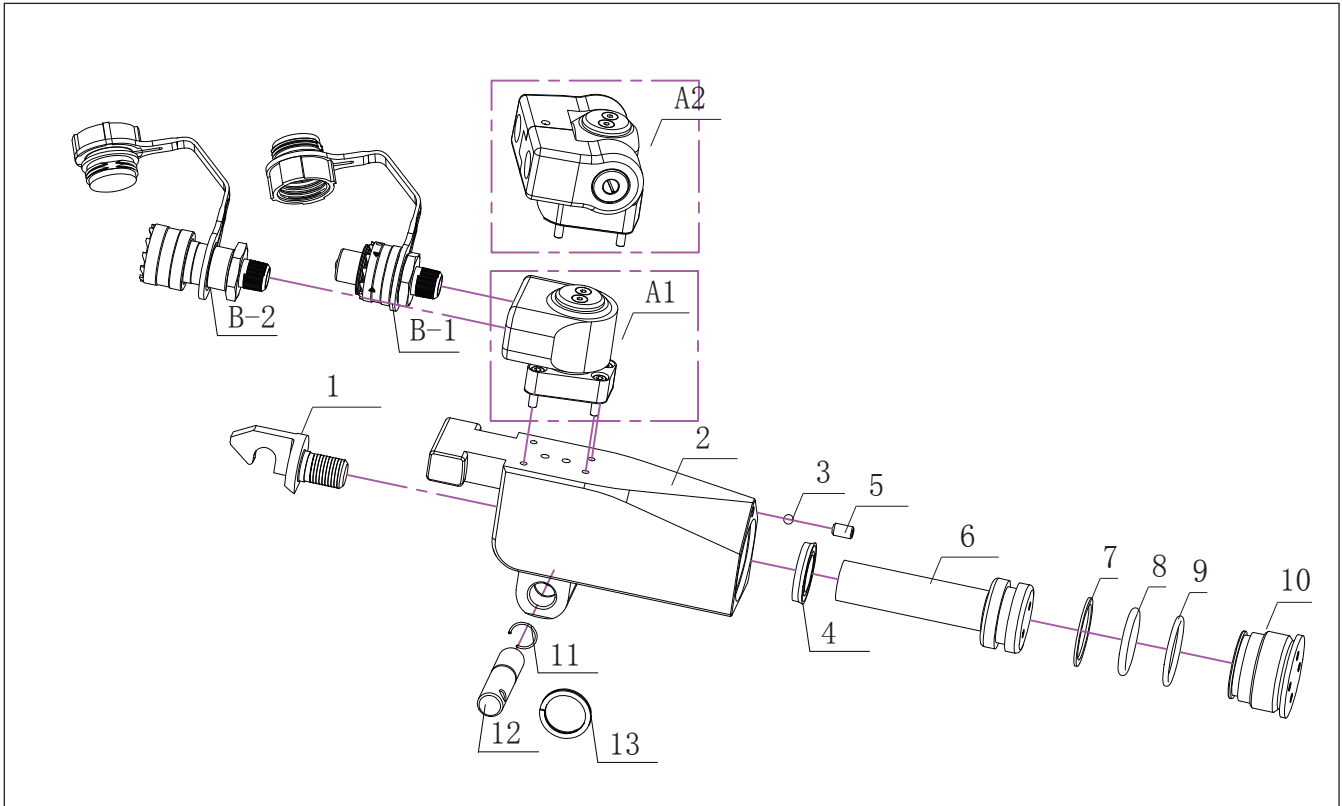
MODEL	2ATWH		4ATWH		8ATWH		14ATWH	30ATWH	
SW	19-55	60	34-65	70-80	41-95	100-105	50-117	110-155	160-175
MPa	N • m	N • m	N • m	N • m	N • m	N • m	N • m	N • m	N • m
7	225	234	570	677	1057	1138	1852	4188	4459
8	258	267	652	774	1208	1301	2116	4787	5096
9	290	301	733	871	1359	1464	2381	5385	5733
10	322	334	814	968	1510	1626	2646	5983	6370
11	354	367	896	1065	1661	1789	2910	6581	7007
12	387	401	977	1161	1812	1952	3175	7180	7645
13	419	434	1059	1258	1963	2114	3439	7778	8282
14	451	468	1140	1355	2114	2277	3704	8376	8919
15	483	501	1222	1452	2265	2439	3969	8975	9556
16	515	534	1303	1549	2416	2602	4233	9573	10193
17	548	568	1385	1645	2567	2765	4498	10171	10830
18	580	601	1466	1742	2718	2927	4762	10770	11467
19	612	635	1547	1839	2869	3090	5027	11368	12104
20	644	668	1629	1936	3020	3253	5292	11966	12741
21	676	701	1710	2032	3171	3415	5556	12565	13378
22	709	735	1792	2129	3322	3578	5821	13163	14015
23	741	768	1873	2226	3473	3740	6085	13761	14652
24	773	802	1955	2323	3624	3903	6350	14360	15289
25	805	835	2036	2420	3775	4066	6614	14958	15926
26	838	868	2118	2516	3926	4228	6879	15556	16563
27	870	902	2199	2613	4077	4391	7144	16154	17200
28	902	935	2280	2710	4228	4554	7408	16753	17837
29	934	969	2362	2807	4379	4716	7673	17351	18474
30	966	1002	2443	2904	4530	4879	7938	17949	19111
31	999	1035	2525	3000	4681	5041	8202	18548	19748
32	1031	1069	2606	3097	4832	5204	8467	19146	20385
33	1063	1102	2688	3194	4983	5367	8731	19744	21022
34	1095	1136	2769	3291	5134	5529	8996	20343	21659
35	1127	1169	2850	3387	5285	5692	9260	20941	22296
36	1160	1202	2932	3484	5436	5855	9525	21539	22934
37	1192	1236	3013	3581	5587	6017	9790	22138	23571
38	1224	1269	3095	3678	5738	6180	10054	22736	24208
39	1256	1303	3176	3775	5889	6342	10319	23334	24845
40	1289	1336	3258	3871	6040	6505	10583	23933	25482
41	1321	1369	3339	3968	6191	6668	10848	24531	26119
42	1353	1403	3421	4065	6342	6830	11112	25129	26756
43	1385	1436	3502	4162	6493	6993	11377	25728	27393
44	1417	1470	3583	4259	6644	7156	11642	26326	28030
45	1450	1503	3665	4355	6795	7318	11906	26924	28667
46	1482	1536	3746	4452	6946	7481	12171	27522	29304
47	1514	1570	3828	4549	7097	7643	12435	28121	29941
48	1546	1603	3909	4646	7248	7806	12700	28719	30578
49	1578	1637	3991	4742	7399	7969	12965	29317	31215
50	1611	1670	4072	4839	7550	8131	13229	29916	31852
51	1643	1703	4154	4936	7701	8294	13494	30514	32489
52	1675	1737	4235	5033	7852	8457	13758	31112	33126
53	1707	1770	4316	5130	8003	8619	14023	31711	33763
54	1740	1804	4398	5226	8154	8782	14288	32309	34400
55	1772	1837	4479	5323	8305	8944	14552	32907	35037
56	1804	1870	4561	5420	8456	9107	14817	33506	35674
57	1836	1904	4642	5517	8607	9270	15081	34104	36311
58	1868	1937	4724	5614	8758	9432	15346	34702	36948
59	1901	1971	4805	5710	8909	9595	15611	35301	37585
60	1933	2004	4887	5807	9060	9758	15875	35899	38223
61	1965	2037	4968	5904	9211	9920	16140	36497	38860
62	1997	2071	5049	6001	9362	10083	16404	37095	39497
63	2029	2104	5131	6097	9513	10245	16669	37694	40134
64	2062	2138	5212	6194	9664	10408	16933	38292	40771
65	2094	2171	5294	6291	9815	10571	17198	38890	41408
66	2126	2204	5375	6388	9966	10733	17463	39486	42045
67	2158	2238	5457	6485	10117	10896	17727	40087	42682
68	2191	2271	5538	6581	10268	11059	17992	40685	43319
69	2223	2305	5620	6678	10419	11221	18256	41284	43956
70	2255	2338	5710	6293	10570	11384	18521	41882	44593

This exploded view diagram illustrates the assembly of a mechanical device. The components are numbered 1 through 27.1. Key sub-assemblies are highlighted with green callouts: ATWH2 (parts 26.1, 25, 27.1), ATWH2.14 (part 26.1), ATWH4.8 (parts 25, 26.2, 25, 21), and ATWH4.8.14 (parts 24, 23, 21). The diagram shows the spatial relationship between the main housing (1), internal components like the lens (4), filter (5), and various connectors (6-11), and the external mounting bracket (20) with its fasteners (21, 22). Dashed lines indicate the assembly path for each part.

PARTS LIST FOR RATCHET LIINK---ATWH SERIES

N0	Item	2ATWH	4ATWH	8ATWH	14ATWH	30ATWH
		Qty	Qty	Qty	Qty	Qty
1	Side Plate(Left)	1	1	1	1	1
2	Top Spacer	1	1	1	1	1
3	Roll Pin(Top Spacer)	1	1	1	1	1
4	Copper Belt				2	2
5	Drive Plate(Left)	1	1	1	1	1
6	Screw	2	2	2	2	2
7	Shroud	1	1	1	1	1
8	Pin	2	2	2	2	2
9	Screw(For Shroud)	1	1	1	1	1
10	Reaction Block	1	1	1	1	1
11	Drive Pawl Primary	1	1	1	1	1
12	Compressed Spring	1	1	1	1	1
13	Spring Seat	1				
14	Drive PawlSecondary	1	1	1	1	1
15	Ratchet Spnine	1	1	1	1	1
16	Tension Spning	1	1	1	1	1
17	Drive Pin	1	1	1	1	1
18	Roll Pin(For Drive Plate)	2	2	2	2	2
19	Drive Plate(Right)	1	1	1	1	1
20	Side Plate(Right)	1	1	1	1	1
21	Screw		2	2		
	Screw(For Top Spacer)	2	2	2	2	2
22	Screw(For Reaction Block)	4	4	4	4	4
23	Drive Pin	1	1	1	1	1
24	Compressed Spning(For Reaction Pawl)	1	1	1	1	1
25	Bushing	1	2	2	1	1
26.1	Shaft Of Rotation	1			1	1
26.2			1	1		
27.1	Reaction Pawl	1				
27.2			1	1	1	1

DRAWING FOR POWER HEAD WITH SWIVEL ON TOP AND PART LIST-ATWH SERIES



NO	Item	2ATWH	4ATWH	8ATWH	14ATWH	30ATWH
		Qty	Qty	Qty	Qty	Qty
1	Rod End	1	1	1	1	1
2	Body	1	1	1	1	1
3	Steel Ball	1	1	1	1	1
4	U Ring	1	1	1	1	1
5	Screw	1	1	1	1	1
6	Pistan Rod	1	1	1	1	1
7	Retaining Ring	1	1	1	1	1
8	O Ring(For Pistan Rod)	1	1	1	1	1
9	O Ring(For End Cap)	1	1	1	1	1
10	End Cap	1	1	1	1	1
11	Circlip	1	1	1	1	1
12	Link Pin	1	1	1	1	1
13	Draw Ring	1	1	1	1	1
A1	360° Swivel	1	1	1	1	1
A2	180° X360° Swivel	1	1	1	1	1
B-1	Coupler	1	1	1	1	1
B-2		1	1	1	1	1

Maintenance

Lubrication:

- Periodically coat all moving parts with a good quality lubricant.
- Under harsh environmental conditions perform cleaning and lubricating more frequently.

Hydraulic Hose Assembly:

- Inspect the hydraulic hose assembly for cracks, burns, kinks, crush spots and leaks after each job.
- Flush hydraulic fittings periodically as they can become plugged with dirt.
- Replace the hydraulic hose assembly immediately if you find any damage.

Connectors:

- Keep hydraulic coupler fittings clean and do not allow them to drag on the floor or ground.
- Even small particles of dirt can cause the internal valves to malfunction.

Cylinder Seals:

- If the cylinder requires disassembly, replace cylinder seals at the same time.
- Seal kits are readily available.
Unless you have a qualified technician on staff, you should consider shipping the tool to a certified repair technician.

Structural Members:

- Inspect all structural parts on the tool periodically for cracks, chips or deformities.
- If present replace the part immediately.

Calibration:

- Calibrate all hydraulic torque wrenches and gauges annually.

Appendix

Recommended Torque For B7 Studs (ASTM A193)

Based Upon 50% Yield

Bolt diameter	Heavy hex nut size (A.F.)	Lubricated torque using copper,graphite or comparable lubricant with a coefficient of friction F-.100(both nut face and threads should be well lubricated	Dry steel on steel,no lubricant,coefficient of friction F-.400
3/4"	1-1/4"	157	559
7/8"	1-7/16"	250	893
1"	1-5/8"	373	1332
1-1/8"	1-13/16"	538	1994
1-1/4"	2"	746	2720
1-3/8"	2-3/16"	1000	3678
1-1/2"	2-3/8"	1307	4837
1-5/8"	2-9/16"	1682	6260
1-3/4"	2-3/4"	2109	7888
1-7/8"	2-15/16"	2602	9775
2"	3-1/8"	3167	11942
2-1/8"	3-5/16"	3809	14408
2-1/4"	3-1/2"	4531	17191
2-3/8"	3-11/16"	5339	20310
2-1/2"	3-7/8"	6238	23786
2-3/4"	3-1/4"	7533	28846
3"	4-5/8"	9803	37670
3-1/4"	5"	12488	48129
3-1/2"	5-3/8"	15622	60365
3-3/4"	5-3/4"	19241	74516
4"	6-1/8"	22162	86146
4-1/4"	6-1/2"	23337	90720
4-1/2"	6-7/8"	26332	102513
4-3/4"	7-1/4"	30994	120831
5"	7-5/8"	36176	141210



All Wren products are guaranteed against defects in workmanship and materials for as long as you own them. Under this guarantee, free repair or replacement will be made to your satisfaction.

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