Hydraulic Torque Wrench Selection

Bolt and nut maximum torque recommendation

power level		4.8		6.8		8.8		10.9		12.9	
Minimum breaking strength		392Mpa		588Mpa		784Mpa		941Mpa		1176Mpa	
material		steel for general construction		steel for machine construction		Aluminum Alloy Steel		Jinluo aluminum alloy steel		Openwork aluminum alloy steel	
Bolt	Nut	Torque		Torque		Torque		Torque		Torque	
M(mm)	S(mm)	KGM	N.m	KGM	Nm	KGM	Nm	KGM	Nm	KGM	N.m
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	39	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						

The above is the German Industrial Standard, and the torque value in the table is measured when the bolt reaches 90% of the yield limit.

The recommended tightening torque is: the value in the table × 90%. For example: M52, 8.8 grade bolts, the tightening torque is: 4704×90%=4233.6Nm

The loosening torque is 15~2 times of the locking torque. For example: in the above example, the locking torque is 4233 6Nm, and the loosening torque is about: 4233 6× (1.5-2) = 63504-84672N m

Due to the limitation of many factors on site, you should pay attention to the position of the use space when choosing a wrench