



ATI ENTERPRISES

TOOL CATALOG

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HYDRAULIC TOOLS CATALOG

Index

- Hydraulic torque multiplier head pg 2-11
- Reducers for low profile torque wrenches pg 12
- Socket for square drive torque wrenches pg 13
- Special application bolt tensioners pg 14-20
- Hydraulic high-pressure pump's pg 21-33
- Hydraulic Jacks pg 34-41
- ISO CERTIFICATION pg 42

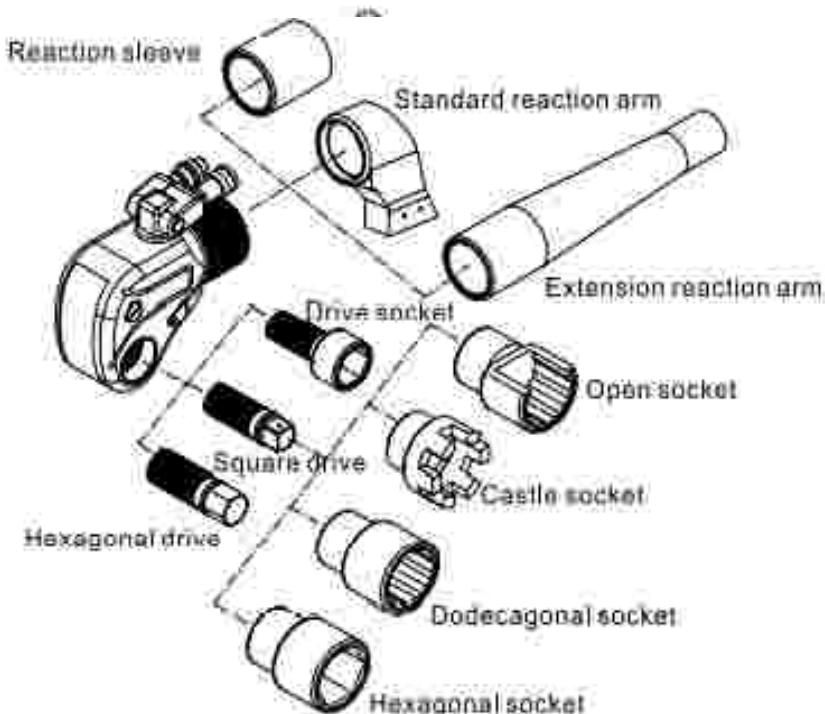
HYDRAULIC TOOLS CATALOG

Hydraulic torque wrenches

MXTD series - Square drive hydraulic torque wrench

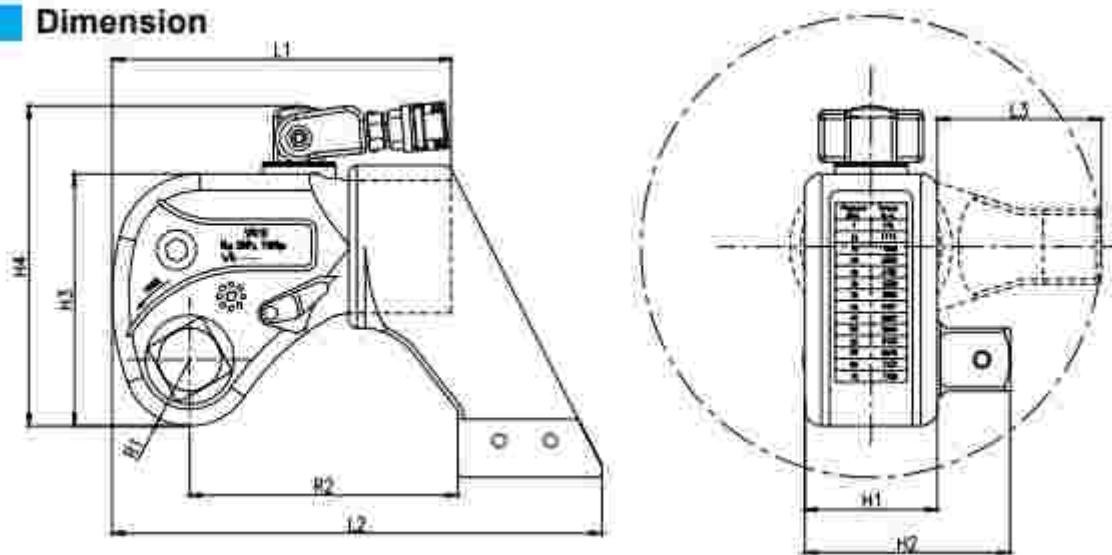


- 70MPa max working pressure
- Torque accuracy up to $\pm 3\%$
- 12 models from 185Nm-15000Nm
- 360X180 degree swivel joint, no space limitation
- 360 degree reaction arm
- Al-Ti alloy material, integrated design
- Square drive and reaction arm can be customized



HYDRAULIC TOOLS CATALOG

Dimension



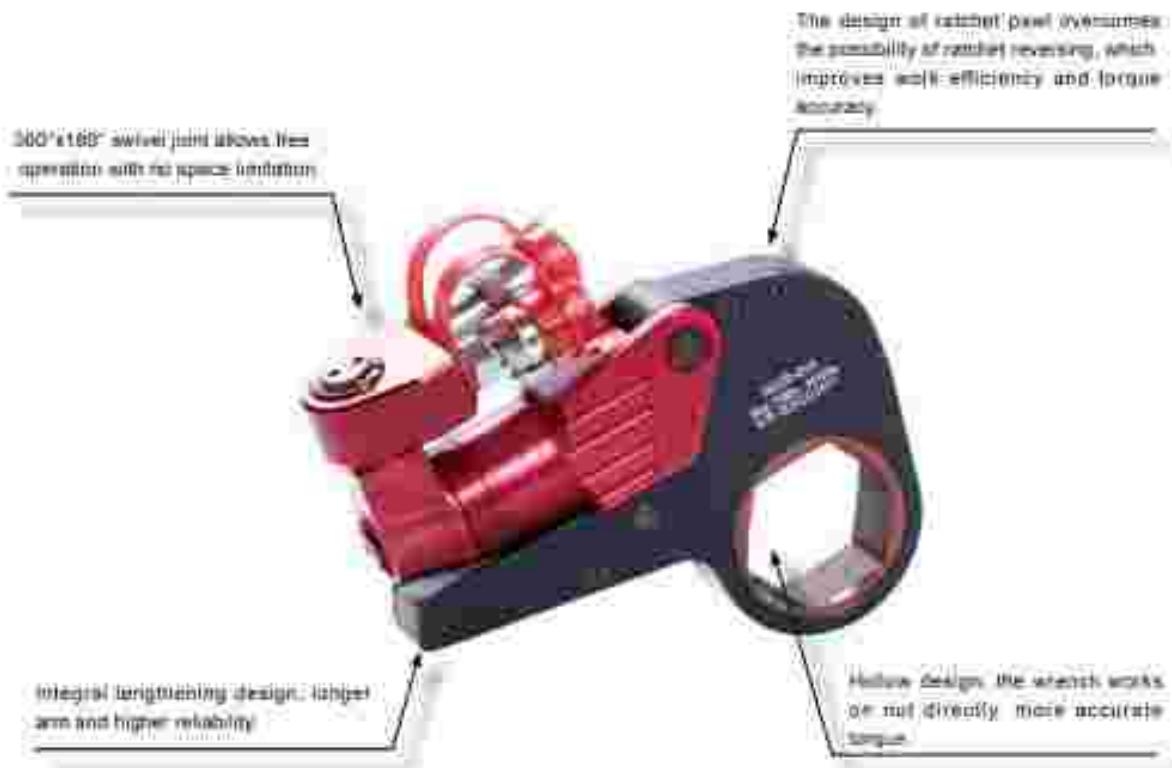
Technical parameters

Model	1MXTD	3MXTD	5MXTD	8MXTD	10MXTD	15MXTD	25MXTD	25MXTD	35MXTD	45MXTD	50MXTD	85MXTD
Torque (Nm)	185	436	779	1072	1553	2050	2517	3493	4963	5912	7032	14085
Weight (Kg)	1852	4364	7789	10715	15528	20501	26171	34926	49627	59123	70315	140848
L1 (mm)	138	168	207	220	250	281	304	331	390	412	418	520
L2 (mm)	194	244	296	326	368	402	442	483	558	570	596	758
L3 (mm)	63	79	99	110	120	132	146	158	177	188	195	246
H1 (mm)	50	70	80	90	100	112	120	138	150	163	166	215
H2 (mm)	73	99	124	133	146	165	183	202	219	229	236	307
H3 (mm)	96	125	152	170	188	206	226	250	282	288	300	415
H4 (mm)	140	165	193	211	227	249	267	291	323	332	366	473
R1 (mm)	28	34	40	46	50	56	60	66	77	80	82	115
R2 (mm)	107	132	162	178	190	218	240	260	298	303	325	400
Square Drive	3/4"	1"	1 1/2"	1 1/2"	1 1/2"	2"	2 1/2"	2 1/2"	2 1/2"	2 1/2"	3"	4"

HYDRAULIC TOOLS CATALOG

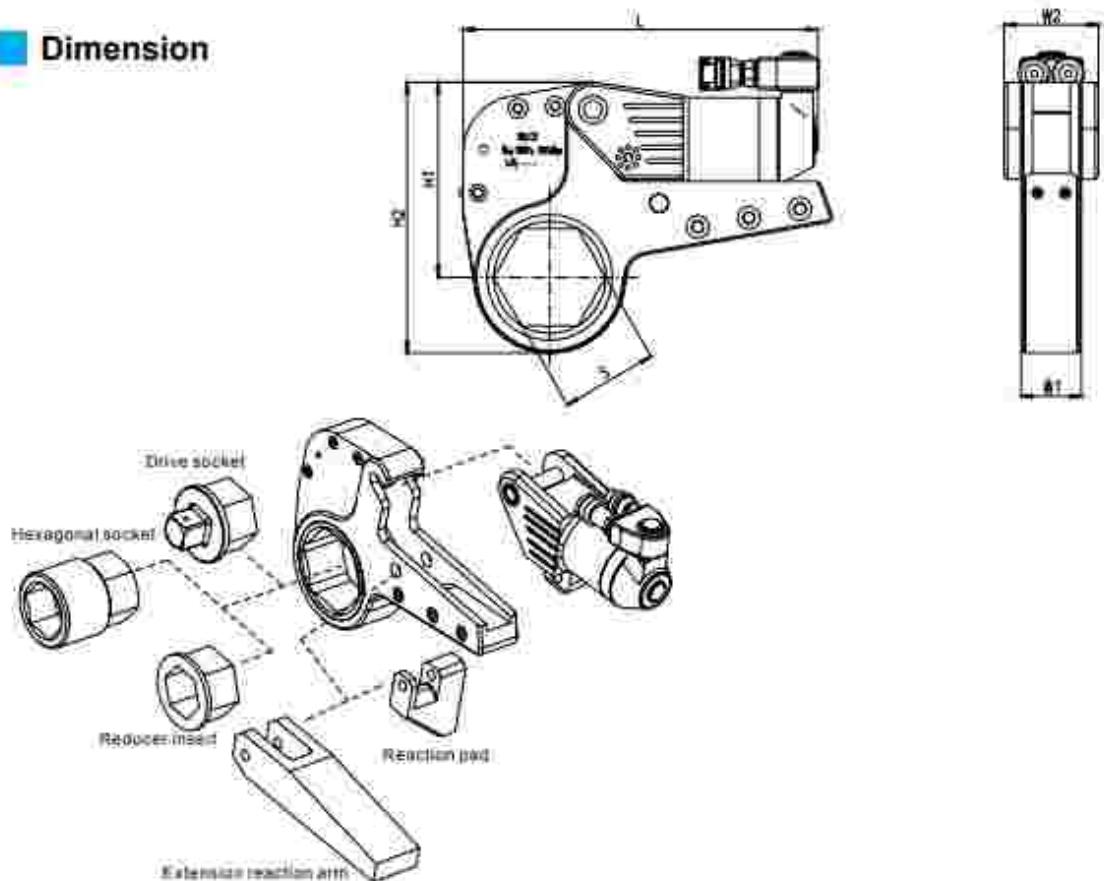
KLCD series - Low profile hydraulic torque wrench

- 70MPa max working pressure
- Torque repeatability up to 3%
- 11 models with the ranges from 237-85000Nm
- 360x180 degree swivel joint, no space limitation
- Integral design, high strength and high toughness
- Al-Ti alloy material
- Working head and supporting point are coaxial, perfect structure, long service life
- One power head can match different working heads



HYDRAULIC TOOLS CATALOG

Dimension

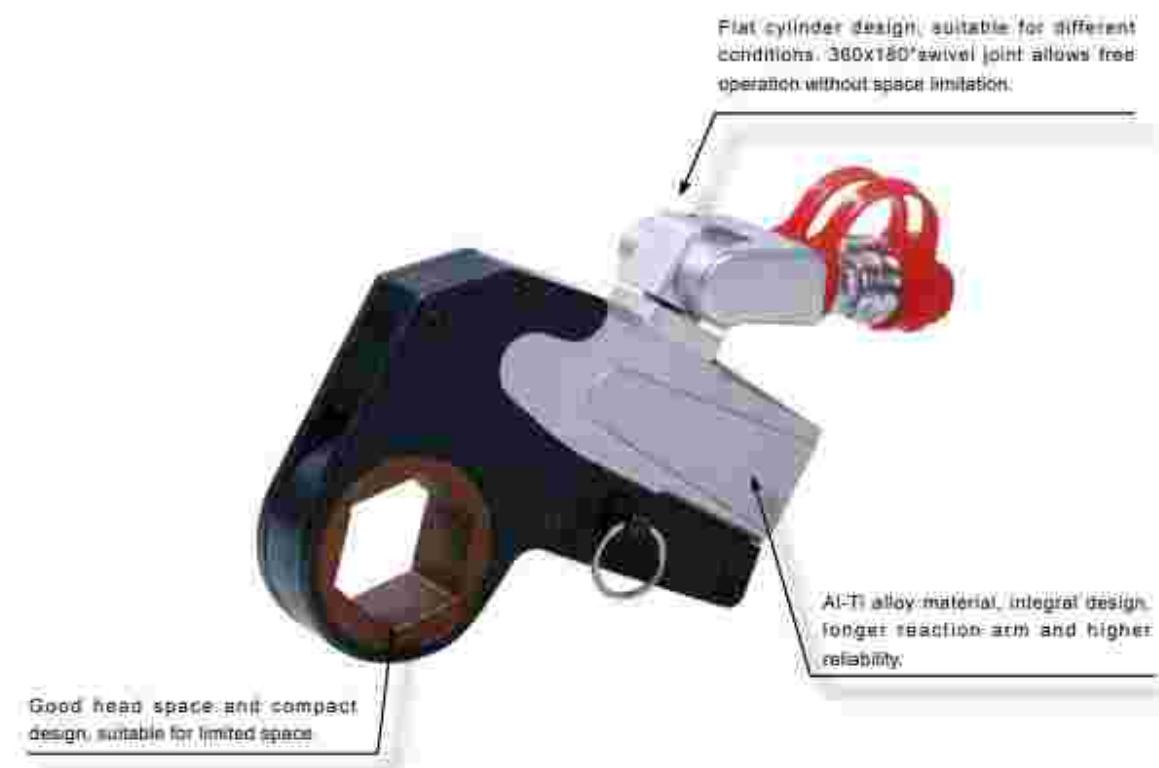


Technical parameters

Model	2KLCD	3KLCD	4KLCD	5KLCD	14KLCD	18KLCD	20KLCD	30KLCD	40KLCD	45KLCD	60KLCD
Torque (Nm)	237 2370	345 3446	548 5458	1055 10550	1848 18484	2481 24814	2909 29089	4231 42311	5209 52088	6057 60566	8415 84150
A/F (mm)	36-55	36-60	48-80	70-105	80-115	85-120	90-130	95-145	120-145	130-155	135-180
Power head Weight (kg)	0.8	0.8	1.0	4.2	6.8	8.1	10.5	12.7	15.2	16.3	23
Working head weight (kg)	1.5	1.7	3.6	7.6	12.2	19.3	22.3	32.3	47.5	58.7	75
L (mm)	192	218	266	324	382	404	427	479	479	486	514
H1 (mm)	105	118	139	171	205	229	240	268	285	311	336
H2 (mm)	147	156	167	196	231	255	265	289	302	352	375
W1 (mm)	32	32	42	53	64	68	70	85	98	105	117
W2 (mm)	50	50	66	83	90	105	110	132	148	160	177

HYDRAULIC TOOLS CATALOG

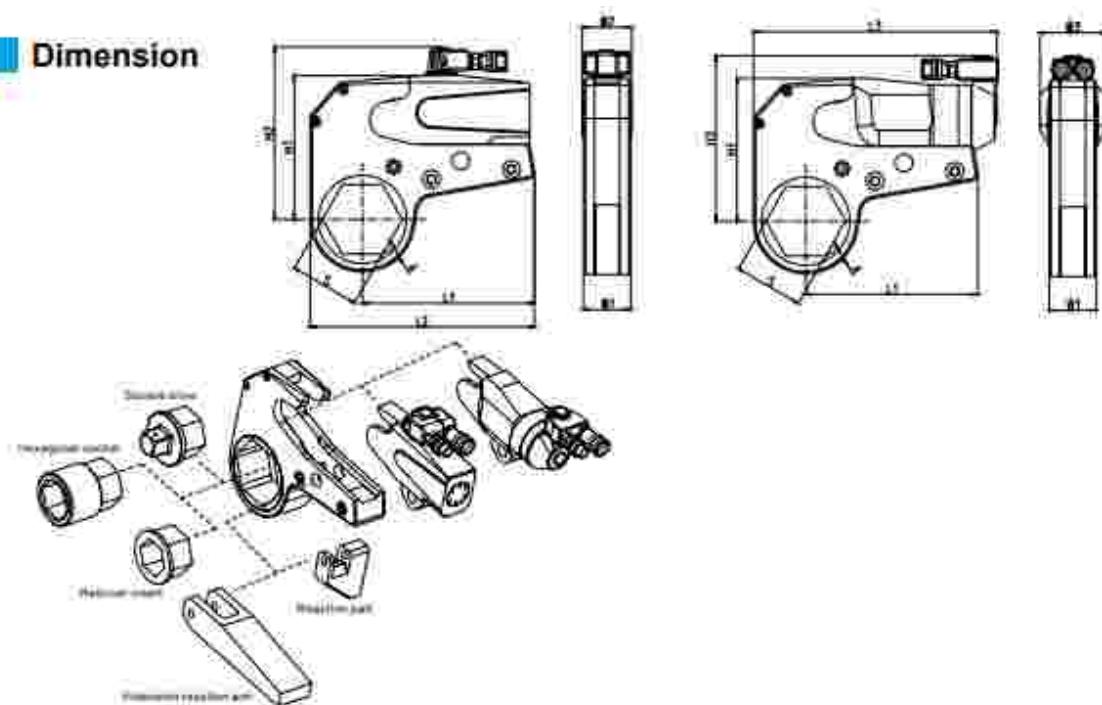
WHCD series - Low profile hydraulic torque wrench



- 70MPa max working pressure
- Torque repeatability up to 3%
- 10 models with the ranges from 233-140000Nm.
- 360x180 degree swivel joints allow free operation without space limitation.
- Al-Ti alloy material, integral design, longer reaction arm and higher reliability.
- Light weight
- Working head can be changed.

HYDRAULIC TOOLS CATALOG

Dimension



Technical parameters

Model	1WHCD	3WHCD	4WHCD	6WHCD	8WHCD	15WHCD	25WHCD	35WHCD	50WHCD	95WHCD
Torque (Nm)	233 2326	345 3440	540 5399	769 7691	1212 12116	1992 19919	3363 33629	5385 53851	7522 75221	13946 139463
A/F (mm)	36-60	41-60	46-80	55-85	70-105	80-115	90-130	120-145	130-160	155-190
Weight (kg)	2.1	3.7	4.5	7.5	8.9	17.3	25.2	35.5	47.8	204
L1 (mm)	120.5	144	158	179	207	237	273	338	382	492
L2 (mm)	156	185	202	232	270	309	361	447	517	665
L3 (mm)	191	223	232	256	291	335	383	456	539	670
H1 (mm)	100	113	119	145	169	197	230	280	320	400
H2 (mm)	144.5	156	161	187	210	237	272	345	383	458
H3 (mm)	142	148	152	179	200	227	265	294	400	425
W1 (mm)	34	36	42	45	53	64	70	84	94	160
W2 (mm)	39	38	46	49	57	69	79	92	102	168
W3 (mm)	50	55	60	65	75	90	100	118	140	180
A (mm)	8.3	9.5	11.7	12.8	14.2	16.2	21.3	24.8	30.5	61.7

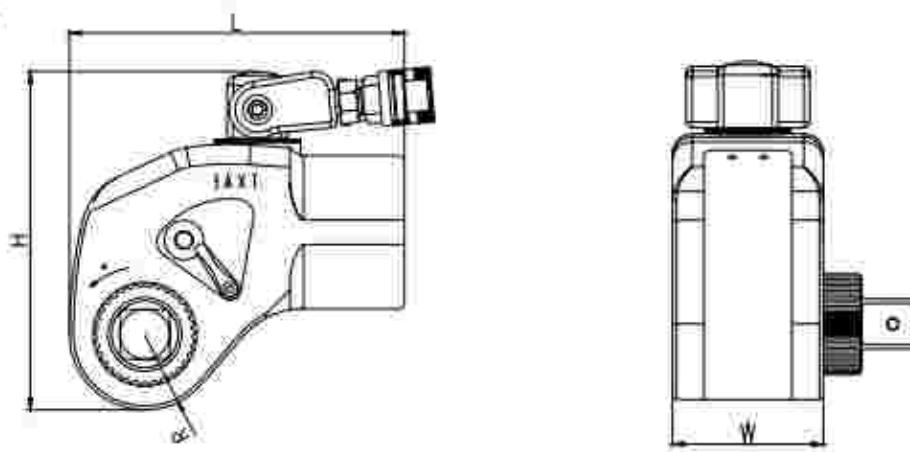
HYDRAULIC TOOLS CATALOG

AXT series - Front square drive hydraulic torque wrench



- 70MPa max working pressure
- Torque repeatability up to $\pm 3\%$
- Front reaction arm, smaller longitudinal size, more suitable for narrow space.
- Reaction arm and square drive are coaxial, better adaptability.
- Wide ranges from 179-19000Nm.
- 360 degree swivel joint, free operation, no space limitation.
- Al-Ti alloy material, high strength
- Reaction arm can be customized.

Dimension



Technical parameters

Model	1AXT	3AXT	5AXT	8AXT	10AXT	15AXT
Torque (Nm)	179 1768	406 4062	733 7325	1003 10033	1513 15133	1904 19041
Precision	$\pm 3\%$	$\pm 3\%$	$\pm 3\%$	$\pm 3\%$	$\pm 3\%$	$\pm 3\%$
Weight (Kg)	2.4	5.1	8.4	10.3	14.8	17.8
R (mm)	29.5	38.5	47.5	54.5	62.5	64.5
L (mm)	133	171	210	238	266	296
H (mm)	135	172	205	232	253	255
W (mm)	57	77	88	100	111	120
Square Drive	3/4"	1"	1 1/2"	1 1/2"	1 1/2"	2"

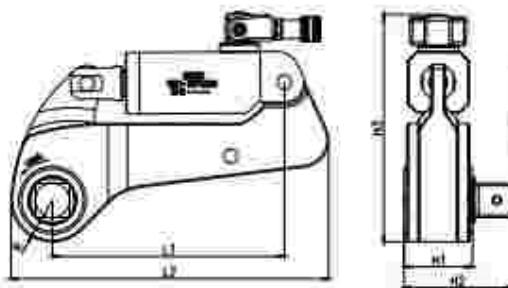
HYDRAULIC TOOLS CATALOG

BXTD series - Square drive hydraulic torque wrench



- Max working pressure 70MPa
- Small precise ratchet design, no trigger button, avoid getting stuck caused by bolt reversing.
- 360X180 degree swivel joint, free operation.
- Few transmission parts, simple structure, easy maintenance.
- Compact integrated reaction arm, little unbalance load, more durable.
- Al-Ti alloy cylinder, high strength
- Perfect combination of Al-Ti alloy and alloy steel.
- Torque repeatability up to 3%
- Square-drive can be changed and customized.
- Especially suitable for bolt tightening of water turbine rotor etc.

Dimension



Technical parameters

Model	38XTD	88XTD	108XTD	158XTD	208XTD	258XTD	458XTD	888XTD	888XTD	1208XTD
Torque (Nm)	485 4847	1071 10712	1512 15121	2013 20130	2909 29089	3879 38795	8058 80582	8440 84403	12017 120176	15936 15935
Weight (Kg)	6.2	12.7	18.5	25	31.5	40.4	58	68	115	163
L1 (mm)	210	258	279	318	340	360	380	422	462	510
L2 (mm)	281	353	385	435	452	472	525	573	660	770
H1 (mm)	55	79	81	88	96	103	112	135	175	235
H2 (mm)	84	120	124	140.5	160	168	182	217	260	352
H3 (mm)	200	255	278	292	313	335	386	403	450	520
R (mm)	35	46	50	58	63	70	80	85	110	125
Square Drive	1"	1 1/2"	1 1/2"	2"	2 1/2"	2 1/2"	2 1/2"	2"	3 1/2"	4"

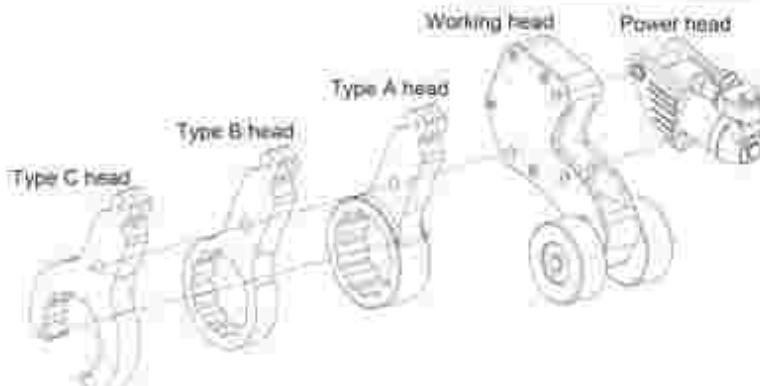
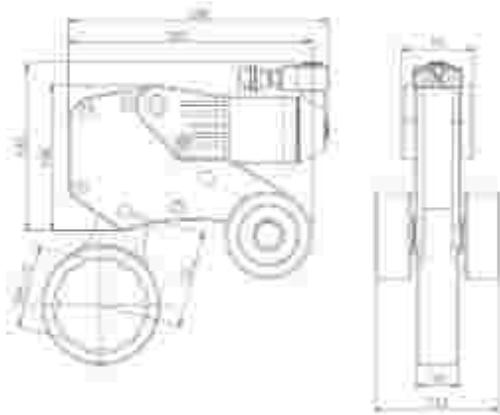
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CLCD fork-wheel-type torque wrench



- It solves the problems of small distance between bolts and pipelines, and limited space in height.
- Applicable to match normal API flanges.
- Small head radius; suitable for small space.
- Made of high strength alloy steel, more durable.
- The power head is interchangeable with KLCD series.
- Attention: Run the pump as return direction to take wrench down when every cycle is finished, then reposition.
- This model does not have retaining function.

Dimension



Technical parameters

Model	Max working pressure	Max torque	Nut range
CLCD	50MPa	11550Nm	75-85mm

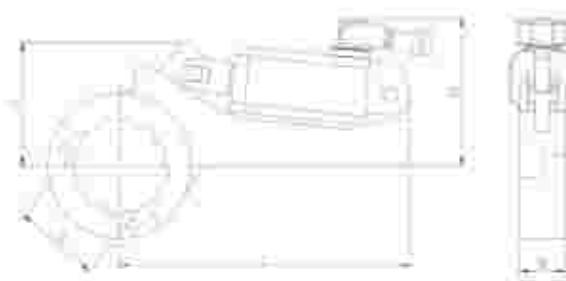
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JND split type hydraulic wrench



- Applicable to piercing nut working condition
- Especially used for steam turbine shaft tightening
- Small head radius, detachable head
- Pin and shaft combination, easy to detach or combine
- Made of high strength alloy steel, very durable
- Attention: Run the pump as return direction to take wrench down when every cycle is finished, then reposition.
- This model does not have retaining function.

Dimension



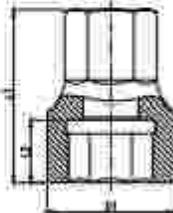
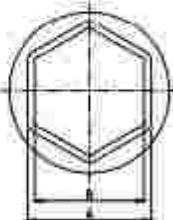
Technical parameters

Model	3JND	8JND	14JND	20JND	30JND	35JND
Torque (Nm)	523 5215	1158 11583	1852 18522	2713 27125	4320 43200	5183 51835
Weight (Kg)	9	11	19	23	31	66
L (mm)	300	325	350	366	410	490
H (mm)	160	163	211	225	254	320
W (mm)	45	50	55	60	75	95
R (mm)	130	136	142	166	235	290
S (mm)	50-85	85-115	90-135	95-145	135-200	155-230

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Reducers For low profile torque wrenches

Reducers for low profile torque wrench

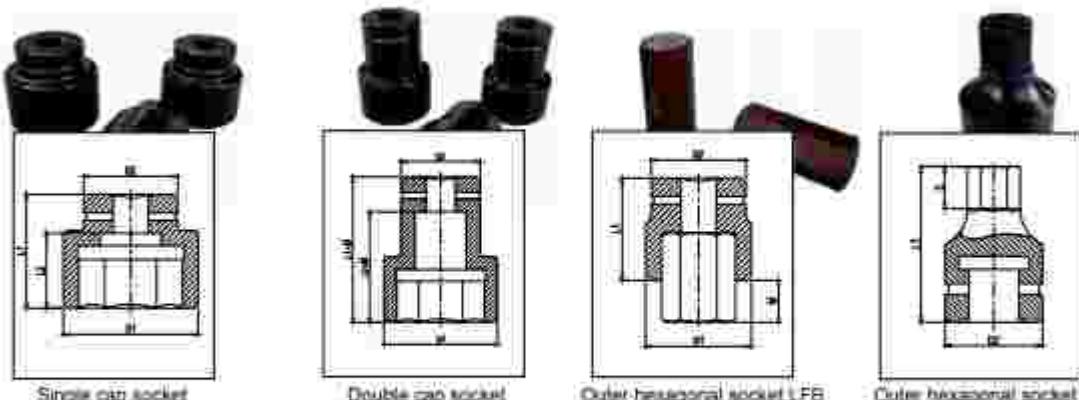


- Made of high strength Cr Mo alloy steel.
- Pass standard heat treatment process, making the socket safe, reliable and durable.
- KLCD series sockets can also be used for WHCD series.
- Non-standard sockets can be customized.

Wrench model	Wrench head size	A/B	Specifications of various sockets							
			Model	A/B	Model	A/B	Model	A/B	Model	A/B
3KLCD	3/8"	3x12	3K0301	36.00	2K0301	36.27	2K0314	36.54		
	3/8" (41)	3x13	3K0410	41.00	2K0414	41.04	2K0410	41.05	2K4127	41.07
	3/8" (41.4)	3x14	3K0411	41.40	2K0416	41.40	2K0414	41.40	2K4126	41.40
	3/8" (41.5)	3x15	3K0415	41.50	2K0417	41.50	2K0415	41.50	2K4124	41.50
	3/8" (41.6)	3x16	3K0416	41.60	2K0418	41.60	2K0416	41.60	2K4123	41.60
	3/8" (41.7)	3x17	3K0417	41.70	2K0419	41.70	2K0417	41.70	2K4122	41.70
4KLCD	1/2"	4x12	4K0501	50.00	2K0501	50.40	2K0514	50.41	2K0503	50.38
	1/2" (48)	4x13	4K0501	48.00	2K0502	48.00	2K0514	48.01	2K0504	48.01
	1/2" (48)	4x14	4K0501	48.00	2K0503	48.00	2K0514	48.00	2K0504	48.00
	1/2" (48)	4x15	4K0502	48.00	2K0504	48.00	2K0514	48.01	2K0505	48.01
	1/2" (48)	4x16	4K0503	48.00	2K0505	48.00	2K0514	48.01	2K0506	48.01
	1/2" (48)	4x17	4K0504	48.00	2K0506	48.00	2K0514	48.01	2K0507	48.01
3KLCD	3/4"	3x12	3K0701	70.00	2K0701	70.50	2K0714	70.50		
	3/4" (70)	3x13	3K0701	70.00	2K0702	70.50	2K0714	70.50	2K7050	70.50
	3/4" (70)	3x14	3K0701	70.00	2K0703	70.50	2K0714	70.50	2K7050	70.50
	3/4" (70)	3x15	3K0701	70.00	2K0704	70.50	2K0714	70.50	2K7050	70.50
	3/4" (70)	3x16	3K0701	70.00	2K0705	70.50	2K0714	70.50	2K7050	70.50
	3/4" (70)	3x17	3K0701	70.00	2K0706	70.50	2K0714	70.50	2K7050	70.50
14KLCD	1/2" (82)	14x12	14K0801	82.00	14K0801	82.00	14K0814	82.00		
	1/2" (82)	14x13	14K0801	82.00	14K0802	82.00	14K0814	82.00	14K0802	82.00
	1/2" (82)	14x14	14K0801	82.00	14K0803	82.00	14K0814	82.00	14K0803	82.00
	1/2" (82)	14x15	14K0801	82.00	14K0804	82.00	14K0814	82.00	14K0804	82.00
	1/2" (82)	14x16	14K0801	82.00	14K0805	82.00	14K0814	82.00	14K0805	82.00
	1/2" (82)	14x17	14K0801	82.00	14K0806	82.00	14K0814	82.00	14K0806	82.00
3KLCD	5/8"	3x12	3K0901	95.00	2K0901	95.70	2K0914	95.65		
	5/8" (95)	3x13	3K0901	95.00	2K0902	95.70	2K0914	95.70	2K0903	95.70
	5/8" (95)	3x14	3K0901	95.00	2K0903	95.70	2K0914	95.70	2K0904	95.70
	5/8" (95)	3x15	3K0901	95.00	2K0904	95.70	2K0914	95.70	2K0905	95.70
	5/8" (95)	3x16	3K0901	95.00	2K0905	95.70	2K0914	95.70	2K0906	95.70
	5/8" (95)	3x17	3K0901	95.00	2K0906	95.70	2K0914	95.70	2K0907	95.70
3KLCD	11/16"	3x12	3K1101	110.00	2K1101	110.00	2K1114	110.00	2K1102	110.00
	11/16" (110)	3x13	3K1101	110.00	2K1102	110.00	2K1114	110.00	2K1103	110.00
	11/16" (110)	3x14	3K1101	110.00	2K1103	110.00	2K1114	110.00	2K1104	110.00
	11/16" (110)	3x15	3K1101	110.00	2K1104	110.00	2K1114	110.00	2K1105	110.00
	11/16" (110)	3x16	3K1101	110.00	2K1105	110.00	2K1114	110.00	2K1106	110.00
	11/16" (110)	3x17	3K1101	110.00	2K1106	110.00	2K1114	110.00	2K1107	110.00
3KLCD	13/16"	3x12	3K1301	130.00	2K1301	130.00	2K1314	130.00	2K1302	130.00
	13/16" (130)	3x13	3K1301	130.00	2K1302	130.00	2K1314	130.00	2K1303	130.00
	13/16" (130)	3x14	3K1301	130.00	2K1303	130.00	2K1314	130.00	2K1304	130.00
	13/16" (130)	3x15	3K1301	130.00	2K1304	130.00	2K1314	130.00	2K1305	130.00
	13/16" (130)	3x16	3K1301	130.00	2K1305	130.00	2K1314	130.00	2K1306	130.00
	13/16" (130)	3x17	3K1301	130.00	2K1306	130.00	2K1314	130.00	2K1307	130.00
3KLCD	15/16"	3x12	3K1501	150.00	2K1501	150.00	2K1514	150.00	2K1502	150.00
	15/16" (150)	3x13	3K1501	150.00	2K1502	150.00	2K1514	150.00	2K1503	150.00
	15/16" (150)	3x14	3K1501	150.00	2K1503	150.00	2K1514	150.00	2K1504	150.00
	15/16" (150)	3x15	3K1501	150.00	2K1504	150.00	2K1514	150.00	2K1505	150.00
	15/16" (150)	3x16	3K1501	150.00	2K1505	150.00	2K1514	150.00	2K1506	150.00
	15/16" (150)	3x17	3K1501	150.00	2K1506	150.00	2K1514	150.00	2K1507	150.00

HYDRAULIC TOOLS CATALOG

Sockets for square drive torque wrench



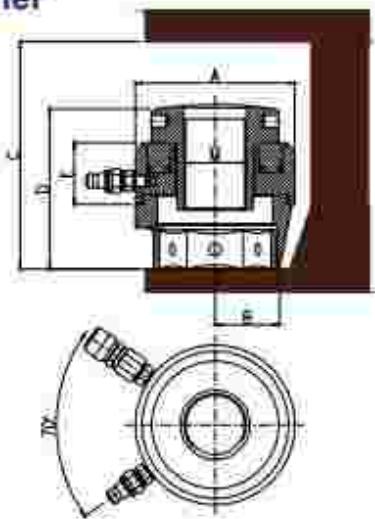
- Made of high strength Cr Mo alloy steel.
- Pass standard heat treatment process, making the socket safe, reliable and durable.
- Non-standard sockets can be customized.

Heavy duty socket standard DIN3121/3129.

Sert specification		3/8" (19x19)				1" (25.4x25.4)				1-1/2" (38x38)				2" (51x51)				2-1/2" (64x64)				
iameter	A/T	D1	D2	L1	L2	D1	D2	L1	L2	D1	D2	L1	L2	D1	D2	L1	L2	D1	D2	L1	L2	
M16	24	42	43	50	27																	
M20	30	48	44	64	31																	
M22	34	52	44	64	31	52	52	68	30													
M24	36	54	44	67	36	55	55	61	31	74	74	74	76	34								
M27	41	57	44	60	37	63	55	64	36	74	74	74	79	37								
M30	45	66	44	68	45	70	58	68	46	74	74	74	82	48								
M33	50	71	44	70	47	75	64	71	49	81	81	81	85	43								
M36	55					81	66	76	48	87	87	87	90	48	100	100	92	48	118	115	118	54
M39	60					97	66	79	51	87	87	87	93	51	103	103	100	51	115	115	118	54
M42	65					97	68	82	54	97	97	97	96	56	105	105	104	54	120	120	110	54
M45	70					97	75	85	57	102	87	99	57	112	112	107	57	120	120	121	57	
M48	75					102	75	91	60	112	67	105	63	119	119	115	63	128	128	127	63	
M52	80					108	75	95	67	118	95	108	67	123	123	117	67	130	130	131	67	
M56	85					116	78	99	71	123	98	114	72	127	127	122	72	132	132	136	72	
M60	90									128	98	118	76	132	115	126	76	139	129	140	76	
M64	95									133	98	124	82	138	115	132	82	145	145	149	82	
M68	100									139	102	129	86	138	115	136	86	153	142	150	86	
M72	105									145	102	132	90	148	118	140	90	160	152	154	90	
M76	110									150	105	136	94	154	120	146	96	166	142	160	96	
M80	115									155	110	160	105	159	120	150	100	171	142	164	100	
M85	120													165	125	155	105	180	142	167	105	
M90	130													177	125	160	110	190	160	174	110	
M95	135													182	125	165	115	195	160	179	115	
M100	145													194	135	175	125	210	160	189	125	
M105	150																	215	170	200	100	
M110	155																	221	170	210	135	
M115	165																	230	170	220	140	
M120	170																	240	170	230	150	

HYDRAULIC TOOLS CATALOG

HLD series Single stage hydraulic bolt tensioner

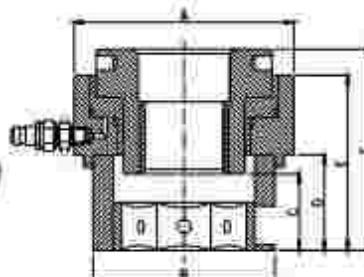


- Maximum working pressure 150Mpa
- Compact design and easy maintenance
- Small size and light weight
- Easy to replace the rod
- Commonly used in petrochemical industry

Model	Bolt diameter		Max load	Oil pressure area	Weight	A	B	C	D	E	F
	Inch	mm									
HLD1		16	226	1506	3.5	73	24	110	74	45	48
	3/4	18	226	1506	3.5	73	24	110	74	45	48
		20	226	1506	3.5	73.5	27	110	74	45	49.5
	7/8	22	226	1506	3	73.5	27	115	74	45	53
	1	24	226	1506	3	73.5	30	125	78	45	56.5
	1 1/8	27	226	1506	3	73.5	32	130	78	45	63.5
HLD2		30	455	3031	5	102	30	160	90	54	59
	1 1/4	33	455	3031	5	102	34	160	90	54	72
	1 3/8	36	455	3031	5	102	36	160	95	54	78
	1 1/2	39	455	3031	5	102	38	170	100	54	80
HLD3	1 1/2	39	803	5357	9	133	42	175	95	56	83.5
	1 5/8	42	803	5357	9	133	42	185	100	56	92.5
	1 3/4	45	803	5357	9	133	44	195	103	56	98
	1 7/8	48	803	5357	9	133	46	205	107	56	101
	2	52	803	5357	9	133	48	210	112	56	106
HLD4	1 7/8	48	1268	8501	15	163	50	205	105	58	108
	2	52	1268	8501	15	163	52	215	108	58	108
	2 1/4	56	1268	8501	15	163	54	235	117	58	118.5
		60	1268	8501	15	163	54	238	120	58	127
	2 1/2	64	1268	8501	15	163	58	254	129	58	130.5
HLD5	2 1/2	64	1978	13188	25	193	64	254	125	60	130.5
		68	1978	13188	25	193	72	258	130	60	138
	2 3/4	72	1978	13188	25	193	72	258	130	60	143
	3	76	1978	13188	25	193	74	258	141	60	153
HLD6	3	76	2717	18114	44	233	76	260	146	64	153
		80	2717	18114	44	233	76	264	146	64	155.5
	3 1/4	85	2717	18114	44	233	78	272	148	64	165.5
	3 1/2	90	2717	18114	44	233	78	280	154	64	174.5
	3 3/4	95	2717	18114	40.5	233	90	300	188	64	180.5
	4	100	2717	18114	40.5	233	106	306	172	64	200

HYDRAULIC TOOLS CATALOG

DLD series Simple type hydraulic bolt tensioner

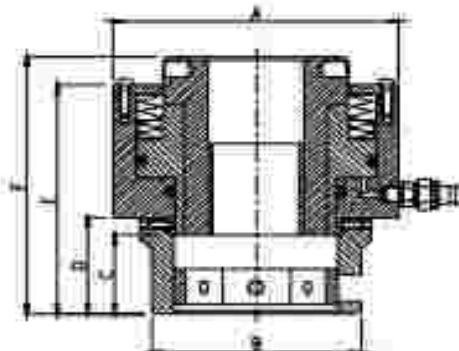


- Maximum working pressure 150Mpa
- Mechanical return
- Replaceable tensioning rod
- Red overstroke warning line
- Polishing surface treatment

Model	Bolt size mm	Max load kN	Dimension (mm)						Stroke mm	Weight kg
			A	B	C	D	E	F		
DLD0	M 20	338	85	55	29	25	74	86	8	3.5
	M 22			59	25	27	75	88		
	M 24			66	27	29	78	90		
DLD1	M 24	486	109	66	27	49	90	105	10	5.5
	M 27			72	30	32	93	108		
	M 30			78	33	35	96	111		
	M 33			85	36	38	98	114		
	M 36			90	39	41	102	117		
DLD2	M 33	614	132	85	36	44	111	127	8	6
	M 36			94	39	47	116	130		
	M 39			98	42	50	118	131		
	M 42			105	45	53	122	136		
DLD3	M 39	889	150	98	41	51	122	135	10	12
	M 42			105	44	54	125	138		
	M 45			110	47	57	128	141		
	M 48			125	50	60	131	144		
DLD4	M 52	1413	174	132	53	58	132	145	10	17
	M 56			135	59	60	138	154		
DLD5	M 56	1649	196	135	59	60	138	154	12	21
	M 60			144	63	65	143	159		
	M 64			150	67	68	147	163		
	M 68			158	71	74	152	168		
DLD6	M 72	2131	222	165	76	77	167	185	12	26
	M 76			170	79	81	175	193		
DLD7	M 76	2544	269	170	79	81	167	187	12	32
	M 80			175	83	85	172	201		
	M 85			185	88	90	178	206		
	M 90			205	93	95	181	211		
DLD8	M 95	3101	282	215	98	100	189	224	12	36
	M 100			235	103	105	194	229		
DLD9	M 105	3793	318	240	108	110	203	238	12	52
	M 110			250	113	115	208	243		
	M 115			260	118	120	213	248		
DLD10	M 115	4336	360	260	120	120	251	297	15	57
	M 120			270	125	125	266	302		
	M 125			285	140	130	271	307		

HYDRAULIC TOOLS CATALOG

TSD series-Single stage hydraulic bolt tensioner

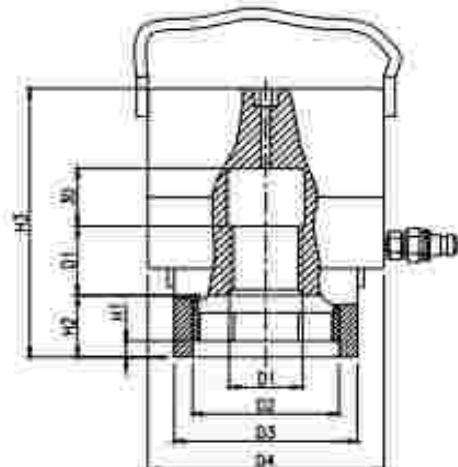


- Maximum working pressure 150Mpa
- Automatic return mechanism design
- Red overstroke warning line to ensure operator safety
- One tensioner can be used for different size bolts, but the rod and bushing must be changed

Model	Bolt size mm	Max load KN	Dimension (mm)						Stroke mm	Weight kg
			A	B	C	D	E	F		
TSD9	M 20	307	109	55	23	25	111	128	8	3
	M 22			56	25	27	113	130		
	M 24			56	27	29	115	132		
TSD1	M 26	456	109	74	27	29	120	138	8	7
	M 27			77	30	32	123	141		
	M 30			80	33	35	126	144		
	M 32			85	36	38	129	147		
	M 36			90	39	41	132	160		
TSD2	M 38	814	132	90	38	44	135	160	8	12
	M 40			96	40	47	138	153		
	M 42			98	42	50	141	156		
	M 42			105	45	53	144	159		
TSD3	M 48	969	150	110	42	42	156	160	10	15
	M 48			113	45	45	160	165		
	M 48			114	50	50	164	161		
	M 48			118	52	52	168	163		
TSD4	M 52	1413	174	132	55	58	154	174	10	20
	M 56			135	59	60	158	178		
TSD5	M 60	1649	198	143	64	64	166	183	12	25
	M 64			150	68	68	168	187		
	M 68			158	72	72	172	191		
	M 72			165	76	76	184	207		
TSD6	M 76	2131	222	170	80	80	188	211	12	35
	M 80			170	80	80	188	221		
TSD7	M 85	2544	252	175	85	85	197	224	12	50
	M 90			180	90	88	199	226		
	M 95			195	95	95	208	238		
	M 100			215	100	102	214	243		
TSD8	M 105	3293	288	240	110	110	224	254	12	65
	M 110			248	115	118	234	264		
	M 115			250	120	120	234	264		
TSD10	M 118	4836	360	260	120	120	261	297	12	110
	M 120			270	125	125	266	302		
	M 125			280	140	130	271	307		

HYDRAULIC TOOLS CATALOG

ESD series-Single stage hydraulic bolt tensioner

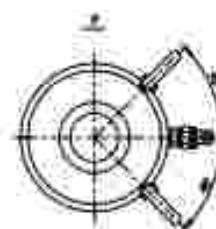
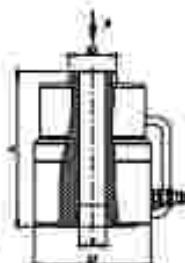


- Maximum working pressure 150Mpa
- Mainly used for 10.9 grade high strength bolts.
- Automatic return mechanism design, labor intensity is greatly reduced.
- Red overstroke warning line to ensure operator's safety.

Model:	Thread:D1	A2F	Tension Force	D2	D3	D4	H1	H2	H3
	mm	kg	KN	mm	mm	mm	mm	mm	mm
ESD 20	M 20x2.5	30	200	42	52	66	8	16	94
ESD 24	M 24x3	38	290	49	60	76	8	22	102
ESD 27	M 27x3	41	380	55	67	86	10	26	108
ESD 30	M 30x3.5	48	480	61	74	97	12	37	108
ESD 33	M 33x3.5	50	570	66	81	107	14	39	114
ESD 36	M 36x4	55	670	71	90	117	16	42	116
ESD 39	M 39x4	60	800	77	96	127	18	44	125
ESD 42	M 42x4.5	68	920	83	102	137	20	47	134
ESD 45	M 45x4.5	70	1080	89	110	148	22	50	135
ESD 48	M 48x5	75	1220	94	116	158	24	42	145
ESD 52	M 52x5	80	1450	102	128	188	28	49	151
ESD 56	M 56x5.5	88	1680	108	135	175	31	49	158
ESD 60	M 60x5.5	90	2010	114	142	199	34	52	167
ESD 64	M 64x6	95	2210	120	151	211	37	55	172
ESD 68	M 68x6	100	2500	124	155	228	40	58	180
ESD 72	M 72x6	105	2880	130	168	238	44	62	188
ESD 76	M 76x6	110	3320	138	180	259	48	68	197
ESD 80	M 80x6	115	3610	142	188	267	50	68	202
ESD 90	M 80x6	130	4650	160	210	300	58	77	226
ESD 100	M 100x6	145	5830	178	237	340	68	85	240

HYDRAULIC TOOLS CATALOG

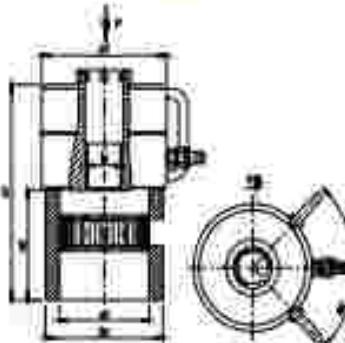
ZLD series-hydraulic bolt tensioner specially for bridge



- Maximum working pressure: 150Mpa
- Automatic return mechanism design.
- Red overstroke warning line to ensure operator safety
- Polishing surface treatment
- High pressure, light weight

Model	Tensile Force KN	Bolt size	Dimension (mm)				Stroke mm	Pressure MPa	Weight Kg
			D1	D2	d	H			
ZLD30	422	M30	94	47	32	210	40	150	8.5
ZLD33	300	M33	101	51	35	210	40	150	10.1
ZLD36	584	M36	109	56	38	210	40	150	12.7
ZLD39	727	M39	121	61	42	210	40	150	14.8
ZLD42	886	M42	132	66	44	210	40	150	16.4
ZLD45	922	M45	138	71	47	210	40	150	18
ZLD48	1027	M48	147	76	50	210	40	150	21
ZLD52	1354	M52	166	81	54	210	40	150	25
ZLD56	1413	M56	171	86	58	277	40	150	32
ZLD60	1688	M60	185	91	52	277	40	150	39
ZLD64	1630	M64	193	96	56	277	40	150	45

SJD series-hydraulic bolt tensioner for bridge lock clamping

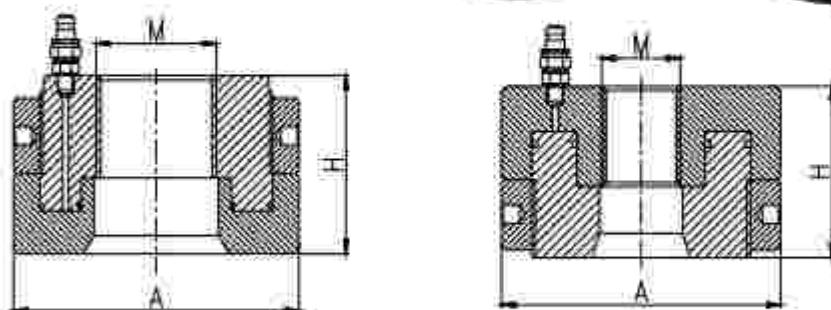


- Maximum working pressure 150Mpa
- Automatic return mechanism design.
- Red overstroke warning line to ensure operator safety.
- Polishing surface treatment
- High pressure, light weight
- One tensioner can be used for different size bolts.

Model	Tensile Force KN	Bolt size	Dimension (mm)				Stroke mm	Pressure MPa	Weight Kg
			D1	D2	d	H			
SLD30	422	M30	94	86	270	136	20	150	8.2
SLD33	300	M33	101	92	273	132	20	150	12
SLD36	584	M36	109	100	276	127	20	150	16
SLD39	727	M39	121	108	279	130	20	150	20
SLD42	886	M42	132	117	283	133	20	150	24
SLD45	922	M45	138	122	285	138	20	150	27
SLD48	1027	M48	147	136	292	145	20	150	31
SLD52	1354	M52	166	156	303	155	20	150	36
SLD56	1413	M56	171	160	322	156	20	150	42
SLD60	1688	M60	185	172	354	165	20	150	51
SLD64	1630	M64	193	180	368	155	20	150	52

HYDRAULIC TOOLS CATALOG

DN/HN series-Hydraulic Nut



• Maximum working pressure: 150Mpa.

• The preload can be accurately set, the precision is up to $\pm 3\%$.

• Adopt no-torque design to avoid the influence of friction, bolt distortion, bolt pre-tightening force and other factors, so the bolt is to be tightened by pure tension force.

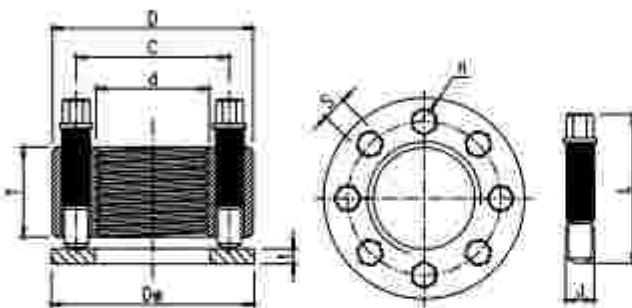
• Particularly suitable for heavy-duty vibration mechanical fastening.

• With stroke indicator. It is allowed to observe, measure and control the tensioner during operation.

Model		Thread size	Outside diameter	Height	Action area	Max force	Stroke	Weight
Top ring hydraulic nut	Bottom ring hydraulic nut	M	A/mm	H/mm	cm ²	kN	mm	Kg
DN30	HN30	30	75	81	17.3	298	8	0.9
DN33	HN33	33	83	94	22.5	338	8	1.1
DN36	HN36	36	96	107	28.6	368	8	1.3
DN39	HN39	39	96	120	35.5	397	8	1.5
DN42	HN42	42	100	133	45.5	427	8	1.8
DN45	HN45	45	106	137	52.4	480	8	2.4
DN48	HN48	48	118	150	60	500	8	2.8
DN52	HN52	52	123	164	62.4	530	8	3.8
DN56	HN56	56	135	183	53.0	564	8	4.6
DN60	HN60	60	147	193	65.3	589	8	5.6
DN64	HN64	64	153	209	69.1	1006	8	6.7
DN68	HN68	68	159	205	72.4	1086	8	8.8
DN72	HN72	72	170	219	80.5	1258	10	9.7
DN76	HN76	76	176	217	91.1	1351	10	11.7
DN80	HN80	80	184	224	100	1580	10	14.9
DN85	HN85	85	200	230	115.9	1708	10	16.4
DN90	HN90	90	212	240	131.7	1979	10	19.8
DN95	HN95	95	223	246	150.7	2261	10	23.4
DN100	HN100	100	238	254	162.3	2450	10	28.5

HYDRAULIC TOOLS CATALOG

CY series-Super Nut



- Operating temperature -60 ~ 200 degree
- Bolt stress under standard load 410-890MPa
- CY series super nuts are suitable for high strength machine tightening and all working conditions of big size hexagonal nuts:
- Application: low temperature bolt, compressor, pump, high pressure flange, reduction gearbox, gearbox, split gear, crushing machine, military machine, etc.

Model	Bolt size	Nut			Piston rod				Gasket		Standard product		Weight
		Outside diameter (mm)	Thickness (mm)	Center distance (mm)	Length (mm)	Number	Diameter (mm)	A/F (mm)	Outside diameter (mm)	Thickness (mm)	Tightening force (N)	Length (mm)	
CY-M20	M20	31	17	25	30	8	M60X1.75	8	36	2.3	144	18	0.14
CY-M24	M24	47	24	35	40	8	M80X1	8	48	4.8	216	36	0.21
CY-M27	M27	53	24	33	40	8	M80X1	8	51	4.8	288	36	0.32
CY-M30	M30	63	34	41	40	8	M80X1	8	54	6.3	388	36	0.32
CY-M33	M33	62	32	48	52	8	M100X1.25	8	62	4.8	346	42	0.54
CY-M36	M36	66	32	51	52	8	M100X1.25	8	67	4.8	489	42	0.85
CY-M40	M38	71	52	54	52	10	M100X1.25	8	72	4.8	574	42	0.77
CY-M42	M42	75	52	58	52	12	M100X1.25	8	77	4.8	698	42	0.89
CY-M45	M45	81	58	62	52	8	M120X1.25	10	85	5.4	738	132	1.22
CY-M48	M48	88	58	68	52	10	M120X1.25	10	87	5.4	874	132	1.32
CY-M52	M52	94	58	70	52	12	M120X1.25	10	98	5.4	1049	132	1.69
CY-M56	M56	101	58	76	52	12	M120X1.25	10	108	5.4	1248	132	1.69
CY-M60	M60	107	58	83	61	8	M160X1.5	14	119	5.4	1226	315	3.2
CY-M64	M64	113	58	82	61	10	M160X1.5	14	118	5	1589	315	3.5
CY-M72	M72	119	58	94	61	12	M160X1.5	14	121	5	1936	315	3.8
CY-M82	M82	131	51	103	61	16	M160X1.5	14	134	5	2542	315	4.8
CY-M90	M90	145	61	113	61	16	M160X1.5	14	147	5	2542	315	5.4
CY-M100	M100	157	61	123	61	16	M160X1.5	14	158	5	2542	315	5.4
CY-M110	M110	177	51	133	51	20	M160X1.5	14	179	5	3177	315	6.2
CY-M120	M120	188	51	140	113	16	M200X1.5	17	191	10	4139	547	11.8
CY-M140	M140	215	54	160	128	22	M200X1.5	17	217	10	5762	547	17.2
CY-M160	M160	236	57	166	138	24	M200X1.5	17	238	10	6318	547	18.5

HYDRAULIC TOOLS CATALOG

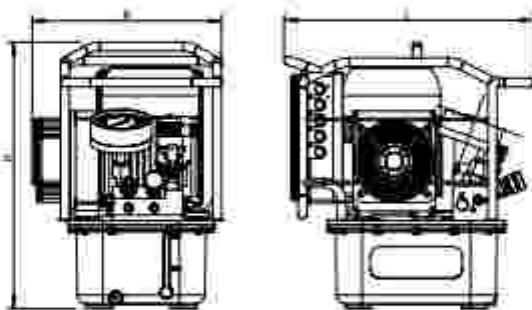
Hydraulic pumps

SP304 series - NEW style electric pump for hydraulic wrench



- High efficiency 3 speed flow pressure design, perfect simulation of manual operation, fast speed when light load, low speed when heavy load, the bolt tightening is more precise.
- It can drive 2 hydraulic wrenches simultaneously or 4 if requested.
- Al-Ti alloy pump body, light weight and easy to carry.
- 40-700 bar adjustable output pressure.
- Brushless high power motor, easy maintenance and long life, with starting capacitor, able to start with load, simple operation.

Dimension



Technical parameters

Model	Output (bar)	Power	Pressure(MPa)			Flow(l/min)			Oil tank (L)	Dimensions (mm)	Weight (KG)
			High	Medium	Low	High	Medium	Low			
SP304-2	40X14 NPT	220V 1.1kW	70	32	6	0.8	1.6	8	7.6	394*300*420	26
SP304-4	40X14 NPT	220V 1.1kW	70	32	6	0.8	1.6	8	7.6	394*300*420	26

HYDRAULIC TOOLS CATALOG

DP304 series - High flow 3 speed hydraulic pump



- Dual motor 3 speed, higher flow and higher efficiency.
- It can drive 4 hydraulic wrenches simultaneously or 8 with distributor.
- Al-Ti alloy pump body.
- 40-700 bar adjustable output pressure.
- Brushless high power motor, easy maintenance and long life, with starting capacitor, able to start with load, simple operation.
- High performance radiator, the fan starts automatically when oil temperature reaches 35 degree.

Technical parameters

Model	Output port	Power	Pressure(MPa)			Flow (L/min)			Oil tank (L)	Dimension (mm)	Weight (KG)
			High	Medium	Low	High	Medium	Low			
DP220-4	8X1/4 NPT	220V 1.1KW	70	37	6	18	3.2	15	14	350*400*570	61
DP220-8	16X1/4 NPT	220V 1.1KW									
DP300-4	8X1/4 NPT	380V 1.1KW									
DP300-8	16X1/4 NPT	380V 1.1KW									

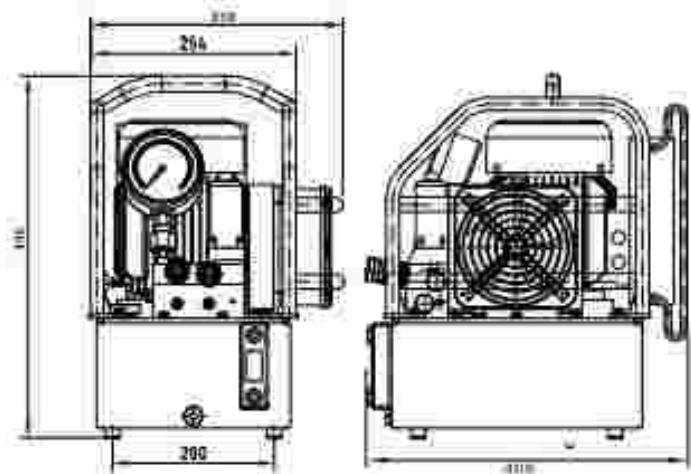
HYDRAULIC TOOLS CATALOG

EMP304 - 3 speed hydraulic wrench pump



- High efficiency 3 speed flow pressure design, perfect simulation of manual operation; fast speed when light load, low speed when heavy load, the bolt tightening is more precise.
- It can drive 2 hydraulic wrenches simultaneously or 4 if requested.
- Al-Ti alloy pump body, light weight and easy to carry.
- 40-700 bar adjustable output pressure.
- Brushless high power motor, easy maintenance and long life, with starting capacitor, able to start with load, simple operation.
- High performance radiator, the fan starts automatically when oil temperature reaches 35 degree.

Dimension



Technical parameters

Model	Output port	Power	Pressure(MPa)			Flow(l/min)			Oil tank (L)	Dimension (mm)	Weight (kg)
			High	Medium	Low	High	Medium	Low			
EMP304-2	4X1/4 NPT	220V 1.1kW	70	32	6	0.8	1.6	8	7.6	384*300*420	27
EMP304-4	8X1/4 NPT	220V 1.1kW	70	32	6	0.8	1.6	8	7.6	384*300*420	27.5

HYDRAULIC TOOLS CATALOG

EMP204 series - 2 speed hydraulic wrench pump



- Adopt standard slide valve, stable reversing and good versatility.
- 2 speed flow design, switch flow automatically.
- Al-Ti alloy pump body, light weight and easy to carry.
- Brushless high power motor, easy maintenance and long life.
- High performance radiator, the fan starts automatically when oil temperature reaches 35 degree, to guarantee long time working.
- The electrical box adopts integrated circuit, able to match hydraulic wrench, hydraulic plier etc.

Technical parameters

Model	Output port	Power	Pressure(MPa)		Flow(l/min)		Oil tank (L)	Dimension (mm)	Weight (KG)
			High	Low	High	Low			
EMP204X-2	4X1/4 NPT	220V 1.1kW	7.0	5	0.8	5	7.0	394*300*420	27
EMP204X-4	8X1/4 NPT	220V 1.1kW	7.0	6	0.8	6	7.6	394*300*420	27.5
EMP204-1	2X1/4 NPT	220V 1.5kW	7.0	6	1.1	6	8	450*325*540	36
EMP204-2	4X1/4 NPT	220V 1.5kW	7.0	6	1.1	6	8	450*325*540	36.5
EMP204-4	8X1/4 NPT	220V 1.5kW	7.0	6	1.1	6	8	450*325*540	37
EMP204-380-1	2X1/4 NPT	380V 1.5kW	7.0	6	1.1	6	8	450*325*540	36
EMP204-380-2	4X1/4 NPT	380V 1.5kW	7.0	6	1.1	6	8	450*325*540	36.5
EMP204-380-4	8X1/4 NPT	380V 1.5kW	7.0	6	1.1	6	8	450*325*540	37

HYDRAULIC TOOLS CATALOG

AMP304 series - Automatic hydraulic wrench pump



- Integrated circuit control makes it possible to automatically control temperature, automatically stop if no operation after 30s, automatically relief pressure protect the motor and alarm when overload.
- 1.1kW brushless AC motor, high power, free maintenance, long life, long time continuous working.
- Ergonomically designed remote handle, comfortable and durable.
- Solenoid pilot operated valve reverses quickly, pressure relief when shutdown, with starting capacitor, can start with pressure.
- Plug-in hydraulic valve, easy repair and low repair cost.
- Multifunctional digital pressure gauge can switch between MPa, KG, bar and PSI.
- Intelligent one-touch operation, only need press the start button, it will tighten and loose automatically, operator can finish the task very quickly.
- High efficiency 3 speed flow pressure design, perfect simulation of manual operation, fast speed when light load, low speed when heavy load, the bolt tightening is more precise.
- Realize the reversing by pressure numerical signal from integrated circuit and digital pressure gauge, quick response and high efficiency.
- Brushless high power motor, easy maintenance and long life, with starting capacitor, able to start with load, simple operation.
- The reversing valve is controlled by pressure gauge after setting pressure; making regulating valve on OFF position and extend the lifetime greatly.
- Fast speed, high efficiency, 30% higher than normal automatic pump.
- High performance radiator, the fan starts automatically when oil temperature reaches 35 degree, to guarantee long time working.

Technical parameters

Model	Output port	Power	Pressure(MPa)			Flow(L/min)			Oil tank(L)	Dimension (mm)	Weight (KG)
			High	Medium	Low	High	Medium	Low			
AMP304-2	4X1/4 NPT	220V 1.1kW	70	32	8	0.8	1.6	8	7.5	394*300*420	28
AMP304-4	8X1/4 NPT	220V 1.1kW	70	32	8	0.8	1.6	8	7.5	394*300*420	28.5

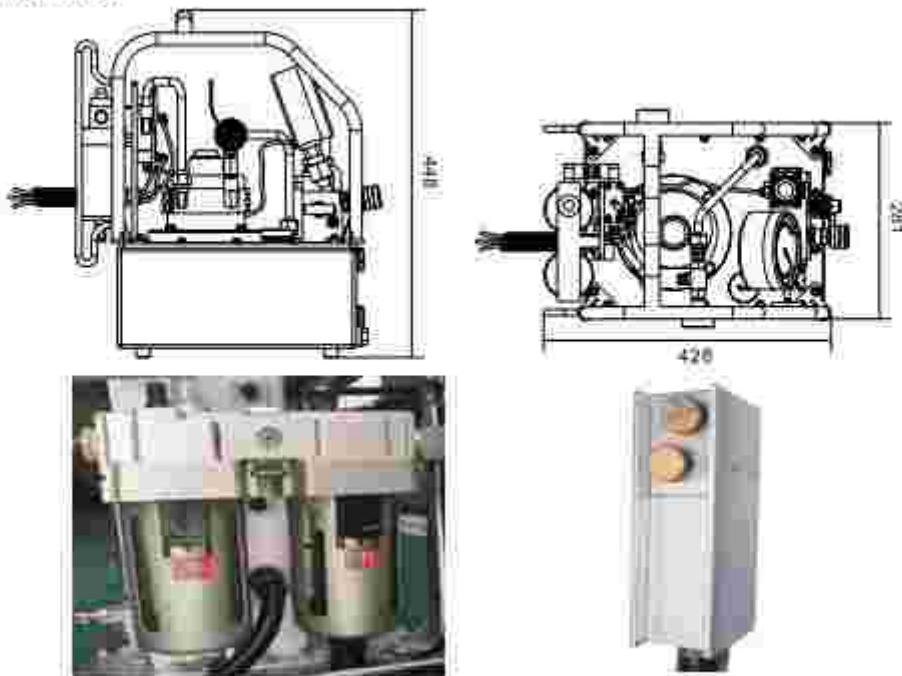
HYDRAULIC TOOLS CATALOG

QMP304 - Pneumatic pump for hydraulic wrench

- Use compressed air as the power source, applicable to coal mine etc, with advantages of anti-explosion, safety, no heat and long time working.
- High performance pneumatic reversing valve, safe and reliable, stable performance.
- Al-Ti alloy pump body, light weight, easy to carry.
- It can drive 2 hydraulic wrenches simultaneously or 4 if requested.
- 4-70MPa adjustable pressure.
- Use 4-8 bar air pressure.
- It can be customized as requested.
- The pressure can be released after pressing the button when the pump stops working.
- Steel frame can protect the pump body and makes it easy to carry.
- Aluminium explosion-proof handle, solid and reliable.



Dimension



Technical parameters

Model	Gas source			Pressure (MPa)			Flow (L/min)			Oil tank (L)	Dimensions (mm)	Weight (kg)
	Reverser	Hand pump (bar)	Air consumption (min)	High	Medium	Low	High	Medium	Low			
QMP304	4-8	1.3	134	70	32	8	63	16	8	7.5	426*281*440	37

HYDRAULIC TOOLS CATALOG

SP2004 series - ultra high pressure electric pump



- SP2004 is the updated version of EMP2004.
- The oil tank is updated into casting aluminium alloy.
- Pump is made of aircraft aluminium, smaller size and lighter weight.
- Max working pressure is 200MPa.
- High performance safety valve, stable pressure.
- High performance radiator can guarantee long time working.

Technical parameters

Model	Output port	Power	Pressure (MPa)		Flow (L/min)		Oil tank (L)	Dimension (mm)	Weight (KG)
			High	Low	High	Low			
SP2004	G1/4	220V 1.1KW	200	3	0.3	2.5	8	384*300*420	24

ISP2004 series - Intelligent electric pump for tensioner

- Max working pressure 200MPa.
- Applicable to bolt tensioner.
- Adopt Siemens controller and human interface, stable performance.
- One-touch operation, just need input tensile force, easy operation.
- Automatic pressure compensation, eliminate pressure loss caused by mechanical deformation, making tensioning more accurate.
- Searchable operation records.
- Automatic pressure relief function.



Technical parameters

Model	Output port	Power	Pressure (MPa)		Flow (L/min)		Oil tank (L)	Dimension (mm)	Weight (KG)
			High	Low	High	Low			
ISP2004	G1/4	220V 1.1KW	200	3	0.2	2.5	8	400*380*600	65

HYDRAULIC TOOLS CATALOG

EMP2004 series - Ultra high pressure electric pump

- Max working pressure 200MPa.
- Automatic switch between high and low pressure, high efficiency.
- Al-Ti alloy pump body, light weight.
- Brushless high power motor, easy maintenance and long life.
- Applicable to bolt tensioner in shipbuilding, wind power etc.
- Plug-in quick connector, easy operation.

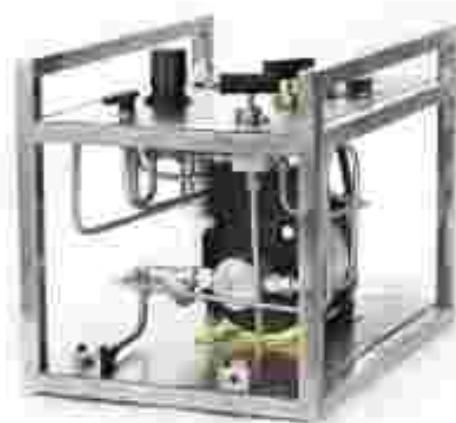


Technical parameters

Model	Output port	Power	Pressure(MPa)		Flow(L/min)		Oil tank (L)	Dimension (mm)	Weight (KG)
			High	Low	High	Low			
EMP2004	G1/4	220V 1.1kw	200	3	0.3	2.5	8	400*310*440	27

J series gas-liquid booster pump

- J series gas-liquid booster pump adopts single air-controlled unbalanced gas distribution valve to realize automatic reciprocating motion of the pump, and the air drive part is made of aluminum alloy.
- High pressure part is made of carbon steel or stainless steel depending on different materials. All the seals are imported products to ensure the performance of pump.
- The maximum drive pressure is 10 bar, it is suggested to be no more than 5 bar to guarantee the lifetime.



Technical parameters

Model	Output port	Supercharge ratio	Output pressure		Flow (L/min)	Weight (KG)
			bar	psi		
J80	G1/4	80:1	640	9280	2.44	25
J100	G1/4	100:1	800	11600	1.82	25
J130	G1/4	130:1	1040	15080	1.4	25
J175	G1/4	175:1	1400	20320	1.14	25
J255	G1/4	255:1	2040	25800	0.75	25
J400	G1/4	400:1	3200	45400	0.48	25

HYDRAULIC TOOLS CATALOG

FB204 series Ultra high pressure electric pump



FB5 manual reversing



FBD electromagnetic reversing



FBE automatic reversing

- Exd II BT4 three phase asynchronous motor, applicable to explosion proof occasions.
- The electrical control system adopts Exd II BT4 explosion proof magnetic starter, safe.
- External pressure regulating valve, 7-70MPa adjustable pressure.
- 3 stage plunger pump, high efficiency, low pressure fluctuation.
- Equipped with tubular protective frame, easy to move.

Technical parameters

Model	Output port	Power	Pressure(MPa)			Flow(L/min)			Oil tank (L)	Dimension (mm)	Weight (KG)
			High	Medium	Low	High	Medium	Low			
FB5204-1	2X1/4 NPT	380V 1.5KW	70		6	0.8		0	10	560*370*640	75
FB5204-2	4X1/4 NPT	380V 1.5KW	70		6	0.8		0	10	560*370*640	75
FB5204-4	8X1/4 NPT	380V 1.5KW	70		6	0.8		0	10	560*370*640	75
FBD204-1	2X1/4 NPT	380V 1.5KW	70		6	0.8		0	10	560*370*640	75
FBD204-2	4X1/4 NPT	380V 1.5KW	70		6	0.8		0	10	560*370*640	75
FBD204-4	8X1/4 NPT	380V 1.5KW	70		6	0.8		0	10	560*370*640	75
FBE204-1	2X1/4 NPT	380V 1.5KW	70		6	0.8		0	10	560*370*640	75
FBE204-2	4X1/4 NPT	380V 1.5KW	70		6	0.8		0	10	560*370*640	75
FBE204-4	8X1/4 NPT	380V 1.5KW	70		6	0.8		0	10	560*370*640	75

HYDRAULIC TOOLS CATALOG

EMP204D / EMP204S hydraulic pump station



- 2-speed pressure, automatic switch of two output flows.
- Al-Ti alloy pump body, light weight.
- Brushless high power motor, easy maintenance and long life.
- Electrical control box adopts integrated circuit, applicable to hydraulic cylinder, hydraulic plier etc.
- Built-in check valve, suitable for long time pressure holding condition.
- Match single acting cylinder, double acting cylinder pump can be customized.

- Light weight and compact design, easy to move.
- 2-speed design, electromagnetic directional control, high flow at low pressure.
- Fast movement of hydraulic parts when no load, high efficiency.
- High pressure high flow, suitable for kinds of hydraulic devices.
- Equipped with tubular protective frame, easy to move.
- Able to customize different capacity oil tank for big ton cylinder.
- Built-in check valve, suitable for long time pressure holding condition.
- Match double acting cylinder.

Technical parameters

Model	Output port	Power	Pressure(MPa)		Flow(L/min)		Oil tank (L)	Dimension (mm)	Weight (KG)
			High	Low	High	Low			
EMP204D-220	1/2" NPT	220V 1.5KW	70	0	1.1	0	6	420*260*630	37
EMP204D-380	1/2" NPT	380V 1.5KW	70	0	1.1	0	6	420*260*630	37
EMP204S25-220	1/2" NPT	220V 1.5KW	70	0	1.1	0	20	680*570*645	57
EMP204S40-220	1/2" NPT	220V 1.5KW	70	0	1.1	0	40	680*570*645	57
EMP204S25-380	1/2" NPT	380V 1.5KW	70	0	1.1	0	20	680*570*645	57
EMP204S40-380	1/2" NPT	380V 1.5KW	70	0	1.1	0	40	680*570*645	57

HYDRAULIC TOOLS CATALOG

EMP086 series - manual electric pump for hydraulic cylinder



- Plastic spray coating, anti-corrosion, good stain resistance.
- Lightweight and compact design, easy to move.
- 2 speed pump, manual reversing control, high flow at low pressure.
- Fast response of hydraulic parts when no load, high efficiency.
- High flow at high pressure, applicable to kinds of hydraulic devices.
- Equipped with tubular protective frame, easy to move.
- Customizable oil tank as request. Single acting pump also available.

Technical parameters

Model	Output port	Power	Pressure(MPa)		Flow(L/min)		Oil tank (L)	Dimension (mm)	Weight (KG)
			High	Low	High	Low			
EMP086-220	2X1/2" NPT	220V 1.5KW	70	6	1.1	0.8	3	480*440*635	48
EMP086-380	4X3/8" NPT	380V 1.5KW	70	6	1.1	0.8	3	480*440*615	48

HP series - single acting aluminium high pressure manual pump



- Reasonable structure and design, beautiful, easy to carry.
- Double speed design, efficiency increases by 80%.
- Built-in safety valve for overload protection.
- Large capacity oil tank, applicable to different models of cylinders and tools.
- Al-Ti alloy pump body, light weight, high strength, anti-corrosion, shock resistance.
- Max working pressure 280MPa.
- Built-in precise high/low pressure switching valve, stable and reliable.

Technical parameters

Model	Output port	Pressure(MPa)		Flow(ml/stroke)		Oil tank (ml)	Dimension (mm)	Weight (KG)
		High	Low	High	Low			
HP100	G1/4	70	2	1.2	24	2000	550*124*160	8.8
HP160	G1/4	100	2	1.2	24	2000	550*124*160	8.8
HP250	G1/4	250	2	1.2	24	2000	550*124*160	8.8
HP280	G1/4	280	2	1.2	24	2000	550*124*160	8.8

HYDRAULIC TOOLS CATALOG

EPS150 series - Ultra high pressure electric pump



- Max working pressure 150MPa.
- Single acting high performance electric pump.
- Al-Ti alloy pump body, light weight.
- Brushless high power motor, easy maintenance, long life.
- Applicable to bolt tensioner in shipbuilding, wind power etc.
- Plug-in quick connector, easy operation.

Technical parameters

Model	Output port	Power	Pressure (MPa)	Flow (L/min)	Oil tank (L)	Dimension (mm)	Weight (KG)
EPS150-220	G1/4	220V 1.5kW	150	0.8	8	500*260*530	58
EPS150-380	G1/4	380V 1.5kW	150	0.8	8	500*260*530	58

ZMP2004 series - Automatic pressure relief pump



- Al-Ti alloy pump body, light weight, easy to carry.
- Brushless high power motor, easy maintenance and long life, with starting capacitor, able to start with load, simple operation.
- Applicable to bolt tensioner in shipbuild, wind power etc.
- Plug-in quick connector, easy operation.
- 2 speed flow design, automatic switch between high and low pressure, high efficiency, more accurate tensioning.
- High performance radiator ensures long time continuous working.

Technical parameters

Model	Output port	Power	Pressure(MPa)		Flow(L/min)		Oil tank (L)	Dimension (mm)	Weight (KG)
			High	Low	High	Low			
ZMP2004	G1/4	220V 1.1kW	200	3	0.5	2.5	8	400*310*440	25

HYDRAULIC TOOLS CATALOG

PHG series gasoline engine hydraulic pump



- This is a reasonable choice when no power or compressed air at work site.
- Able to match single or double acting hydraulic tools, 70MPa external pressure regulating valve, adjustable between 7-70MPa.
- Equipped with preset one way valve for the engine and hydraulic pump, to prevent the pressure lose from forward position to holding position.
- The pump is driven by a 4 stroke 2.0KW HONDA engine, which has the lowest weighthorse-power and has forced air cooling function compared with normal gasoline engine.
- Equipped with tubular protective frame, easy to move.

Technical parameters

Model	Output port	Engine		Pressure (MPa)		Flow (L/min)		Oil tank (L)	Dimension (mm)	Weight (kg)
		Displacement (cm ³)	Speed (min ⁻¹)	High	Low	High	Low			
PHG120	M16X1.5	163	3600	70		1.3		40	540*430*620	34
PHG220	M16X1.5	163	3600	70	6	1.1	6	40	450*320*640	34

PEH series gasoline engine hydraulic pump

- As hydraulic power source, this pump mainly works together with professional break-in tools. Main features are compact structure, strong mobility, beautiful appearance, quick connection with tools, good engine cooling conditions.
- Two speed output pressure, switch automatically, high efficiency.
- It can move together with tools on connection status, low noise.



Technical parameters

Model	Output port	Engine		Pressure (MPa)		Flow (L/min)		Oil tank (L)	Dimension (mm)	Weight (kg)
		Displacement (cm ³)	Speed (min ⁻¹)	High	Low	High	Low			
PEH220	M16X1.5	86	3600	83	5	9.63	4	40	300*440*470	22

HYDRAULIC TOOLS CATALOG

Hydraulic Jacks

RC series single acting hydraulic cylinder

- Hard chrome plating piston, to avoid scratch and corrosion.
- Anti-corrosion painted surface.
- Dustproof ring extends the service life.
- Single acting, spring return.



Technical parameters

Capacity ton(KN)	Series Number	Model	Effective width (mm)	Oil capacity (mm ³)	Collapsed height (mm)	Extended height (mm)	Outline length (mm)	Weight (kg)
5 (45)	16	RC05-16	65	10	41	57	38	1
	25	RC05-25		18	110	135		1.2
	76	RC05-76		50	160	241		1.5
	127	RC05-127		83	215	342		1.9
	177	RC05-177		118	270	450		2.4
	232	RC05-232		151	323	555		2.8
10 (101)	28	RC10-28	145	38	89	116	57	1.8
	54	RC10-54		76	121	175		2.3
	105	RC10-105		152	171	278		3.3
	158	RC10-158		226	247	403		4.4
	200	RC10-200		294	299	501		5.4
	257	RC10-257		371	348	556		6.4
	304	RC10-304		441	400	704		6.8
	358	RC10-358		518	450	806		8.2
15 (142)	25	RC15-25	203	51	104	149	69	3.3
	51	RC15-51		104	149	200		4.1
	101	RC15-101		206	200	301		5
	152	RC15-152		308	271	423		6.8
	203	RC15-203		411	322	525		8.2
	254	RC15-254		518	373	527		9.5
	305	RC15-305		619	423	729		10.9
	358	RC15-358		723	474	830		11.8
25 (237)	28	RC25-28	302	98	139	165	38	5.0
	58	RC25-58		164	160	215		6.4
	102	RC25-102		338	215	317		8.2
	152	RC25-152		525	273	421		10
	215	RC25-215		697	323	503		12.2
	281	RC25-281		867	324	626		14.1
	311	RC25-311		1053	425	736		16.3
	362	RC25-362		1200	476	828		17.2
39 (295)	209	RC30-209	42.1	680	367	596	101	18.1
50 (498)	51	RC50-51	71.2	963	170	227	57	15
	101	RC50-101		218	227	329		18.1
	158	RC50-158		1131	283	441		23.1
	237	RC50-237		2389	400	787		37.6
75 (718)	158	RC75-158	102.2	1601	265	441	148	29.5
	333	RC75-333		3417	492	825		59
100 (931)	168	RC100-168	133.3	2239	357	515	177	58
	260	RC100-260		3462	440	799		72.6

HYDRAULIC TOOLS CATALOG

RCH series single acting hollow cylinder



- Single acting, spring return.
- Anti-corrosion painted surface.
- Equipped with 3/8 NPT coupler and protection cap.
- Hard chrome plating piston, to avoid scratch and corrosion.

Technical parameters

Capacity (kN)	Stroke (mm)	Model	Effective area (cm²)	Oil capacity (cm³)	Collapsed height (mm)	Extended height (mm)	Outside diameter (mm)	Bore diameter (mm)	Plunger diameter (mm)	Hole diameter (mm)	Weight (kg)
13(12)	8	RCH13-8	17.0	14	65	63	69	54	35.1	13.8	1.6
	42	RCH13-42	17.0	75	120	162	69	54	35.1	13.8	2.8
	76	RCH13-76	17.0	136	184	260	69	54	35.1	13.8	4.6
20(25)	42	RCH20-42	30.7	130	162	211	95	73	54.1	26.9	3.7
	163	RCH20-163	30.7	476	306	461	95	73	54.1	26.9	14.1
30(32)	54	RCH30-54	46.8	258	178	242	114	89	63.5	33.3	11.9
	163	RCH30-163	46.8	722	300	465	114	89	63.5	33.3	21.8
60(57)	76	RCH60-76	82.3	628	247	325	159	124	91.9	51.8	28.1
	163	RCH60-163	82.3	1250	323	478	159	124	91.9	53.8	38.4
100(93)	76	RCH100-76	133.0	1011	254	330	212	165	127.0	78	63.0

RRH series double acting hollow cylinder



- Hollow plunger design, applicable to pushing or pulling.
- Anti-corrosion painted surface.
- Equipped with 3/8 NPT coupler and protection cap.
- Longer stroke can be customized as request.

Technical parameters

Capacity (kN)	Stroke (mm)	Model	Cylinder area (cm²)		Effective area (cm²)		Oil capacity (cm³)		Collapsed height (mm)	Extended height (mm)	Outer diameter (mm)	Bore diameter (mm)	Plunger diameter (mm)	Hole diameter (mm)	Weight (kg)
			Adhesive	Resin	Adhesive	Resin	Distance	Rated							
20	133	RRH00-119	320	213	463	39.4	829	941	330	330	114	39	39	33.2	21
	200	RRH00-200	320	213	463	39.4	1002	1184	411	411	114	59	59	33.2	27
50	54	RRH00-54	320	388	823	94.2	238	414	347	347	159	124	124	33.8	38
	163	RRH00-163	320	388	823	94.2	1056	166	421	421	159	124	124	33.8	58
100	163	RRH00-163	320	388	823	94.2	2196	1683	438	438	165	126	126	43.8	43
	200	RRH100-200	320	388	823	94.2	2196	1683	438	438	165	126	126	43.8	43
300	54	RRH100-54	320	912	133	174	326	325	185	211	212	166	127	79.2	53
	163	RRH100-163	320	912	133	174	1011	666	254	254	212	166	127	79.2	61
500	54	RRH100-54	320	912	133	174	2036	1337	342	403	212	166	127	79.2	76
	163	RRH100-163	320	912	133	174	3402	2346	403	711	212	166	127	79.2	108
1000	76	RRH100-76	1400	718	204.1	302.9	4142	2083	361	362	247	176	176	79.2	111

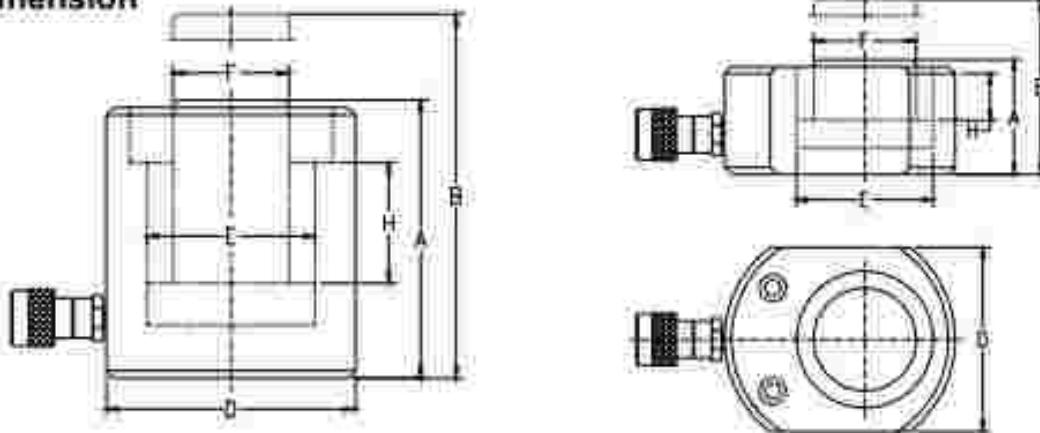
HYDRAULIC TOOLS CATALOG

RSM/RCS series Thin hydraulic cylinder



- Compact flat design, suitable for limited space operation.
- Hard chrome plating piston, to avoid scratch and corrosion.
- Anti-corrosion painted surface.
- Dustproof ring extends the service life.
- Spring return piston is optional.

Dimension

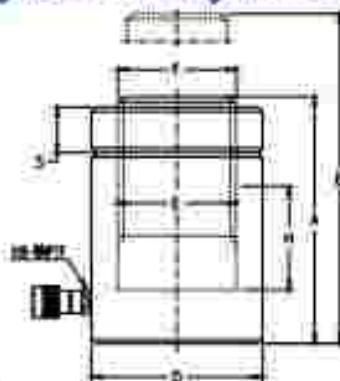


Technical parameters

Capacity ton(kN)	Stroke H/mm	Model	Effective area (cm ²)	Oil capacity (ml/cm)	Compressed height A/mm	Extended height B/mm	Diameter D/mm	Bore diameter E/mm	Plunger diameter F/mm	Weight Kg)
5(45)	6	RSM5-6	6.5	4	22	38	58±41	28.7	19.5	1.0
10(101)	12	RSM10-12	14.5	18	44	54	112±35	42.0	21.5	1.4
20(201)	11	RSM20-11	26.2	32	61	92	101±78	60.5	27.5	3.1
30(298)	13	RSM30-13	42.1	55	68	121	117±85	73.2	38.5	4.5
50(493)	18	RSM50-18	62.2	98	68	182	140±114	88	44.5	6.8
75(74)	16	RSM75-16	102	164	79	95	185±138	114	62	11.3
100(888)	18	RSM100-18	128.9	203	85	101	178±153	127	85	14.5
150(1388)	18	RSM150-18	198.1	317	100	118	215±190	158	85	26.3
10(101)	38	RCS10-38	14.5	55	88	128	59	42.9	36.1	4.1
20(201)	45	RCS20-45	26.7	128	98	143	92	80.5	50.8	5.0
30(298)	62	RCS30-62	42.1	261	117	179	101	73.2	66.5	6.8
50(493)	80	RCS50-80	62.2	373	122	182	126	88	88.8	10.9
100(886)	57	RCS100-57	128.9	722	141	198	155	127	92.2	22.7

HYDRAULIC TOOLS CATALOG

CLL series single acting lock nut cylinder



- Single acting, load return.
- Lock nut type, suitable for long time work.
- Overflow hole also has stroke limiting function.
- Cylinder can bear 5% lateral load.

Technical parameters

Capacity kN(kN)	Stroke Height mm	Model	Effective area cm ²	Oil capacity ml	Column height mm	Extended height mm	Outer diameter Dmm	Rod diameter Dmm	Plunger diameter Dmm	Rod height mm	Weight kg
50 (400)	100	CLL100-50	72.6	208	164	216	125	35	T192x4	36	13
	125	CLL100-100	72.6	256	214	234	125	35	T192x4	36	20
	150	CLL100-150	72.6	3084	264	414	125	35	T192x4	36	28
	200	CLL100-200	72.6	5418	314	614	125	35	T192x4	36	38
	250	CLL100-250	72.6	1773	364	614	125	35	T192x4	36	53
	300	CLL100-300	72.6	2927	414	716	125	35	T192x4	36	68
100 (929)	100	CLL100-100	132.7	3064	187	237	135	40	T1130x6	46	31
	125	CLL100-125	132.7	3237	217	237	135	40	T1130x6	46	38
	150	CLL100-150	132.7	3581	287	437	135	40	T1130x6	46	48
	200	CLL100-200	132.7	2654	317	537	135	40	T1130x6	46	58
	250	CLL100-250	132.7	3214	367	637	135	40	T1130x6	46	68
	300	CLL100-300	132.7	3881	417	737	135	40	T1130x6	46	78
100 (1430)	50	CLL150-50	200.9	2005	239	239	207	55	T1180x6	47	51
	100	CLL150-100	200.9	2019	289	319	207	55	T1180x6	47	68
	150	CLL150-150	200.9	3014	300	410	207	55	T1180x6	47	78
	200	CLL150-200	200.9	4019	369	519	207	55	T1180x6	47	88
	250	CLL150-250	200.9	5024	400	619	207	55	T1180x6	47	98
	300	CLL150-300	200.9	5029	459	719	207	55	T1180x6	47	108
200 (1688)	50	CLL200-50	266.8	1343	243	233	237	55	T1180x6	52	53
	100	CLL200-100	266.8	2687	281	361	237	55	T1180x6	52	68
	150	CLL200-150	266.8	4030	343	483	237	55	T1180x6	52	78
	200	CLL200-200	266.8	5000	483	783	237	55	T1180x6	52	88
	250	CLL200-250	266.8	5005	539	839	237	55	T1180x6	52	98
	300	CLL200-300	266.8	5010	595	939	237	55	T1180x6	52	108
250 (2540)	50	CLL250-50	362.9	1814	248	239	275	71	T2115x6	58	108
	100	CLL250-100	362.9	3629	299	369	275	71	T2115x6	58	128
	150	CLL250-150	362.9	5643	348	418	275	71	T2115x6	58	152
	200	CLL250-200	362.9	10000	489	789	275	71	T2115x6	58	174
	250	CLL250-250	362.9	2261	535	345	275	71	T2115x6	58	173
	300	CLL250-300	362.9	4522	545	445	275	71	T2115x6	58	193
300 (3188)	50	CLL300-50	452.2	2422	345	445	310	74	T240x6	68	203
	100	CLL300-100	452.2	4742	300	545	310	74	T240x6	68	223
	150	CLL300-150	452.2	7162	430	565	310	74	T240x6	68	243
	200	CLL300-200	452.2	7362	545	665	310	74	T240x6	68	263
	250	CLL300-250	452.2	7367	545	665	310	74	T240x6	68	283
	300	CLL300-300	452.2	7372	545	665	310	74	T240x6	68	303
400 (400)	50	CLL400-50	511.2	2708	330	330	350	85	T240x6	78	200
	100	CLL400-100	511.2	5213	388	488	350	85	T240x6	78	225
	150	CLL400-150	511.2	8223	430	565	350	85	T240x6	78	257
	200	CLL400-200	511.2	15538	585	685	350	85	T240x6	78	287
500 (5188)	50	CLL500-50	731.1	3082	375	375	400	100	T330x6	88	387
	100	CLL500-100	731.1	7312	426	526	400	100	T330x6	88	418
	150	CLL500-150	731.1	12322	475	625	400	100	T330x6	88	448
	200	CLL500-200	731.1	20330	520	625	400	100	T330x6	88	477
600 (5844)	50	CLL600-50	854.9	4277	500	445	430	100	T330x6	88	446
	100	CLL600-100	854.9	8584	445	545	430	100	T330x6	88	505
	150	CLL600-150	854.9	13830	495	645	430	100	T330x6	88	562
	200	CLL600-200	854.9	20930	545	745	430	100	T330x6	88	622
800 (8148)	50	CLL800-50	1163.9	34907	705	915	520	128	T330x6	118	1110
	100	CLL800-100	1163.9	11635	455	545	520	128	T330x6	118	1493
	150	CLL800-150	1163.9	17652	505	645	520	128	T330x6	118	1741
	200	CLL800-200	1163.9	23752	555	745	520	128	T330x6	118	1930

HYDRAULIC TOOLS CATALOG

CLP series thin lock nut hydraulic cylinder



- Compact structure.
- Hard chrome plating piston, to avoid scratch and corrosion.
- Safe lock nut design, suitable for mechanical load support.
- Capable of bearing unbalance loading up to 3% of rated load, no crushing damage.

Technical parameters

Capacity ton(kN)	Stroke mm	Model	Effective area (mm ²)	Oil capacity (ml)	Collapsed height (mm)	Extended height (mm)	Outside diameter (mm)	Bore diameter (mm)	Plunger diameter (mm)	Nut height (mm)	Weight kg
50(600)	50	CLP50	86.8	432	125	175	140	105	11105-4	36	15
100(1001)	50	CLP100	143.1	715	132	187	175	135	11135-5	52	25
150(1500)	45	CLP150	226.8	1021	148	193	220	170	11170-6	42	44
200(2100)	45	CLP200	283.4	1275	155	200	245	190	11190-8	44	57
250(2540)	45	CLP250	362.9	1633	158	204	275	215	11215-6	48	74
400(3858)	45	CLP400	551.3	2481	178	223	380	265	11265-8	88	134
500(5111)	45	CLP500	730.2	3286	192	237	400	305	11305-8	65	189

RTC series extra-high pressure thin jack

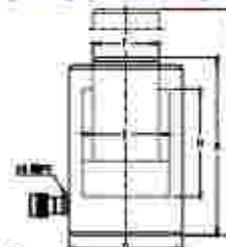


Technical parameters

Capacity ton(kN)	Stroke mm	Model	Effective area (mm ²)	Oil capacity (ml)	Collapsed height (mm)	Extended height (mm)	Outside diameter (mm)	Bore diameter (mm)	Plunger diameter (mm)	Return	Weight kg
5	10	RTC05	3.86	34.6	30	35	80	21	Load return	0.67	
10	10	RTC10	7.07	70.7	30	40	70	30	Load return	0.9	
25	10	RTC25	17.34	173.4	30	45	100	47	Load return	1.45	
50	10	RTC50	38.46	384.6	30	40	118	70	Load return	2.43	
100	10	RTC100	89.36	893.6	33	43	152	94	Load return	3.81	
150	10	RTC150	105.83	1058.3	34	44	180	116	Load return	5.88	
200	10	RTC200	130.79	1307.9	36	45	204	132	Load return	8.15	

HYDRAULIC TOOLS CATALOG

DS series single acting high tonnage hydraulic cylinder



- Single acting, load return.
- Hard chrome plating piston, to avoid scratch and corrosion.
- Anti-corrosion painted surface.
- Dustproof ring extends the service life.
- Cylinder can bear 5% lateral load.

Technical parameters

Capacity KN(KN)	Stroke mm	Model	Effective area cm ²	Capacity KN	Calculated stroke	Extended stroke	Outer diameter	Rod diameter	Flange diameter	Length	Weight
50	100	DS50-50	78.5	392.5	162	212	140	100	100	75	17
	150	DS50-100	78.5	78.5	212	212	140	100	100	75	21
	200	DS50-150	78.5	157.5	262	412	140	100	100	75	27
	250	DS50-200	78.5	196.5	312	612	140	100	100	75	32
	300	DS50-250	78.5	235.5	362	812	140	100	100	75	38
	350	DS50-300	78.5	274.5	412	1012	140	100	100	75	44
100	100	DS100-50	156.5	78.5	162	232	156	140	100	100	32
	150	DS100-100	156.5	156.5	232	332	156	140	100	100	46
	200	DS100-150	156.5	235.5	282	432	156	140	100	100	51
	250	DS100-200	156.5	314.5	332	632	156	140	100	100	58
	300	DS100-250	156.5	393.5	382	832	156	140	100	100	64
	350	DS100-300	156.5	472.5	432	1032	156	140	100	100	71
150	100	DS150-50	213	100	162	242	196	160	100	100	42
	150	DS150-100	213	200	242	342	196	160	100	100	56
	200	DS150-150	213	300	282	442	196	160	100	100	61
	250	DS150-200	213	400	332	642	196	160	100	100	67
	300	DS150-250	213	478.5	382	842	196	160	100	100	73
	350	DS150-300	213	557.5	432	1042	196	160	100	100	81
200	100	DS200-50	270	100	162	252	236	200	100	100	42
	150	DS200-100	270	200	252	352	236	200	100	100	56
	200	DS200-150	270	300	282	452	236	200	100	100	62
	250	DS200-200	270	400	332	652	236	200	100	100	68
	300	DS200-250	270	478.5	382	852	236	200	100	100	74
	350	DS200-300	270	557.5	432	1052	236	200	100	100	82
250	100	DS250-50	324	100	162	262	290	252	100	100	42
	150	DS250-100	324	200	262	362	290	252	100	100	56
	200	DS250-150	324	300	302	462	290	252	100	100	62
	250	DS250-200	324	400	362	562	290	252	100	100	68
	300	DS250-250	324	478.5	412	662	290	252	100	100	74
	350	DS250-300	324	557.5	462	862	290	252	100	100	82
300	100	DS300-50	378	100	162	272	324	302	100	100	42
	150	DS300-100	378	200	272	372	324	302	100	100	56
	200	DS300-150	378	300	312	472	324	302	100	100	62
	250	DS300-200	378	400	372	572	324	302	100	100	68
	300	DS300-250	378	478.5	422	672	324	302	100	100	74
	350	DS300-300	378	557.5	472	872	324	302	100	100	82
400	100	DS400-50	432	100	162	282	384	362	100	100	42
	150	DS400-100	432	200	282	432	384	362	100	100	56
	200	DS400-150	432	300	342	532	384	362	100	100	62
	250	DS400-200	432	400	402	632	384	362	100	100	68
	300	DS400-250	432	478.5	462	732	384	362	100	100	74
	350	DS400-300	432	557.5	512	832	384	362	100	100	82
500	100	DS500-50	486	100	162	292	446	402	100	100	42
	150	DS500-100	486	200	292	542	446	402	100	100	56
	200	DS500-150	486	300	352	642	446	402	100	100	62
	250	DS500-200	486	400	412	742	446	402	100	100	68
	300	DS500-250	486	478.5	472	842	446	402	100	100	74
	350	DS500-300	486	557.5	532	942	446	402	100	100	82
600	100	DS600-50	540	100	162	302	508	462	100	100	42
	150	DS600-100	540	200	302	602	508	462	100	100	56
	200	DS600-150	540	300	362	702	508	462	100	100	62
	250	DS600-200	540	400	422	802	508	462	100	100	68
	300	DS600-250	540	478.5	482	902	508	462	100	100	74
	350	DS600-300	540	557.5	542	1002	508	462	100	100	82
800	100	DS800-50	694	100	162	312	664	562	100	100	42
	150	DS800-100	694	200	312	712	664	562	100	100	56
	200	DS800-150	694	300	372	812	664	562	100	100	62
	250	DS800-200	694	400	432	912	664	562	100	100	68
	300	DS800-250	694	478.5	492	1012	664	562	100	100	74
	350	DS800-300	694	557.5	552	1112	664	562	100	100	82
1000	100	DS1000-50	848	100	162	322	814	612	100	100	42
	150	DS1000-100	848	200	322	864	814	612	100	100	56
	200	DS1000-150	848	300	382	964	814	612	100	100	62
	300	DS1000-200	848	400	442	1064	814	612	100	100	68

HYDRAULIC TOOLS CATALOG

DQ series double acting high tonnage hydraulic cylinder



- Double acting, hydraulic return, applicable for pushing and pulling.
- Hard chrome plating piston, to avoid scratch and corrosion.
- Anti-corrosion painted surface.
- Capable of bearing unbalance loading up to 5% of rated load, no crushing damage.
- Equipped with 3/8 NPT coupler and protection cap.

Capacity ton(kN)	Stroke: mm	Model	Effective area:		CII capacity:		Collapsed height mm	Extended height mm	Outside diameter D/mm	Bore diameter E/mm	Plunger diameter F/mm	Weight kg
			Advance	Retract	Advance	Retract						
			cm ²	cm ²	cm ²	cm ²						
50	DQ50-50	78.5	40	392.5	200	193	243	140	100	70	18	
	DQ50-100	78.5	40	785	400	243	343	140	100	70	23	
	DQ50-150	78.5	40	1177.5	600	295	443	140	100	70	28	
	DQ50-200	78.5	40	1570	800	343	543	140	100	70	33	
	DQ50-250	78.5	40	1962.5	1000	393	643	140	100	70	38	
	DQ50-300	78.5	40	2355	1200	443	743	140	100	70	42	
100	DQ100-50	153.9	75.4	789	377	216	258	160	140	100	34	
	DQ100-100	153.9	75.4	1539	754	258	358	160	140	100	42	
	DQ100-150	153.9	75.4	2308	1101	308	458	160	140	100	50	
	DQ100-200	153.9	75.4	3077	1508	368	558	160	140	100	58	
	DQ100-250	153.9	75.4	3846	1885	408	658	160	140	100	66	
	DQ100-300	153.9	75.4	4615	2282	458	758	160	140	100	74	
150	DQ150-50	201	97.1	1025	486	237	287	216	160	115	47	
	DQ150-100	201	97.1	2010	971	287	337	216	160	115	57	
	DQ150-150	201	97.1	3014	1457	337	387	216	160	115	67	
	DQ150-200	201	97.1	4019	1943	387	587	216	160	115	77	
	DQ150-250	201	97.1	5024	2429	437	687	216	160	115	87	
	DQ150-300	201	97.1	6029	2914	487	787	216	160	115	97	
200	DQ200-50	314	137.4	1570	687	265	315	268	200	150	62	
	DQ200-100	314	137.4	4710	2061	305	515	268	200	150	112	
	DQ200-150	314	137.4	6820	2748	415	615	268	200	150	122	
	DQ200-200	314	137.4	9420	4122	515	815	268	200	150	137	
250	DQ250-100	383	149	3629	1619	323	423	285	235	165	123	
	DQ250-150	383	149	5443	2429	373	523	285	235	165	141	
	DQ250-200	383	149	7257	3358	423	623	285	235	165	159	
	DQ250-300	383	149	10886	4857	523	823	285	235	165	195	
300	DQ300-100	452	168.8	4522	1667	345	445	320	240	190	237	
	DQ300-150	452	168.8	6782	2531	395	545	320	240	190	261	
	DQ300-200	452	168.8	9043	3378	445	645	320	240	190	285	
	DQ300-300	452	168.8	13564	5063	545	845	320	240	190	333	
400	DQ400-100	572	192	5723	1923	427	527	367	270	220	310	
	DQ400-150	572	192	8584	2885	477	627	367	270	220	342	
	DQ400-200	572	192	11445	3847	527	727	367	270	220	374	
	DQ400-300	572	192	17188	5770	627	927	367	270	220	438	
500	DQ500-100	707	254	7065	2943	474	574	400	300	240	433	
	DQ500-150	707	254	10587	3815	524	674	400	300	240	478	
	DQ500-200	707	254	14120	5087	574	774	400	300	240	521	
	DQ500-300	707	254	21195	7030	674	974	400	300	240	613	
	DQ500-500	707	254	35325	12717	874	1374	400	300	240	712	
600	DQ600-100	855	283	8548	2826	484	584	445	330	270	550	
	DQ600-150	855	283	12423	4239	534	684	445	330	270	601	
	DQ600-200	855	283	17097	5652	584	764	445	330	270	668	
	DQ600-300	855	283	23040	9470	634	904	445	330	270	711	
	DQ600-500	855	283	42723	14120	884	1384	445	330	270	994	
800	DQ800-100	1194	390	11940	3901	630	830	550	390	320	872	
	DQ800-150	1194	390	17910	5483	680	980	550	390	320	988	
	DQ800-200	1194	390	23880	7803	830	1030	550	390	320	1092	
	DQ800-300	1194	390	38026	11704	930	1230	550	390	320	1178	
	DQ800-500	1194	390	59860	19507	930	1430	550	390	320	1365	
1000	DQ1000-100	1451	490	14515	4898	614	714	600	430	350	1105	
	DQ1000-150	1451	490	21772	7348	664	814	600	430	350	1210	
	DQ1000-200	1451	490	29029	9797	714	914	600	430	350	1315	
	DQ1000-300	1451	490	43544	14695	814	1114	600	430	350	1528	
1500	DQ1500-100	2205	949	22050	9491	635	935	790	530	400	3070	
	DQ1500-200	2205	949	44181	18281	835	1135	790	530	400	3860	
	DQ1500-300	2205	949	66151	28472	1035	1335	790	530	400	3940	
	DQ1500-500	2205	949	110252	47453	1235	1735	790	530	400	5400	
2000	DQ2000-100	2921	11123	29210	11124	953	1053	910	480	480	4790	
	DQ2000-200	2921	11123	58420	22247	1063	1263	910	480	480	5210	
	DQ2000-300	2921	11123	57630	23371	1153	1453	910	480	480	5715	
	DQ2000-500	2921	11123	146056	55616	1353	1853	910	480	480	7820	

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Accessories:



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