

HOISTING EQUIPMENT AND MAST(DERRICK)

Catalog



HOISTING EQUIPMENT AND MAST(DERRICK)

1. HOISTING EQUIPMENT

1.1 CROWN BLOCK

The crown block consists of crown basement, fast-line sheave, dead-line sheave, main sheave, sand-line sheave, drilling line protector and sheaves for hydraulic and air winch, bumper wood for the Crown-O-Matic and guardrail. It's designed with closed type and open type. The traveling system is divided into 7×6, 6×5, 5×4, and 4×3, which fit to $\Phi 7/8'' \sim \Phi 1 1/2''$ drilling lines. The sheave groove conforms to the requirements of API RP 9B. The sheave groove surface is processed with a quenching treatment. The bearing adopts centralized lubrication for convenient operation.



Specification

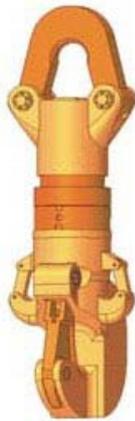
Model	Travelling system	Drilling line diameter (in)	Load (lbf)	Main sheave diameter (in)	Fastline sheave diameter (in)	Sandline sheave diameter (in)	Overall Dimension (ft)	Self-weight (lb)
TC60	3×2	7/8	134885	19.68	19.68		5.37×4.36×4.89	1305
TC70	4×3	7/8	157366	24.02	24.02		4.86×2.05×2.07	1598
TC90C	4×3	1	202328	24.02	24.02		4.46×3.28×4.1	1764
TC135	4×3	1	303492	29.92	36.02		6×4.95×4.27	2866
TC158	5×4	1;1 1/8	355198	29.92	36.02	19.68	7.64×4.69×4.82	3263
TC158	6×5	1;1 1/8	355198	29.92	36.02	19.68	7.64×5.38×4.82	3472
*TC160	4×3	1 1/8	359694	36.02	36.02	19.68	2.23×3.23×3.41	4393
*TC170C	5×4	1 1/4	382175	36.02	44.09	15.75	7.97×3.28×4.43	6095
*TC180D	6×5	1 1/4	404656	36.02	36.02		8.14×2.7×3.18	4574
*TC225	6×5	1 1/4	505820	44.09	50		8.14×2.7×3.18	12306
TC225	6×5	1 1/4	505820	36.02	36.02	19.68	6.56×4.59×4.43	5158
*TC315	7×6	1 3/8	708148	50	60	30	12.84×10×9.24	19294
*TC450	7×6	1 1/2	111640	60	60	29.92	11.38×10×9.8	21459

Note: * marked items for the mast of skid-mounted drilling rig.

1.2 HOOK

Specification

Model	DG225	DG315	DG450	DG675
Max hook load (lbf)	505820	483339	1011640	1517460
Main hook opening size (in)	7.48	8.66	8.66	9.37
Spring stroke (in)	7.08	7.87	7.87	7.87
Overall dimension (ft)	8.34×2.55×2.46	9.68×2.92×7.87	9.68×2.92×2.88	10.35×3.97×3.05
Mass (lb)	4806	7517.8	7707.35	8598



HOOK



TRAVELLING BLOCK

1.3 TRAVELLING BLOCK

Specification

Type	YC225	YC315	YC450	YC585	YC675
Max hook load (lbf)	505820	708148	1011640	1315132	1517400
Number of sheaves	5	6	6	7	7
Sheave OD (in)	44	50	60	60	60
Drilling line diameter (in)	1 1/8; 1 1/4	1 1/4; 1 3/8	1 3/8; 1 1/2	1 5/8	1 3/4
Overall dimension (in)	8.23×3.9×2.06	8.79×4.42×3.19	10.15×5.24×2.65	10.17×5.24×3.16	11.2×5.25×3.77
Mass (lb)	8388.57	15084	18168.27	21164.35	23821

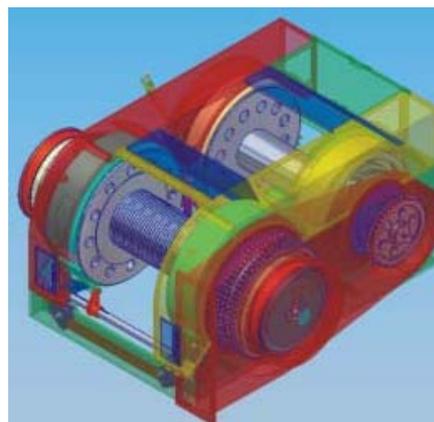
1.4 TYPE HOOK BLOCK

Specification

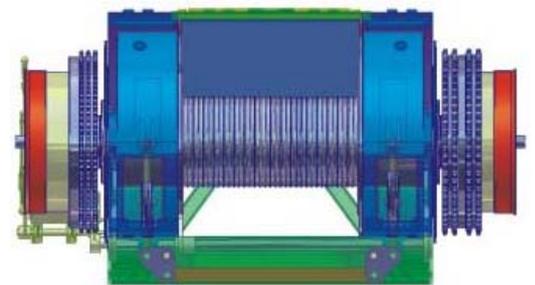
Model	YG35	YG60	YG70	YG80	YG90	YG110	YG135B	YG160	YG160B	YG180	YG225	
Max load (lbf)	80931	131508	151746	179840	20232	252910	303492	355198	155398	404656	505820	
Sheave OD (in)	19.68	24.02	24.02	24.02	29.92	29.92	29.92	29.92	29.92	36.02	36.02	
Number of sheave	3	4	3	3	3	4	4	5	4	4	5	
Drilling line diameter (in)	3/4	7/8	7/8	7/8	1	1	1	1	1 1/8	1 1/4	1 1/4	
Hook body type	Two-hook	Three-hook	Two-hook	Three-hook								
Hook opening dimension (in)	3.54	4.33	4.33	4.33	4.33	5.91	5.98	7.09	7.09	7.48	7.48	
Spring stroke (in)	6.02	4.53	4.53	6.02	6.02	5.91	6.02	5.91	5.91	7.09	7.09	
Overall dimension (ft)	L	3.89	6	6.04	7.36	7.71	8.66	9.08	10.33	10.33	11.32	11.32
	W	1.48	2.27	2.27	2.2	2.72	2.72	2.72	2.72	2.72	3.18	3.18
	H	1.02	1.5	1.5	2.07	1.35	1.64	1.64	1.98	2.4	2.76	2.79
Mass (lb)	1047	2646	2535	4740	4409	5093	6265	7231	7054	10207	10432	



TYPE HOOK BLOCK



ELECTRICAL DRIVE DRAWWORKS



MECHANICAL DRIVE DRAWWORKS

1.5 ELECTRICAL DRIVE DRAWWORKS

Specification

Model	Power (hp)	Fast line pull (lbf)	Drilling line diameter(ft)	Gears	Main drum (in)	Brake rim (disc) diameter × Width (in)	Gear-box reducer speed ratio	Auxiliary brake	Weight (lb)	Transport width (ft)
JC30DB	750	47210	1 1/8"; 1 1/4"	Stepless speed regulation	φ22.05× 40.94	Single disc brake PZ30 φ59.05×2.36	5.2	Motor resistance brake for main motor	41447	10.5
JC40DB	1000	62947	1 1/4"	Stepless speed regulation	φ25.2×4 7.56	Single disc brake PZ40 φ59.05×2.36	7.5	Motor resistance brake for main motor	54816	10.5
JC40DJ	1000	62947	1 1/4"	4 gears	φ25.2×4 7.56	Disc brake PZ40 φ59.05×2.36	4 gears	DWS40 FD WS	51400	8.5
JC40DZ	1000	62947	1 1/4"	4 gears	φ25.2×4 7.56	Band brake	4 gears	236WCB	68511	10.5
JC50DB	1100	78683	1 3/8"	2 gears Stepless speed regulation	φ26.97× 51.18	Single disc brake PZ50 φ59.84×2.99	8.5/5	Motor resistance brake for main motor	77735	10.2
JC50D	1500	78683	1 3/8"	4 Forward 4 Reverse, Stepless speed regulation	φ26.97× 51.18	Disc brake PZ50 φ59.84×2.99	--	DWS50 FD WS	83731+ 27337	10.5
JC70DB	2000	109032	1 1/2"	2 gears Stepless speed regulation	φ30.31× 51.18	Disc brake PZ70 φ59.84×2.99	10.4/5.4	Motor resistance brake for main motor	100376	10.5
JC70D	2000	109032	1 1/2"	4 Forward 4 Reverse, Stepless speed regulation	φ30.31× 51.18	Disc brake PZ70 φ59.84×2.99	--	DWS70 FD WS	88405+ 27337	10.5
JC90DB	3000	145000	1 3/4"	2 gears Stepless speed regulation	φ42×72. 44	Disc brake φ86.6×2.99	8.76/5.72	Motor resistance brake for main motor	168083	10.5

1.6 MECHANICALDRIVE DRAWWORKS

Specification

Model	Power (hp)	Fast line pull (lbf)	Drilling line diameter (in)	Gears	Main drum diameter× Width (in)	Sand drum diameter× Width (in)	Brake rim (disc) diameter × Width (in)	Auxiliary brake	Main clutch	Weight (lb)
JC14	350	31473	7/8"	-	13.9 × 31.5	-	Band brake 38.19x8.27	/	ATD224H	6945
JC18/11	450	40465	7/8"	-	16.89 × 35.91	12.76x35.91 (Selectable)	Band brake 42.13x8.27	Water brake/1 24WCB	ATD224H	13999
JC21/11	550	44962	1"; 1 1/8"	-	17.72 × 35.91	13.39x37.2 (Selectable)	Band brake 42.13x10.51(water cooling)	224WCB	ATD324H	14504
					20.5 × 35.91					
JC28/11	735	47209	1 1/8"; 1 1/4"	-	22 × 40.94	13.39x37.2 (Selectable)	Band brake 45x10.51(water cooling)	324WCB	ATD330H	23170
	1000				25 × 44		13.39x41			
JC20	550	44962	1"; 1 1/8"	-	17.72 × 35.91	-	Band brake 42.13x12(water cooling)	224WCB	ATD324H	10882
JC30	750	47200	1 1/8"; 1 1/4"	-	22 × 40.94	-	Disc brake PZ40 59X2.36	324WCB	ATD330H	17972
JC40	1000	62946	1 1/4"	4 forward 2 reverse	25.2 × 47.56	-	Disc brake PZ40 59X2.99	PDWS40	LT1070/200 T(low) LT900/250T (high)	71379
JC50	1500	78683	1 3/8"	6 forward 2 reverse	26.97 × 50.79	-	Disc brake PZ40 59.84X2.99	DWS50	LT1168/305 T(low) LT965/305T (high)	93088
JC70	2000	10903 2	1 1/2"	6 forward 2 reverse	26.97 × 50.79	-	Disc brake PZ40 59.84X2.99	DWS70	LT1168/305 T(low) LT900/305T (high)	107116

2. MAST (DERRICK)

The drilling and workover mast (derrick) with different loadings is designed and fabricated according to API Spec 4F and SY/T5025-1999.

The mast (derrick) includes A type, tower type, K type, special K type, mast type and the special type used in offshore drilling.

The main parameters for the different kinds of mast (derrick) are given in tables 1 to 6.

2.1 Offshore special derrick

Specification

Model	Height (ft)	Max. rated static hook load (lb)	Height of racking platform (ft)	Sheave groove Dia.(in)	Anti-wind capacity without hook load ft/s		Travelling system	Weight (lb)
					No setback	Full setback		
HJJ9029	95.14	202328	53.15/54.79/56.43	1	No setback	180.44	4×3	37919.46
					Full setback	157.48		
HJJ11329	95.14	269770	49.87/55.12/60.37	1	No setback	180.44	5×4	40565
					Full setback	157.48		
HJJ13533	108.27	303492	52.17/54.79/57.41	1 1/8	No setback	157.48	5×4	52910.88
					Full setback	118		
HJJ16031	101.7	359694	49.54/54.79/60	1 1/8	No setback	180.44	6×5	77161.7
					Full setback	157.48		
HJJ18033	108.27	404656	51.5/54.79/58	1 1/4	No setback	180.44	6×5	84657.4
					Full setback	157.48		
HJJ22533	108.27	505820	50.85/54.13/57.4	1 1/4	No setback	193.57	6×5	90389.4
					Full setback	157.48		
HJJ31545	147.6	708120	86.94	1 3/8	No setback	157.48	7×6	242506
					Full setback	118		
HJJ31547	153.22	708120	86.94	1 3/8	No setback	168.96	7×6	194004.8
					Full setback	118		
HJJ45045	147.6	1011600	86.94	1 1/2	No setback	157.48	7×6	264552

2.2 Tower-type derrick

Specification

Model	Height (ft)	Max. rated static hook load (lbf)	Height of racking platform (ft)	Sheave groove Dia. (in)	Travelling system	Weight (lbs)
HJJ11322	72.18	254034	54.79	1	5×4	39683
HJJ11231	101.7	254034	54.79	1	5×4	57320
HJJ13531	101.7	303492	54.79	1	5×4	52910
HJJ15833	108.27	355198	54.79	1 1/8	5×4	56217
HJJ18043	141	404656	85.3	1 1/4	6×5	77161
HJJ22545	147.6	505820	85.3	1 1/4	6×5	92594
HJJ31547	154.2	708120	85.3	1 3/8	7×6	194005

2.3 Mast

Specification

Model	Type	Height of mast (ft)	Max. rated static hook load (lb)	Height of racking platform (ft)	Sheave groove Dia. (in)	Travelling system	Transportation length (ft)	Weight (lb)
JJ7021	double-section	67.26	157366	--	7/8;1	4×3	37.73	11243.56
JJ7029	double-section	95.14	157366	50.85/57.41	7/8	4×3	55.77	21164.35
JJ9029	double-section	95.14	202328	57.41/66.27	1	4×3	46.26	33730.69
JJ9031	double-section	101.7	202328	57.41/66.27/69.55	1	4×3	55.77	28660
JJ11331	double-section	101.7	254034	55.77/64.63	1	5×4	55.77	28660
JJ13533	double-section	108.27	303492	57.41/66.27/69.55/72.18	1	5×4	59.05	30864.68
JJ15835	double-section	114.83	355198	57.41/66.27/69.55/72.18	1; 1 1/8	5×4	62.34	32407.9
JJ15835B	triple-section	114.83	355198	57.41/66.27	1	5×4	52.49	52910.88
JJ15836	double-section	115	355198	57.41/66.27	1 1/8	5×4	68.9	36375.9
JJ18038	double-section	124.67	404656	72.18/75.46/78.74	1 1/4	6×5	62.34	46297
JJ22538	double-section	124.67	505820	70.54/75.46	1 1/4	6×5	67.26	47840.25
JJ22547	triple-section	154.2	505820	83.66/86.94	1 1/4	6×5	67.26	73413.85
XJJ60	Slant-well mast	68.9	134885	20.67-30.84	7/8	3×2	68.9	19841.58

2.4 K-TYPE SPECIAL MAST

Specification

Model	Type	Height of mast(ft)	Hook load (lb)	Height of racking platform (ft)	Sheave groove Dia. (in)	Travelling system	Weight (lbs)	Top span (ft)	Bottom span (ft)
JJ15831B	K Type triple-section telescopic set	101.7	355198	55.77	1 1/8	5x4	47178	3.94x3.28	10.52x5.18
JJ15831C	K Type double-section telescopic set	101.7	355198	55.77	1 1/8	5x4	44357	3.94x3.28	10.52x5.18
JJ15831D	K Type double-section telescopic set	101.7	355198	57.09	1 1/8	5x4	48501	3.94x3.28	9.5x4.5
JJ17032A	K Type double-section telescopic set	104.99	382175	54.79	1 1/4	5x4	55115	5.74x4.98	9.8x5.7
JJ17033A	K Type triple-section telescopic set	108.27	382175	52.49/55.77	1 1/4	6x5	61729	5.74x4.98	10.5x5.2
JJ22541	Five-section butt-joint expansion	134.51	505820	83.66/86.94	1 1/4	6x5	84216	7.68x6.2	13.12x8.5
JJ22532	Fraction type five-section expansion	104.99	505820	50.85/54.13/57.4	1 1/4	6x5	114640	8.2x7.55	24.61x9.35
JJ22543	Fraction type six-section expansion	141.08	505820	80.38/83.66/86.94	1 1/8	7x6	128970	8.2x7.55	24.61x9.35

2.5 K-type mast

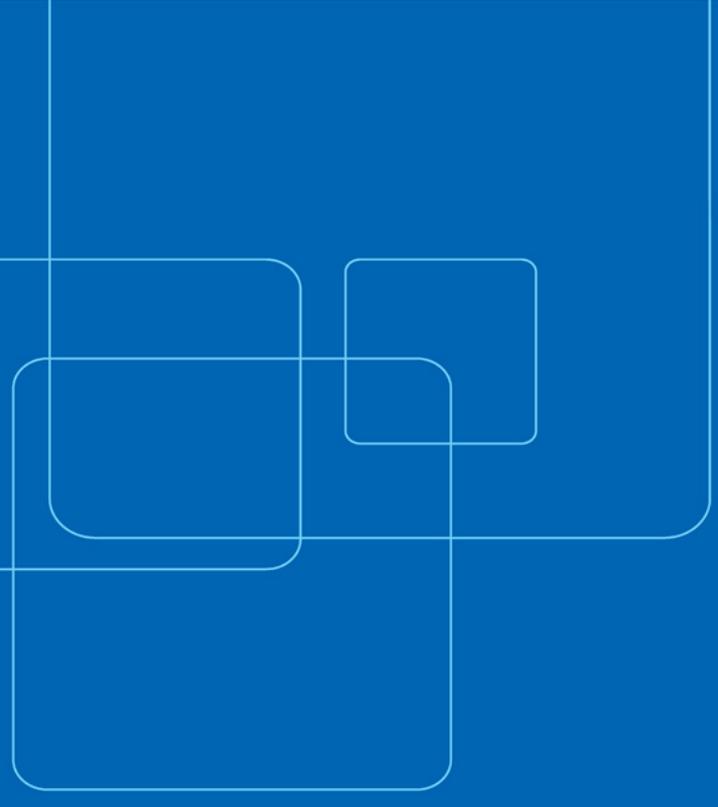
Specification

Model	Height of mast (ft)	Hook load (lbf)	Height of racking platform (ft)	Sheave groove Dia. (in)	Travelling system	Weight (lbs)	Top span (ft)	Bottom span (ft)
JJ17041	134.51	382175	80.38/83.66/86.94	1 1/8	6×5	80468	5.91×6.56	21.33×8.86
JJ22543	141	505820	80.38/83.66/86.94	1 1/4	6×5	134481	5.91×6.56	29.53×8.2
JJ31545	147.64	708148	80.38/83.66/86.94	1 3/8	7×6	209438	7.22×7.22	27.89×8.37
JJ45045	147.64	1011640	80.38/83.66/86.94	1 1/2	7×6	251326	8.2×7.55	29.53×8.69
JJ67548	157.48	1517400	80.38/83.66/86.94	1 3/4	8×7	357145	8.53×7.87	32.8×8.69

2.6 A-type mast

Specification

Model	Height of mast (ft)	Hook load (lbf)	Height of racking platform (ft)	Sheave groove Dia. (in)	Travelling system	Weight (lbs)	Top span (ft)	Bottom span (ft)
JJ17041	134.51	382175	80.38/83.66/86.94	1 1/8	6×5	85098	5.58×6.56	24.61×7.55
JJ22542	137.79	505820	80.38/83.66/86.94	1 1/4	6×5	109349	5.58×6.56	25.59×7.55
JJ31545	147.64	708148	80.38/83.66/86.94	1 3/8	6×5/7×6	125222	6.23×6.89	27.23×7.55



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