

# Catalog

ROTATING  
EQUIPMENT  
AND WELL-  
HEAD  
TOOLS



# ROTATING EQUIPMENT AND WELLHEAD TOOLS

## 1. ROTATING EQUIPMENT

### 1.1 TOP DRIVE SYSTEM

The top drive system is compact to meet the installation requirements of truck-mounted drilling and workover rigs, skid-mounted land rigs and offshore drilling rigs.

With good performance, it is especially applicable for drilling operations of directional wells and horizontal wells in order to save auxiliary drilling time and improve drilling efficiency.

The AC variable frequency drive is adopted to realize stepless speed regulation, wide regulating range, simple and reliable drive, and simple and convenient installation, maintenance and operation.

The key load-bearing parts are made of special materials and subjected to heat treatment to ensure mechanical integrity.



### Specification

Model		DQ250	DQ500
Nominal drilling range (ft)	5" DP	10498.7	19685.0
	4 1/2" DP	13123.4	22965.8
Max. hook load (lbf)		505800	1011600
Max. torque of main shaft (ft-lb)		29502.4	36878.0
Max. break-out torque (ft-lb)		44253.6	55317.0
Speed range of main shaft (r/min)		0~180	0~220
Suitable mast height (ft)		108~141	148
Opening diameter of central pipe (in)		2.95	2.95

### 1.2 POWER SWIVEL

The power swivel is driven by motor via a gear-box reducer and uses it to run the DP by its rotary shaft. It consists of power device and swivel, which can realize rotation of drilling strings and circulation of the mud fluid.

The power swivel is suitable for light-duty drilling rigs, truck-mounted drilling rigs and

workover rigs.

It has a stepless speed control, which can realize big torque at lower rotary speeds.

Hydraulic system power is from a motor or diesel engine. It is put on an integrated skid for convenient movement, installation and commissioning.



### Specification

MODEL	DSL60	DSL90	DSL135	DSL160
Drive ways	Hydraulic drive	Hydraulic drive	Hydraulic drive	Hydraulic drive
Nominal drilling depth (ft)(4 1/2"DP)	1640	3280	4920	6560
Max. load (lbf)	134885.4	269770.7	303492.1	359694.3
Rotary speed range r/min	0~170	0~180	0~180	0~180
Max. working torque (ft-lb)	3687.8	7375.6	11063.4	13276.1
Max. working pressure of hydraulic system (psi)	5000	5000	5000	5000
Open-end hole diameter of central pipe (in)	1.97	2.36	2.99	2.99
Max. working pressure of central pipe thru hole (psi)	5000	5000	5000	5000
Thread type	2 7/8"IF	3 1/2"IF	4 1/2"IF	4 1/2"IF
Electrical Power	380VAC/50Hz	380VAC/50Hz	380VAC/50Hz	380VAC/50Hz
Engine power (hp)	107	147	355	482

### 1.3 SWIVEL

#### Specification I

MODEL	SL70	SL110	SL135	SL160
Max. static load (lbf)	151740	25290	303492	35969
Working load of main bearing (lbf)	67440	101164	224808	269770
Gooseneck pipe thread	2 3/8 " TBG	4 1/2 " NPT	4 1/2 " TBG	4 1/2 " TBG
Bottom thread of central pipe joint	2 7/8 " UP DP	4 1/2 " REG LH	5 1/2 " REG LH	5 1/2 " REG LH
Max. working pressure (psi)	2143	3000	5000	5000
Opening diameter of central pipe (in)	1.96	2.50	2.99	2.99
Overall dimension (ft)	5.57×1.49×0.98	5.53×0.93×1.67	7.41×2.21×2.44	7.87×2.33×2.47
Mass (lb)	606	741	1711	2176

## Specification II

MODEL	SL225	XSL225	XSL450	SL675
Max. static load (lbf)	505820	505820	1011640	1517400
Working load of main bearing (lbf)	337213	377213	562022	1011600
Gooseneck pipe thread	4 1/2 " TBG	4"NPT	4"NPT	4"NPT
Bottom thread of central pipe joint	6 5/8"REG LH	6 5/8"REG LH	6 5/8"REG LH	6 5/8"REG LH
Max. working pressure (psi)	5000	5000	5000	7571
Opening diameter of central pipe (in)	2.99	2.99	2.99	4.01
Overall dimension (ft)	8.53x2.56x2.60	9.45x3.37x3.49	9.89x3.59x3.49	12.38x4.07x4.61
Mass (lb)	2925	5666	6746	15168



SWIVEL



RUSSIAN-STYLE ROTARY TABLE

### 1.4 RUSSIAN-STYLE ROTARY TABLE

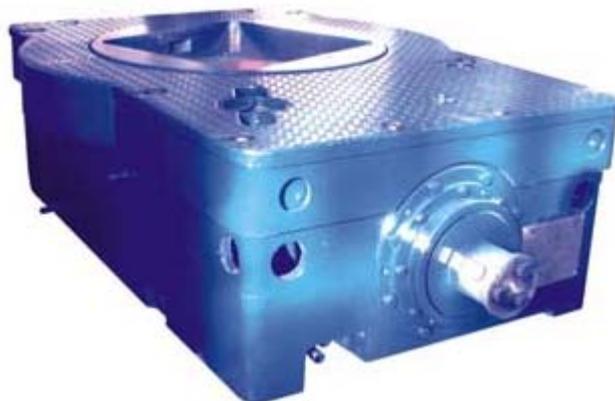
#### Specification

Rotary table model	P700	P560
Max. load (lbf)	1011600	899200
Opening diameter (in)	27.5 "	22 "
Max. torque (ft-lb)	47937	36875
Gear ratio (i)	3.61	3.05
Max. speed (r/pm)	300	300
Center distance (ft)	4.43	4.43
Center height (ft)	1	1
Overall dimension (ft)	7.41x5.07x2.23	7.59x5.33x2.46
Weight (lb)	13999	12897

## 1.5 ROTARY TABLE

### Specification

MODEL PARAMETER	ZP50	ZP135	ZP175	ZP205C	ZP275	ZP375	ZP495
Opening Dia. (in)	7 "	12.25 "	17.5 "	20.5 "	27.5 "	37.5 "	49.5 "
Max. static load (lbf)	134885	303492	303492	708148	1011640	1315132	2023200
Rated torque (ft-lb)	5900	8850	10325	16595	20282	23867	47498
Distance between rotary table center and chain wheel internal teeth centerline (ft)	1.93	3.66	3.66	4.43	4.43	4.43	5.42
Max. speed r/min	300	300	300	300	300	300	300
Gear ratio (i)	2.94	3.5	3.58	3.62	3.67	3.56	3.96
Center height (in)		6.29	10.62	12.51	12.99	12.99	14.49
Overall dimension (ft)	3.05x1.93x1.77	5.59x3.51x1.24	6.24x4.19x1.88	7.57x4.83x2.19	7.92x5.51x2.25	8.09x5.93x2.35	9.89x7.39x2.69
Mass (lb)	1170	3007	8238	9208	14931	17694	24823



## 2. WELLHEAD TOOLS

### 2.1 IRON ROUGHNECK

The iron roughneck is a new multiple functional power tong with a wide holding range. It can perform the functions of making up and breaking out instead of hydraulic power tong and manual tongs.

Its structure is compact and covers a small working space, and the base is permanently installed to implement the adjustment of the upper and lower and fore-and-aft positions. Its operation scope covers everything from well heads to mouse holes.



Complete hydraulic control or electrical-hydraulic proportional control is used, with adjustable torque and speed performance. The maximum torque and speed that can be operated in both forward and reverse directions is to get a precise control of the make-up torque and to protect the drill pipe.

The rotary guide rail is installed between the upper and lower tongs to prevent the drill pipe from bending due to large torque so as to avoid the drill pipe from slippage in the slips.

#### Specification

Application scope	3 1/2" DP~9" DC
Max. pressure of hydraulic system (PSI)	2286
Max. make-up torque (lbf.ft)	66380
Max. break-out torque (lbf.ft)	110634
Spinning torque (lbf.ft)	1748
Spinning speed rpm	40~90
Connection height of drilling string (in)	23.62~49.80
Vertical travel distance (in)	25.59
Weight (lb)	6631

## 2.2 CENTRAL-LATCH TUBING ELEVATORS

### Specification

Specification and model	Rated load (KN/US ton)	Suitable tubing size		Elevator upper/lower bore diameter (in)	Net weight (lb)
		in	mm		
DD 2 3/8-150	1350/150	2 3/8	60.3	2.48/2.48	291
DD 2 3/8EU-150		2 3/8EU	60.3	2.72/2.48	291
DD 2 7/8-150		2 7/8	73.0	2.95/2.95	287
DD 2 7/8EU-150		2 7/8EU	73.0	3.23/2.95	287
DD 3 1/2-150		3 1/2	88.9	3.58/3.58	283
DD 3 1/2EU-150		3 1/2EU	88.9	3.86/3.58	283
DD 4 -150		4	101.6	4.09/4.09	276
DD 4EU-150		4EU	101.6	4.37/4.09	268
DD 4 1/2-150		4 1/2	114.3	4.61/4.61	266
DD 4 1/2EU-150		4 1/2EU	114.3	4.84/4.61	265



CENTRAL-LATCH TUBING ELEVATORS



SIDE-DOOR TUBING ELEVATORS

## 2.3 SIDE-DOOR TUBING ELEVATORS

### Specification

Specification and model	Rated load (KN/US ton)	Suitable tubing size		Elevator upper/lower bore diameter (in)	Net weight (lb)
		in	mm		
CD 2 7/8-150	1350/150	2 7/8	73.0	2.95/2.95	161
CD 2 7/8EU-150		2 7/8EU	73.0	3.23/2.95	161
CD 3 1/2-150		3 1/2	88.9	3.58/3.58	168
CD 3 1/2EU-150		3 1/2EU	88.9	3.86/3.58	168
CD 4 -150		4	101.6	4.09/4.09	188
CD 4EU-150		4EU	101.6	4.37/4.09	188
CD 4 1/2-150		4 1/2	114.3	4.61/4.61	210
CD 4 1/2EU-150		4 1/2EU	114.3	4.84/4.61	210

## 2.4 CENTRAL-LATCH DRILL PIPE ELEVATORS

### Specification

Specification and model	Rated load (KN/US ton)	Suitable DP size		Elevator upper/lower bore diameter (in)	Net weight (lb)
		in	mm		
DDZ 2 3/8EU-150	1350/150	2 3/8EU	60.3	2.68	291
DDZ 2 7/8EU-150		2 7/8EU	73.0	3.28	287
DDZ 3 1/2EU -150		3 1/2EU	88.9	3.98	283
DDZ 5 IEU-250	2250/250	5 IEU			

## 2.5 DRILL PIPE ELEVATORS

### Specification

Specification and model	Rated load (KN/US ton)	Suitable DP size		Elevator upper/lower bore diameter (in)	Net weight (lb)
		in	mm		
DD2 7/8EU-150	1350/150	2 7/8EU	73.0	3.39/2.99	286.6
DD3 1/2EU -150		3 1/2EU	88.9	4.06/3.62	282.2

## 2.6 SIDE-DOOR DRILL PIPE ELEVATORS

The design and fabrication conform to API Spec 8A, API Spec 8C, SY/T5035 and other relevant technical specifications, with a national fabrication license.

It's made of high quality alloy steel created by a forging process.

Finite-element analysis is adopted for strength checking and electrical measurement for stress testing. There are two kinds of elevator links, including the single arm type and the double arm type.

More effective sand blasting process is adopted to intensify the surface of the links.



## Specification

Specification and model	Rated load (KN/US ton)	Suitable DP size		Elevator upper/lower bore diameter (in)	Net weight (lb)
		in	mm		
CD2 <sup>7</sup> / <sub>8</sub> EU-150	1350/150	2 7/8EU	73.0	3.39/2.99	160.94
CD3 1/2EU-150		3 1/2EU	88.9	4.06/3.62	167.55
CD3 1/2EU -250	2250/250	3 1/2EU	88.9	4.06/3.62	211.64
CD4 IU-150	1350/150	4 IU	101.6	4.33/4.13	187.39
(CD4EU-150)		4EU	101.6	4.80/4.65	209.44
CD4 1/2IU-150		4½1/2IU	114.3		
(CD41/2IEU-150)		4½1/2IEU	114.3		
(CD4EU -250)	2250/250	4EU	101.6	4.80/4.65	275.58
CD4½1/2IU -250		4½1/2IU	114.3		
(CD41/2IEU-250)		4½1/2IEU	114.3		
CD4½1/2EU -150	1350/150	4½1/2EU	114.3	5.16/4.65	202.83
(CD41/2EU-250)	2250/250	4½1/2EU	114.3	(5.16/4.65)	286.60
CD5 IEU-250		5 IEU	127.0	5.31/5.16	

Note: the model in parentheses is optional.

## 2.7 DOUBLE ARM ELEVATOR LINKS

The design and fabrication conform to API Spec 8A, API Spec 8C, SY/T5035 and other relevant technical specifications, with a national fabrication license.

It's made of high quality alloy steel created by a forging process.

Finite-element analysis is adopted for strength checking and electrical measurement for stress testing. There are two kinds of elevator links, including the single arm type and the double arm type.

More effective sand blasting process is adopted to intensify the surface of the links.

## Specification

Type	Rated load (lbf)	Working length (ft)	Overall dimension (ft)	Net weight (lb)
SH75	151746	4.92	5.31×0.89×0.26	13272
SH150	303492	5.58	6.10×1.02×0.34	24691

★The length can be custom-made in accordance with the requirements of the end-users.

## 2.8 SINGLE ARM ELEVATOR LINKS

The design and fabrication conform to API Spec 8A, API Spec 8C, SY/T5035 and other relevant technical specifications, with a national fabrication license.

It's made of high quality alloy steel created by a forging process.

Finite-element analysis is adopted for strength checking and electrical measurement for stress testing. There are two kinds of elevator links, including the single arm type and the double arm type.

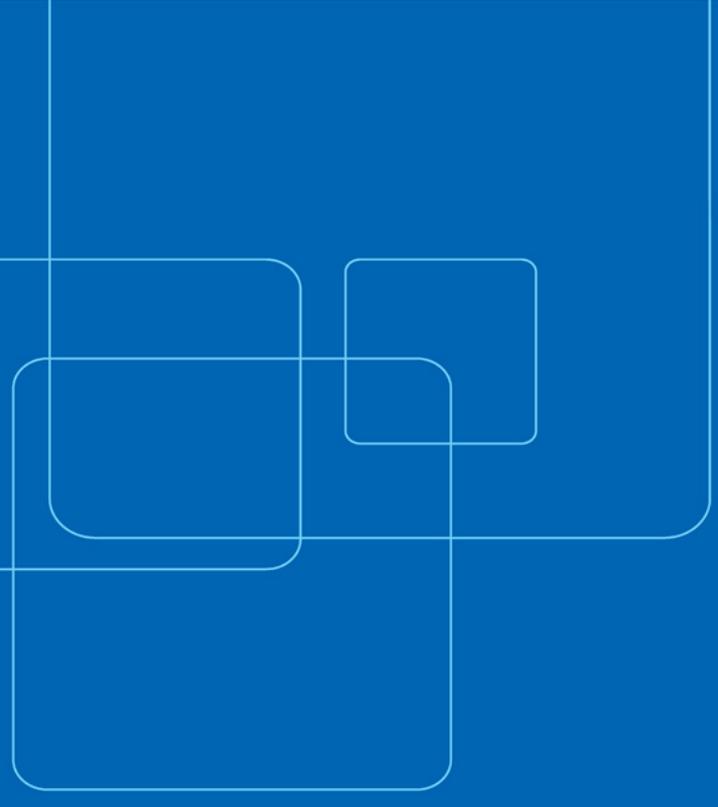
More effective sand blasting process is adopted to intensify the surface of the links



### Specification

Model	Rated load (lbf)	Working length (ft)	Overall dimension (ft)	Weight (lb)
DH150	303492	5.91	6.50×0.89×0.33	132.28
DH250	505820	8.86	9.51×1.18×0.36	330.69
DH350	708148	10.83	11.48×1.27×0.43	498.24
DH500	1000360	12.46	12.68×1.61×0.52	868.61

★The length can be custom-made in accordance with the requirements of the end-users.



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