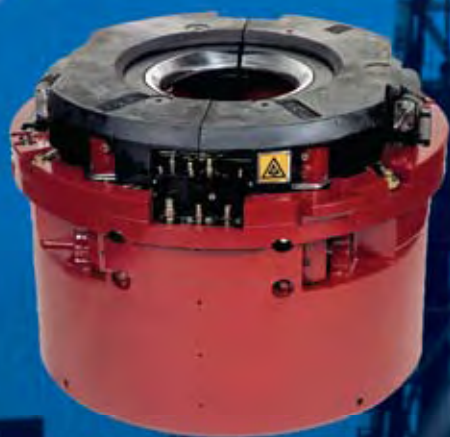


# ROTARY AND HANDLING TOOLS

2011





# GENERAL INFORMATION

This catalog is intended to provide general information. Every effort has been made to ensure the accuracy of the information contained herein. NOV will not be held liable for errors in this material, or for consequences arising from misuse of this material.

## GENERAL INFORMATION

### About this issue

This book is the new version of the catalog.

This issue contains information about new products like the UX-elevator, CRT500-14, CRT500-20 and RST's.

Also readers response has lead to a review of part numbers, which have been improved.

### CE - API

The products in this catalogue comply, where applicable, with the appropriate EU and API-standards, except the PSF Hydraulic Power Slip Frame.

### OEM-information

Documentation like User's Manuals can be downloaded from the equipment folders which can be found on [www.nov.com](http://www.nov.com) under "Drilling / handling tools".

### Patent info

Products in this catalog are covered by (but not limited to) the following patents:

US6,845,814 B2; US6,845,814 B2; US6,845,814 B2; US6,845,814 B2; US6,845,814 B2; WO03060280; US6,896,048; US 6,896,048; US 6,896,048; US 6,896,048; US4,446,761; US4,446,761; WO2005059299; GB2004/003413; USP 10/734,923; USSN 10/807,642; USSN 60/567,236; WO0052297; EP1475512; US2006005962; US2002074132; US6,443,241; US6,527,493; US6,691,801; US6,637,526; US6,938,709; WO.03/025444; WO.03/054338; US6,845,814 B2; WO0052297; EP1475512; US2006005962; US2002074132; US6,443,241; US6,527,493; US6,691,801; US6,637,526; US6,938,709; WO.03/025444; WO.03/054338; US6,845,814 B2; WO2005045177; US 2005/0077084; WO2005106185; PCT/GB2004/0050001; US No. 60/567,235; US6,845,814 B2; CA1087162; US4,203,182; CA1087162; US4,203,182; US4,446,761; WO 2005/059299; US7,510,006; US. 7,591,304

### Original instructions

The Original Instructions can be found on [www.nov.com](http://www.nov.com) - solutions - drilling

### Product information bulletins & safety alerts

All bulletins and alerts are available from [www.nov.com](http://www.nov.com) - solutions - drilling

### Liability

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Special information: Detailed descriptions of standard workshop procedures, safety principles and service operations are not included. Please note that this catalog may contain warnings about procedures which could damage equipment, make it unsafe, or cause PERSONAL INJURY. Please understand that these warnings cannot cover all conceivable ways in which service (whether or not recommended by NOV) might be done, or the possible hazardous consequences of each conceivable ways. Anyone using service procedures or tools, whether or not recommended by NOV, must be thoroughly satisfied that neither personal safety nor equipment safety will be jeopardized.

All information contained in this catalog is based upon the latest product information available at any time of printing. We reserve the right to make changes at any time without notice.

### Information


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### Conventions; Notes, Cautions, and Warnings

Notes, cautions, and warnings provide readers with additional information, and to advise the reader to take specific action to protect personnel from potential injury or lethal conditions. They may also inform the reader of actions necessary to prevent equipment damage. Please pay close attention to these advisories.



**WARNING: A warning indicates a definite risk of equipment damage or danger to personnel. Failure to observe and follow proper procedures could result in serious or fatal injury to personnel, significant property loss, or significant equipment damage.**

 **CAUTION:** A caution indicates that potential damage to equipment or injury to personnel exists. Follow instructions explicitly. Extreme care should be taken when performing operations or procedures preceded by this caution.

**NOTE:** A note indicates that additional information is provided about the current topics.

## Illustrations

Illustrations (figures) provide a graphical representation of equipment components or screen snapshots for use in identifying parts or establishing nomenclature, and may or may not be drawn to scale.

## Safety requirements

NOV equipment is installed and operated in a controlled drilling rig environment involving hazardous situations. Proper maintenance is important for safe and reliable operation. Procedures outlined in NOV User Manuals are the recommended methods of performing operations and maintenance

 **WARNING:** To avoid injury to personnel or equipment damage, carefully observe requirements outlined in this section.


## General system safety practices

 **WARNING:** Read and follow the guidelines below before installing equipment or performing maintenance to avoid endangering exposed persons or damaging equipment.

- Isolate energy sources prior to beginning work.
- Avoid performing maintenance or repairs while the equipment is in operation.
- Wear proper protective equipment during equipment installation, maintenance, or repair.
- Never weld on any parts of tools. The tools are produced from cast alloy heat threaded steel and must not be welded in the field. Improper welding can cause cracks and brittleness in heat affected area's which result in weakening of the part and possible failure.

## Personnel Training

All personnel performing installation, operations, repair, or maintenance procedures on the equipment, or those in the vicinity of the equipment, should be trained on rig safety, tool operation, and maintenance to ensure their safety.

 **WARNING:** Personnel should wear protective gear during installation, maintenance, and certain operations.

Contact the NOV training department for more information about equipment operation and maintenance training.

## Recommended Tools


Service operations may require the use of tools designed specifically for the purpose described. NOV recommends that only those tools specified be used when stated. Ensure that personnel and equipment safety are not jeopardized when following service procedures or using tools not specifically recommended by NOV.

## Replacing Components

Verify that all components (such as cables, hoses, etc.) are tagged and labeled during assembly and disassembly of equipment to ensure correct installation. Replace failed or damaged components with NOV certified parts. Failure to do so could result in equipment damage or injury to personnel.

## Routine Maintenance

Equipment must be maintained on a routine basis. See the Users Manuals for maintenance recommendations.

 **WARNING:** Failure to conduct routine maintenance could result in equipment damage or injury to personnel.

## Proper Use of Equipment

NOV equipment is designed for specific functions and applications, and should be used only for its intended purpose.

## Lifting


The lifting procedures should carefully be observed and carried out according to the Users Manuals.

## Limitations

The tools are designed to be used in the gas and oil well drilling environment, and must not be used for any other purpose.

## Warnings for use

 **WARNING:** Always use 3 segment rotary slips as sets (except the XL slip)

 **WARNING:** When a slip is dressed for a new size, always carry out a paper test.

## Abbreviations

Abbr.	Explanation	Abbr.	Explanation
AO	Air Operated	m	meter(s)
CL	Center Latch	mm	millimeter(s)
Csg	Casing	max.	Maximum
°C	Degree Celsius or Centigrade	min.	Minimum
DC	Drill Collars	Nm	Newton meter (= torque)
dia.	diameter	no.	number
DP	Drill Pipe	OD	outside diameter
EU	External upset	oz	ounce(s)
Elev.	Elevator	P/N	part number
°F	Degree Fahrenheit	psi	pounds per square inch
ft	foot or feet	qty.	quantity
ft.lbs	foot pounds (= torque)	rpm	rotation per minute
gpm	(US) gallon per minute	sTon	short tons (American tons)
hex	hexagon or hexagonal	sq	square
ID	inside diameter	SD	Side Door
in.	inch(es)	Tbg	Tubing
IEU	Internal external upset	Ton	metric tons
IU	Internal upset	w/	with
kW	kilowatt	w/o	without
kPa	kilopascal	wt	weight
kg	kilogram(s)	w/Zip	with Zip groove
lb	pound(s)		

## Conversions

Metric conversions through-out this handbook conform to the Systeme Internationale (SI) metric equivalents.

### Metric to US

inches x 25.4 = millimeters (mm)  
 feet x .3048 = meters (m)  
 pounds x .4536 = kilograms (kg)  
 ounces x .0283 = kilograms (kg)  
 Ton x .9078 = sTonUS to Metric

### US to Metric

inches x 25.4 = millimeters (mm)  
 feet x .3048 = meters (m)  
 pounds x .4536 = kilograms (kg)  
 ounces x .0283 = kilograms (kg)  
 sTon x .9078 = Ton

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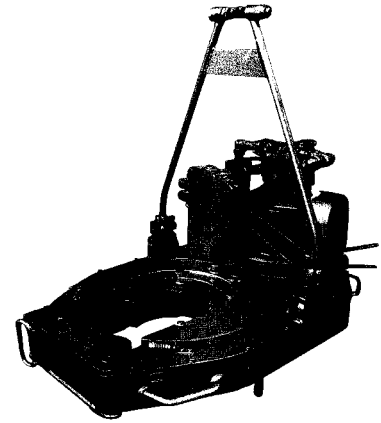
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# POWER TOOLS

## HK20000

The HK20000 is a tool designed for making up and breaking connections of casing. The HK20000s can be assembled for either making-up or break-out.

The rotor support design has the cam followers attached directly to the rotor, providing support for a smooth and quiet operation. A priority 4-way valve minimizes possible gear train damage. The power assisted gear shift assures efficient operation. Accommodations for torque return are standard. A load cell and torque gauge are available as accessories. A two-speed gear box uses a cluster gear, high and low speed gears and pinion shaft. The single door design is simple to operate, has fixed guide support for the rotor. The door interlock system increases safety because the tong will not rotate with the door open. The larger door helps to cover rotating parts and is load carrying, thus adding strength. A single hanging bar arrangement is easier to adjust and provides maximum clearance making our HK20000 power casing tong safe to work with and work around.



## TECHNICAL SPECIFICATIONS

Description	Imperial	Metric
Size range	4" – 14"	102-356 mm
Torque low gear	20,000 ft.lbs @ 2300 psi	27,000Nm @ 14,000 kPa
Torque high gear	4,900 ft.lbs @ 2300 psi	6,650 Nm @ 14,000 kPa
Maximum intermittent torque	25,000 ft.lbs @ 2,500 psi	34,000 Nm @ 17,500 kPa
Rpm in low gear	17 rpm	17 rpm
Rpm in high gear	70 rpm	70 rpm
Power requirements: Volume	66 gpm @ 1,000 psi	250 ltr/ min @ 7,000 kPa
Pressure (max.)	2,500 psi	17,200 kPa
Dimensions (L x W x H)	62" x 37" x 54"	1,571 x 940 x 1372 mm
Torque arm length back-up eye to center line of pipe	39"	1,007 mm
Weight	1,950 lbs	886 kg

## MAIN PART NUMBERS

Description	Part number
Main assembly	8532-5000-10

## OPTIONAL EQUIPMENT PART NUMBERS

Description	Part number
Suspension spring assembly	8532-5108
Tong torque assembly	8532-5119

## SIZE EQUIPMENT

Pipe Size	Jaw Assembly (2 pc)	Guide ring (1 pc)	Pipe Size	Jaw Assembly (2 pc)	Guide ring (1 pc)
3.1/2"	200708-1		7"	8547-5026	
4"	50006093-1	201107-6	7.5/8"	8547-5027	201107-3
4.1/2"	8547-5211		8.5/8"	8547-5028	
4.3/4"	8547-5205		9.5/8"	8547-5029	
5"	8547-5206	201107-1	10.3/4"	8547-5030	201107-4
5.1/2"	8547-5207		11.3/4"	8547-5031	
5.3/4"	200692		12"	8547-5032	
6"	8547-5208		12.3/4"	200690	
6.3/8"	200688-1	201107-2	13.3/8"	8547-5033	
6.5/8"	8547-5209		13.1/2"	8547-5033-1	
6.7/8"	200689-1		13.5/8"	50000629-1	
			14"	8547-5034	

## SSW10 PNEUMATIC SPINNING WRENCH

The NOV Safety Spinning Wrench, SSW 10, is a pneumatically powered tool for spinning drill pipe from 3.1/2" to 5.1/2" O.D. Using the proven principle of frictional drive contact, the spinning wrench can spin drill pipe in or out quickly and efficiently without damage to expensive drill pipe and without the hazards of the dangerous spinning chain.



### TECHNICAL SPECIFICATIONS

Description	Imperial	Metric
Size range	3.1/2" - 5.1/2"	89 -140 mm
Air pressure	90 to 125 psi	620 to 860 kPa
Air consumption	240 cfm	510 dm <sup>3</sup> /s
Rpm (5" pipe)	80-100 rpm	80-100 rpm
Torque (5" pipe)	1,000 ft.lbs	1,350 Nm
Weight	810 lbs	368 kg
Height	31.5"	800 mm
Length	55"	1,397 mm
Width	21"	533 mm

### MAIN PART NUMBER

Assembly number w/o rollers:

10426

Assembly number with rollers:

10426-35	3.1/2" rollers
10426-45	4.1/2" rollers
10426-50	5" rollers
10426-55	5.1/2" rollers

### SIZE EQUIPMENT

Roller assemblies (2 required):

Pipe OD	3.1/2"	4.1/2"	5"	5.1/2"
Part No	12035	12045	12050	12055

## SSW30 HYDRAULIC SPINNING WRENCH

The hydraulically powered SSW30 can spin drill pipe and drill collars from 2.7/8" to 9.1/2" O.D. with no adjustments necessary. Its abundant power will bump up shoulders tight enough so each joint is quickly torqued.

This lightweight tool is narrower and has lower profile than previous spinning wrench designs. It achieves its compact shape by using one large cylinder for clamping.



### TECHNICAL SPECIFICATIONS

Description	Imperial	Metric
Size range	2.7/8" - 9.1/2" OD	73-241 mm OD
Normal operating hydraulic pressure	2,000 psi	13,789 Kpa
Torque (5" dia. pipe)	900 to 1,000 ft.lbs	1,215-1,350 Nm
Rpm (5" dia. pipe)	100 rpm	100 rpm
Weight	850 lbs	385 kg
Hydraulic power requirement	29 to 45 gpm	109 to 170 lpm

### MAIN PART NUMBERS

Assembly number	
Closed center:	19000-6
Open center:	19000-7

### OPTIONAL EQUIPMENT PART NUMBERS

Description	Assembly number
Pressure hose:	58314-*
Return hose:	58518-*

\*Specify length 6; 15; 25; 35 or 50 feet

## SSW40 PNEUMATIC SPINNING WRENCH

An easy adjustment screw eliminates the need to change rollers and can accommodate drill pipe and drill collars from 3.1/2" to 9.1/2" OD.

The speed of the SSW40's four drive rollers, powered by two motors, is precisely controlled by the operator to permit the slow walking in of drill collars or fast spinning in or out when tripping pipe. In a typical spinning operation the rig hand swings the SSW40 onto the pipe just above the joint upset. The clamp control is pulled and the throttle handle actuated to spin in or out with absolute precision. For added safety a spin direction lockout feature is included to prevent spinning pipe in wrong direction and comes with added safety valve, which prevents the tool from being closed without pipe in tool.



### TECHNICAL SPECIFICATIONS

Description	Imperial	Metric
Size range OD Drill Pipe and Drill Collars:	3.1/2" - 9.1/2"	89-241 mm
Air pressure Min/Max:	90 - 125 psi	620 - 860 kPa
Max. air consumption:	250 cfm	530 dm <sup>3</sup> /s
Max. stall torque (5" dia. pipe):	1,100 ft.lbs	1,490 Nm
Weight:	850 lbs	385 kg

### MAIN PART NUMBERS

Assembly number:

73109

## KS6600 PNEUMATIC KELLY SPINNER KS6800 HYDRAULIC KELLY SPINNER

Models 6600 and 6800 Kelly Spinners can be used for rotating drill pipe slowly, for limited rathole and mousehole drilling and making fast kelly connections. These units are completely reversible; the driller can spin-out, as well as spin-in, when making connections, therefore, spinning chains are not required.



### TECHNICAL SPECIFICATIONS

Description	Imperial	Metric
Connections	6.5/8" API Reg LH	168.275 mm API Reg LH
Height	38.1/2"	978 mm
Diameter	28"	711 mm
Weight	1,110 Lbs	504 kg
Oil SAE 40, Capacity	4.1/4 gal	4.8 l
Stall torque	1,200 ft.lbs	1,622 Nm
Rpm	110 rpm	110 rpm
Flow (Air 6600)	320 cfm	680 dm <sup>3</sup> /s
Flow (Hydraulic 6800)	24 gpm	91 lpm
Rotation	Right and Left	Right and Left

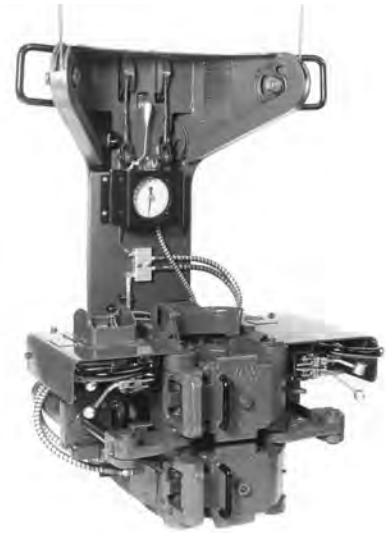
### MAIN PART NUMBERS

Part number	Assembly description
70876Y	Pneumatic Kelly Spinner Model 6600 complete with thread protectors, control valve, filter lubricator, and 62 foot hoses:
70877Y	Same as above with 77 foot hoses:
70867Y	Hydraulic Kelly Spinner Model 6800 complete with thread protectors, control valve, filter lubricator, and 62 foot hoses:
70868Y	Same as above with 77 foot hoses:



## TW61 HYDRAULIC TORQUE WRENCH

The NOV TW61 makes-up and breaks-out drill pipe and drill collars from 4" to 8.1/2" OD. Torque is adjustable and can be pre-set to the required value. Upper and lower gripping structures provide the required torque. The TW61 can rotate the tool joint pin up to 34°, to produce the desired torque while providing its own back-up. A built-in tugger is provided to pull the TW61 back out of the way while lowering or raising pipe stands. The tugger can also be used to assist in pulling the TW61 to a storage position. The tool has 6-foot vertical travel range so it can locate at the exact tool joint height.



### TECHNICAL SPECIFICATIONS

Description	Imperial	Metric
Size	4" - 8.1/2"	102-216 mm
Make-up Torque	63,000 ft.lbs	85,000 Nm
Break-out Torque	75,000 ft.lbs	101,000 Nm
Power Requirements	30-35 gpm @ 2,000 psi	114-133 lpm @13,789 Kpa
Air Pressure (for Tugger)	90-125 psi	620-860 kPa
Weight	3,190 lbs	1,450 kg
Vertical Positioning (Total travel)	72"	1,830 mm
Rate of Travel	2" / s	50.8 mm / s
Cycle Time	@ 40 gpm	@ 151 lpm
Clamping Both Jaws	2.5 s	2.5 s
Clamping Upper Jaw	1.25 s	1.25 s
Torquing 34°	2 s	2 s

### MAIN PART NUMBERS

Part number	Assembly description
19999-12	TW61



# HYDRAULIC POWER UNITS & CONTROL PANELS

## HYDRAULIC POWER UNIT

### HKB (CE + ATEX EXPLOSION PROOF) power units

Since the introduction of the HKB35 and HKB66, NOV has continuously worked towards improving the efficiency, reliability and safety of its design. This expanded product range will respond to the industry demands for reliable easy maintenance power units built according to ATEX-rules (Explosion Safety) for safer operation.

#### HKB FEATURES

- Variable displacement piston pump, stops the flow at maximum pressure to prevent unnecessary heating up of the oil.
- A power compensator is mounted to prevent an overload of the electric motor
- Automatic temperature control. The cooler starts automatically at an oil temperature inside the tank of 38°C (100°F). The unit automatically shuts down if the oil temperature inside the tank reaches 70°C (158°F)
- Automatic oil level safety. Unit automatically shuts down if the oil level inside the tank is too low.
- Pressure and return connections by with quick disconnect couplings
- Electric powered
- Skid mounted unit unit van be lifted using a forklift or crane
- HKB units can be lifted using a forklift or a crane.
- Maximum pressure 2500 psi (175 bar)
- Return line equipped with contamination indicator

#### OPTIONS

- Available in various pressure and flow configurations
- Available for standard, arctic and desert ambient temperatures.
- Available in 50 or 60Hz, from 360 to 480 Volts. Other supply power on request.
- Diesel HKB's on request.
- Available with remote starter kit
- Available HKB140D dual pump with 100% redundancy.
- Air-over-Hydraulic Power Unit HKB3

#### ATEX: EXPLOSION SAFETY

- HKB units are built according requirements of the European directive EN 982 and EN 94/9/EC for use in potentially explosive atmosphere.
- Standard ATEX compliance according to Ex II 2G T3 EEx-e IIB T3 for use in zone 2 (category 3) as a minimum.

#### FLOW AND PRESSURE

- Fixed pressure - Fixed flow (standard)
- Fixed pressure - Adjustable flow
- Adjustable pressure - Adjustable flow
- Adjustable pressure - Fixed flow

#### AMBIENT TEMPERATURE

- -10° to +40°C (standard)
- 0° to 50° C (Desert)
- -40° to + 10°C (Arctic)

#### POWER SUPPLY

- 360 up to 480 V
- 50 or 60 Hz



## HKB3 POWER AIR-OVER-HYDRAULIC POWER UNIT

The HKB-3 is an air driven hydraulic power unit which supplies hydraulic fluid under pressure to the FMS.

### PART NUMBERS HKB3

- 50007090 HKB3
- 50007091 HKB3 with remote control

## QUICK REFERENCE FOR EXISTING TOOLS

### ORDERING INFORMATION

To order the HKB with the proper specifications, choose from different flow settings, temperatures listed.

HKB	Tool interface	Required pressure [psi/ kPa]	Required flow [gpm/ lpm]	Available units	
				50Hz	60Hz
71	FMS375	2,000 / 13,790	5/18.9	No	Yes
71	PS21/30	2,500 / 17,240	10/38	Yes	Yes
71	BX3,4,5,S	2,000 / 13,789	7/26.5	Yes	Yes
71	H-SJH	2,000 / 13,789	5/18.9	Yes	Yes
71	All E/S's	2,000 / 13,789	12/45	Yes	Yes
71	FMS275	2,000 / 13,789	12/45	Yes	Yes
71	CRT350	2,000 / 13,789	16/60	Yes	Yes
71	CRT500	2,000 / 13,789	16/60	Yes	Yes
100	KS6800	2,000 / 13,790	24/91	Yes	Yes
100	TW61	2,000 / 13,790	35/132	Yes	Yes
100	SSW30	2,000 / 13,790	45/170	Yes	Yes
100	FMS375	2,000 / 13,790	32/121	Yes	No
100	ST80	2,000 / 13,790	45/151	Yes	Yes
140	IR2100	2,000 / 13,790	32/121	Yes	Yes
140	HK20000	2,500 / 17,240	66/250	No	Yes
180	HK20000	2,500 / 17,240	66/250	Yes	No
180	SSW30	2,500 / 17,240	66/250	Yes	Yes
140D	TDS+AR3200	2,500 / 17,240	66/250	Yes	Yes
HKB3	FMS375	2,000 / 13,790	32/121	n/a	n/a

## SELECTING THE HKB\*

### HKB71

- Pump 71 cc/rev
- Qmax at 1,500 rpm [50 Hz]: 106.5 lpm=27 gpm
- Qmax at 1,750 rpm [60 Hz]: 124 lpm=32 gpm
- Maximal pressure: 2,500 psi / 17,240 kPa
- Maximum power output: 15 kW
- Dimensions LxWxH [inches/m]: 78x43x60/2x1.1x1.5

### HKB100

- Pump 100 cc/rev
- Qmax at 1,500 rpm [50 Hz]: 150 lpm=38 gpm
- Qmax at 1,750 rpm [60 Hz]: 175 lpm=46 gpm
- Maximum pressure: 2,500 psi / 17,240 kPa
- Maximum power output: 22 kW
- Dimensions LxWxH [inches/m]: 79x43x60/2x1.1x1.5

### HKB140 + HKB 140 D (dual pump)

- Pump 140 cc/rev
- Qmax at 1,500 rpm [50 Hz]: 210 lpm=53 gpm
- Qmax at 1,750 rpm [60 Hz]: 245 lpm=65 gpm
- Maximum pressure: 2,500 psi / 17,240 kPa
- Maximum output power: 30 kW
- Dimensions Single Pump LxWxH [inches/m]: 87x43x60/2.2x1.1x1.5

### HKB180

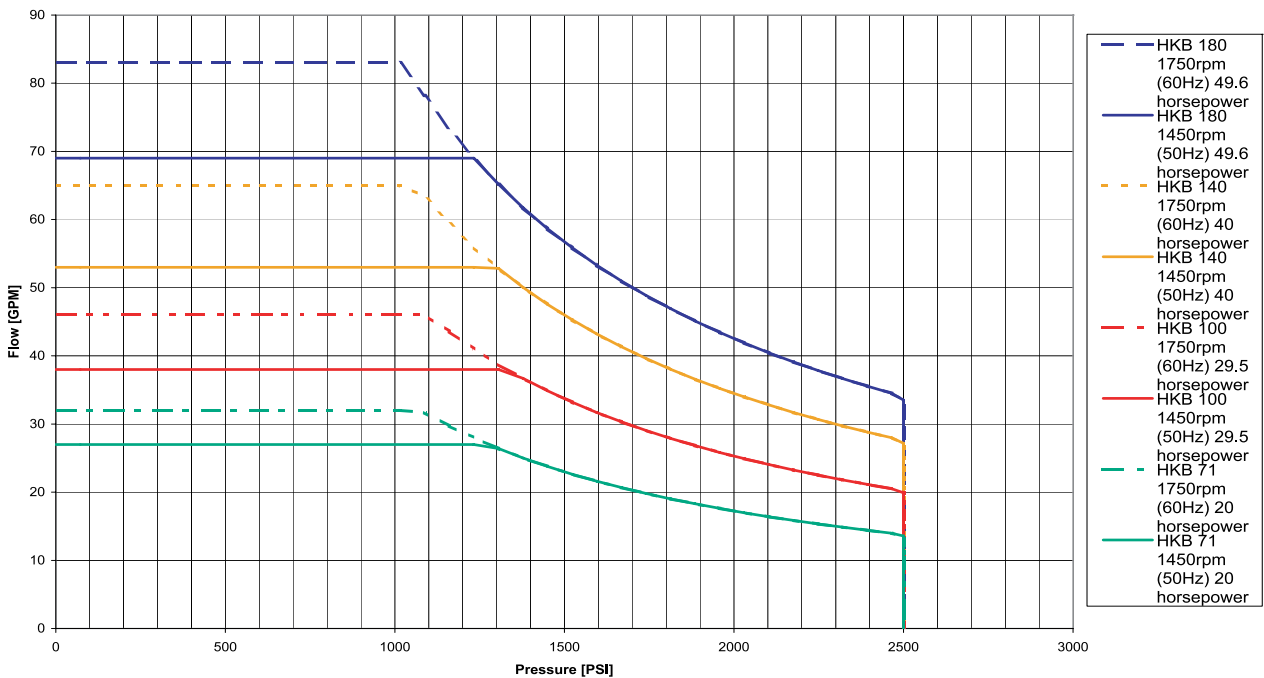
- Pump 180 cc/rev
- Qmax at 1,500 rpm [50 Hz]: 270 lpm=69 gpm
- Qmax bij 1,750 rpm [60 Hz]: 315 lpm=95 gpm
- Maximum pressure: 2,500 psi / 17,240 kPa
- Maximum output power: 37 kW
- Dimensions LxWxH [inches/m]: 95x43x60/2.4x1.1x1.5



### HKB3

- Pump 180 cc/rev
- Qmax: 7.5 lpm = 2 gpm
- Max "Slips down" pressure is preset at 2,500 psi / 17,200 kPa
- Max "Slips up" pressure is preset at 1,000 psi / 6,900 kPa
- Minimum airpressure 95 psi / 690 kPa
- Maximum airpressure 300 psi / 2,100 kPa
- Air consumption at input pressure 95 psi / 6,5 Bar / max. 75cfm / 2.12 m<sup>3</sup>/min
- Dimensions LxWxH [inches/mm]:  
34 x 30 x 55.75 / 863.6 x 762 x 1416

Theoretical flow curves HKB power units



\*All data subject to confirmation by manufacturer

For details or a quotation, please contact NOV

## HYDRAULIC STAND ALONE CONTROL PANEL BX/BXS

Portable fully hydraulic control panel to operate BX and BXS through a portable service loop. Also suitable to operate the BX universal rotator.

The panel is suitable to operate the following rotary spiders/slips: FMS275, FMS375, PS21, PS30 and hydraulic Elevator / Spiders 14" & 24".

The panel has an interlock function between the elevator and the rotary spider.



### TECHNICAL SPECIFICATIONS

#### Weight & Dimensions of Panel

Weight Stand Alone Control Panel [lbs/kg]	450 / 200
Dimensions Overall: Height x Width x Depth [inches/mm]	47.5 x 27.6 x 19.7 / 1210 x 700 x 500

#### Weight & Dimensions of Service Loops

Service Loop is suitable for BX 3 thru 5 and BXS .

Service Loop is suitable for Universal Rotator (Single Arm, pn 50004130) ONLY

Length (Coupling to Coupling) [ft/m]	197 / 60
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Weight (Oil filled) [lbs/kg]	800 / 365
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Service Loops is supplied with two loop hanger assemblies to provide interface point to the Derrick (via Tugger) and the Top-Drive (RLA Link-ear or other suitable attachment point).

### MAIN PART NUMBERS

Part number	Description
50000350	Control panel ass'y
50000360	Service loop

### OPTIONAL EQUIPMENT PART NUMBERS

Part number	Description
50000350-13	1 year spares for control panel and service loop
200977-8	Hose kit for FMS375
50005249	Hose kit for FMS275
50008610-21	Hose kit for PS21
50008610-21	Hose kit for NOV 14" Hydr. Spider pn 50006046Y1

## FMS CONTROL PANELS

The FMS is connected to the panel by applying two hoses between the FMS and the two quick disconnect couplers (Slips up, Slips down) on the panel.

On the extra connections of the control panel (Pressure power tong, Return power tong) a power tong or secondary tool can be connected by using hydraulic hoses. This tool also needs to be a open center system.

The panel pn 50006538 allows to control both the FMS and power tong. No power fluctuations will occur, allowing a consistent operation and reliable and nearly absolute torque read out.



## TECHNICAL SPECIFICATIONS

### Hydraulic characteristics

Maximum pressure [psi/kPa]	3,000 / 20,684
Maximum flow [gpm/lpm]	50 / 200
Pressure at "pressure power-unit" connection [psi/kPa]	2,600-3,000 / 17,926-20,684
Back pressure at "return power unit" connection [psi/kPa]	0-200 / 0-1,378
Power unit flow range [gpm/lpm]	5-50 / 20-200
Pressure on "slips down" connection [psi/kPa]	1,300-2,450 / 8,963-16,892
Standard settings on "slips down" connection [psi/kPa]	1,800 / 12,410
Pressure on "slip up" connection [psi/kPa]	1,000 / 6,894
Max. output flow to FMS [gpm/lpm]	15 / 60
Output flow to pressure power tong	When the FMS is moving; no flow is available. With the FMS stationary, see power unit flow range (minus leakage flow)
Nominal volume of accumulator [gallon/l]	0.18 / 0.7
Ni pre-charge pressure [psi/kPa]	1,960 / 13,513
Maximum accumulator pressure [psi/kPa]	3,000 / 20,684

### Pneumatic characteristics

Pressure at air pressure connection [psi/kPa]	90-230 / 620-1585
Air flow [gpm/lpm]	396 / 1,500

### Physical

Dimensions (L x W x H) [inches/mm]	29.53" x 22.83" x 21.65" / 750x580x55
Weight [Lbs/kg]	265 / 120

## MAIN PART NUMBER

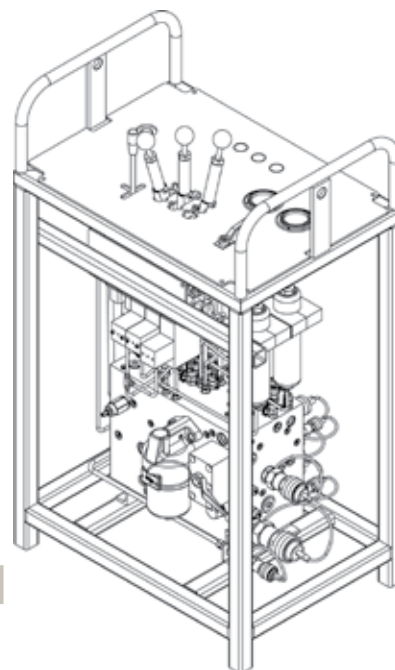
Part number	Description
50006538	Control panel

## CRT350/500 INTERLOCK PANEL

The CRT350/500 Gated Operator Control Panel contains all required valves and control handles to remotely operate the following tools.

- The CRT350
- The CRT500
- The CRT350's hydraulic single joint elevator (H-SJH)
- The CRT500's hydraulic single joint elevator (UX)
- The Hydraulic Rotary Slips

The control panel connects to both the CRT350/500 and its hydraulic single joint elevator H-SJH/UX (via the service loop) as well as the Hydraulic Rotary Slips.



## TECHNICAL SPECIFICATIONS

Subject	Value
Weight [lbs / kg]	250 / 450
Dimensions [inches / mm]	27,6 x 19,7 x 47,5 / 675 x 500 x 1206

## MAIN PART NUMBERS

Part number	Part
50008610	Control panel
50008551	Service loop

## OPTIONAL EQUIPMENT PART NUMBERS

Part number	Description
50008610-13	1 year spares for control panel and service loop
200977-8	Hose kit for FMS375
50005249	Hose kit for FMS275
50008610-21	Hose kit for PS21
50008610-21	Hose kit for NOV 14" Hydr. Spider pn 50006046Y1



# DYNAPLEX HOOKS

## DYNAPLEX HOOKS

The Dynaplex hook is a premium-quality rotary hook for heavy-duty drilling requirements. Special features: Hydraulic snubber, flexible pin connection and hook positioner. The hook positioner provides faster, safer operation and cuts down round-trip time. When going in the hole, the positioner automatically rotates the elevator into the correct position for the derrickman to catch the next stand of pipe. The positioner also prevents the hook and elevator from being rotated by the "spin-up" of drill pipe going in the hole. Operators may desire to direct-connect the Dynaplex hook to the traveling block.



### TECHNICAL SPECIFICATIONS

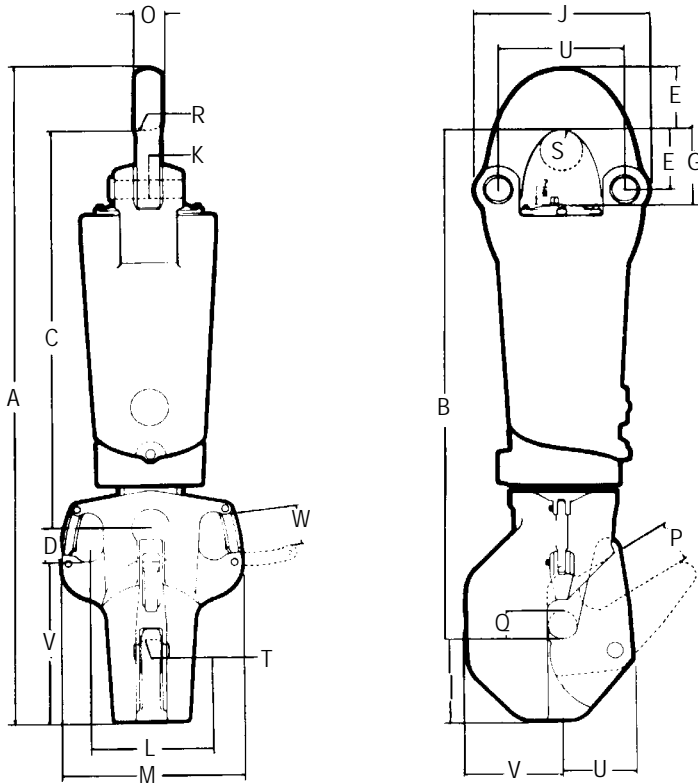
Specifications	51000	5750	5500	5350
Capacity [Ton/sTon]	907 / 1,000	680 / 750	453 / 500	317 / 350
Hook complete with positioner [lbs]	32,076	18,090	9,950	5,340
Hook complete with positioner [kg]	14,550	8,205	4,513	2,876

### MAIN PART NUMBERS

Model	Hook Complete With Positioner
51000	38327Y
5750	31108Y
5500	26955Y
5350	24767Y

### DIMENSIONAL DATA DYNAPLEX HOOKS - BLOCK COMBINATIONS

\*information on request



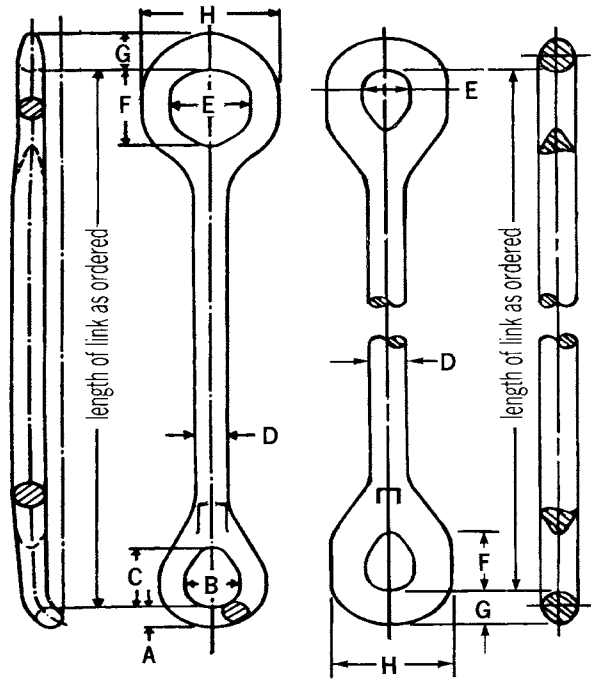
Ref.	51000		5750		5500		5350	
No.	[inches]	[mm]	[inches]	[mm]	[inches]	[mm]	[inches]	[mm]
A*	187.3/4	4768.85	162	4114.80	139.1/2	3543.30	126.3/4	3219.45
B*	150.7/8	3832.23	129.1/2	3289.30	109.3/8	2778.13	97.1/2	2476.50
C*	118.3/4	3016.25	102.1/2	2604.00	85.3/8	2168.53	72.5/8	1844.68
D	6.5/8	168.28	6.5/16	160.34	7.3/8	187.33	9	228.60
E	15.1/2	393.70	13.1/2	342.90	12.1/2	317.50	11	279.40
F	17.1/2	444.50	15	381.00	13	330.20	11.1/4	285.75
G	23.3/8	594.00	20	508.00	16.5/8	422.28	14	355.60
H	41	1041.40	35.1/4	895.35	26.1/4	666.75	21	533.40
I	21.3/8	542.93	19	482.60	17.3/4	450.85	18.1/4	463.55
J	56.1/2	1435.10	48.1/4	1225.55	36.1/2	927.10	29.3/4	755.65
K	6.1/2	165.10	5.3/4	146.05	4	101.60	3.1/4	82.55
L	36.3/4	933.45	32.1/4	819.15	26.3/4	679.45	22	558.80
M	48.3/4	1238.25	43.1/2	1104.90	37.3/4	958.85	30.3/4	781.05
N	46.7/8	1190.63	39.11/16	1008.06	34.1/4	869.95	34.1/8	866.78
O	9	228.60	7	177.80	6.1/2	165.10	5.3/8	136.53
P	12.1/2	317.50	10.3/4	273.05	8.1/2	215.90	7.1/2	190.50
Q	10.1/2	266.70	8.1/2	215.90	7	177.90	6.1/2	165.10
R	6	152.40	3.1/4	82.55	3.1/4	82.55	3	76.20
S	6	152.40	6	152.40	4.1/2	114.30	4	101.60
T	5	127.00	4	101.60	4	101.60	4	101.60
U	18.7/8	479.43	16	406.40	14.1/4	361.95	13.1/4	336.50
V	25.5/8	650.88	22.1/2	571.50	20.3/8	517.53	19	482.60
W	9	228.60	8	203.20	8.1/4	209.55	6	152.40



# LINKS

## WELDLESS LINKS

Weldless Links are forged from a single piece of high-grade alloy steel to provide maximum tensile strength. More weight and “plus-diameter” in critical areas make these links extra strong. Short upper eye design means better balance and easier elevator handling, while reducing wear of the eye section against the swivel bail or body.



### TECHNICAL SPECIFICATIONS\*

Link P/N	Nominal [inches]	Dim.	A	B	C	D	E	F	G	H
<b>250 [sTon]</b>										
16363	2.1/4	[inches]	2.5/16"	5.1/2"	7.1/2"	2.7/8"	9.1/2"	12"	5"	15"
"	"	[mm]	58.7	139.7	190.5	73	241.3	304.8	127	381
<b>350 [sTon]</b>										
26940	2.3/4	[inches]	2.13/16"	5.5/8"	8.3/8"	3.1/2"	9.1/2"	12"	5"	15"
"	"	[mm]	71.4	142.9	212.7	88.9	241.3	304.8	127	381
<b>500 [sTon]</b>										
25469	3.1/2	[inches]	3.5/8"	6.1/2"	10.1/8"	4.1/2"	9.1/2"	12"	6"	17"
"	"	[mm]	92.1	165.1	257.2	114.3	241.3	304.8	152.4	431.8
<b>750 [sTon]</b>										
16143	4.3/4	[inches]	7.1/2"	10"	14.5/8"	6"	10"	14.5/8"	7.1/2"	23"
"	"	[mm]	190.5	254	371.5	152.4	254	371.5	190.5	584.2
<b>1,000 [sTon]</b>										
70101	5.1/2	[inches]	8.1/4"	12.3/4"	17.1/2"	6"	12.3/4"	17.1/2"	8.1/4"	29.1/4"
"	"	[mm]	209.6	323.9	444.5	152.4	323.9	444.5	209.6	743
<b>1,250 [sTon]</b>										
M614000320	5.1/2	[inches]	8.1/4"	12.3/4"	17.1/2"	6"	12.3/4"	17.1/2"	8.1/4"	29.1/4"
"	"	[mm]	209.6	323.9	444.5	152.4	323.9	444.5	209.6	743

\* Note: The dimensions are nominal. The actual dimensions may vary due to manufacturing tolerances. All API contact radius are manufactured according to API specifications.

## PART NUMBERS WELDLESS LINKS

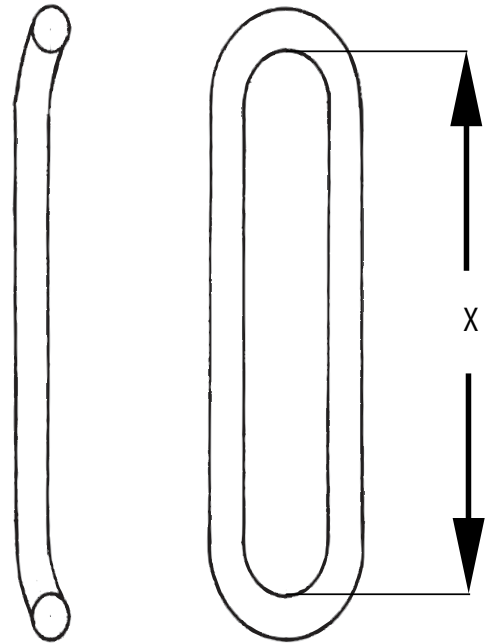
Part No.	Nominal link size [inches]	Size [inches/mm]	Rated Capacity per Set [sTon/Ton]	Weight per Set [lbs/kg]
16363Y1060	2.1/4 x 60	60 / 1,524	250 / 226.8	480 / 218
16363Y1072	2.1/4 x 72	72 / 1,829	250 / 226.8	530 / 241
16363Y1084	2.1/4 x 84	84 / 2,134	250 / 226.8	580 / 264
16363Y1096	2.1/4 x 96	96 / 2,438	250 / 226.8	630 / 286
16363Y1108	2.1/4 x 108	108 / 2,743	250 / 226.8	680 / 309
16363Y1132	2.1/4 x 132	132 / 3,353	250 / 226.8	780 / 355
16363Y1168	2.1/4 x 168	168 / 4,267	250 / 226.8	880 / 399
26940Y1060	2.3/4 x 60	60 / 1,524	350 / 317.5	620 / 282
26940Y1072	2.3/4 x 72	72 / 1,829	350 / 317.5	685 / 311
26940Y1084	2.3/4 x 84	84 / 2,134	350 / 317.5	740 / 336
26940Y1096	2.3/4 x 96	96 / 2,438	350 / 317.5	805 / 366
26940Y1108	2.3/4 x 108	108 / 2,743	350 / 317.5	870 / 395
26940Y1120	2.3/4 x 120	120 / 3,048	350 / 317.5	935 / 425
26940Y1132	2.3/4 x 132	132 / 3,353	350 / 317.5	1,000 / 454
26940Y1144	2.3/4 x 144	144 / 3,657	350 / 317.5	1,064 / 483
26940Y1150	2.3/4 x 150	150 / 3,810	350 / 317.5	1,095 / 498
26940Y1168	2.3/4 x 168	168 / 4,267	350 / 317.5	1,190 / 541
26940Y1180	2.3/4 x 180	180 / 4,572	350 / 317.5	1,255 / 571
26940Y1192	2.3/4 x 192	192 / 4,877	350 / 317.5	1,320 / 600
26940Y1200	2.3/4 x 200	200 / 5,080	350 / 317.5	1,363 / 618
26940Y1216	2.3/4 x 216	216 / 5,486	350 / 317.5	1,450 / 659
26940Y1240	2.3/4 x 240	240 / 6,096	350 / 317.5	1,580 / 718
26940Y1264	2.3/4 x 264	264 / 6,705	350 / 317.5	1,770 / 800
26940Y1290	2.3/4 x 290	290 / 7,366	350 / 317.5	1,944 / 882
26940Y1350	2.3/4 x 350	350 / 8,890	350 / 317.5	2,180 / 988
26940Y1360	2.3/4 x 360	360 / 9,144	350 / 317.5	2,235 / 1,014
26940Y1480	2.3/4 x 480	480 / 12,192	350 / 317.5	2,885 / 1,306
26940Y1540	2.3/4 x 540	540 / 13,716	350 / 317.5	3,187 / 1,446
26940Y1600	2.3/4 x 600	600 / 15,240	350 / 317.5	3,408 / 1,546
25469Y1072	3.1/2 x 72	72 / 1,829	500 / 453.6	705 / 320
25469Y1096	3.1/2 x 96	96 / 2,438	500 / 453.6	1058 / 480
25469Y1108	3.1/2 x 108	108 / 2,743	500 / 453.6	1,450 / 659
25469Y1120	3.1/2 x 120	120 / 3,048	500 / 453.6	1,622 / 736
25469Y1132	3.1/2 x 132	132 / 3,353	500 / 453.6	1,670 / 759
25469Y1144	3.1/2 x 144	144 / 3,688	500 / 453.6	1,780 / 809
25469Y1160	3.1/2 x 160	160 / 4,064	500 / 453.6	1,927 / 876
25469Y1168	3.1/2 x 168	168 / 4,267	500 / 453.6	2,000 / 909
25469Y1180	3.1/2 x 180	180 / 4,572	500 / 453.6	2,110 / 959
25469Y1190	3.1/2 x 190	190 / 4,826	500 / 453.6	2,202 / 998
25469Y1192	3.1/2 x 192	192 / 4,826	500 / 453.6	2,220 / 1,007
25469Y1216	3.1/2 x 216	216 / 5,486	500 / 453.6	2,422 / 1,098
25469Y1226	3.1/2 x 226	226 / 5,740	500 / 453.6	2,596 / 1,177
25469Y1264	3.1/2 x 264	264 / 6,706	500 / 453.6	2,882 / 1,307
25469Y1360	3.1/2 x 360	360 / 9,144	500 / 453.6	3,174 / 1,440
25469Y1480	3.1/2 x 480	480 / 12,192	500 / 453.6	3,968 / 1,800
25469Y1540	3.1/2 x 540	540 / 13,716	500 / 453.6	4,519 / 2,050

Part No.	Nominal link size [inches]	Size [inches/mm]	Rated Capacity per Set [sTon/Ton]	Appr. weight per Set [lbs/kg]
16143Y1132	4.3/4 x 132	132 / 3,352	750 / 680.4	1,741 / 790
16143Y1144	4.3/4 x 144	144 / 3,688	750 / 680.4	2,312 / 1,051
16143Y1160	4.3/4 x 160	160 / 3,688	750 / 680.4	3,178 / 1,445
16143Y1180	4.3/4 x 180	180 / 4,572	750 / 680.4	3,900 / 1,769
16143Y1200	4.3/4 x 200	200 / 5,080	750 / 680.4	4,550 / 2,063
16143Y1216	4.3/4 x 216	216 / 5,486	750 / 680.4	5,200 / 2,364
16143Y1240	4.3/4 x 240	240 / 6,096	750 / 680.4	5,864 / 2,660
16143Y1264	4.3/4 x 264	264 / 6,705	750 / 680.4	7,275 / 3,300
16143Y1300	4.3/4 x 300	300 / 7,620	750 / 680.4	8,800 / 3,991
70101Y1200*	5.1/2 x 200	200 / 5,080	1,000 / 907.2	5,100 / 2,315
M614000320Y1180	5.1/2 x 180	200 / 5,080	1,250 / 1,133	4,550 / 2,063
M614000320Y1200	5.1/2 x 200	200 / 5,080	1,250 / 1,133	5,100 / 2,315
M614000320Y1240	5.1/2 x 240	200 / 5,080	1,250 / 1,133	7,275 / 3,300

\* Other lengths available on request.

## PERFECTION LINKS

Dependable, efficient Perfection links are designed for light loads. They are made by forging, bending and electric welding of high-quality steel bar stock, which is then heat-treated and magnafluxed.



## PART NUMBERS PERFECTION LINKS

Part No.	Size [inches/mm]	Rated Cap per Set [sTon/Ton]	Weight per Set [lbs/kg]	Dimension X [inches/mm]
200450Y130	2 x 30 / 50.8 x 762	100 / 89.3	49 / 108	30 / 762
200450Y136	2 x 36 / 50.8 x 914	100 / 89.3	58 / 128	36 / 914
200450Y142	2 x 42 / 50.8 x 1,067	100 / 89.3	67 / 148	42 / 1,067
200450Y148	2 x 48 / 50.8 x 1,219	100 / 89.3	76 / 168	48 / 1,219
200450Y160	2 x 60 / 50.8 x 1,524	100 / 89.3	95 / 208	60 / 1,524



## DC DOLLY

Efficient method of handling drill collars without having to remove the elevator from the links. The drill collar assemblies are suitable for use in combination with the perfection links. The size range is from 2.7/8" plain to 6.5/8" IEU.

### PART NUMBERS DC DOLLIES

Part No.	Size [inches]
<b>18° type</b>	
31189Y1	4.1/2" IF & 5" IEU
31189Y7	3.1/2" IF, Reg & FH
31189Y10	5.1/2" IEU -18
31189Y18	5.7/8" IEU -18
<b>Collar type</b>	
31189Y3	4.1/2" IF & 5" IEU
31189Y5	4" IF & 4.1/2" Reg & FH
31189Y9	4 FH
31189Y12	3.1/2" IF & 5" IEU
31189Y15	6.5/8" EU
31189Y16	2.7/8" Plain





# ELEVATOR SELECTION CHARTS

## ELEVATOR SELECTION CHARTS

### SLIP TYPE ELEVATORS Y SERIES

Size	Size	Type	Part number	Cap.	Max. Weight	Max. Weight	Link size (min / max)			
[inches]	[mm]			[sTon]	[lbs]	[kg]	[inches]	[mm]	[inches]	[mm]
1.315" - 2.7/8"	33-73	MYT	29328Y	40	148	67	1.1/4"	32	2.3/4"	70
1.315" - 3.1/2"	33-89	YT	55600Y	75	355	161	2.1/4"	57	2.3/4"	70
2.3/8" - 3.1/2"	60-89	HYT	39284Y	150	740	336	2.1/4"	57	3.1/2"	89
3.1/2" - 7"	89-178	YC	24140Y	75	445	206	2.1/4"	57	2.3/4"	70
3.1/2" - 7"	89-178	MYC	200360Y	125	750	336	2.1/4"	57	2.3/4"	70
2.7/8" - 7.3/4"	73-197	HYC	BJ55310Y	200	997	452	2.1/4"	57	3.1/2"	89
2.7/8" - 7.3/4"	73-197	HYC AO	BJ70166Y	200	1465	665	2.1/4"	57	3.1/2"	89

### COLLAR TYPE CENTER LATCH ELEVATORS A SERIES

1.050" - 2.7/8"	28-73	TA	32387Y*	35	57	26	1.1/4"	32	1.3/4"	45
2.3/8" - 5"	60-127	TMA	50006310Y *	100	121	55	1.3/4"	45	2.3/4"	70
4.3/4" - 8.5/8"	121-219	TA	200000Y*	100	260	118	1.3/4"	45	2.3/4"	70
4.1/2" - 8.5/8"	121-219	TA	32754Y*	150	370	168	1.3/4"	45	3.1/2"	89
4.1/2" - 8.5/8"	121-219	TA AO	35636Y*	150	530	240	1.3/4"	45	3.1/2"	89
8.1/2" - 11.1/4"	216-286	TA	39342Y*	150	524	238	1.3/4"	45	3.1/2"	89
8.1/2" - 11.1/4"	216-286	TA AO	39343Y*	150	550	250	1.3/4"	45	3.1/2"	89
2.7/8" - 4.3/4"	70 - 120	RGA	201360Y*	200	304	138	1.3/4"	45	2.3/4"	70
3.1/2" - 7"	89 - 178	GA	200034Y*	350	608	276	2.1/4"	57	3.1/2"	89
3.1/2" - 7"	89 - 178	GAAO	200035Y*	350	725	330	2.1/4"	57	3.1/2"	89
4" - 7.5/8"	102 - 193	GGA	201385Y*	350	693	314	2.1/4"	57	3.1/2"	89
4" - 7.5/8"	102 - 193	GGAAO	201380Y*	350	998	454	2.1/4"	57	3.1/2"	89

### 18° CENTER LATCH ELEVATOR G SERIES

2.3/8" - 5"	60-127	MG	30157Y*	100	233	106	1.3/4"	45	2.3/4"	70
2.3/8" - 3.1/2"	60-89	RGG	200680Y*	150	304	138	1.3/4"	45	2.3/4"	70
2.7/8" - 5.1/2"	89-140	MGG	35005Y*	250	608	276	2.1/4"	57	3.1/2"	89
2.7/8" - 5.1/2"	89-140	MGG AO	36056Y*	250	720	327	2.1/4"	57	3.1/2"	89
4" - 5.1/2"	102-140	GG	31068Y*	350	693	314	2.1/4"	57	3.1/2"	89
4" - 5.1/2"	102-140	GG AO	35143Y*	350	1018	463	2.1/4"	57	3.1/2"	89
4" - 6.5/8"	102-168	HGG	70013Y*	500	1029	467	2.1/4"	57	3.1/2"	89
4" - 6.5/8"	102-168	HGG AO	70222Y*	500	1500	680	2.1/4"	57	3.1/2"	89

### 18° CENTER LATCH ELEVATOR G SERIES (with wear bushing)

2.7/8" - 5.1/2"	89-140	MGG	200058Y*	250	585	266	2.1/4"	57	3.1/2"	89
2.7/8" - 5.1/2"	89-140	MGG AO	200057Y*	250	730	332	2.1/4"	57	3.1/2"	89
4" - 5.1/2"	102-140	GG	200056Y*	350	680	310	2.1/4"	57	3.1/2"	89
4" - 5.1/2"	102-140	GG AO	200024Y*	350	1028	468	2.1/4"	57	3.1/2"	89
4" - 5.1/2"	102-140	HGG	200060Y*	500	1010	459	2.1/4"	57	3.1/2"	89
4" - 5.1/2"	102-140	HGG AO	200059Y*	500	1510	685	2.1/4"	57	3.1/2"	89
5.1/2" - 6.5/8"	140-168	HGG	200062Y*	500	1010	459	2.1/4"	57	3.1/2"	89
5.1/2" - 6.5/8"	140-168	HGG AO	200061Y*	500	1510	685	2.1/4"	57	3.1/2"	89

\* bore code, see chapter "Elevator bore charts"

## COLLAR TYPE SIDE DOOR ELEVATORS X SERIES

Size	Size	Type	Part number	Cap.	Max. Weight	Max. Weight	Link size (min / max)			
[inches]	[mm]			[sTon]	[lbs]	[kg]	[inches]	[mm]	[inches]	[mm]
1.660" - 2.7/8"	42-73	SLX	33734Y*	65	50	23	1.3/4	45	2.1/4	57
2.3/8" - 2.7/8"	60-73	SLX	33693Y*	100	75	34	1.3/4	45	2.3/4	70
3.1/2" - 4"	89-101.6	SLX	33809Y*	100	114	58	1.3/4"	45	2.3/4"	70
3.1/2" - 5.3/4"	89-146	SMX	50006430Y*	150	278	126	2.1/4"	57	2.3/4"	70
4.1/2" - 5.1/2"	89-146	SLX	33854Y*	100	145	66	1.3/4"	45	2.3/4"	70
5.1/2" - 8.5/8"	140-219	SLX	31239Y*	150	326	148	1.3/4"	45	3.1/2"	89
6" - 9"	152-229	SMX	50006438Y*	150	291	132	2.1/4"	57	3.1/2"	89
6" - 9"	152-229	SMX	50006426Y*	250	474	215	2.1/4"	57	3.1/2"	89
9.5.8" - 10.3/4"	245-273	SLX	33950Y*	150	357	162	1.3/4"	45	3.1/2"	89
9.1/8" - 13.3/8"	231-340	SMX	50006454Y*	150	406	187	2.1/4"	57	3.1/2"	89
9.1/8" - 13.3/8"	231-340	SMX	50006740Y*	250	563	255	2.1/4"	57	3.1/2"	89
9.1/8" - 13.3/8"	231-340	SMX	50006440Y*	350	563	255	2.1/4"	57	3.1/2"	89
13.5/8"	340	SX	29965Y*	350	1200	544	2.1/4"	57	3.1/2"	89
9.5/8" - 13.5/8"	245-340	SX	29964Y*	500	1235	560	2.1/4"	57	3.1/2"	89
11.3/4" - 13.3/8"	289-340	SLX	33982Y*	150	448	203	1.3/4"	45	3.1/2"	89
13.1/2" - 17.7/8"	343-454	SMX	50006450Y*	250	679	308	2.1/4"	57	3.1/2"	89
16"	406	SLX	34087Y*	150	1200	544	1.3/4"	45	3.1/2"	89
16"	406	SX	30729* (8A only)	500	1200	544	2.1/4"	57	3.1/2"	89
18" - 24.1/2"	457-622	SMX	50006460Y*	250	902	409	2.1/4"	57	3.1/2"	89
18.5/8" - 20"	473-508	SLX	33632Y*	150	705	320	1.3/4"	45	3.1/2"	89
24.1/2"	622	SLX	34175Y*	250	1208	548	1.3/4"	45	3.1/2"	89
26" - 30"	663-762	SLX DD	52755Y*	150	1820	826	1.3/4"	45	3.1/2"	89

## AUXILIARY ELEVATORS S SERIES

2.3/8" - 3.1/2"	60-89	SJL	70499*	5 / 4.5	45	20				
4" - 5.1/2"	102-140	SJL	70500Y*	5 / 4.5	51	23				
6" - 7.5/8"	152-194	SJL	70501Y*	5 / 4.5	72	32				
8.5/8" - 10.3/4"	219-273	SJL	70502Y*	5 / 4.5	98	44				
11.3/4" - 14"	298-340	SJL	70503Y*	5 / 4.5	121	55				
16" - 20"	406-508	SJL	70504Y*	5 / 4.5	233	105				
21" - 24.1/2"	546-622	SJL	70505Y*	5 / 4.5	283	128				
2.7/8" - 5.1/2"	73-127	SPL 5°	200008Y*	5 / 4.5	77	35				
5.1/2" - 7.5/8"	140-194	SPL 5°	200010Y*	5 / 4.5	108	49				
8.5/8" - 9.5/8"	219-244	SPL 5°	200012Y*	5 / 4.5	145	66				
10.3/4"	273	SPL 5°	200013Y*	5 / 4.5	160	73				
2.3/8" - 4.1/2"	60-114	SPL 12°	200014Y*	5 / 4.5	86	39				
2.3/8" - 5"	60-127	SPL 18°	200009Y*	5 / 4.5	79	36				
5.1/2" - 6.5/8"	140-168	SPL 18°	200011Y*	5 / 4.5	94	42				

## DOUBLE HINGED SINGLE JOINT ELEVATORS SJX SERIES

2.3/8" - 4.1/2"	60-114	SJX	50004929Y*	5 / 4.5	37	17				
4.1/2" - 7"	114-178	SJX	50004931Y*	5 / 4.5	44	20				
7" - 10"	178-254	SJX	50004933Y*	5 / 4.5	57	25				
10" - 14"	254-356	SJX	50004935Y*	5 / 4.5	67	30				

## SJH HORIZONTAL PICK UP ELEVATORS SERIES

2.3/8" - 4.1/2"	50003135	tubing and drill pipe	50003148Y*	5 / 4.5	100	45				
4.1/2" - 7.5/8"	50003155	tubing and drill pipe	50003189Y*	5 / 4.5	111	50.5				
7" - 10.3/4"	50003175	casing	50003150Y*	5 / 4.5	132	60				

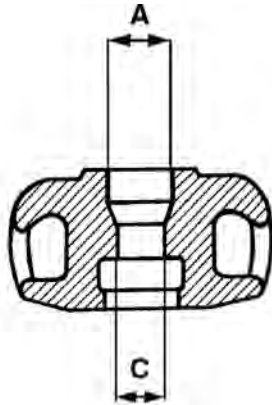


# ELEVATOR BORE CHARTS

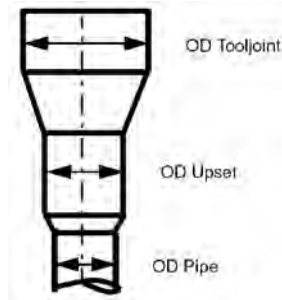
## HOW TO USE THE BORE CHARTS

When ordering any elevator for drill pipe, casing and tubing, first determine correct pipe size and corresponding elevator part number part number from specification tables on these pages. Then determine correct bore code from bore charts on this and the following pages. Add this number to the part number part number for the complete elevator.

Note that the bore diagrams give bore diagrams for all elevators other than BJ 18° elevators.



18° Taper Elevator



Drill Pipe



## DRILL PIPE BORE CODES

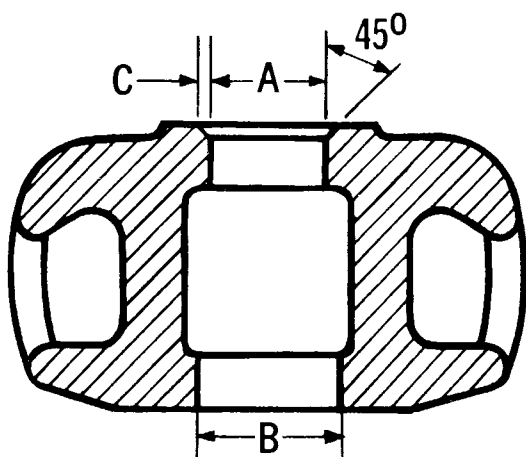
Drill pipe size Max OD	Type Upset	Upset Max OD	Elevator Dimension Center bore C (new)	Dimension Top bore A (new)	Bore code 18° taper	Standard Connection	Hydrill Wedge Thread	Grant Prideco
2.3/8"	EU	2.9/16"	2.21/32"	4.1/4"	116	OH NC 26 (IF) SL H90 WO	WT 14S, 23, 26	XT 24, 26 HT 26 GPDS 26
2.7/8"	EU	3.3/16"	3.9/32"	4.3/4"	118	NC 31(IF) OH SL H90 WO	WT 14S, 31	XT 31 HT 31 GPDS 31
3.1/2"	IU	3.11/16"	3.25/32"	5.1/2"	119	XH NC 31(SH)	WT 14S, 31	XT 31 HT 31
3.1/2"	EU	3.7/8"	3.31/32"	5.1/2"	120	NC 38(IF) OH SL H90 WO	WT 31, 38	XT 38 HT 38 GPDS 38
4"	IU	4.3/16"	4.9/32"	6.1/2"	121	NC 40(FH) SH H90	WT 31, 38, 39	XT 38, 39 HT 38, 40 GPDS 40
4"	EU	4.1/2"	4.25/32"	6.3/4"	122	NC 46(IF) OH WO	WT 40	
4.1/2"	IU	4.11/16"	4.25/32"	6.3/4"	122	H90	WT 38	
4.1/2"	IEU	4.11/16"	4.25/32"	6.3/4"	122	NC 46(XH) FH NC 38(SH) H90	WT 39, 40	XT 40, 46 HT 46 GPDS 46
4.1/2"	EU	5" - 5.1/8"	5.1/4"	7.1/8"	123	NC 50(IF) OH WO	WT 46	XT 50 HT 50
5"	IEU	5.1/8"	5.1/4"	7.1/8"	123	NC 50(XH)	WT 39, 40, 46, 50	XT 46, 50 HT 50 GPDS 50
5"	IEU	5.1/8"	5.1/4"	7.1/2"	756	5.1/2" FH		
5.1/2"	IEU	5.11/16"	5.13/16"	7.7/8"	124	FH	WT 46, 50, 54, 56	XT 54, 57 HT 55 GPDS 55
5.1/2"	EIU		6.233"	8"	678	IF	Mannesmann	
5.1/2"	IEU	6"	6.1/8"	8.1/4"	770		WT 54, 56	XT 57
5.7/8"	IEU	6"	6.1/8"	8.1/4"	789			XR
5.7/8"		6"	6.125"	7.875"	789			
6.5/8"	IEU	6.3/4"	5.11/16"	8.7/8"	740	FH	WT 56, 66	XT 65 HT 65 GPDS 65

## DRILL COLLARS WITH ZIP LIFT RECESS BORE CHART

Drill collar OD	ZIP OD	Bore code	Top bore A	Bevel C	Bottom bore B
4.1/8"	3.11/16"	177	3.13/16"	1/16"	4.1/4"
4.3/4"	4.1/4"	435	4.3/8"	1/16"	4.7/8"
5.1/4"	4.3/4"	179	4.7/8"	1/16"	5.3/8"
5.1/2"	5"	180	5.1/8"	1/16"	5.5/8"
5.3/4"	5.1/8"	181	5.1/4"	1/16"	5.7/8"
6"	5.3/8"	362	5.1/2"	1/16"	6.1/8"
6.1/4"	5.5/8"	337	5.3/4"	1/16"	6.3/8"
6.1/2"	5.7/8"	373	6"	1/16"	6.5/8"
6.3/4"	6"	387	6.3/16"	3/32"	6.7/8"
7"	6.1/4"	361	6.7/16"	3/32"	7.1/8"
7.1/4"	6.1/2"	357	6.11/16"	3/32"	7.3/8"
7.1/2"	6.3/4"	188	6.15/16"	3/32"	7.5/8"
7.3/4"	7"	339	7.3/16"	3/32"	7.7/8"
8"	7.1/4"	336	7.7/16"	3/32"	8.1/8"
8.1/4"	7.1/2"	422	7.11/16"	3/32"	8.3/8"
8.1/2"	7.3/4"	426	7.15/16"	3/32"	8.5/8"
9"	8.1/8"	427	8.3/8"	1/8"	9.1/8"
9.1/2"	8.5/8"	370	8.7/8"	1/8"	9.5/8"
9.3/4"	8.7/8"	367	9.1/8"	1/8"	9.7/8"
10"	9.1/8"	195	9.3/8"	1/8"	10.1/8"
10.3/4"	9.7/8"	527	10.1/8"	3/32"	10.7/8"
11"	10.1/8"	419	10.3/8"	1/8"	11.1/8"
11.1/4"	10.3/8"	196	10.5/8"	1/8"	11.3/8"

## PLAIN DRILL COLLARS WITH LIFT PLUGS BORE CHART

Drill collar OD	Bore code	Top bore A	Bevel C	Bottom bore B
2.1/2"	201	2.21/32"	1/16"	2.21/32"
2.3/4"	203	2.29/32"	1/16"	2.29/32"
3"	205	3.5/32"	1/16"	3.5/32"
3.1/8"	206	3.9/32"	1/16"	3.9/32"
3.1/4"	207	3.13/32"	1/16"	3.13/32"
3.1/2"	209	3.21/32"	1/16"	3.21/32"
3.3/4"	211	3.29/32"	1/16"	3.29/32"
4"	213	4.5/32"	1/16"	4.5/32"
4.1/8"	519	4.9/32"	1/16"	4.9/32"
4.1/4"	548	4.13/32"	1/16"	4.13/32"
4.1/2"	215	4.21/32"	1/16"	4.21/32"
4.3/4"	354	4.15/16"	1/16"	4.15/16"
5"	552	5.3/16"	1/16"	5.3/16"
5.1/4"	219	5.7/16"	1/16"	5.7/16"
5.1/2"	411	5.11/16"	1/16"	5.11/16"
5.3/4"	222	5.31/32"	1/16"	5.31/32"
6"	349	6.7/32"	1/16"	6.7/32"
6.1/4"	348	6.15/32"	1/16"	6.15/32"
6.3/8"	331	6.19/32"	1/16"	6.19/32"
6.1/2"	135	6.23/32"	1/16"	6.23/32"
6.3/4"	338	7"	1/16"	7"
7"	372	7.1/4"	1/16"	7.1/4"
7.1/4"	335	7.1/2"	1/16"	7.1/2"
7.1/2"	137	7.3/4"	1/16"	7.3/4"
7"	550	8"	1/16"	8"
8"	334	8.1/4"	1/16"	8.1/4"
8.1/4"	347	8.1/2"	1/16"	8.1/2"
8.1/2"	580	8.25/32"	1/16"	8.25/32"
8.3/4"	226	9.1/32"	1/16"	9.1/32"
9"	356	9.9/32"	1/16"	9.9/32"
9.1/4"	227	9.17/32"	1/16"	9.17/32"
9.1/2"	346	9.25/32"	1/16"	9.25/32"
10"	228	10.11/32"	1/16"	10.11/32"
10.1/2"	229	10.27/32"	1/16"	10.27/32"
11"	230	11.11/32"	1/16"	11.11/32"



## TUBING BORE CHART

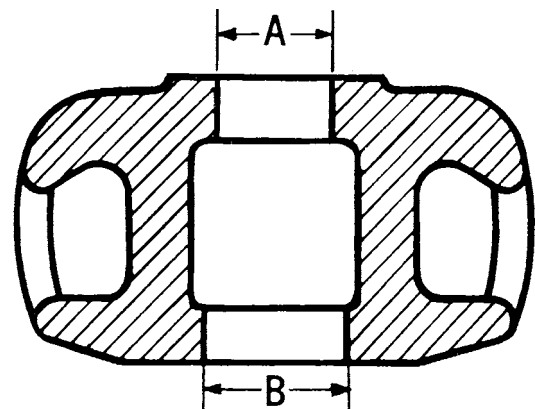
Tubing size	Style	Bore code	Top bore A	Bottom bore B
1.050"	Plain	150	1.125"	1.125"
	Upset Tubing	151	1.422"	1.422"
1.315"	Plain	152	1.390"	1.390"
	Upset Tubing	153	1.578"	1.578"
1.660"	Plain	154	1.734"	1.734"
	Upset Tubing	155	1.922"	1.922"
1.900"	Plain	156	1.984"	1.984"
	Upset Tubing	157	2.203"	2.203"
2.3/8"	Plain	158	2.453"	2.453"
	Upset Tubing	159	2.703"	2.703"
2.7/8"	Plain	160	2.953"	2.953"
	Upset Tubing	161	3.203"	3.203"
3.1/2"	Plain	162	3.578"	3.578"
	Upset Tubing	163	3.859"	3.859"
4"	Plain	164	4.078"	4.078"
	Upset Tubing	165	4.359"	4.359"
4.1/2"	Plain	129	4.594"	4.594"
	Upset Tubing	167	4.859"	4.859"

## COLLAR TYPE DRILL PIPE BORE CHART

Bore Code	Top Bore A	Bottom Bore B
101	3.3/8"	3.1/8"
102	3.13/16"	3.3/4"
103	4.1/16"	3.3/4"
104	4.5/16"	4.1/4"
105	4.13/16"	4.3/4"
106	5.5/16"	5.1/4"
107	5 7/8"	5.13/16"
108	3.1/8"	3.1/8"
109	2.5/8"	2.5/8"
110	2.3/4"	2.3/4"
111	3.1/2"	3.1/2"
112	3.1/16"	3.1/16"
113	5.11/16"	5.11/16"
114	6.1/4"	6.1/4"
115	2.13/16"	2.13/16"

## CASING BORE CHART

Casing size	Bore code	Top bore A	Bottom bore B
4.1/2"	129	4.19/32"	4.27/32"
4.3/4"	130	4.27/32"	4.27/32"
5"	131	5.1/8"	5.3/32"
5.1/2"	132	5.5/8"	5.5/8"
5.3/4"	133	5.7/8"	5.7/8"
6"	134	6.1/8"	6.1/8"
6.5/8"	135	6.3/4"	6.3/4"
7"	136	7.1/8"	7.1/8"
7.5/8"	137	7.3/4"	7.3/4"
8.5/8"	139	8.25/32"	8.25/32"
9"	140	9.5/32"	9.5/32"
9.5/8"	141	9.25/32"	9.25/32"
9.7/8"	649	10.1/8"	10.1/8"
10"	831	10.156"	10.156"
10.1/8"	846	10.3"	10.3"
10.3/4"	142	10.15/16"	10.29/32"
11.3/4"	143	11.15/16"	11.15/16"
13.3/8"	144	13.9/16"	13.9/16"
13.5/8"	596	13.13/16"	13.13/16"
14"	690	14.13/64"	14.13/64"
16"	145	16.7/32"	16.7/32"
18"	723	18.1/4"	18.1/4"
18.5/8"	146	18.7/8"	18.7/8"
20"	147	20.9/32"	20.1/4"
21.1/2"	148	21.25/32"	21.25/32"
22"	688	22.9/32"	22.9/32"
24"	630	24.5/16"	24.5/16"
24.1/2"	149	24.13/16"	24.13/16"
26"	650	26.11/32"	26.11/32"
28"	693	28.23/64"	28.23/64"
30"	644	30.3/8"	30.3/8"





# MANUAL & AIR OPERATED ELEVATORS

MANUAL & AIR OPERATED ELEVATORS

## MANUAL OPERATED ELEVATORS

Manual Operated Elevators are conventionally operated elevators for lifting all existing pipe:

- Collar type center latch A series
- 18° center latch G series
- Collar type side door D-series
- Collar type side door X series
- Auxiliary S-series

The elevators are suitable for handling casing, tubing, plain & upset drill pipe, collar type drill pipe, 18° drill pipe, IU, EU and IEU pipe etc, depending on the type and rating.



## AIR OPERATED ELEVATORS

Air Operated Elevators are conventional center latch elevators to which power actuation has been added. This feature permits remote opening of the elevators. All NOV elevators are designed and manufactured in strict accordance with ISO-API standard 8A and/or 8C.



## SLIP TYPE ELEVATORS

NOV "Y" series elevators are conventional slip type elevators for handling tubing and small casing. They feature a four slip design which give an optimum contact on the pipe to prevent bottle necking and gauge damage.



## SLIP TYPE ELEVATORS MYC, YC & HYC SERIES

### HYC Casing Elevator

The HYC elevator is a powerful 200 ton capacity elevator and can handle from 2.7/8" to 7.3/4" tubing or casing. The full range can be achieved with the use of 5 sets of slips for the complete range. All slips provide a full 10.1/2" of insert contact to firmly grip your casing or tubing. The HYC elevator as with all Type 'Y' series elevators operate with the latch lock combination for safety.

Size range and capacity:

2.7/8" through 7.3/4" (73-197 mm) OD. API rated capacity is 200 sTon (181 Ton).

### MYC Casing Elevator

With its 125 sTons capacity the MYC completes the range of Y type elevators for handling either external upset or API collar type casing or tubing. The MYC has a range of 3.1/2" to 7", utilizing the same slips as the YC elevator. All slips provide a full 7" of insert contact to firmly grip your casing or tubing. The MYC operates with a latch and a latch lock combination for safety.

Size range and capacity:

3.1/2" to 7" (89-178mm) OD. API rated capacity is 125 sTon (114 Ton).

### YC Casing Elevator

The YC is an exceptionally versatile elevator that handles either external upset or API collar type casing simply by installing the proper size insert-type slips and slip-setting ring assembly. In addition, slips can be provided that enable the YC to handle dual strings of tubing. To reduce the possibility of the elevator opening under load, a latch lock is provided in addition to the spring type-latch. The rugged, long-lasting slip inserts are easily changed when they become worn.

Size range and capacity:

3.1/2" (89 mm) through 7" (178 mm) casing. API rated capacity is 75 sTon (68 Ton)

## TECHNICAL SPECIFICATIONS

Type	Part number	Cap.	Size	Size	Max. Weight		Link size (min / max)			
		[sTon]	[inches]	[mm]	[lbs]	[kg]	[inches]	[mm]	[inches]	[mm]
YC	24140Y	75	3.1/2 - 7	89-178	445	206	2.1/4	57	2.3/4	70
MYC	200360Y	125	3.1/2 - 7	89-178	750	336	2.1/4	57	2.3/4	70
HYC	BJ55310Y	200	2.7/8 - 7.3/4	73-197	997	452	2.1/4	57	3.1/2	89
HYC AO	BJ70166Y	200	2.7/8 - 7.3/4	73-197	1415	642	2.1/4	57	3.1/2	89

## SLIP ASSEMBLIES

HYC									
Size	Slip assembly	Insert part number	No. required	Bottom guide plate set part number	Weight Slip Ass'y		Weight Guide plate		
					[lbs]	[kg]	[lbs]	[kg]	
3.1/2"	201353Y	16441	24	26827-1	282	128	18	8	
3.1/2" x 2.7/8" *	201355Y	201356	24	201358	282	128	18	8	
4.1/2" x 3.1/2"	55509Y	24779	24	26827-1	275	125	15	7	
4.1/2" x 4"	55510Y	24781	24	26827	270	123	15	7	
4.1/2"	55511Y	BJ16408	24	24071-4	268	122	5	2	
5.1/2" x 4.1/2"	55513Y1	24785	36	24071-4	268	122	5	2	
5.1/2" x 5"	55512Y	24783	36	24071	251	114	14	6	
5.1/2"	55513Y	BJ 16407	36	24071-1	238	108	13	6	
7" x 5.3/4"	55515Y2	29254	48	24071-7	238	108	13	6	
7" x 6"	55515Y1	24785	48	24071-5	234	106	10	5	
7" x 6.5/8 "	55514Y	24748	48	24071-3	234	106	10	5	
7"	55515Y	BJ16407	48	24071-2	229	104	8	4	
7.5/8" x 6.5/8"	70009Y2	25474-1	48	24071-3	229	104	8	4	
7.5/8" x 7"	70009Y1	26750-1	48	24071-2	229	104	8	4	
7.5/8" x 7.1/4"	70009Y5	39287-1	48	24071-9	230	105	7	3	
7.5/8"	70009Y	70010	48	24071-6	230	105	7	3	
7.3/4"	70009Y4	32477-1	48	24071-8	229	104	8	4	

MYC & YC									
Size	Slip assembly	Insert part number	No. required	Bottom guide plate set part number	Weight				
					[lbs]	[kg]			
4.1/2" x 3.1/2"	34931Y	24779	16	26827-1	130	59			
4.1/2" x 4"	26830Y	24781	16	26827	120	54			
4.1/2"	24072Y5	BJ16408	16	24071-4	116	53			
5.1/2" x 5"	24072Y7	24783	16	24071	112	51			
5.1/2"	24072Y2	BJ16407	16	24071-1	101	46			
7" x 6.5/8 "	24077Y7	24748	16	24071-3	97	44			
7"	24077Y1	BJ16407	16	24071-2	95	43			

\* Requires special trigger part number 203333

## SLIP TYPE ELEVATORS YT, MYT & HYT SERIES

### YT Slip Tubing Elevator

The YT is an outstanding combination tool for use with any of the power tubing spiders. It has four slips each contacting 9" (228.6 mm) of pipe length. The interlocking slips form a circle around the tubing, assuring a uniform grip. Slip inserts are easily replaceable. Only one set of slip bodies is required to handle all tubing sizes from 1.315" (44.4 mm) through 2.7/8" (73.02 mm). A sturdy latch and safety latch lock combination holds the YT securely in closed position.

### HYT Tubing Elevator

The HYT is designed to accommodate the widest possible range of tubing. The key is the various combinations possible with three different slip-setting rings, reducing inserts and two sizes of slips. The HYT handles 2.3/8", 2.7/8" or 3.1/2" (60.33, 70.02 or 88.9 mm) OD tubing, with any type of upset and any wall thickness. The slip provides a full 12" (304.8 mm) of vertical contact on the pipe. The entire tool is made for long field life, with stainless steel corrosion resistant latch and hinge pins.

### MYT Slip Tubing Elevator

The Type MYT is a light-weight elevator for medium wells. It handles all tubing within its range with one set of slips, plus reducing inserts. The MYT has four curved slips that form a circle around the tubing. This assures a uniform grip with minimum marking of pipe.



## TECHNICAL SPECIFICATIONS

Type	Part number	Rating [sTons]	Size		Max. Weight		Link Size Min/Max			
			[inches]	[mm]	[lbs]	[kg]	[inches]	[mm]	[inches]	[mm]
YT	55600Y	75	1.315" - 3.1/2"	33-89	355	161	2.1/4"	57	2.3/4"	70
HYT	39284Y	150	2.3/8" - 3.1/2"	60-89	740	336	2.1/4"	57	3.1/2"	89
MYT	29328Y	40	1.315" - 2.7/8"	33-73	148	67	1.1/4"	32	2.3/4"	70

## SLIP ASSEMBLIES

YT			
Size	Slip assembly	Insert part number	No. required
2.7/8"	23108Y4	24773	12
2.7/8" x 2.3/8"	23108Y6	29255	12
2.7/8" x 2.1/16"	23108Y7	29256	12
2.7/8" x 2"	23108Y8	29256	12
2.7/8" x 1.900"	23108Y9	29257	12
2.7/8" x 1.600"	23108Y10	29258	12
2.7/8" x 1.315"	23108Y11	29259	12
3.1/2"	23108Y5	24774	24
3.1/2" x 2.7/8"	23108Y3	30358	24
HYT			
Size	Slip assembly	Insert part number	No. required
2.7/8"	39259Y2	39175Y	16
2.7/8" x 2.3/8"	39259Y4	39175Y	16
3.1/2"	39258Y2	24774	32
3.1/2" x 2.7/8"	39258Y4	30358	32
MYT			
Size	Slip assembly	Insert part number	No. required
2.1/16"	29343Y3	29256	8
2.1/16" x 2"	29343Y4	29256	8
2.1/16" x 1.900"	29343Y5	29257	8
2.1/16" x 1.660"	29343Y6	29258	8
2.1/16" x 1.315"	29343Y7	29259	8
2.7/8"	29343Y1	24773	8
2.7/8" x 2.3/8"	29343Y2	29255	8



## COLLAR TYPE ELEVATORS A SERIES

### COLLAR TYPE ELEVATORS A SERIES

Center-latch elevators are for handling collar-type drill pipe, casing and tubing. All "A" type elevators are constructed in two halves of practically the same weight, providing proper balance and easier opening and closing. In open position, the elevator hangs ready for closing at any point below the upset of the pipe. All "A" type elevators feature latch and safety latch lock combinations. Safety features include operating handles to help prevent accidents to operators and an extra handle at the rear of the elevator for safer operation.



### TECHNICAL SPECIFICATIONS A SERIES

Type	Part number*	Size	Size	Rating	Max. Weight		Link Size			
		[inches]	[mm]		[sTon]	[lbs]	[kg]	[inches] Min	[mm] Min	[inches] Max
TA	32387Y	1.050" - 2.7/8"	28-73	35	57	26	1.1/4"	32	1.3/4"	44
TMA	50006310Y	2.3/8" - 5"	60-127	100	121	55	1.3/4"	44	2.3/4"	70
RGA	201360Y	2.7/8" - 4.3/4"	70 - 120	200	304	138	1.3/4"	44	2.3/4"	70
GA	200034Y	3.1/2" - 7"	89 - 178	350	608	276	2.1/4"	57	3.1/2"	89
GGA	201385Y	4" - 7.5/8"	102 - 193	350	693	314	2.1/4"	57	3.1/2"	89
TA	200000Y	4.3/4" - 8.5/8"	121-219	100	260	118	1.3/4"	44	2.3/4"	70
TA AO	35636Y	4.1/2" - 8.5/8"	121-219	150	530	240	1.3/4"	44	2.3/4"	70
TA	32754Y	4.1/2" - 8.5/8"	121-219	150	370	168	1.3/4"	44	3.1/2"	89
TA	39342Y	8.1/2" - 11.1/4"	216-286	150	524	238	1.3/4"	44	3.1/2"	89
TA AO	39343Y	8.1/2" - 11.1/4"	216-286	150	550	249	1.3/4"	44	3.1/2"	89

\*See bore code charts

## 18° TYPE ELEVATORS G SERIES

G series elevators are constructed in two halves of practically the same weight for better balance, making them easier to handle; easier to latch on and take off the pipe. In open position, a G-series elevator hangs ready for closing at any point below the upset of the pipe. Safety features include guarded operating handles to help prevent accidents to operators and an extra handle at the rear of the elevator for easier, safer operation.



GG series elevator

### TECHNICAL SPECIFICATIONS G SERIES

Type	Part number*	Size	Size	Rating	Max. Weight		Link Size			
		[inches]	[mm]		[sTons]	[lbs]	[kg]	[inches] Min	[mm] Min	[inches] Max
MG	30157Y	2.3/8" - 5"	60 - 127	100	233	106	1.3/4"	44	2.3/4"	70
RGG	200680Y	2.3/8" - 3.1/2"	60 - 89	150	304	138	1.3/4"	44	2.3/4"	70
MGG	35005Y	2.7/8" - 5.1/2"	89 - 140	250	608	276	2.1/4"	57	3.1/2"	89
MGG AO	36056Y	2.7/8" - 5.1/2"	89 - 140	250	720	327	2.1/4"	57	3.1/2"	89
GG	31068Y	4" - 5.1/2"	102 - 140	350	693	314	2.1/4"	57	3.1/2"	89
GG AO	35143Y	4" - 5.1/2"	102 - 140	350	720	327	2.1/4"	57	3.1/2"	89
HGG	70013Y	4" - 6.5/8"	102 - 168	500	1029	467	2.1/4"	57	3.1/2"	89
HGG AO	70222Y	4" - 6.5/8"	102 - 168	500	1441	654	2.1/4"	57	3.1/2"	89

\*See bore code charts

### TECHNICAL SPECIFICATIONS G SERIES WITH WEAR BUSHING

Type	Part number *	Size	Size	Rating	Max. Weight		Link Size			
		[inches]	[mm]		[sTon]	[lbs]	[kg]	[inches] Min	[mm] Min	[inches] Max
MGG	200058Y	2.7/8" - 5.1/2"	89-140	250	585	266	2.1/4"	57	3.1/2"	89
MGG AO	200057Y	2.7/8" - 5.1/2"	89-140	250	720	327	2.1/4"	57	3.1/2"	89
GG	200056Y	4" - 5.1/2"	102-140	350	680	310	2.1/4"	57	3.1/2"	89
GG AO	200024Y	4" - 5.1/2"	102-140	350	680	310	2.1/4"	57	3.1/2"	89
HGG	200060Y	4" - 5.1/2"	102-140	500	1010	459	2.1/4"	57	3.1/2"	89
HGG AO	200059Y	4" - 5.1/2"	102-140	500	1010	459	2.1/4"	57	3.1/2"	89
HGG	200062Y	5.1/2" - 6.5/8"	140-168	500	1010	459	2.1/4"	57	3.1/2"	89
HGG AO	200061Y	5.1/2" - 6.5/8"	140-168	500	1441	654	2.1/4"	57	3.1/2"	89

\*See bore code charts

## X SERIES SIDE DOOR ELEVATORS

The X-series elevators handle all sizes of collar-type tubing, drill pipe and casing. The SMX has a patented latch & latch lock arrangement mounted on the elevator door. The handle protects the latch from accidental opening. Both latches operate from a single handle. The SLX-elevators are offered alternatively to the SMX-elevators. They provide proven technology and economics. The SX-elevator is a mid-sized elevator with higher rating compared to the SLX and SMX, while the SLX DD elevator provides for the largest sizes.



SMX elevator



SLX elevator

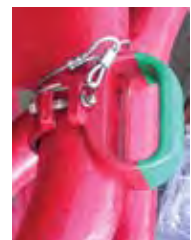
### TECHNICAL SPECIFICATIONS X SERIES

Part number	Rating [sTon/Ton]	Size [inches]	Max. Weight		Link size			
			[lbs]	[kg]	[inches] Min	[mm] Min	[inches] Max	[mm] Max
<b>SLX</b>								
33734Y	65 / 59	1.660 - 2.7/8	50	23	1.3/4	44.45	2.1/4	57
33693Y	100 / 77	2.3/8 - 2.7/8	77	35	1.3/4	44.45	2.3/4	69.85
33809Y	100 / 77	3.1/2 - 4	114	58	1.3/4	44.45	2.3/4	69.85
33854Y	100 / 77	4.1/2 - 5.1/2	145	66	1.3/4	44.45	2.3/4	69.85
31239Y	150 / 136	5.1/2 - 8.5/8	326	148	1.3/4	44.45	3.1/2	88.9
33950Y	150 / 136	9.5/8 - 10.3/4	357	162	1.3/4	44.45	3.1/2	88.9
33982Y	150 / 136	11.3/4 - 13.3/8	448	203	1.3/4	44.45	3.1/2	88.9
34087Y	150 / 136	16	537	244	1.3/4	44.45	3.1/2	88.9
33632Y	150 / 136	18.5/8 - 20	705	320	1.3/4	44.45	3.1/2	88.9
34175Y	250 / 227	24.1/2	1208	548	1.3/4	44.45	3.1/2	88.9
<b>SMX</b>								
50006430Y	150 / 136	3.1/2" - 5.3/4"	278	126	2.1/4	57	2.3/4	70
50006438Y	150 / 136	6 - 9	291	132	2.1/4	57	3.1/2	90
50006454Y	150 / 136	9.1/8 - 13.3/8"	406	187	2.1/4	57	3.1/2	90
50006426Y	250 / 227	6 - 9	474	215	2.1/4	57	3.1/2	90
50006740Y	250 / 227	9.1/8 - 13.3/8"	563	255	2.1/4	57	3.1/2	90
50006440Y	350 / 317	9.1/8 - 13.3/8"	563	255	2.1/4	57	3.1/2	90
50006450Y	250 / 227	13.1/2" - 17.7/8"	679	308	2.1/4	57	3.1/2	90
50006460Y	250 / 227	18" - 24.1/2"	902	409	2.1/4	57	3.1/2	90
<b>SX</b>								
29965Y	350	13.5/8'	1200	544	2.1/4	57.15	3.1/2	88.9
29964Y	500	9.5/8-13.5/8	1,235	560	2.3/4	69.85	3.1/2	88.9
30729*	500	16	1200	544	2.3/4	69.85	3.1/2	88.9
<b>SLX DD</b>								
52755Y	150	26-30	1,820	826	1.3/4	44.45	3.1/2	88.9

\* 8A only

#### Link handle kit

The Link handle kit can be used in combination with a SMX or other kind of Manual Elevator side-door type. It is developed for easier and safer closing the elevator. Part number 50006435. Will fit on 350 and 250 ton links.



## SJL, SPL & SJX SERIES ELEVATORS

Single-joint, center-latch elevator designed to replace unsafe rope slings for hoisting collar-type pipe into position. The SJL 90° type enables the crew to handle pipe properly, help avoid damage to pipe threads and reduce the chances of accident or injury. The SPL is the same as the SJL type except that the SPL is designed for use on tapered pipe, conforming to API specifications for Extreme Line casing.

The SJX single joint elevator is designed for running single joints of tubing and casing from V-door to well center. It is double hinged for use with CRT Casing Running Tool, or any other stabberless operation. There are no loose parts as hinge pins are contained within the body halves. Ergonomically designed handles with cast on stop pins prevent the lifting sling shackles from pinching hands.



SJL



SPL



SJX

### TECHNICAL SPECIFICATIONS SJL SERIES

Type	Part number part no.	Rating [sTon/Ton]	Size range [Inches]	Max. Weight [lbs]	Max. Weight [kg]
SJL	70499Y*	5 / 4.5	2.3/8" - 3.1/2"	45	20
SJL	70500Y*	5 / 4.5	4 - 5.1/2	51	23
SJL	70501Y*	5 / 4.5	6 - 7.5/8"	72	32
SJL	70502Y*	5 / 4.5	8.5/8" - 10.3/4"	98	44
SJL	70503Y*	5 / 4.5	11.3/4" - 14"	121	55
SJL	70504Y*	5 / 4.5	16" - 20"	233	105
SJL	70505Y*	5 / 4.5	21" - 24.1/2	283	128

### TECHNICAL SPECIFICATIONS SPL SERIES

Type	Part number part no.	Rating [sTon/Ton]	Size range [Inches]	Max. Weight [lbs]	Max. Weight [kg]
SPL 5°	200008Y*	5 / 4.5	2.7/8" - 5.1/2"	77	35
SPL 5°	200010Y*	5 / 4.5	5.1/2" - 7.5/8"	108	49
SPL 5°	200012Y*	5 / 4.5	8.5/8" - 9.5/8"	145	66
SPL 5°	200013Y*	5 / 4.5	10.3/4"	160	73
SPL 12°	200014Y*	5 / 4.5	2.3/8" - 4.1/2	86	39
SPL 18°	200009Y*	5 / 4.5	2.3/8" - 5"	79	36
SPL 18°	200011Y*	5 / 4.5	5.1/2" - 6 5/8"	94	42

### TECHNICAL SPECIFICATIONS SJX SERIES

Type	Part number	Rating [sTon/Ton]	Size range [Inches]	Max. Weight [lbs]	Max. Weight [kg]
SJX	50004929Y*	5 / 4.5	2.3/8 - 4.1/2	37	17
SJX	50004931Y*	5 / 4.5	4.1/2 - 7	44	20
SJX	50004933Y*	5 / 4.5	7 - 10	57	26
SJX	50004935Y*	5 / 4.5	10 - 14	67	30

\*Refer to bore codes

## SIZE COMPONENTS SPL-ELEVATORS

Elevator Ass'y No. = Frame No.	Type	Tapered Insert	Qty	Size	Elevator Ass'y No.	Frame No. Used	Type	Tapered Insert	Qty	Size
200008Y*	SPL 5°	36184-278	6	2.7/8"	200014Y*	200008	SPL 12°	53614-238	6	2.3/8"
	SPL 5°	36184-312	6	3.1/2"			SPL 12°	53614-278	6	2.7/8 "
	SPL 5°	36184-400	6	4"			SPL 12°	53614-312	6	3.1/2 "
	SPL 5°	36184-412	6	4.1/2"			SPL 12°	53614-400	6	4"
	SPL 5°	36184-500	6	5"			SPL 12°	53614-412	6	4.1/2 "
	SPL 5°	36184-512	6	5.1/2"			200009Y*	200008	SPL 18°	36185-238
200010Y*	SPL 5°	36284-512	6	5.1/2"	SPL 18°	36185-278			6	2.7/8 "
	SPL 5°	36248-658	6	6.5/8"	SPL 18°	36185-312			6	3.1/2 "
	SPL 5°	36248-700	6	7"	SPL 18°	36185-400			6	4 "
	SPL 5°	36248-758	6	7.5/8"	SPL 18°	36185-412			6	4.1/2 "
200012Y*	SPL 5°	36186-858	6	8.5/8"	200011Y*	200010			SPL 18°	36185-500
	SPL 5°	36186-958	6	9.5/8"			SPL 18°	70253-512	6	5.1/2 "
	SPL 5°	36186-978	6	9.7/8"			SPL 18°	70253-658	6	6.5/8 "
200013Y*	SPL 5°	36187-107	6	10.3/4"						

NOTE: The frame number + tapered insert number determines the actual size of the elevator.

E.g. 200008 + 53614-312 = SPL 12° for 3.1/2" pipe becomes 200014Y312.

E.g. 200008 + 36184-312 = SPL 5° for 3.1/2" pipe becomes 200008Y312.

## OPTIONAL EQUIPMENT PART NUMBERS

SJL/SPL swivel suspension sling\*

Size	Part number
2.3/8" - 24.1/2"	34568-5

\*Not to be used when rotating with load.

## SJH SERIES MANUAL ELEVATOR

The SJH Horizontal Pick Up elevator, designed to pick up tubular lying flat on a surface without having to lift the tubular prior to closing the elevator. The elevator is capable of lifting drill pipe, recessed/zip lift drill collars and casing. It will handle single joints of pipe straight from cantilever to off-line stand building system.



### TECHNICAL SPECIFICATIONS

Type	Part number*	Rating [sTon/Ton]	Size range	Pipe type	Part number Jaws	Appr. weight [lbs / kg] (incl jaws)
SJH 2.3/8" – 4.1/2"	50003135Y*	5 / 4.5	2.3/8" – 4.1/2"	Tbg & Dp	50003148Y*	100 / 45
SJH 4.1/2" – 7.5/8"	50003155Y*	5 / 4.5	4.1/2" – 7.5/8"	Tbg & Dp	50003189Y*	111 / 50.5
SJH 7" – 10.3/4"	50003175Y*	5 / 4.5	7" – 10.3/4"	Csg	50003151Y*	132

\*Refer to Jaw Bore code # in the following tables.

### SIZE COMPONENTS

Jaws SJH 2.3/8" – 4.1/2" pn 50003135Y\*

Size Tubing	Type upset	90° Bode code #	5° Bode code #	12° Bode code #
2.3/8"	Plain	158	5238	12238
	Upset	159		
2.7/8"	Plain	160	5278	12278
	Upset	161		
3.1/2"	Plain	162	5312	12312
	Upset	163		
4"	Plain	164	5400	12400
	Upset	165		
4.1/2"	Plain	129	5412	12412
	Upset	167		

Size Drill Pipe	Type upset	18° Bode code #
2.3/8"	IU	-
	EU	116
2.7/8"	IU	117
	EU	118
3.1/2"	IU	119
	EU	120
4"	IU	121
	EU	122
4.1/2"	EU	123

Jaws SJH 4.1/2" – 7.5/8" pn 50003155Y\*

Size Casing	90° Bode code #	5° Bode code #
4.1/2"	129	5412
5"	131	5500
5.1/2"	132	5512
5.3/4"	133	-
6"	134	-
6.5/8"	135	5658
7"	136	5700
7.5/8"	137	5758

Size Drill Pipe	Type upset	18° Bode code #
4.1/2"	IU	122
	EU	123
5"	IU	123
5.1/2"	IEU	124
5.7/8" (6" upset)	IEU	789
6.5/8"	IEU	782

Jaws SJH 7" – 10.3/4" pn 50003175Y\*

Size Casing	90° Bode code #	5° Bode code #
4.1/2"	129	na
5"	131	na
5.1/2"	132	na
7"	136	5700
7.5/8"	137	5758
8.5/8"	139	5858
9"	140	5900
9.5/8"	141	5958
10.3/4"	142	51034

# HYDRAULIC ELEVATORS

## BX HYDRAULICALLY ACTUATED ELEVATOR AND UNIVERSAL ROTATOR



### BX 3,4,5

- Purpose designed for hydraulic actuated operation
- Cost competitive and economic with normal rig complement of air-operated, Drill pipe, Drill collar and casing elevators.
- Double Door design for optimal balance and performance.
- The hydraulic cylinders are located inside the body casting for clean lines and maximum protection, and yet they are accessible for normal maintenance.
- Changeable bushings allow one elevator frame to handle all pipe size and type requirements.
- Bushings are locked into place with spring loaded pins for quick, easy removal and installation.
- Bushings can be changed within 5 minutes.
- No special tools are needed, no loose nuts, bolts or pins.
- Hinge journals are bushed to put major wear into replaceable components.
- One door Bushing is spring loaded with linkage connecting it to a locking pin. Any load on this Bushing segment engages the pin preventing the elevator from opening. This safety lock prevents the elevator from opening under load.
- Latch valve eliminates any faulty signals
- The elevator is prepared for an interlock system as an option when used with a power slip.
- A trigger mechanism initiates the closing sequence when pipe is thrown into the elevator.
- Additional equipped with a rotary actuator can be tilted to pick up pipe from the V-door, eliminating the need for single joint elevators.



### BXS-SLIP TYPE

- Purpose designed for hydraulic actuated operation.
- Cost competitive and economic with normal rig complement of air-operated casing elevators.
- Double Door design for optimal balance and performance.
- The hydraulic cylinders are located inside the body casting for clean lines and maximum protection, and yet they are accessible for normal maintenance.
- Movable replaceable slips allow one elevator frame to handle multiple pipe sizes with no or very small external upset or load Shoulder.
- Easy slip exchange.
- No loose nuts, bolts or pins.
- The safety lock prevents the elevator from opening under load.
- Latch valve will prevent any false signals
- The elevator is prepared for an interlock system as an option when used with a power slip.
- Additional equipped with a rotary actuator can be tilted to pick up pipe from the V-door, eliminating the need for single joint elevators.



### UX-HORSE SHOE TYPE

- The Hydraulic UX-elevator Single Joint Horizontal Pick Up elevator, is designed to pick up tubular lying flat on a scaffold/raised support beam without having to lift the tubular prior to closing the elevator.
- The elevator is capable of lifting casing.
- It will handle single joints of pipe straight from cantilever to off-line stand building system, and is used underneath the CRT350/500 as for picking up tubulars from the V-door.
- After picking up the pipe, the pipe weight is transferred to the top collar plate.
- The jaws do not carry the vertical load.
- The jaws are delivered in sets and cover the range from 4.1/2" - 20".
- The top collar plates and bottom guides must be ordered separately.



### H-SJH-TYPE

- Hoist joints and/or stands of tubulars (Drill Pipe, Casing or Tubing) during the stand building operations of the total CRT350.
- Pick up single tubulars from the V-door or the catwalk (pipe deck) and hoist them into the derrick and vice versa.



### UNIVERSAL ROTATOR

- Hydraulic actuated operation.
- Strong, reliable, economic.
- Single hydraulic line required for rotation, accumulator actuated return movement.
- The hydraulic cylinder is located inside the body for clean lines and maximum protection.
- No loose nuts, bolts or pins.
- Easy adjustment of angle.
- Safe and reliable picking up pipe from the V-door, eliminating the need for single joint elevators.



## UNIVERSAL ROTATOR

The universal rotator is a tool designed for rotating the BX-series elevators, used e.g. when picking up a pipe from the V-door. The Rotator is hydraulically driven via the rotating head and is operated via the Drillers console. The float function enables the elevator to follow a changing pipe angle without any interference of the operator, as the float command overrides all manual rotator commands

### TECHNICAL SPECIFICATIONS

Dimensions LxWxH [inches/mm]	Weight [lbs/kg]
15 x 8 x 37 / 381 x 203 x 940	330 / 150

Link size [inches]
Min 2.3/4"
Max 4.3/4"

Hydraulic requirements: See BX-elevator specifications



### MAIN PART NUMBERS

Part number	Description
50004130	Universal rotator (single arm)
50004100-1	Wear buttons for 5,75" links (750 sTon)
50004100-2	Wear buttons for 4,5" links (500 sTon)
50004100-3	Wear buttons for 3,5" links (350 sTon)
50004100-4	Wear buttons for 6,25" links (1000 sTon)
50004100-340	Link block adapter for BX3 & BX4
50004100-50	Link block adapter for BX5

## BX HYDRAULICALLY ACTUATED ELEVATOR

### TECHNICAL SPECIFICATIONS

Type	Part no.	Size range	Weight (w/o bushings) [lbs/kg]	Rating of the elevator		Link size	
				18° Tool Joint [sTon/Ton]	90° Coupling [sTon/Ton]	Min	Max
3	203300Y30	9.5/8" - 20"	2,165 / 975	n/a	350 / 318	2.3/4"	3.1/2"
4-50	50000640Y	2.3/8" - 9.3/4"	2,039 / 924	500 / 454	500 / 454	2.3/4"	4.3/4"
4-75	50000650Y	2.3/8" - 9.3/4"	2,047 / 928	500 / 454	750 / 680	3.1/2"	4.3/4"
5	50004000Y30	3.1/2" - 11"	2,875 / 1,290	750 / 680	1000 / 907	4.3/4"	5.1/2"

Type	Part no.	Size range	Weight (w/o slips) [lbs/kg]	Rating of the elevator	Link size	
					Min	Max
BXS * (slip type)	50000202Y	2.3/8" - 7.5/8"	2,730 / 1,238	350 / 318	2.3/4"	4.3/4"

\* Stand alone Control Panel, refer to chapter "Power Units and Control Panels"

#### Power requirements BX, BXS elevators and Universal Rotator

Description	
Min Pressure [psi/kPa]	2,000 / 13,789
Max Pressure [psi/kPa]	2,500 / 17,236
Flow rate [GPM/lpm]	5 / 19
Hydraulic lines	3 @ 1/2" w/o rotator 5 @ 1/2" w/ rotator

## SIZE COMPONENTS BXS

Size [inches]	Part number Slip carrier	Insert	Qty. inserts	Dimension insert [inches]
2.7/8 - 2.3/8 pn 50000205				
2.7/8	50000205Y1	24773	12	3"x2"
2.3/8	50000205Y2	29255	12	3"x2"
3.1/2" - 2.7/8 pn 50000206				
3.1/2	50000206Y1	24774	24	3"x1.25"
2.7/8	50000206Y2	30358	24	3"x1.25"
4.1/2 - 3.1/2 pn 50000207				
4.1/2	50000207Y1	2165	24	2.75"x 1.29"
4	50000207Y2	2164	24	2.75"x 1.29"
3.1/2	50000207Y3	2163	24	2.75"x 1.29"
5.1/2 - 4.1/2 pn 50000208				
5.1/2	50000208Y1	2170	24	2.75"x 1.29"
5	50000208Y2	2169	24	2.75"x 1.29"
4.1/2	50000208Y3	2168	24	2.75"x 1.29"
4 3/4	50000208Y4	2638	24	2.75"x 1.29"
6.1/2 - 5.5/8 pn 50000209				
6.1/2	50000209Y1	2173	36	2.75"x 1.29"
6.1/8	50000209Y2	2172	36	2.75"x 1.29"
6	50000209Y3	2169	36	2.75"x 1.29"
5.7/8	50000209Y4	2623	36	2.75"x 1.29"
5.5/8	50000209Y5	2650	36	2.75"x 1.29"
7.5/8 - 6.5/8 pn 50000210				
7.5/8	50000210Y1	2633	36	2.75"x 1.29"
7	50000210Y2	2623	36	2.75"x 1.29"
6.5/8	50000210Y3	2632	36	2.75"x 1.29"

## SIZE COMPONENTS BX3

Casing Bushing			Drill collar Plain		
Size	Part number	Max. Rating [sTon/Ton]	Size	Part number	Max. Rating [sTon/Ton]
9.5/8"	203310Y141	350 / 318	10" DC Plain	203312Y228	150 / 136
9.7/8"	203310Y649	350 / 318	10.1/2" DC Plain	203312Y229	150 / 136
10.3/4"	203310Y142	350 / 318	11" DC Plain	203312Y230	150 / 136
10.5/8"	203310Y453	350 / 318			
11.3/4"	203310Y143	350 / 318			
11.7/8"	203310Y729	350 / 318			
12.3/4"	203310Y345	350 / 318			
12.7/8"	203310Y676	350 / 318			
13.3/8"	203310Y144	350 / 318			
13.5/8"	203310Y596	350 / 318			
14"	203310Y690	350 / 318			
16"	203310Y145	350 / 318			
16.3/4"	203310Y664	350 / 318			
18"	203310Y723	350 / 318			
18.5/8"	203310Y146	350 / 318			
20"	203310Y147	350 / 318			

## SIZE COMPONENTS BX4-50, 4-75

NOTE: Mid 2009 some bushings have been replaced by modified bushings. The old and new bushings are interchangeable, however, when ordering bushings, customer will always receive the new bushings with new part numbers.

DC w/Zip Lift Bushing		
Description	Part number	Rating [sTon/Ton]
5.1/4" DC w/Zip Lift	50000677Y179	150 / 136
5.1/2" DC w/Zip Lift	50000677Y180	150 / 136
6.1/4" DC w/Zip Lift	50000677Y337	150 / 136
6" DC w/Zip Lift	50000677Y362	150 / 136
6.1/2" DC w/Zip Lift	50000677Y373	150 / 136
6.3/8" DC w/Zip Lift	50000677Y409	150 / 136
4.3/4" DC w/Zip Lift	50000677Y435	150 / 136
5" DC w/Zip Lift	50000677Y530	150 / 136
8" DC w/Zip Lift	50000677Y336	150 / 136
7.3/4" DC w/Zip Lift	50000677Y339	150 / 136
7.1/4" DC w/Zip Lift	50000677Y357	150 / 136
7" DC w/Zip Lift	50000677Y361	150 / 136
6.3/4" DC w/Zip Lift	50000677Y387	150 / 136
8.1/4" DC w/Zip Lift	50000677Y422	150 / 136
10" DC w/Zip Lift	50000677Y195	150 / 136
9.3/4" DC w/Zip Lift	50000677Y367	150 / 136
9.1/2" DC w/Zip Lift	50000677Y370	150 / 136
8.1/2" DC w/Zip Lift	50000677Y426	150 / 136
9" DC w/Zip Lift	50000677Y427	150 / 136
8.3/4" DC w/Zip Lift	50000677Y553	150 / 136
4.1/8" DC w/Zip Lift	203211Y177	150 / 136
3.1/2" DC w/Zip Lift	203211Y625	150 / 136
4.1/4" DC w/Zip Lift	203211Y674	150 / 136
3.1/8" DC w/Zip Lift	203211Y735	150 / 136
3.3/8" DC w/Zip Lift	203211Y736	150 / 136

Riser Handling Bushing		
Description	Part number	Rating [sTon/Ton]
6.5/8" Riser Handling	50000676Y333	750 / 608
7.1/4" Riser Handling	50000676Y885	750 / 608
8" Riser Handling	50000676Y884	750 / 608
8.3/4" Riser Handling	50000676Y783	750 / 608
8.5/8" Riser Handling	50000676Y784	750 / 608
9.5/8" Riser Handling	50000676Y788	750 / 608
7" Riser Handling	50000676Y790	750 / 608
Special 55.deg, 8.5/8" Riser	50000676Y869	750 / 608

Tubing Bushing		
Description	Part number	Rating [sTon/Ton]
2.3/8" Casing / Plain Tbg.	203210Y158	500 / 453
2.3/8" OD.EU. Tbg.	203210Y159	500 / 453
2.7/8" Plain Tbg.	203210Y160	500 / 453
2.7/8" OD. EU. Tbg.	203210Y161	500 / 453
3.1/2" Casing / Plain Tbg.	203210Y162	500 / 453
3.1/2" OD. EU. Tbg.	203210Y163	500 / 453
4" OD. Plain Tbg.	203210Y164	500 / 453
4" OD. EU. Tbg.	203210Y165	500 / 453
2.88" Special Gun tube	203210Y867	500 / 453
3.50" Special Gun tube	203210Y868	500 / 453

Square Shoulder DP		
Description	Part number	Rating [sTon/Ton]
5" IEU Sq. Shoulder DP	50000675Y106	750 / 608
5.1/2" IEU Sq. Shoulder DP	50000675Y107	750 / 608
2.7/8" EU Sq. Shoulder DP	203212Y101	500 / 453
3.1/2" IU Sq. Shoulder DP	203212Y102	500 / 453
3.1/2" EU Sq. Shoulder DP	203212Y103	500 / 453
4" IU Sq. Shoulder DP	203212Y104	500 / 453

Casing Bushings		
Description	Part number	Rating [sTon/Ton]
4.1/2" Casing / Plaine Tbg.	50000676Y129	750 / 608
5" Casing	50000676Y131	750 / 608
5.1/2" Casing	50000676Y132	750 / 608
6" Casing	50000676Y134	750 / 608
6.5/8" Casing	50000676Y135	750 / 608
7" Casing	50000676Y136	750 / 608
7.5/8" Casing	50000676Y137	750 / 608
8.5/8" Casing	50000676Y139	750 / 608
9.5/8" Casing	50000676Y141	750 / 608
4.1/2" OD. EU. Tbg.	50000676Y167	750 / 608
6.1/4" Casing	50000676Y505	750 / 608
1/16" Bevel 7-1/4" Casing	50000676Y563	750 / 608
9.7/8" Casing	50000676Y649	750 / 608
7.3/4" Casing	50000676Y705	750 / 608
8" Casing	50000676Y757	750 / 608
8.3/4" Casing	50000676Y804	750 / 608
4.1/2" Casing / Plaine Tbg.	50000676Y848	750 / 608
6.7/8" 55",45",35" Taper	50000676Y834	750 / 608
7" HyDrill 521 #26 w/ Lift plug	50000676Y854	750 / 608
9.1/8" Casing	50000676Y883	750 / 608

## DP bushing

Description	Part number	Rating [sTon/Ton]
2.7/8" IU DP	50000675Y117	500 / 453
2.7/8" EU DP	50000675Y118	500 / 453
3.1/2" IU DP	50000675Y119	500 / 453
3.1/2" EU DP	50000675Y776	500 / 453
4" IU DP	50000675Y777	500 / 453
4" EU & 4.1/2" IEU DP	50000675Y778	500 / 453
4.1/2" EU & 5" IEU DP	50000675Y779	500 / 453
5.1/2" IEU DP	50000675Y780	500 / 453
5.1/2" IF IEU DP	50000675Y781	500 / 453
6.5/8" IEU DP	50000675Y782	500 / 453
5.7/8" DP 18degr (6"EU MAX.)	50000675Y789	500 / 453
4" DP with 4.1 max upset	50000675Y798	500 / 453
6.5/8" DP 7.1/8" upset	50000675Y823	500 / 453
SK5.1/2" special DP	50000675Y880	

## DC Plain bushing

Description	Part number	Rating [sTon/Ton]
6" DC Plain	50000678Y349	150 / 136
4.3/4" DC Plain	50000678Y354	150 / 136
6.1/2" DC Plain	50000678Y765*	150 / 136
6.3/4" DC Plain	50000678Y338	150 / 136
6.1/4" DC Plain	50000678Y348	150 / 136
8" DC Plain	50000678Y334	150 / 136
9.1/2" DC Plain	50000678Y346	150 / 136
8.1/4" DC Plain	50000678Y347	150 / 136
9" DC Plain	50000678Y356	150 / 136
8.1/2" DC Plain	50000678Y580	150 / 136
2.1/2" DC Plain	203213Y201	150 / 136
2.3/4" DC Plain	203213Y203	150 / 136
3" DC Plain	203213Y205	150 / 136
3.1/8" DC Plain	203213Y206	150 / 136
3.1/4" DC Plain	203213Y207	150 / 136
3.1/2" DC Plain	203213Y209	150 / 136
3.3/4" DC Plain	203213Y211	150 / 136
4.1/8" DC Plain	203213Y519	150 / 136
4.1/4" DC Plain	203213Y548	150 / 136
3.3/8" DC Plain	203213Y795	150 / 136

## SIZE COMPONENTS BX5

Casing Bushing		
Size	Part number	Rating [sTon/Ton]
4.1/2"	50004010Y129	750 / 680
4.3/4"	50004010Y130	750 / 680
5"	50004010Y131	750 / 680
5.1/2"	50004010Y132	750 / 680
5.3/4"	50004010Y133	750 / 680
6	50004010Y134	750 / 680
6 5/8"	50004010Y135	750 / 680
7"	50004010Y136	750 / 680
7.5/8"	50004010Y137	750 / 680
7.3/4"	50004010Y705	750 / 680
8.5/8"	50004010Y139	750 / 680
9.5/8"	50004010Y141	750 / 680
9.7/8"	50004010Y649	750 / 680
10.3/4"	50004010Y142	750 / 680

Drill collars Zip Lift Bushing		
Size	Part number	Rating [sTon/Ton]
4.3/4"	50004011Y435	150 / 136
6"	50004011Y362	150 / 136
6.1/4 "	50004011Y337	150 / 136
6.1/2"	50004011Y373	150 / 136
6.3/4"	50004011Y387	150 / 136
7.3/4"	50004011Y339	150 / 136
8"	50004011Y336	150 / 136
8.1/4"	50004011Y422	150 / 136
8.1/2"	50004011Y426	150 / 136
9"	50004011Y427	150 / 136
9.1/2"	50004011Y370	150 / 136
9.3/4"	50004011Y367	150 / 136
10"	50004011Y195	150 / 136
10.3/4"	50004011Y527	150 / 136
11"	50004011Y419	150 / 136

Drill pipe Bushing		
Size	Part number	Rating [sTon/Ton]
3.1/2" IEU 18°	50004012Y766	750 / 680
4" IU Drill	50004012Y777	750 / 680
4" EU & 4 1/2 " IEU	50004012Y778	750 / 680
4.1/2" EU & 5" IEU	50004012Y779	750 / 680
5.1/2" IEU 18°	50004012Y780	750 / 680
5.1/2" IF	50004012Y781	750 / 680
6.5/8" IEU Drill	50004012Y782	750 / 680
5.7/8" EU	50004012Y789	750 / 680

Drill collars plain (lift-plug) Bushing		
Size	Part number	Rating [sTon/Ton]
4.3/4" Plain Drill	50004013Y354	150 / 136
5.1/4" Plain Drill	50004013Y219	150 / 136
6.1/4" Plain Drill	50004013Y348	150 / 136
6.1/2" Plain Drill	50004013Y135	150 / 136
8" Plain Drill	50004013Y334	150 / 136
8.1/4" Plain Drill	50004013Y347	150 / 136
8.1/2" Plain Drill	50004013Y357	150 / 136
9" Plain Drill	50004013Y356	150 / 136
9.1/2" Plain Drill	50004013Y346	150 / 136
10" Plain Drill	50004013Y228	150 / 136
10.1/2" Plain Drill	50004013Y229	150 / 136
11" Plain Drill	50004013Y230	150 / 136

Special square shoulder Bushing		
Size	Part number	Rating [sTon/Ton]
8"	50004014Y757	1000 / 907
8.3/4"	50004014Y783	1000 / 907
8.5/8"	50004014Y784	1000 / 907
9.5/8"	50004014Y788	1000 / 907

## HYDRAULIC PICK UP ELEVATOR

The Hydraulic SJH and UX Single Joint Horizontal Pick Up elevator, designed to pick up tubular lying flat on a surface without having to lift the tubular prior to closing the elevator. The elevator is capable of lifting casing with a lifting collar or nubbin. It will handle single joints of pipe straight from cantilever to off-line stand building system, and is used underneath the CRT350 (H-SJH) and CRT500 (UX) as a standard for picking up elevators from the V-door. The jaws are delivered in sets and cover the range from 4.1/2" - 20". For CRT350 the size 9.5/8" is the maximum.



### TECHNICAL SPECIFICATIONS

Description	H-SJH	UX5-14	UX5-20
Size [inches]	4.1/2" – 10.3/4"	9.5/8" – 14"	16" – 20"
Size with CRT350 [inches]	max 9.5/8"	9.5/8" – 14"	16" – 20"
Rating [sTon/ Ton]	5 / 4.5	5 / 4.5	5 / 4.5
Rating 4.1/2" to 5.1/2" [sTon / Ton]	3 / 2.7	n/a	n/a
Flow [gpm/lpm]	2 to 5 / 7.5 to 18.9	2 to 5 / 7.5 to 18.9	2 to 5 / 7.5 to 18.9
Max. pressure [psi/kPa]	2,500 / 17,236	2,500 / 17,236	2,500 / 17,236
Min. pressure [psi/kPa]	2,000 / 13,789	2,000 / 13,789	2,000 / 13,789
BX type controls	3 control lines (P - T - Xp)	3 control lines (P - T - Xp)	3 control lines (P - T - Xp)
Elevator latched feed-back signal	Jaw & Latch closed verification	Jaw & Latch closed verification	Jaw & Latch closed verification

### MAIN PART NUMBER

H-SJH	UX5-14	UX5-20
50003275Y	50002400Y	50002450Y

### SIZE COMPONENTS

Size Casing	Rating [sTons / Tons]	H-SJH	UX		
		Jaw sets	Jaw set	Top collar	Bottom guide
4.1/2"	3 / 2.72	50003151Y129			
5"	3 / 2.72	50003151Y131			
5.1/2"	3 / 2.72	50003151Y132			
6.5/8"	5 / 4.54	50003151Y135			
7"	5 / 4.54	50003151Y136			
7.5/8"	5 / 4.54	50003151Y137			
7.3/4"	5 / 4.54	50003151Y705			
8.5/8"	5 / 4.54	50003151Y139			
8.3/4"	5 / 4.54	50003151Y804			
9.5/8"	5 / 4.54	50003151Y141			
9.3/4" *	5 / 4.54	50003151Y769			
9.7/8" *	5 / 4.54	50003151Y649			
9.5/8"	5 / 4.54		50005955Y141	50005954Y141	50005959-141
9.7/8"	5 / 4.54		50005955Y649	50005954Y649	50005959-649
10"	5 / 4.54		50005955Y831	50005954Y831	50005959-831
10.1/8"	5 / 4.54		50005955Y846	50005954Y846	50005959-846
10.3/4"	5 / 4.54		50005955Y142	50005954Y142	50005959-142
11.3/4"	5 / 4.54		50005955Y143	50005954Y143	50005959-143
13.3/8"	5 / 4.54		50005955Y144	50005954Y144	50005959-144
13.5/8"	5 / 4.54		50005955Y596	50005954Y596	50005959-596
14"	5 / 4.54		50005955Y690	50005954Y690	50005959-690
16"	5 / 4.54		50002475Y145	50002476Y145	50002477-145
18"	5 / 4.54		50002475Y723	50002476Y723	50002477-723
18.5/8"	5 / 4.54		50002475Y146	50002476Y146	50002477-146
20"	5 / 4.54		50002475Y147	50002476Y147	50002477-147

\* on request

# FMS + ELEVATOR / SPIDERS





### Back up torque for FMS275 only

Hydraulic Working Pressure (psi)	Power Down Force (sTon)	Applied Maximum Back-up Torque [ft.lbs / Nm] *	
3,000	17.24	17,240	23,373
2,500	14.37	14,370	19,483
2,000	12.49	11,490	15,587
1,500	8.62	8,620	11,687

\* On 7.5/8" OD pipe

### Back up torque for FMS375 only

Hydraulic Working Pressure (psi)	Power Down Force (sTon)	Applied Maximum Back-up Torque [ft.lbs / Nm]	
2,500	47	40,000	54,232
2,200	41	35,200	47,724
2,000	38	32,000	43,386
1,800	34	28,800	39,047
1,600	30	25,600	34,708
1,400	26	22,400	30,370

## TECHNICAL SPECIFICATIONS MANUAL & PNEUMATIC ELEVATOR/SPIDERS

	250 BJ 7.5/8"	350 BJ 13.5/8"	500 sTon 14"	500 sTon 24.1/2"	750 sTon 14"	750 sTon 24.1/2"	1000 sTon 24.1/2"
Weight* without slip assembly [Lbs/kg]	2,043 / 927	3,500 / 1,587	4,850 / 2,200	7,950 / 3,606	7,500 / 3,402	9,500 / 4,275	9,500 / 4,275
Weight* slips set w/ inserts [Lbs/kg]	550 / 250	650 / 295	360 - 600 / 163 - 272	360 - 600 / 163 - 272	360 - 600 / 163 - 272	360 - 600 / 163 - 272	360 - 600 / 163 - 272
Rating [sTon/Ton]	250 / 226	350 / 317	500 / 453	500 / 453	750 / 680	750 / 680	1000 / 907
Casing size range [inches]	2.3/8"-7.5/8"	4.1/2"-13.5/8"	4.1/2" - 14"	16" - 24.1/2"	4.1/2" - 14"	16" - 24.1/2"	16" - 24.1/2"
Normal Operating pressure [psi/kPa]*	85 / 585	85 / 585	85 / 585	85 / 585	85 / 585	85 / 585	85 / 585
Maximum Operating pressure [psi/kPa]*	125 / 861	125 / 861	125 / 861	125 / 861	125 / 861	125 / 861	125 / 861

\* Applicable for pneumatic only

## TECHNICAL SPECIFICATIONS HYDRAULIC ELEVATOR/SPIDERS

	500 sTon 14"	500 sTon 24.1/2"	750 sTon 14"	750 sTon 24.1/2"
Weight* without slip assembly [Lbs/kg]	5,392 / 2,446	9,500 / 4,275	7,500 / 3,402	9,500 / 4,275
Weight* slips set w/ inserts [Lbs/kg]	360 - 600 / 163 - 272	360 - 600 / 163 - 272	360 - 600 / 163 - 272	360 - 600 / 163 - 272
Casing size [inches]	4.1/2" - 14"	16" - 24.1/2"	4.1/2" - 14"	16" - 24.1/2"
Rating [sTon/Ton]	500 / 454	500 / 454	750 / 680	750 / 680
Rotary size [inches]	-	-	-	-
Minimum inlet pressure [psi/kPa]			1,500 / 10,342	
Normal Operating pressure [psi/kPa]			2,000 / 13,790	
Maximum Operating pressure [psi/kPa]			2,500 / 17,235	
For a cycle time of appr. 4 to 5 seconds, the following flow and pressure is required			5 gpm@2,000 psi to 12 gpm@1,000 psi 19 lpm@13,790 kPa to 45 lpm@6,895 kPa	
Recommended inlet pressure Slips UP [psi/kPa]			500-750 / 3,447-5,171	
Maximum pressure Slips UP [psi/kPa]			1,000 / 6,895	
Maximum pressure Slips Down [psi/kPa]			2,500 / 13,789	
Minimum pressure differential between pressure line and return line [psi/kPa]			200 / 1,378	
Maximum allowed pressure in return line [psi/kPa]			200 / 1,378	

### E/S REMOTE OPERATION

Air operated versions can be remote controlled, please contact your NOV supplier for details

## BJ TYPE ELEVATOR/SPIDER 7.5/8" 250 TON & FMS275 FLUSH MOUNTED SLIP

### MAIN PART NUMBERS 7.5/8" 250 TON E/S

Part Number	Description
50364Y	Assembly complete, manual
50006260Y	Assembly complete, air operated
31021	Guide Bell Assembly, elevator
50422-2	Upper Guard Assembly, spider
31008	Spider Adapter Plate
52384	Hose assembly, elevator
23602	Hose assembly, spider



7.5/8" E/S 250 ton



FMS 275

### MAIN PART NUMBERS FMS275

Part Number	Description
50005200	Assembly complete, hydraulically operated

### OPTIONAL EQUIPMENT PART NUMBERS FMS275

Part Number	Description
50004994	Hinged adapter 37.1/2" Emsco to 27.1/2" API
50004998	Hinged adapter 37.1/2" National to 27.1/2" API
50004999	Hinged adapter 37.1/2" Oilwell to 27.1/2" API
59000300	Lifting sling for FMS275
50005248-10	Control valve for FMS275
50005249	Jumper hose kit control valve to FMS275
50006261	Conversion kit Manual-to-Air Operated
50006538	Control panel FMS
50000350	Control panel BX(S) i.c.w. FMS275/FMS375

### SLIPS, INSERTS, RETAINERS & GUIDES FMS275 & 250 TON ELEVATOR/SPIDER

Slip Size, [inches]	Pipe Size, [inches]	PARTS					GUIDES	
		Slip Ass'y. Part Number.	Insert Part Number	Qty. of insert	Slip Hanger Kit *	Insert Retainer Part Number	Bottom Guide Plate Assembly Part No.	Top Guide Plate Assembly Part No.
3.1/2"	2.3/8"	50006291Y238	24777	18	50005241	31003	51920	51925
	2.7/8"	50006291Y278	25780	18	50005241	31004	51920	51925
	3.1/2"	50006291Y312	16441	18	50005241	31005	51920	51925
4.1/2"	3.1/2"	50006292Y312	24779	27	50005242	31177	51921	51926
	4"	50006292Y400	24781	27	50005242	31177	51921	51926
	4.1/2"	50006292Y412	BJ16408	27	50005242	31177	51921	51926
5.1/2"	4.1/2"	50006293Y412	24785	27	50005243	31014	51922	51927
	5"	50006293Y500	24783	27	50005243	31013	51922	51927
	5.1/2"	50006293Y512	BJ16407	27	50005243	31012	51922	51927
7.5/8"	6.5/8"	50006294Y658	25474	45	50005244	31011	51924	51928
	7"	50006294Y700	26750	45	50005244	31010	51924	51928
	7.5/8"	50006294Y758	BJ16407	45	50005244	31009	51924	51928

\* FMS only

## BJ TYPE ELEVATOR/SPIDER 13.5/8" 350 TON



### MAIN PART NUMBERS

Part Number	Description
34301Y	Assembly complete: manually operated
33492Y	Assembly complete, air operated
52384	Hose assembly, elevator
23602	Hose assembly, spider
28599	Guide Bell Assembly, elevator
28570-1	Upper Guard Assembly, spider
27000	Spider Adapter Plate 27.1/2" RT
31100	Spider Adapter Plate 37.1/2" RT (except Emsco)
32698	Spider Adapter Plate 37.1/2" RT (Emsco s/n < 49)
34050	Spider Adapter Plate 37.1/2" RT (Emsco s/n > 48)
50006276	Conversion kit Manual-to-Air operated

### SLIPS, GUIDES & INSERTS 350 TON ELEVATOR/SPIDER

Pipe size [inches]	Slip size (nominal) [inches]	PARTS			GUIDES		
		Slip assembly Part Number	Insert Part Number	Qty	Insert retainer Part Number	Bottom guide plate assembly Part Number	Top guide plate assembly Part Number
4.1/2"	6"	50006480Y412	31157	36	50006479	51936	51949
5"	6"	50006480Y500	24785	36	50006479	51936	51950
5.1/2"	6"	50006480Y512	24781	36	50006479	51936	51950
5.3/4"	6"	50006480Y534	50006544	36	50006479	28568 & 28578	51951
6"	6"	50006480Y600	BJ16407	48	50006479	28568 & 28578	51951
6.5/8"	8"	50006485Y658	31157	60	50006484	51937	51952
7"	8"	50006485Y700	25474	60	50006484	51937	51952
7.5/8"	8"	50006485Y758	24748	60	50006484	51938	51953
8.5/8"	8.5/8"	50006785Y858	15660	60	50006484-1	51939	51954
9.5/8"	10.3/4"	50006490Y958	33249	72	50006489	51940	51955
10.3/4"	10.3/4"	50006490Y1034	15660	72	50006489	51941	51956
11.3/4"	13.3/8"	50006495Y1134	50006545	84	28581	51941	51957
12.3/4"	13.3/8"	50006495Y1234	32700	84	28581	51942	51958
13.3/8"	13.3/8"	50006495Y1338	15660	84	28581	28571*	51958
13.5/8"	13.5/8"	50006795Y1358	32477	84	28581	28571*	51958-1

\* Only door guide required

## VARCO TYPE ELEVATOR/SPIDER 14" 500 TON & FMS375

### MAIN PART NUMBERS ELEVATOR/SPIDER 14" 500 TON

Part Number	Description
13800Y	Assembly complete, air operated
50006046Y2	Assembly complete, elevator, hydraulic-operated*
50006046Y1	Assembly complete, spider, hydraulic-operated*
11881	Airline and filter assembly
11798	Guide Bell Assembly, elevator
19276	Spider Adapter Plate

\* Hydraulic type requires HUK



14" E/S 500 ton



FMS 375

### MAIN PART NUMBERS FMS375

Part Number	Description
200930-10	Assembly complete, hydraulically operated, less slips and guides

### OPTIONAL EQUIPMENT PART NUMBERS FMS375

Part Number	Description
50004995	Hinged National 49.1/2" to National 37.1/2"
200990-11	Hinged Oilwell 37.1/2" to National 37.1/2", 6.25" raised load shoulder
200991-11	Hinged Emsco 37.1/2" to National 37.1/2", 6.25" raised load shoulder
200995-11	Hinged National 37.1/2" to National 37.1/2", 6.25" raised load shoulder
201430-1	Hinged Ideco 37.1/2" to National 37.1/2", 6.25" raised load shoulder
200982-1	4 Way Lifting sling for FMS375
50006538	Control panel FMS
50000350	Control panel BX(S) i.c.w. FMS275/FMS375/Hydraulic E/S 14" 500 Ton

## SLIPS, GUIDES & INSERTS 14" 500 TONS ELEVATOR/SPIDER & FMS375

Pipe Size [inches]	Slip Size Nominal [inches]	PARTS			GUIDES	
		Slip Assembly Part Number	Insert Part Number	Quantity	Top Guide Plate Assembly Part Number	Bottom Guide Plate Assembly Part Number
4.1/2"	5.1/2"	13842Y3	2168	32 + 16B	V18419-1	11787
5"	"	13842Y2	2169	32 + 16B	V18419-2	11788
5.1/2"	"	13842Y1	2170	48	V18419-3	11789
6.1/4"	"	13841Y62	17080	48 + 24B	18419-62	11789-62
6.5/8"	7.5/8"	13841Y3	2632	48 + 24B	18419-4	11791
7"	"	13841Y2	2623	48 + 24B	18419-4	11791
7.1/2"	"	13841Y74	2669	72	18419-18	11792
7.5/8"	"	13841Y1	2633	72	18419-5	11792
7.3/4"	"	13841Y4	2649	72	18419-5	11792
8.1/8"	"	13841Y81	2633	72	18419-81	11792-81
8.5/8"	9.5/8"	13840Y3	2640	64 + 32B	18419-6	11793
8.3/4"	"	13840Y5	2650	64 + 32B	18419-6	11793
9.5/8"	"	13840Y1	2633	96	18419-7	11794
9.3/4"	"	13840Y4	2649	96	18419-15	71231
9.7/8"	"	13840Y2	2649	96	18419-15	71231
9.7/8"	10.1/8"	94035Y2	2655	96	<b>18419-15</b>	<b>71231</b>
10"	"	94035Y1	2637	96	18419-15	71231
10.1/4"	10.1/8"	94035Y3	2651	96	<b>18419-15</b>	<b>71231</b>
10.3/4"	11.3/4"	13839Y3	2640	80 + 40B	18419-8	11795
10.7/8"	"	13839Y4	2650	80 + 40B	18419-8	11795
11"	"	13839Y5	2638	80 + 40B	18419-112	11795-112
11.3/4"	"	13839Y2	2637	120	18419-9	11796
11.7/8"	"	13839Y1	2651	120	18419-9	11796
12"	12"	94034Y1	2637	120	18419-9	11796
12.3/4"	14"	70734Y7	2657	80 + 40B	18419-13	72229
13.3/8"	"	70734Y5	2636	80 + 40B	18419-10	11797
13.1/2"	"	70734Y4	2652	80 + 40B	18419-12	71228
13.5/8"	"	70734Y3	2653	80 + 40B	18419-12	71228
13.3/4"	"	70734Y2	2655	80 + 40B	18419-12	71228
14"	"	70734Y1	2635	120	18419-11	15939

## VARCO TYPE ELEVATOR/SPIDER 24.1/2" 500 TON



### MAIN PART NUMBERS

Part Number	Description
15740Y	Assembly complete, air operated
50006047Y2	Assembly complete, elevator, hydraulic-operated*
50006047Y1	Assembly complete, spider, hydraulic-operated*
11881	Airline and filter assembly
19001	Guide Bell Assembly, elevator
16552	Spider Adapter Plate
50000350	Control panel BX(S) i.c.w. FMS275/FMS375/Hydraulic E/S 24.1/2" 500 Ton

\* Hydraulic type requires HUK

### SLIPS, GUIDES & INSERTS 24.1/2" 500 TON ELEVATOR/SPIDER

Slip Size Nominal [inches]	Pipe Size [inches]	PARTS			GUIDES	
		Slip Assembly Part Number	Insert Part Number	Quantity	Spider Top Guide Plate Assembly Part Number	Elevator Bottom Guide Plate Assembly Part Number
16"	16"	15790Y4	2635	180	73138	16184
17"	17"	15790Y7	2635	180	50006198	50006199
18.5/8"	18"	15790Y6	2636	180	71139-6	15794-6
	18.5/8"	15790Y3	2635	180	73137	15794
20"	18.5/8"	15790Y26	17080	120+60B	73137	15794
20"	20"	15790Y2	2635	180	73136	15793
22"	22"	15790Y5	2635	180	50006074	50006055
24"	24"	15790Y1	2635	180	73135	15792
24.1/2"	24.1/2"	75226Y1	2635	180	74817	74818

## VARCO TYPE ELEVATOR/SPIDER 14" 750 TON



### MAIN PART NUMBERS

Part Number	Description
16150Y	Assembly complete, air operated
50006500Y2	Assembly complete, elevator, hydraulic-operated*
50006500Y1	Assembly complete, spider, hydraulic-operated*
11881	Airline and filter assembly
19002	Guide Bell Assembly, elevator
17163	Spider Adapter Plate
50000350	Control panel BX(S) i.c.w. FMS275/FMS375/Hydraulic E/S 14" 750 Ton

\* Hydraulic type requires HUK

### SLIPS, GUIDES & INSERTS 14" 750 TON ELEVATOR/SPIDER

Slip Size [inches]	Nominal Pipe Size [inches]	PARTS			GUIDES	
		Slip Assembly Part Number	Insert Part Number	Quantity	Spider Top Guide Plate Assembly Part Number	Elevator Bottom Guide Plate Assembly Part Number
7.5/8"	6.5/8"	16182Y4	2632	60 + 24B	18419-4	11791
	7"	16182Y8	2623	60 + 24B	18419-4	11791
	7.5/8"	16182Y7	2633	84	18419-5	11792
	7.3/4"	16182Y21	2649	84	18419-5	11792
9.5/8"	8.5/8"	16182Y6	2640	80 + 32B	18419-6	11793
	8.3/4"	16182Y20	2650	80 + 32B	18419-6	11793
	9.5/8"	16182Y3	2633	112	18419-7	11794
	9.3/4"	16182Y19	2649	112	18419-15	71231
11.3/4"	9.7/8"	16182Y18	2649	112	18419-15	71231
	10.3/4"	16182Y5	2640	100 + 40B	18419-8	11795
	10.7/8"	16182Y17	2650	100 + 40B	18419-8	11795
	11.3/4"	16182Y2	2637	140	18419-9	11796
14"	11.7/8"	16182Y16	2651	140	18419-9	11796
	13.3/8"	16182Y10	2636	100 + 40B	18419-10	11797
	13.1/2"	16182Y12	2652	100 + 40B	18419-12	71228
	13.5/8"	16182Y11	2653	100 + 40B	18419-12	71228
	13.3/4"	16182Y13	2655	100 + 40B	18419-12	71228
	14"	16182Y9	2635	140	18419-11	15939

## VARCO TYPE ELEVATOR/SPIDER 24.1/2" 750/1000 TON



### MAIN PART NUMBERS

Part Number	Description
16180Y	750 sTon assembly complete, air operated
50006265Y	1000 sTon assembly complete, air operated
11881	Airline and filter assembly
19001	Guide Bell Assembly, elevator
16552	Spider Adapter Plate

### SLIPS, GUIDES & INSERTS 24.1/2" 750/1000 TON ELEVATOR/SPIDER

Slip Size Nominal [inches]	Pipe Size [inches]	Slip Assembly Part Number	Insert Part Number	Quantity	Spider Top Guide Plate Assembly Part Number	Elevator Bottom Guide Plate Assembly Part Number
* 9.5/8"	8.5/8"	50006535Y858			50006533-858	50006532-858
*	9.5/8"	50006535Y958			50006533-958	50006532-958
*	9.7/8"	50006535Y978			50006533-978	50006532-978
* 11.3/4"	10.3/4"	50006536Y1034			50006533-1034	50006532-1034
*	11.3/4"	50006536Y1134			50006533-1134	50006532-1134
*	11.7/8"	50006536Y1178			50006533-1178	50006532-1178
*	12"	50006536Y120			50006533-120	50006532-120
* 14"	12.3/4"	50006537Y1234			50006533-11234	50006532-11234
*	13.3/8"	50006537Y1338			50006533-1338	50006532-1338
*	13.5/8"	50006537Y1358			50006533-1358	50006532-1358
*	14"	50006537Y140			50006533-140	50006532-140
16"	16"	16181Y	2635	210	73138	16184
17"	17"	50006194Y	2635	210	50006198	50006199
18.5/8"	18"	16381Y2	2636	210	71139-6	15794-6
	18.5/8"	16381Y1	2635	210	73137	15794
20"	18.5/8"	16179Y	17080	150 + 60B	73137	15794
	20"	16178Y	2635	210	73136	15793
22"	22"	50006195Y	2635	210	50006074	50006055
24"	24"	16900Y	2635	210	73135	15792
24.1/2"	24.1/2"	50003196Y	2635	210	74817	74818

\* On request



# POWER SLIPS

## PS21/30 HYDRAULIC POWER SLIP

### Installs flush with the drill floor

The PS21/30 improve both safety and rig efficiency as proven with the FMS Flush Mounted Casing Slip. Proven technology gives optimal performance, high safety operation, allowing to run the whole string with one tool: Centralizers, Couplings etc, due to enlarged throat opening.

Eliminates work platforms for stabbing and operating power tongs during casing running operations.

- Power down slips reacts up to 45,000 (PS21) on 14" casing or 55,000 ft.lbs (PS30) of torque, on 20" casing with sufficient string weight.
- Insert carriers make this a universal tool, not just another power slip
- Allows the PS21 to handle all pipe types and sizes, including BHA's, collars, drill pipe, casing and tubing from 2.3/8" to 14" and PS 30 from 2.3/8" to 20"
- Quick changeover from BHA's to collars to drill pipe allows the PS21/30 to trip the entire string.
- Insert carriers can be changed with pipe in the hole.
- Carrier change can be done in 5 minutes or less.
- Special "drop and lock, pull and release" design eliminates loose pieces such as bolts and pins.
- The PS21/30 can be fitted with insert bowls should it become necessary to use hand slips.
- Reliable slips-set signal
- Corrosion resistant nickel plated manifold blocks
- Integrated pressure relief valve in slip actuators
- Umbilical operations possible (optional guides available)

### Like the insert carriers, the slips also have a rapid change system

- Two handles on the middle slip segment retract and lock the springloaded slip retaining pin.
- No loose parts.

### Centering device

- The PS21/30 is standard equipped with a centering device incorporated in the top cover.
- Ram inserts up to 7.5/8" available in Stainless Steel (DP only) or Mild Steel

### Slip set-back designed to pass tool joints, BHAs and casing centralizers

- The slip set back allows tool joints and drill pipe protectors to pass without dragging on the inserts, even when drilling with 6.5/8" drill pipe.
- The PS21/30 will pass: BHA's when tripping; Centralizers when running casing.

### Hook Up Kit

- A control panel, which can be located in the driller's console,
- Hook Up Kit with integrated flushing system, greasing pump, pressure switches, dependent on customer requirements, ready for plug and play.

### Control panel

- Stand alone control panels enables the driller to operate the slips. See chapter Power Tools.



## TECHNICAL SPECIFICATIONS

	PS21	PS30
For rotary size	37.1/2"	49.1/2"
Pipe size range	2.3/8" to 14"	2.3/8" to 20"
Load rating	500 sTon	750 sTon
Maximum torque	45,000 ft.lbs	55,000 ft.lbs
Hydraulic requirements	PS21	PS30
Pressure*	2,300 - 2,500 psi	2,300 - 2,500 psi
Flow rate	10 gpm	10 gpm

\* Pressure in return line not to exceed 200 psi.

## MAIN PART NUMBERS

PS21	PS30
202200*	202400*
	202400*-10 (umbilical option)

\* Depending on configuration. Standard delivery includes bit breaker adapter plate, centering device and lifting sling PN 200982-1

## OPTIONAL EQUIPMENT PART NUMBERS

	PS21	PS30
Hand slip bowl # 3: 10.3/4" slip	202361	202361
Hand slip bowl # 3: 16" slip	--	202364
Hand slip bowl # 2: 16" slip	--	202363
Hand slip bowl # 1: 16" slip	--	202362
Hand slip bowl # 3: 10.3/4" removal tool	50004550-21	50004550-21
Hand slip bowl # 1: 16" removal tool	--	50004550-30
Insert carrier removal tool (Pogo stick)	50004600-1	50004600-1
Slip removal tool	50004551	50004551
Slip handle operating tool	50004552	50004552
Extension kit for SD-slip handles	50004604-1	50004604-1
Extension kit for CMS-slip handles	50004604-2	50004604-2

## PS21 SIZE COMPONENTS

Slip Part Number	Clamping diameter [inches]	Pipe type	Zip DC [inches]	Plain DC [inches]	Rating [sTons]	Slip Assy Part Number	Inserts Part Number	Ram Part Number	Throat opening (slips up) [inches]
Inserts directly in slip	14	Csg	--	--	500	202250-1400	2635	202347-1400	18
	13.5/8	Csg	--	--	500	202250-1363	2653	202347-1363	17.5/8
	13.1/2	Csg	--	--	500	202250-1350	2652	202347-1350	17.1/2
	13.3/8	Csg	--	--	500	202250-1338	2636	202347-1338	17.3/8
	13	Csg	--	--	500	202250-1300	2640	202347-1300	17
	12.3/4	Csg	--	--	500	202250-1275	2657	202347-1275	16.3/4
	11.7/8	Csg	--	--	500	202253-1188	2651	202347-1188	15.7/16
11.3/4	Csg	--	--	500	202253-1175	2637	202347-1175	15.5/16	
							Insert Carrier Part Number	Ram-inserts Part Number	
202250-5	**11.1/8	Csg	--	--	500	202270-1113	2651	202346-1113	15.3/4
	**11	Csg	--	--	500	202270-1100	2637	202346-1100	15.1/2
	10.7/8	Csg	--	--	500	202270-1088	2651	202346-1088	15.1/2
	10.3/4	Csg	--	--	500	202270-1075	2637	202346-1075	15.3/8
	10	Csg	--	--	500	202270-1000	2638	202346-1000	14.3/4
	9.7/8	Csg	--	--	500	202270-988	2650	202346-988	14.9/16
	9.5/8	Csg	--	--	500	202270-963	2656	202346-963	14.5/16
	9.1/2	Csg	--	--	500	202270-950	2657	202346-950	14.1/4
	9.1/8	Csg	--	--	500	202279-913	2637	202346-913	14.1/4
	8.5/8	Csg	--	--	500	202279-863	2652	202346-863	13.1/2
	7.3/4	Csg	--	--	500	202279-775	17080	202346-775	13
	7.5/8	Csg	--	--	500	202273-763	2633	202346-763	12.1/2
	7	Csg	--	--	500	202273-700	2623	202346-700	11.7/8
	6.7/8	Csg/DP	--	--	500	202273-688	2638	202346-688	11.3/4
	6.5/8	Csg/DP	--	--	500	202273-663	2632	202346-663	11.5/8
	6.1/2	Csg	--	--	500	202369-650	2173	202346-650	11.1/2
	6.9/64	Csg/DP	--	--	500	202369-614	2172	202346-614	11.1/8
	6	Csg/DP	--	--	500	202369-600	2169	202346-600	11
	5.7/8	DP	--	--	500	202369-588	2623	202346-588	11
	5.11/16	Csg/DP	--	--	500	202369-568	2650	202346-568	10.7/8
	5.1/2	Csg/DP	--	--	500	202274-550	2170	202346-550	10.3/4
	5	Csg/DP	--	--	500	202274-500	2169	202346-500	11.1/4
	4.1/2	Tbg/DP	--	--	500	202274-450	2168	202346-450	9.3/4
	4**	Tbg/DP	--	--	500	202278-400	2165	202346-400	9.3/8
	9.1/2**	DC	10	9.1/2	350	202271-950	2633	--	14.3/16
	9.1/4**	DC	9.3/4	9.1/4	350	202271-925	2655	--	13.15/16
	9	DC	9.1/2	9	350	202271-900	2633	--	13.11/16
	8.3/4	DC	9.1/4	8.3/4	350	202271-875	2655	--	13.9/16
	8.5/8	DC	9.1/8	8.5/8	350	202271-863	2653	--	13.1/2
	8.1/2	DC	9	8.1/2	350	202271-850	2652	--	13.7/16
	8.1/4	DC	8.3/4	8.1/4	350	202271-825	2638	--	12.7/8
	8.1/8	DC	8.5/8	8.1/8	350	202271-813	2650	--	12.3/4
	8	DC	8.1/2	8	350	202272-800	2633	--	13.1/4
	7.3/4	DC	8.1/4	7.3/4	350	202272-775	2655	--	13
	7.5/8	DC	8.1/8	7.5/8	350	202272-763	2172	--	12.1/2
	7.1/2	DC	8	7.1/2	350	202272-750	2652	--	12.3/4
	7.3/8	DC	7.7/8	7.3/8	350	202272-738	2636	--	12.1/2
	7.1/4	DC	7.3/4	7.1/4	350	202272-725	2638	--	12.1/2
	6.3/4**	DC	7.1/4	6.3/4	350	202275-675	2633	--	11.1/4
	6.1/2	DC	7	6.1/2	350	202275-650	2633	--	11
	6.1/4	DC	6.3/4	6.1/4	350	202275-625	2655	--	10.7/8
	6	DC	6-1/2	6	350	202275-600	2652	--	10.7/8
	5.3/4	DC	6.1/4	5.3/4	350	202275-575	2638	--	10.5/8
	5.5/8	DC	6.1/8	5.5/8	350	202275-563	2650	--	10.1/2
	3.1/2	Tbg/DP	--	--	350	202277-350	2162	202346-350	8.7/8
	3.1/8	Tbg/DP	--	--	350	202277-313	2172	202346-313	8.7/8
	2.7/8	Tbg/DP	--	--	350	202277-288	2161	202346-288	8.1/2
2.3/8	Tbg/DP	--	--	350	202277-238	2160	202346-238	8.1/8	
4.3/4	DC	5.1/4	4.3/4	225	202276-475	2165	--	10	
4.5/8	DC	--	4.5/8	225	202276-463	2655	--	9.7/8	
4.3/8	DC	4.3/4	4.3/8	225	202276-438	2172	--	9.3/4	
4.1/4	DC	--	4.1/4	225	202276-425	2166	--	9.5/8	
4	DC	--	4	225	202276-400	2638	--	9.3/8	

\*\* These insert carriers are size specific and cannot be redressed to another size

## PS30 SIZE COMPONENTS

Slip Part Number	Clamping diameter [inches]	Pipe type	Zip DC [inches]	Plain DC [inches]	Rating [sTons]	Slip Assy Part Number	Inserts Part Number	Ram Part Number	Throat opening (slips up) [inches]
Inserts directly in slip	20	Csg	--	--	250	202430-2000	2635	202381-2000	24
	18.5/8	Csg	--	--	250	202430-1863	17080	202381-1863	22-3/4
	18	Csg	--	--	250	202430-1800	2635	202381-1800	22
	17.7/8	Csg	--	--	250	202430-1788	V-2669	202381-1788	21.1/2
							Insert Carrier Part Number	Ram-inserts Part Number	
202430-5	16	Csg	--	--	750	202440-1600	2635	202386-1600	20
	14	Csg	--	--	750	202441-1400	2635	202386-1400	18
	13.5/8	Csg	--	--	750	202441-1363	2653	202386-1363	17.5/8
	13.3/8	Csg	--	--	750	202441-1338	2636	202386-1338	17.3/8
	12.3/4	Csg	--	--	750	202441-1275	2657	202386-1275	17.1/4
	11.7/8	Csg	--	--	750	202442-1188	2651	202386-1188	16.7/16
	11.3/4	Csg	--	--	750	202442-1175	2637	202386-1175	16.5/16
	10.3/4	Csg	--	--	750	202443-1075	2637	202386-1075	15.3/8
	9.7/8	Csg	--	--	750	202443-988	2650	202386-988	14.7/16
	9.5/8	Csg	--	--	750	202443-963	2656	202386-963	14.5/16
	7.5/8	Csg	--	--	750	202445-763	2633	202386-763	14.1/2
	7	Csg	--	--	750	202445-700	2623	202386-700	13.7/8
	6.7/8	Csg	--	--	750	202445-688	2638	202386-668	13.5/16
	6.5/8	Csg/DP	--	--	750	202445-663	2632	202386-663	13.1/2
	6.1/2	Csg/DP	--	--	750	50004569-650	2173	202386-650	13.1/4
	5.7/8	DP	--	--	750	50004569-588	2623	202386-588	13
	5.1/2	Csg/DP	--	--	750	202446-550	2170	202386-550	10.3/4
	5	Csg/DP	--	--	750	202446-500	2169	202386-500	10.1/4
	4.1/2	Tbg/DP	--	--	750	202446-450	2168	202386-450	9.3/4
	** 11.1/8	Csg	--	--	500	202270-1113	2651	202386-1113	15.3/4
	** 11	Csg	--	--	500	202270-1100	2637	202386-1100	15.1/2
	10.7/8	Csg	--	--	500	202270-1088	2651	202386-1088	15.1/2
	10.3/4	Csg	--	--	500	202270-1075	2637	202386-1075	15.3/8
	10	Csg	--	--	500	202270-1000	2638	202386-1000	14.3/4
	9.7/8	Csg	--	--	500	202270-988	2650	202386-988	14.9/16
	9.5/8	Csg	--	--	500	202270-963	2656	202386-963	14.5/16
	9.1/2	Csg	--	--	500	202270-950	2657	202386-950	14.1/4
	9.1/8	Csg	--	--	500	202279-913	2637	202386-913	14.1/4
8.5/8	Csg	--	--	500	202279-863	2652	202386-863	13.1/2	
7.3/4	Csg	--	--	500	202279-775	17080	202386-775	13	
7.5/8	Csg	--	--	500	202273-763	2633	202386-763	12.1/2	
7	Csg	--	--	500	202273-700	2623	202386-700	11.7/8	
6.7/8	Csg/DP	--	--	500	202273-688	2638	202386-688	11.3/4	
6.5/8	Csg/DP	--	--	500	202273-663	2632	202386-663	11.5/8	
6.1/2	Csg	--	--	500	202369-650	2173	202386-650	11.1/2	
6.9/64	Csg/DP	--	--	500	202369-614	2172	202386-614	11.1/8	
6	Csg/DP	--	--	500	202369-600	2169	202386-600	11	
5.7/8	DP	--	--	500	202369-588	2623	202386-588	11	
5.11/16	Csg/DP	--	--	500	202369-568	2650	202386-568	10.7/8	
5.1/2	Csg/DP	--	--	500	202274-550	2170	202386-550	10.3/4	
5	Csg/DP	--	--	500	202274-500	2169	202386-500	11.1/4	
4.1/2	Tbg/DP	--	--	500	202274-450	2168	202386-450	9.3/4	
** 4	Tbg/DP	--	--	500	202278-400	2165	202386-400	9.3/8	

202433-5

Slip Part Number	Clamping diameter [inches]	Pipe type	Zip DC [inches]	Plain DC [inches]	Rating [sTons]	Slip assy Part Number	Inserts Part Number	Ram Part Number	Throat opening (slips up) [inches]
202433-5	** 9.1/2	DC	10	9-1/2	350	202271-950	2633	--	14.3/16
	** 9.1/4	DC	9-3/4	9-1/4	350	202271-925	2655	--	13.15/16
	9	DC	9-1/2	9	350	202271-900	2633	--	13.11/16
	8.3/4	DC	9-1/4	8-3/4	350	202271-875	2655	--	13.9/16
	8.5/8	DC	9-1/8	8-5/8	350	202271-863	2653	--	13.1/2
	8.1/2	DC	9	8-1/2	350	202271-850	2652	--	13.7/16
	8.1/4	DC	8-3/4	8-1/4	350	202271-825	2638	--	12.7/8
	8.1/8	DC	8-5/8	8-1/8	350	202271-813	2650	--	12.3/4
	8	DC	8-1/2	8	350	202272-800	2633	--	13.1/4
	7.3/4	DC	8-1/4	7-3/4	350	202272-775	2655	--	13
	7.5/8	DC	8-1/8	7-5/8	350	202272-763	2172	--	12.1/2
	7.1/2	DC	8	7-1/2	350	202272-750	2652	--	12.3/4
	7.3/8	DC	7-7/8	7 3/8	350	202272-738	2636	--	12.1/2
	7.1/4	DC	7-3/4	7-1/4	350	202272-725	2638	--	12.1/2
	** 6.3/4	DC	7-1/4	6-3/4	350	202275-675	2633	--	11.1/4
	6.1/2	DC	7	6-1/2	350	202275-650	2633	--	11
	6.1/4	DC	6-3/4	6-1/4	350	202275-625	2655	--	10.7/8
	6	DC	6-1/2	6	350	202275-600	2652	--	10.7/8
	5.3/4	DC	6-1/4	5-3/4	350	202275-575	2638	--	10.5/8
	5.5/8	DC	6-1/8	5-5/8	350	202275-563	2650	--	10.1/2
	3.1/2	Tbg/DP	--	--	350	202277-350	2162	202386-350	8.7/8
	3.1/8	Tbg/DP	--	--	350	202277-313	2172	202386-313	8.7/8
	2.7/8	Tbg/DP	--	--	350	202277-288	2161	202386-288	8.1/2
	2.3/8	Tbg/DP	--	--	350	202277-238	2160	202386-238	8.1/8
	4.3/4	DC	5-1/4	4-3/4	225	202276-475	2165	--	10
	4.5/8	DC	--	4-5/8	225	202276-463	2655	--	9.7/8
	4.3/8	DC	4-3/4	4-3/8	225	202276-438	2172	--	9.3/4
	4.1/4	DC	--	4-1/4	225	202276-425	2166	--	9.5/8
	4	DC	--	4	225	202276-400	2638	--	9.3/8

\*\* These insert carriers are size specific and cannot be redressed to another size

## PS15 AND PS16 POWER SLIPS

NOV Power Slips are designed to eliminate the manual lifting and setting of slips. The PS15 use coil springs as a counterbalance to offset the weight of the slips when in upper, released position. Slips are set by standing on the slipset ring. The foot pedal is pressed to release the slips.

The PS16 is an air operated power slip controlled with a foot valve. The slips are set by gravity and released with air pressure much like NOV's casing elevator/spiders.

### PS15 and PS16 Power Slip Features:

- Fits directly into NOV pin drive master bushings.
- Fits 27.1/2" and 37.1/2" to 49.1/2" rotary tables using adapter rings
- Accommodates 3.1/2" to 6.5/8" OD Drill pipe



PS15 Spring Slip



PS16 Pneumatic Slip

Slip body size [inches]	Drill Pipe Size [inches]	PS15	PS16	Slip set Part Number	Insert set Part Number	Guide ring Part Number
		Complete with Guide and slip set Part Number	Compl. with air controls and hose guide and slip set Part Number			
4.1/2"	3.1/2"	18172-45-35	78181-45-35	7686	2163-16B-32	79011-1
4.1/2"	4	18172-45-40	78181-45-40	7685	2164-16B-32	79011-2
4.1/2"	4.1/2"	18172-45-45	78181-45-45	7684	2165-48	79011-2
5.1/2"	4.1/2"	18172-55-45	78181-55-45	7691	2168-16B-32	79011-2
5.1/2"	5"	18172-55-50	78181-55-50	7690	2169-16B-32	79011-3
5.1/2"	5.1/2"	18172-55-55	78181-55-55	7689	2170-48	79011-4
5.7/8"	5.7/8"	18172-57-57	78181-57-57	7689-57	2173	79011-4
*7.5/8"	6.5/8"		78181-76-66	7696	2632-24B-48	7799

\* tripping only!

## OPTIONAL EQUIPMENT PART NUMBERS

Part number	Description
7831	Foot pedal
11814	Connecting hoses (2 required)

## PSF HYDRAULIC POWER SLIP FRAME

The Power Slip Frame (PSF) improves drilling and tripping operations with simple, light weight, compact mechanical hydraulic slips. The slips may be operated from anywhere on the drill floor via electro - hydraulic remote control. In addition, the slips may be operated manually by foot pedal or hand operated control valve. This increases safety by moving personnel away from the hazards at well center during drilling operations. In addition, the design does not extend beyond the rotary table and thereby reduces trip hazards in the event of an accidental rotation of the rotary table.



## TECHNICAL SPECIFICATIONS

Description	
Weight w/o slips [lbs / kg]	365 / 166
Weight, with slips [lbs / kg]	515 / 234
Pipe Size Capacity [inches / mm]	2.3/8" to 7" / 60 - 178 (with simple adapters required for the range)
Operating pressure [psi / kPa]	≥600 / ≥4,137
Operators Control	Electro-hydraulic remote control or manually by foot pedal or hand operated control valve
Required ID Connection [inches / mm]	3/8 / 9.5
Required hydraulic flow [gpm / lpm]	3 / 11.4
Required pressure [psi / kPa]	≥600 / 4,137

## MAIN PART NUMBERS

Description	Part number
Power Slip Frame for 20.1/2" pin drive rotary table	1100070-501
Power Slip Frame for 17.1/2" - 27.1/2" square drive rotary table	1100070-502
Power Slip Frame for 27.1/2" & 37.1/2" pin drive rotary table	1100070-503





# BUSHINGS / SLIPS / CLAMPS

BUSHINGS / SLIPS / CLAMPS

## CU, CUL AND CB CASING BUSHINGS

CU, CUL and CB Casing Bushings are inserted directly into the rotary table and insure that the casing being run is perfectly aligned with the center of the hole. Models CU and CUL are solid bushings and Model CB is a split bushing. All of the bushings accept bowls of different sizes to accommodate a wide range of casing. Using CMS-XL or CP-S slips, since these bushings fit into the rotary table, the casing string can be easily rotated during cementing operations.



CU Casing Bushing



CUL Casing Bushing



CB Casing Bushing

Rotary Table Size [inches]	Make	Casing Size [inches]	Casing Bushing and Insert Bowl (P/N)	Weight [lbs/kg]		
17.1/2-20.1/2	ALL	11.3/4 and 13.3/8	CU (3102)	470 / 213		
		9.5/8 and 10.3/4	W/bowl No. 2 (1902)	342 / 155		
26 and 27.1/2	ALL	18.5/8 and 20	CUL (3103)	938 / 425.5		
		16	W/bowl 20x16 (3104)	562 / 255		
		11.3/4 and 13.3/8	W/bowl No. 1 (3105)	846 / 384		
		9.5/8 and 10.3/4	W/bowl No. 2 (1902)	342 / 155		
		2.3/8 and 8.5/8	W/bowl No. 3 (1809)	464 / 210.5		
27.1/2	ALL 27.1/2	18.5/8 and 20	CB (6695)	713 / 323		
	API	16	W/bowl 20 x 16 (6127)	572 / 259		
		11.3/4 and 13.3/8	W/bowl No. 1 (6126)	895 / 406		
		9.5/8 and 10.3/4	W/bowl No. 2 (6114)	252 / 114		
37.1/2-49.1/2	NATIONAL	30	CB (V11763)	1100 / 499		
		26	CB (16454)	1100 / 499		
		24	CB (11253)	1200 / 544		
		23	CB (11252)	1200 / 544		
		18.5/8 and 20	CB (10187)	1600 / 726		
		16	W/bowl 20 x 16 (6127)	572 / 259		
		11.3/4 and 13.3/8	W/bowl No. 1 (6126)	895 / 406		
		9.5/8 and 10.3/4	W/bowl No. 2 (6114)	252 / 114		
		37.1/2-49.1/2	OILWELL	30	CB (12093)	1170 / 531
				26	CB (6170-26)	1100 / 500
24	CB (6170)			1260 / 571.5		
18.5/8 and 20	CB (10188)			1670 / 759		
16	W/bowl 20 x16 (6127)			572 / 259		
11.3/4 and 13.3/8	W/bowl No. 1 (6126)			895 / 406		
9.5/8 and 10.3/4	W/bowl No. 2 (6114)			252 / 114		
37.1/2-49.1/2	EMSCO			30	CB (11633)	1160 / 526
				26	CB (89183-1)	1100 / 500
				24	CB (16542)	1260 / 571.5
		22	CB (11252-22)	1120 / 509		
		18.5/8 and 20	CB (11553) S/N 49	1610 / 730		
			and above for 37.1/2 only			
			(10190) S/N 48	1820 / 825.5		
37.1/2	IDECO	16	W/bowl 20 x16 (6127)	572 / 259		
		11.3/4 and 13.3/8	W/bowl No. 1 (6126)	895 / 406		
		9.5/8 and 10.3/4	W/bowl No. 2 (6114)	252 / 114		
		30	CB (12092)	1100 / 499		
		26	CB (74814-26)	1452 / 605		
		24.1/2	CB (74814)	1560 / 650		
		18.5/8 and 20	CB ( 10189)	1670 / 759		
		16	W/bowl 20 x16 (6127)	572 / 259		
		11.3/4 and 13.3/8	W/bowl No. 1 (6126)	895 / 406		
		9.5/8 and 10.3/4	W/bowl No. 2 (6114)	252 / 114		

## CASING SPIDERS

The Baash-Ross 200 ton Hinged Casing Spider will fit most casing handling operations. It can be placed on the rotary table, mounted on a platform which replaces the rotary table, or supported by cribbing, depending upon the auxiliary equipment and procedure to be followed.

## UC-3 CASING SLIPS

Most casing strings' weight and the relatively thin pipe wall make it important that the supporting slips provide full circumferential grip. The BAASS-ROSS Type UC-3 slips achieves this with many narrow segments. They are hinged together to wrap around the casing and exert a more uniform pressure. With each segment carrying the same load, they automatically center the casing string within the bushing or spider.

The UC-3 has a 3" taper. With changes in the number of segments and liners, it will handle strings from 16" OD to 42" OD. Liners are held in place by a liner Retainer Key and Cotter Pinch.



Baash-Ross 200 Ton Hinged Casing Spider



UC-3 Casing Slips

## 200 TON HINGED CASING SPIDERS, INSERT BUSHINGS AND UC-3 SLIPS

Csg. Size	UC-3 Slip No.	Weight [lbs]	30" Spider 7704-A-161	Weight [lbs] 1,200	36" Spider 7704-A-167	Weight [lbs] 1,100	42" Spider 7704-A-179	Weight [lbs] 1,525
16"	7704-5036	226	Bushing 7704-A-165 Retainers 50012-148-8	975				
18.5/8"	7704-5035	325	Bushing 7704-A-164 Retainers 50012-50-8	900	Bushing 7704-A-172 Retainers 50012-76-8	1135		
20"	7704-5034	283	Bushing 7704-A-164 Retainers 50012-50-8	900	Bushing 7704-A-172 Retainers 50012-76-8	1135		
22.1/2"	7704-5002	359	Bushing 7704-A-163 Retainers 50012-38-C8	750	Bushing 7704-A-171 Retainers 900041-441	924		
24"	7704-5001	312	Bushing 7704-A-163 Retainers 50012-38-C8	750	Bushing 7704-A-171 Retainers 900041 -441	924		
26"	7704-5006	325	Bushing 7704-A-162 Retainers 50012-26-C8	605	Bushing 7704-A-170 Retainers 900042-186	817		
30"	7704-5005	367	Use 30" Spider		Bushing 7704-A-169 Retainers 50012-32-C8	640	Bushing 7704-A-180 Retainers 900042-708	1400
33"	7704-5008	410			Bushing 7704-A-168 Retainers 50012-20-C8	500		
36"	7704-5007	437			Use 36" Spider		Bushing 7704-A-178 Retainers 50012-36-C8	1226
42" *	7704-5019	495					Use 42" Spider	

\* 42" Casing spider is rated at 300 sTon

## ROLLER KELLY BUSHINGS

### HDP ROLLER KELLY BUSHING

Widely recognized as the standard of the industry. For master bushings with 25.3/4" pin circle 27 HDP of 23" pin circle, 20 HDP. Unit comes with wrench, wiper and wear gauge. Weight 1,500 lbs.

### 27XHDP ROLLER KELLY BUSHING

For extreme high-torque drilling. Essentially two HDP bushings combined into one unit, this tool reduces wear to kelly and itself through wider force distribution. For master bushings with 25.3/4" pin circle. Unit comes with wrench, wiper and wear gauge. Weight 2,850 lbs.

### HDS ROLLER KELLY BUSHING

For heavy duty square drive applications. Components are interchangeable with HDP. Unit comes with wrench, wiper and wear gauge. Weight 1,420 lbs.

### OPTIONAL LOCK ASSEMBLY

Locks for the Kelly Bushing in the Master Bushing for use offshore with motion compensators. Lock assembly may be ordered installed in 27-HDP only. To specify, add an "L" to basic part number of unit. Lock Assembly alone PN 3695.



27" HDP Roller Kelly Bushing



XHDP Roller Kelly Bushing



HDS Roller Kelly Bushing



27.1/2" HDP Roller Kelly Bushing

Kelly Size	27" HDP	20" HDP	27" XHDP	HDS
Size/Type	Part. No.	Part. No.	Part. No.	Part. No.
3" Hex	3650-30	-	-	-
3.1/2" Hex	3650-35	3690-35	-	3635-35
4.1/4" Hex	3650-42	3690-42	70947-1	3635-42
5" Spec. Hex	3650-50	-	-	-
5.1/4" Hex	3650-52	3690-52	-	3635-52
6" Hex	3650-60	-	70947-2	3635-60
2.1/2" Sq	-	-	-	-
3" Sq	3651-30	-	-	3636-30
3.1/2" Sq	3651-35	3691-35	-	3636-35
4.1/4" Sq	3651-42	3691-42	-	3636-42
5.1/4" Sq	3651-52	3691-52	70947-3	3636-52
6" Sq	3651-60	-	70947-4	-
Less Rollers	3653	3692	70947-BD	3637

### ROLLER ASSEMBLIES COMPLETE

Kelly Size/Type	HDP* Part No.	Weight [lbs/kg]	HDS* Part No.	Weight [lbs/kg]
3" Sq	3660	590/276	70474-5	176/80
3.1/2" Sq	3661	562/255	70474-6	160/73
4.1/4" Sq	3662	512/232	70474-7	132/60
5.1/4" Sq	3665	438/199	-	-
6" Sq	3666	374/169	-	-
3" Hex	3667	612/278	70474-1	162/74
3.1/2" Hex	3668	584/265	70474-2	146/66
4.1/4" Hex	3669	532/241	70474-3	126/57
4.1/2" Hex	3670	509/230	-	-
5" Sp Hex	3671	486/220	-	-
5.1/4" Hex	3672	476/215	-	-
6" Hex	3673	414/188	-	-

\* Sleeve bearings are standard, roller bearings optional

## KELLY BUSHINGS

### KELLY WIPERS

Kelly Size [inches]	HDP, HDS Square P/N	Weight [lbs/kg]	Hex P/N	Wt [lbs/kg]
3" API	8-0260	4 / 1.8	8-0320	4 / 1.8
3.1/2" API	8-0265	4 / 1.8	8-0285	4 / 1.8
4.1/4" API	8-0170	3.5 / 1.6	8-0275	3.5 / 1.6
5.1/2" API	8-0300	3 / 1.4	8-0305	3 / 1.4
6" API	8-0200	3 / 1.4	8-0240	3 / 1.4

### KELLY BUSHING SAFETY GUARD

Fits Rotary Tables with HDP-HDS Kelly Bushings.

For 17.1/2" - 27.1/2" Rotary Table P/N 15794

For 37.1/2" Rotary Table P/N 16951

For 49.1/2" Rotary Table P/N 16953

## MPCH MASTER BUSHING

The 37.1/2" MPCH is a Pin Drive Hinged Master Bushing specially designed for floating and semi-submersible drilling operations.

With insert bowl No. 3 and optional insert bowls No. 1 and No. 2, the MPCH will handle 2.3/8" to 13.3/8" OD drill collars, tubing and casing.

Unit come complete with No. 3 insert bowl, bit breaker adapter plate and lifting sling PN 6699.

Part	P/N	Weight [lbs/kg]
Complete	*	4200 / 1905
Body only	*	3200 / 1452
Insert Bowl No. 1: 13.3/8" to 11.3/4"	6610	336 / 152
Insert Bowl No. 2: 10.3/4" to 9.5/8"	6609	470 / 213
Insert Bowl No. 3: API 8.5/8" and smaller	6608	625 / 283
Lifting sling for insert bowls	1021	46 / 22

\* See selection chart

## MSPC MASTER BUSHING

The 27.1/2" MSPC is a solid Body Pin Drive Master Bushing designed for all drilling operations.

The pin drive allows the Kelly bushing to ride on top of the rotary table and permits extended bowls to be used for better slip back up. With the extended API insert bowl No. 3, the MSPC will handle 2.3/8" thru 8.5/8" OD drill pipe, drill collars, tubing and casing. Insert bowl No. 2 can handle tubulars from 9.5/8" to 10.3/4" OD; while insert bowl No. 1 is good for 11.3/4" to 13.3/8" OD. Unit comes with No. 3 insert bowl, bit breaker adapter plate and lifting sling PN 6699.

Part	P/N	Weight [lbs/kg]
27.1/2" complete	*	1965 / 891
body only	*	1110 / 503
Insert Bowl No.1: 13.3/8" and 11.3/4"	1903	326 / 148
Insert Bowl No.2: 10.3/4" and 9.5/8"	1904	460 / 209
Insert Bowl No.3: API 8.5/8" and smaller	1810	620 / 281
Lifting sling for insert bowls	1021	46 / 22

\* See selection chart

## MSP MASTER BUSHINGS

### MSP 27.1/2" SPLIT PIN DRIVE BUSHINGS\*

MSP 27.1/2" Split Pin Drive bushings are also available. With the larger rotary opening the standard No. 3 Extended API taper is used. This allows the use of extra-long SDXL slips required for heavier loads. Weight 1600 lbs / 726 kg.

\* See selection chart



MPCH with # 3 bowl and SDXL slips



MPCH with bit breaker adapter plate



MSPC



MSP

## MASTER BUSHING SELECTION CHART

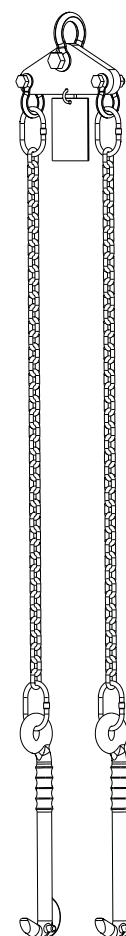
Make	Type	MPCH		MSPC		MSP	
		Compl.	Body only	Compl.	Body only	Compl.	Body only
Emsco	T-2750	-	-	1804-1	1808-1	5429-1	-
	G-27.1/2	-	-	1804-5	1808-5	5429-5	-
	H-27.1/2	-	-	1804-2	1808-2	-	-
	K-27.1/2, KS, P1	-	-	1804-3	1808-3	-	-
	T-3750 (S/N 1-48)	6600-2A	6601-2A	-	-	-	-
	T-3750/T-4950 (49/UP)	6600-2	6601-2	-	-	-	-
Gardner-Denver	RT-27.1/2	-	-	1804-1	1808-1	5429-1	-
	RT-37.1/2	6600-7	6601-7	-	-	-	-
Ideco	27.1/2	-	-	1804-7	1808-7	5429-7	-
	37.1/2	6600-4	6601-4	-	-	-	-
National	MS-27.1/2, A and B-27.1/2	-	-	1804-5	1808-5	5429-5	-
	C-365	6600-5	-	-	-	-	-
	C-375	6600-1	6601-1	-	-	-	-
Oilwell	27.1/2, 27.1/2 A	-	-	1804-9	1808-9	-	-
	A-27.1/2	-	-	1804-1	1808-1	5429-1	-
	A-37.1/2	6600-3	6601-3	-	-	-	-
Wirth	27.1/2	-	-	1804-1	1808-1	5429-1	-
	37.1/2	6600-6	6601-6	-	-	-	-

## LIFTING SLINGS

Suitable for the MPCH, MSPC & MSP Master Bushing & Bowls. Not allowed for overhead lifting purposes.

## MAIN PART NUMBERS

Name	Suitable as	Part number	CE	DnV
2 Way Lifting Sling Chain Design	Bowl lifter	50001130	Yes	Yes
2 Way Lifting Sling Cable Design	Bowl lifter	50001160	Yes	Yes
2 way Lifting Sling	Bowl lifter	1021	No	No
4 way Lifting Sling	Master Bushing lifter	6699	No	No



## MBH1250 HINGED MASTER BUSHING

For the safe handling of heavy weight casing strings, including bit, in combination with the corresponding landing strings a new series of rotary equipment, having a dedicated rating and safety factor, has been developed.

- Casing sizes up to 24", string weights up to 1,000 sTon.
- 5.1/2" to 6.5/8" landing strings with dedicated drill pipe, string weights up to 1,250 sTon.
- Dual upset drill pipe, string weight up to 1,250 sTon.
- All standard pipe types and sizes with special #1, #2 and #3 master bushing bowls, string weights up to 1,000 sTon.
- Standard bit breaker plates. Maximum bit diameter 29.1/2".



MBH1250 with drilling bowl and slips

### CASING BUSHINGS

Height and internal diameters/tapers of casing bushing are 100% identical to standard NOV Varco BJ 24" CB16542 casing bushing. Interfaces with standard 24" CMS-XL casing slips.



MBH1250 with casing bushing

### DRILLING BOWLS

Interfaces with standard API handslips featuring a 1: 6 taper. When removed from MBH1250, a 29.1/2" diameter bit can pass through MBH1250, without the need to remove the MBH1250 from the rotary table, due to throat opening of 30". These bowls feature the standard MPCH bit breaker holes. Standard bit breaker plates, kelly bushings, etc, fit into these holes. Interfaces with same torque backup blocks in MBH1250 as above mentioned casing bowls for torque backup an assembly.



MBH1250 with drilling bowl

### LSB1250 LANDING STRING BUSHING

To handle 1,000 sTon capacity landing strings, the MBH1250 can be dressed with the LSB1000 Landing String Bowl. Combined with the Special Design Landing String Hand Slips, the landing string can be run up to loads of 1,000 sTon. The Landing String Slips grip the pipe with standard inserts. Customers should always perform a crushing load calculation to determine the ultimate safe working load of the system.

To handle 1,250 sTon capacity landing strings, the MBH1250 can be dressed with the LSB1250 Landing String Bowl. Combined with the Special Design Landing String Hand Slips, the landing string can be run up to loads of 1,250 sTon. The 1,250 sTon capacity can only be achieved with landing strings with "dual upset" connections, i.e. the joint has two 18 degree tool joints. A 1,250 sTon capacity BX style elevator will be connected to the upper tool joint, while the lower tool joint is suspended in the LSB1250 with special slips that have an 18 degree contour in the slips, rather than inserts.



MBH1250 with LSB1250 landing string bushing and LSS1250 landing string slip

## TECHNICAL SPECIFICATIONS

Description	Size
Size	Fits into 49.1/2" National rotary table (= 49.1/2" RST) as standard.
Height	20" (equal to a standard 37.1/2" MPCH Master Bushing)
Internal throat opening	30"
Maximum backup torque	500,000 ft.lbs
Rating axial	1,250 sTon
Rating axial w/ spreading load 1:6 taper	1,000 sTon
Lifting slings	Can be handled (lifted) with standard lifting slings with certified latching hooks or standard certified shackles.

## MAIN PART NUMBERS

### MBH1250 MASTER BUSHING HINGED

Name	Part number
Master Bushing Hinged for National 49.1/2" table	50005900-1
Master Bushing Hinged for Continental Emsco 49.1/2"	50005900-2
Master Bushing Hinged for Oilwell 49.1/2'	50005900-3

### CASING BUSHINGS

Description	Part number
Casing bushing for 24"	50005905
Casing bushing for 22"	50005906
Casing bushing for 20"	50005907
Casing bushing for 16"	50005908

### DRILLING BOWLS

Description	Part number
MBH bowl #1 - 11.3/4" - 13.3/8"	50005910
MBH bowl #2 - 8.5/8" - 10.3/4"	50005911
MBH bowl #3 - 2.3/8" - 8.5/8"	50005912

### LSB1000 - LANDING STRING BUSHING & SLIPS

Part number	Description
50005920	LSB1000 - Landing String Bushing 1000 ton capacity
50005939-658	Landing String Slip for Grant Prideco Slip Proof 6.5/8" pipe
50005939-578	Landing String Slip for Grant Prideco Slip Proof 5.7/8" pipe
50005939-550	Landing String Slip for Grant Prideco Slip Proof 5.1/2" pipe

### LSB1250 - DUAL UPSET LANDING STRING BUSHING

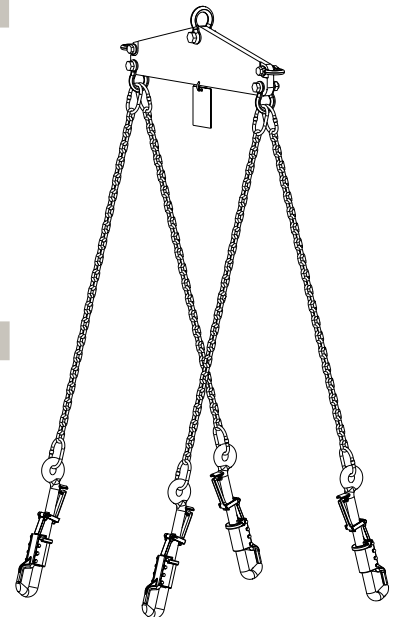
Part number	Description
50005940	LSB1250 - Dual Upset Landing String Bushing 1250 ton capacity
50005940-658	Landing String Slip for Dual Upset Landing String 6.5/8" Special Taper
50005940-578	Landing String Slip for Dual Upset Landing String 5.7/8" Special Taper
50005940-550	Landing String Slip for Dual Upset Landing String 5.1/2" Special Taper



LSS1250 landing string slip

### LSS1250 Landing String Slips

Name	Part number
Grant Prideco H-6.5/8" pipe having a 7.1/8" clamping diameter	50005925-1



## LIFTING SLINGS

Suitable for the MBH1250 Master Bushing, Casing Bushings and the MBH-bowls. Allowed for overhead lifting purposes.

## MAIN PART NUMBERS

Name	Part number	CE	DnV
4 Way Lifting Sling Chain Design	50001110	Yes	Yes
2 Way Lifting Sling Chain Design	50001120	Yes	Yes
4 Way Lifting Sling Cable Design	50001140	Yes	Yes
2 Way Lifting Sling Cable Design	50001150	Yes	Yes



## ROTARY SLIPS, CASING SLIPS

### SDS, SDML, SDXL and SDHL ROTARY SLIPS

SDS, SDML, SDXL and SDHL Rotary Slips are for use in API standard insert bowls. Featuring better contact and distribution of load on drill pipe thru a superior wraparound configuration and unique insert design, these slips prevent bottle necking and gouging damage. The buttress design of the body segments provides great strength while minimizing weight for ease of handling. SDS, SDML & SDXL type hand slips are not recommended to be used on mobile floating drilling vessels or installations. Use SDHL type hand slips instead.

### ROTARY SLIPS COMPLETE\*

Slip Size [inches]	API Pipe Sizes OD [inches]	SDS P/N	SDML P/N	SDXL P/N	SDHL 750 ton P/N
3.1/2	2.3/8	3901	15524	-	-
	2.7/8	3903	15523	-	-
	3.1/2	3905	15522	-	-
4.1/2	3.1/2	3907	15563	V15515	-
	4	3909	15564	15514	-
	4.1/2	3911	15565	V15513	-
5	4	-	15567	15518	-
	4.1/2	-	15568	15517	-
5.1/2**	5	-	15569	V15516	-
	4.1/2	-	15571	15521	50006021-450
	5	-	15572	15520	50006021-500
6.7/8**	5.1/2	-	15573	V15519	50006021-550
	5.5/8	-	-	-	50006040-563
	5.3/4	-	-	-	50006040-575
	5.7/8	-	-	-	50006040-588
	6	-	-	-	50006040-600
	6.3/8	-	-	-	50006040-638
	6.5/8	-	-	-	50006040-663
	6.7/8	-	-	-	50006040-688
	7	6.5/8	-	-	86720
7	7	-	-	86719	-

\* Available with flex handles

### \*\* LOAD RINGS FOR SDHL

Slip size	Load ring part number	Cotter pin part number
5.1/2	50006033	51403-12-S
6.7/8	50006038	51403-12-S



SDXL SLIP

### CMS-XL EXTRA LONG MULTI-SEGMENT CASING SLIPS

Today's deeper drilling calls for long and heavy casing strings. NOV has slips to handle any casing job.

Varco CMS-XL slips are manufactured from castings, reinforced to take severe service. The self-centering full wraparound grip prevents damage to casing. With certain simple adjustments, the CMS-XL can accommodate casing from 6.5/8" to 30" OD. All NOV slips have an API taper of 4"/ft on the diameter.

### DCS DRILL COLLAR SLIPS

Each slip segments are castings with an extra long back to provide maximum support to the circular button gripping elements. Full wraparound design and circular buttons assure positive holding and slip setting. Drill collar slips are flat on top to accommodate the MP Clamp. All NOV slips have an API taper of 4"/ft on the diameter.

### CMS-XL CASINGS SLIPS AND DCS DRILL COLLARS SLIPS CP-S CONDUCTOR PIPE SLIPS COMPLETE

Slip Set	Casing OD [inches]	P/N	Slip Set	Drill Collar OD [inches]	P/N
CMS-XL	6.5/8	5315	DCS-S	3 - 4	2572
	7	5301		4 - 4.7/8	2573
	7.5/8	5303	DCS-R	4.1/2 - 6	2552
	8.5/8	5305		5.1/2 - 7	2550
	9.5/8	5307	DCS-L	5.1/2 - 7	2501
	10.3/4	V5309		6.3/4 - 8.1/4	2503
	11.3/4	5311		8 - 9.1/2	2507
	13.3/8	5313		8.1/2 - 10	2530
	16	5325		9.1/4 - 11.1/4	2508
	18	5335-1		11 - 12.3/4	2534
	18.5/8	5333	12 - 14	V2536	
	20	5329	CP-S		
	24	5331		24	5338
	26	5346		26	5344
30	5342	30		5340	



CMS-XL SLIP

## CIRCULAR BUTTONS

### CIRCULAR BUTTONS FOR CMS-XL AND CP-S

Slip Set	Casing OD [inches]	Circular Buttons			
		Part No.	Weight lbs	kg	Qty
CMS-XL	6.5/8	2628-144	36	16	144
	7	2619-144	36	16	144
	7.5/8	2630-144	24	11	144
	8.5/8	2630-156	26	12	156
	9.5/8	2630-168	28	13	168
	10.3/4	2630-180	30	14	180
	11.3/4	2627-204	51	23	204
	13.3/8	2630-216	36	16	216
	16	2631-252	43	19.5	252
	18.5/8	2626-300	60	27	300
	20	2631-312	52	23.3	312
	24	2631-360	60	27	360
	26	2631-396	64	29	396
	30	2631-444	72	32.5	444

### CIRCULAR BUTTONS FOR DCS SLIPS

Slip Set	Drill Collar OD [inches]	Circular buttons			
		Part No.	Weight lbs	Kg	Qty
CP-S	24	2631-156	26	12	156
	26	2631-168	28	13	168
	30	2631-192	32	14.5	192
DCS-S	3 - 4	2628-49	13	6	49
	4 - 47/8	2620-49	8	3.5	49
DCS-R	4.1/2 - 6	2628-63	16	7	63
	5.1/2 - 7	2620-63	11	5	63
DCS-L	5.1/2 - 7	2513-88	22	10	88
	6.3/4 - 8.1/4	2630-88	15	7	88
	8 - 9.1/2	2630-96	16	7	96
	8.1/2 - 10	2627-104	26	12	104
	9.1/4 - 11.1/4	2630-112	19	8.5	112
11 - 12.3/4	2625-136	13	6	136	
12 - 14	2630-136	16	7	136	

### SDS SHORT ROTARY SLIPS AND SDS INSERTS

Slip Body Size [inches]	3.1/2"				4.1/2"	
Pipe Size [inches]	2.3/8	2.7/8	3.1/2	3.1/2	4	4.1/2
P/N Slip w/inserts	3901	3903	3905	3907	3909	3911
Weight Slip w/insert [lbs / kg]	134 / 61	128 / 58	124 / 56	162 / 73	155 / 70	146 / 66
Insert Set: part number	2160-24	2161-24	2162-24	2163-36	2164-36	2165-36
Insert Set [Qty]	24	24	24	36	36	36

### SDML MEDIUM ROTARY SLIPS AND SDML INSERTS

Slip Body Size [inches]	3.1/2"	3.1/2"	3.1/2"	4.1/2"	4.1/2"	4.1/2"	5"	5	5	5	5.1/2	5.1/2	5.1/2
Pipe Sizes [inches]	2.3/8	2.7/8	3.1/2	3.1/2	4	4.1/2	4	4.1/2	5	4.1/2	5	5.1/2	5.1/2
P/N Slip w/inserts	15524	15523	15522	15563	15564	15565	15567	15568	15569	15571	15572	15573	15573
Weight : Slip w/inserts [lbs / kg]	193 / 87.5	188 / 85	180 / 81.50	207 / 94	199 / 90	188 / 85	204 / 92.5	196 / 89	185 / 84	200 / 91	192 / 87	181 / 82	181 / 82
P/N Insert set	2160-30	2161-30	2162-30	2163-45	2164-45	2165-45	2168-45	2166-45	2167-45	2168-45	2169-45	2170-45	2170-45
Insert set: Qty	30	30	30	45	45	45	45	45	45	45	45	45	45

### SDXL EXTRA LONG ROTARY SLIPS AND INSERTS

Slip Body Size [inches]	4.1/2				5		
Pipe Sizes [inches]	3.1/2	4	4.1/2	4	4.1/2	5	4.1/2
P/N Slip w/inserts	V15515	15514	V15513	15518	15517	V15516	15521
Weight : Slip w/inserts [lbs/kg]	229 / 104	219 / 99	205 / 93	237 / 107.5	227 / 103	213 / 96.5	234 / 106
Insert set part number	2163- 54	2164- 54	2165- 54	2168- 54	2166- 54	2167- 54	2168- 54
Inserts [Qty]	54	54	54	54	54	54	54
Slip Body Size [inches]	5.1/2		7				
Pipe Sizes [inches]	5	5.1/2	5.3/4	5.7/8	6	6.5/8	7
P/N Slip w/inserts	15520	V15519	86719-1	86722-1	86719-2	86720	86719
Weight : Slip w/inserts [lbs/kg]	224 / 101.5	210 / 95	242 / 110	232 / 105	220 / 100	200 / 91	190 / 110
Insert set part number	2169- 54	2170 - 54	2521	2656	2632-60	2172- 60	2173-60
Inserts [Qty]	54	54	60	60	48	60	60

## SDHL ROTARY SLIPS AND INSERTS

Slip Body Size [inches]	5.1/2			6.7/8	
Pipe Sizes [inches]	4.1/2	5	5.1/2	5.5/8"	5.3/4"
P/N Slip w/inserts	50006021-450	50006021-500	50006021-550	50006040-563	50006040-575
Weight : Slip w/inserts [lbs/kg]	*	250 / 113	235 / 107	260 / 117	250 / 113
Insert set part number	2168	2169	2170	2521	2656
Inserts [Qty]	45	45	45	60	60
Slip Body Size [inches]	6.7/8				
Pipe Sizes [inches]	5.7/8"	6"	6.3/8"	6.5/8"	6.7/8"
P/N Slip w/inserts	50006040-588	50006040-600	50006040-638	50006040-663	50006040-688
Weight : Slip w/inserts [lbs/kg]	235 / 107	230 / 104	220 / 100	210 / 95	200 / 91
Insert set part number	2632	2650	2652	2655	2173
Inserts [Qty]	60	60	60	60	60

## FLEX HANDLES

Available for all Varco BJ rotary hand slips (SDS, SDML, SDXL and SDHL).

Can be assembled on rotary hand slips without any modification.

Protection Horn on top of the handle provides guard to crew hands, should elevator be lowered too much.

The elastomer section allows the handle to bend. Handle will recover to it's original shape. Reduces bend and broken handles. Bent handles do not give crew hands an ergonomically lifting position.



### SLIPS WITH FLEX HANDLES

Slip size [inches]	Pipe size [inches]	SDS P/N	SDML P/N	SDXL P/N	SDHL P/N
3.1/2	2.3/8	3901-FH	15524-FH		
	2.7/8	3903-FH	15523-FH		
	3.1/2	3905-FH	15522-FH		
4.1/2	3.1/2	3907-FH	15563-FH	V15515-FH	
	4	3909-FH	15564-FH	15514-FH	
	4.1/2	3911-FH	15565-FH	V15513-FH	
5	4		15567-FH	15518-FH	
	4.1/2		15568-FH	15517-FH	
	5		15569-FH	V15516-FH	
5.1/2	4.1/2		15571-FH	15521-FH	50006021-450-FH
	5		15572-FH	15520-FH	50006021-500-FH
	5.1/2		15573-FH	V15519-FH	50006021-550-FH
6.7/8	5.5/8				50006040-563-FH
	5.7/8				50006040-588-FH
	6.5/8				50006040-663-FH
	6.7/8				50006040-688-FH
7	6.5/8			86720-FH	
	7			86719-FH	

Note: eliminate -FH when ordering slips with regular handles

## MULTIPURPOSE SAFETY CLAMP

Safety clamps are a convenient way to secure flush tubular products during installation. The MP clamp can act as the last resort, when a piece of tubular slips through a pipe. Especially in combination with handslips, the clamp will land on top of the slips, adding extra push down force to the slips and thus stopping the tubular from slipping through the slip. The MP clamps can NOT be used for snubbing or lifting operations.



MP Safety Clamp

### MP SAFETY CLAMP

Range [inches]	P/N Clamp Cplt.	P/N Links	Qty Links	P/N Grip Die	Qty Grip Dies
<b>MP-S</b>					
2.7/8 - 4.1/8	33030	3335	7	3333	8
4 - 5	33031	3335	8	3333	9
<b>MPR</b>					
4.1/2 - 5.5/8	33011	3319	7	3310	8
5.1/2 - 7	33012	3319	8	3310	9
6.3/4 - 8.1/4	V33013	3319	9	3310	10
8 - 9.1/4	V33014	3319	10	3310	11
9.1/4 - 10.1/2	33015	3319	11	3310	12
<b>MP-M</b>					
10.1/2 - 11.1/2	33016	3319	12	3310	13
11.1/2 - 12.1/2	33017	3319	13	3310	14
12.1/2 - 13.5/8	33018	3319	14	3310	15
13.5/8 - 14.3/4	33019	3319	15	3310	16
14.3/4 - 15.7/8	33020	3319	16	3310	17
<b>MP-L</b>					
15.7/8 - 17	33021	3319	17	3310	18
17 - 18.1/2	33022	3319	18	3310	19
18.1/8 - 19.3/8	33023	3319	19	3310	20
<b>MP-XL</b>					
19.3/8 - 20.3/8	33024	3319	19	3310	20
20.3/8 - 21.1/2	33025	3319	20	3310	21
21 - 22.5/8	V33032	3319	21	3310	22
22.5/8 - 23.3/4	V33033	3319	22	3310	23
23.3/4 - 24.7/8	33034	3319	23	3310	24
24.7/8 - 26	V33035	3319	24	3310	25
26 - 27.1/8	33036	3319	25	3310	26
29.3/8 - 30.1/2	V33039	3319	28	3310	29

## CDI TUBING SPIDER

The CDI-Tubing power slip improves operations with a simple, light weight, compact mechanical pneumatic slips for small sizes of tubing. The slips may be operated from anywhere on the drill floor manually by foot foot operated control valve. This increases safety by moving personnel away from the hazards at well center during drilling operations. In addition, the design does not extend beyond the rotary table and thereby reduces trip hazards in the event of an accidental rotation of the rotary table.



### TECHNICAL SPECIFICATIONS

Description	Size
Rating [sTon / Ton]	82.5 / 75
Tubing size	1" - 3.1/2"
Dimension HxWxL [inches / mm]	23.1/2"x25.1/2"x17.7/8" / 597x648x453
Required flow [gpm / lpm]	12 - 15 / 45 - 57
Minimum air pressure [psi / kPa]	45 / 310
Recommended air pressure [psi / kPa]	65 / 490

### MAIN PART NUMBERS

Part number Type C Air Operated Slip w/o slips

CDI-9794

### OPTIONAL EQUIPMENT PART NUMBERS

Part number	Optional equipment
CDI-9778	Foot valve assembly without guard
CDI 9753	Foot valve assembly with guard
CDI 9754	Air filter, press. regulator & lube valve assembly
CDI 9741	Arbor (link bushing removal tool)
CDI 9742	Arbor (shaft bushing removal tool)

### CDI-SPIDER SIZE COMPONENTS

Part numbers Top Loading slip assemblies							
CDI-9726	CDI-9729	CDI-9730	CDI-9785	CDI-9786	CDI-9787	CDI-9788	CDI-9789
3.1/2"x3.1/2"	3.1/2"x2.7/8"	3.1/2"x2.3/8"	3.1/2"x2.1/16"	3.1/2"x1.1/2"	3.1/2"x1.1/4"	3.1/2"x1"	NO DIES
Part numbers Side Loading slip assemblies							
CDI-9762	CDI-9763	CDI-9764	CDI-9765	CDI-9766	CDI-9784		
3.1/2"x3.1/2"	3.1/2"x2.7/8"	3.1/2"x2.3/8"	3.1/2"x2.1/16"	3.1/2"x3.1/16"	NO DIES		



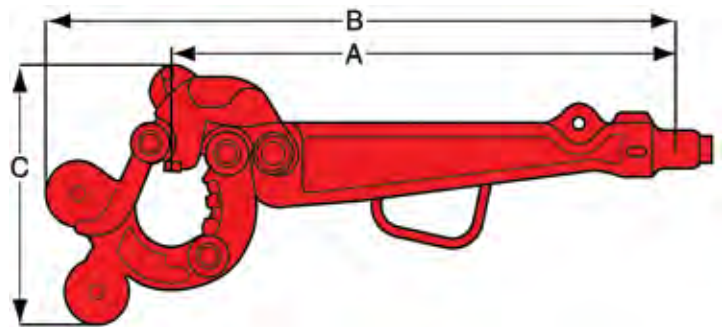
# MANUAL TONGS

## MANUAL TONGS

The HT-Tong is a tool designed for making up and breaking connections of tubular goods, from light tubing to heavy wall pipe and drill collars. There are 7 types, varying in torque capacity from 10,000 to 200,000 lbs / ft (13,560 - 271,000Nm). Covered sizes from 2 3/8" to 17", or 36" (HT50 with extended reach).

Interchangeable lug jaw design permits each tong to handle different sizes of pipe. By installing hinge jaws (available for some models), bigger pipe sizes can be handled.

The tongs can be assembled for either making-up or break-out by removing the hanger and turning the complete HT Tong over.



### DIMENSIONS

HT-Tong type	Size range lever [inches]	Size range lever [mm]	A max. type	A min. [inches]	A [mm]	B max. [inches]	B [mm]	B min. [inches]	B [mm]	C [inches]	C [mm]		
14	2.3/8 - 7	60.3 - 177.8	Standard	27	685	24.3/4	628	33	838	30.3/4	181	14	355
35	2.3/8 - 10.3/4	60.3 - 273.1	Long lever	47.1/8	1196	44.5/8	1133	57.1/8	1450	54.5/8	1387	18	457
			Short lever	43.3/16	919	33.11/16	885	46.11/16	1173	43.11/16	1109	18	457
55	3.1/2 - 13.3/8	88.9 - 339.7	Long lever	55.3/16	1401	52.1/16	1322	66.7/16	1687	59.9/16	1512	23.1/4	590
			Short lever	49.3/16	1249	46.1/16	1169	60.7/16	1535	53.9/16	1360	23.1/4	590
65	3.1/2 - 17	88.9 - 431.8	Standard	56.9/16	1436	50.15/16	1293	72.9/16	1843	72.9/16	1519	35.3/4	908
100	4 - 17	101.6 - 431.8	Standard	60	1524	53.7/8	1368	78	1981	78	1641	34.1/8	866
	7.1/2 - 12	190.5 - 304.8	Standard	62.1/2	1597	60	1524	80	2032	76.3/8	1940	31.3/4	806
200	6 - 16	203.2 - 406.4	Standard	62.3/8	1584	57.11/16	1465	78	1981	68	1727	38	965

#### Casing head assembly only

HT tong type	Size range lever [inches]	Size range lever [mm]	
HT50	13.3/8 - 36	339.7 - 914.4	Lever to be used with HT55 tong and hanger



## MAIN PART NUMBERS AND SIZE EQUIPMENT TONGS

Part Description	Part no.	Torque Rating		Weight	
		[ft.lbs]	[Nm]	[lbs]	[kg]
<b>HT14</b>					
Complete less lug jaws	200640	-	-	99	45
Lug jaw assembly 2.3/8"-3.1/2"	200645-1	10,000	13,558	12	5.4
Lug jaw assembly 3.1/2"-5"	200646-1	10,000	13,558	15	6.8
Lug jaw assembly 4.3/4"-6.1/4"	200647-1	14,000	18,981	24	10.9
Lug jaw assembly 5.3/4"-7"	200648-1	12,000	16,269	31	14
<b>HT35</b>					
Long lever 7" x 10.3/4" less lug jaw	200620	-	-	242	110
Short lever 7.5/8" x 10.3/4" less lug jaw	200620-1	-	-	238	108
Long lever 2.3/8" x 7" less lug jaw	200620-2	-	-	242	110
Short lever 2.3/8" x 7" less lug jaw	200620-3	-	-	238	108
Lug jaw assy. 2.3/8" - 3.668"	200076-1	15,000	20337	25	11
Lug jaw assembly 2.7/8" - 4.1/4"	200077-1	15,000	20337	29	13
Lug jaw assembly 3.1/2" - 5.1/4"	200078-1	25,300	34,302	33	15
Lug jaw assembly 5.1/4" - 7"	200079-1	33,500	45,419	45	20
Hinge and lug jaw assembly 7" - 8.5/8"	200080-2	25,000	33895	33	15
Hinge and lug jaw assembly 9.5/8"- 10.3/4"	200081-2	32,000	43386	76	34.5
<b>HT55</b>					
Complete with long lever, less lug jaws	200560	-	-	400	181
Complete with short lever, less lug jaws	200560-1	-	-	386	175
Lug jaw assembly 3.1/2"-5"	200083-1	35,000	47,453	29	13
Lug jaw assembly 5"-6.3/4"	200084-1	55,000	74,570	39	17.7
Lug jaw assembly 6.5/8"-9"	200085-1	55,000	74,570	56	25.4
Lug jaw assembly 9"-10.3/4"	200086-1	40,000	54,232	60	27.2
Lug jaw assembly 11.3/4"	200087-1	30,000	40,674	61	27.7
Lug jaw assembly 12"	200088-1	30,000	40,674	65	29.5
Lug jaw assembly 12.3/4"-13"	200089-1	30,000	40,674	72	32.7
Lug jaw assembly 13.3/8"	200090-1	30,000	40,674	72	32.7
<b>HT65</b>					
Complete less lug jaws	200540	-	-	440	199.6
Lug jaw assembly 3.1/2"-8.1/4"	200546-1	65,000	88,128	82	37.2
Lug jaw assembly 8"-11.1/4"	200547-1	65,000	88,128	97	44
Lug jaw assy. 11.3/4"-14.3/8"	200548-1	40,000	54,232	71	32
Lug jaw assembly 16"-17"	200549-1	40,000	54,232	83	37.6
Hinge jaw assembly 8"-17"	200545-1	40,000	54,232	56	25.4
<b>HT100</b>					
Complete less lug jaws	200071	-	-	533	241
Lug jaw assembly 4" - 8.1/2"	200663-1	100,000	135,582	135	61
Lug jaw 8.1/2" - 12"	200664	100,000	135,582	102	46.3
Lug jaw 12" - 15"	200665	75,000	101,686	140	63.5
Lug jaw 15.3/4"	200666	60,000	81,349	162	73.5
Lug jaw 16" - 17"	200667	60,000	81,349	135	61.2
Hinge jaw assy. 8.1/2" - 17"	200662-1	60,000	81,349	112	50.8
<b>HT200</b>					
Complete less lug jaws	200500	-	-	1050	476
Lug jaw 6" - 7.7/8"	200506-SP	150,000	203,373	90	40
Lug jaw assembly 8" - 9.5/8" or 13" - 13.1/4"	200506-1	200,000	271,164	89	40.4
Lug jaw assy. 9" - 11.1/8" or 13" - 14.3/4"	200507-1	175,000	237,268	104	47.2
Lug jaw assembly 11"-12.1/2" or 14.3/8" - 16"	200508-1	200,000	271,164	150	68
Hinge jaw assy. 11.1/2" - 16"	200505-1	200,000	271,164	60	27.2

## MAIN PART NUMBERS CASING HEAD ASSEMBLIES

Range [inches]	Casing head assy Part no	Torque rating		Weight	
		[ft.lbs]	[Nm]	[lbs]	[kg]
13.3/8" - 14.1/2"	200580-1	25,000	33,895	340	154
14.1/2" - 16"	200580-2	25,000	33,895	352	159
16" - 17.1/2"	200580-3	25,000	33,895	373	169
17.1/2" - 19"	200580-4	25,000	33,895	385	175
19" - 20"	200580-5	25,000	33,895	397	180
20" - 21.1/2"	200580-6	25,000	33,895	418	189
21.1/2" - 23"	200580-7	25,000	33,895	430	195
24" - 25.1/2"	200580-8	25,000	33,895	459	208
25.1/2" - 27"	200600-1	25,000	33,895	490	222
27" - 27.1/2"	200600-2	25,000	33,895	499	226
28.1/2" - 30"	200600-3	25,000	33,895	531	240
30" - 31.5/8"	200600-4	25,000	33,895	542	245
31.1/2" - 33"	200600-5	25,000	33,895	572	259
33" - 34.1/2"	200600-6	25,000	33,895	612	277
34.1/2" - 36"	200600-7	25,000	33,895	618	280

## CASING TONG HEAD SIZE COMPONENTS\*

		Fig. A	Fig. B	Fig. C	Fig. D	Fig. E	Fig. F	Fig. G	Fig. H	
Part no.:		200580-1	200580-2	200580-3	200580-4	200580-5	200580-6	200580-7	200580-8	
Ref.	Description	No. req.	No. req.	No. req.	No. req.	No. req.	No. req.	No. req.	No. req.	Part. No
7	Hinge jaw ass'y A		1		1	2	1	2	2	200584-1
8	Hinge jaw ass'y B	1	1	1	1	1	1	1	1	200585-1
9	Hinge jaw ass'y C	1	-	2	1	-	2	1	2	200586-1
		Fig. I.	Fig. J	Fig. K	Fig. L	Fig. M	Fig. N	Fig. O		
Part no.:		200600-1	200600-2	200600-3	200600-4	200600-5	200600-6	200600-7		
Ref.	Description	No. req.	No. req.	No. req.	No. req.	No. req.	No. req.	No. req.	No. req.	Part no.
7	Hinge jaw ass'y D	3	4	3	4	3	2	2		200604-1
8	Hinge jaw ass'y E	1	1	3	2	2	2	5		200605-1
9	Hinge jaw ass'y F	1	-	-	-	2	4	1		200606-1

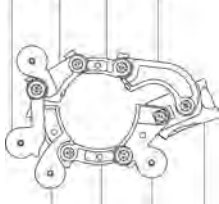
\* Note: It is possible to combine the number of jaws. One doesn't need to purchase a casing head tong for each size.

Example 1: When purchasing pn 200600-4 (30" - 31.1/2") comprizing 4 x pn 200604-1 and 2 x pn 200605-1, one can assemble pn 200600-5 (31.1/2" - 33") comprizing 3 x pn 200604-1 and 2 x pn 200605-1, however, one needs in this case also 2 x hinge jaw pn 200606-1.

Example 2: When purchasing pn 200580-8 (24" - 25.1/2") comprizing 2 x pn 200584-1, 1 x pn 200585-1 and 2 x pn 200586-1, one can assemble pn 200580-7 (21.1/2" - 23") by leaving out 1 x pn 200586-1.

PARTS LIST HT 50 CASING HEAD ASSEMBLIES

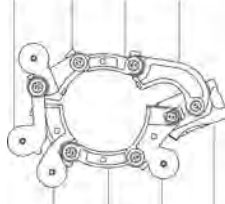
5 4 9 2



6 8 3 1

Fig A, 13<sup>3</sup>/<sub>8</sub>"-14<sup>1</sup>/<sub>2</sub>", Part no. 200580-1

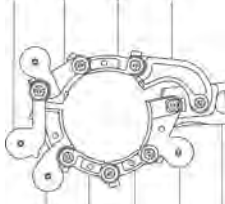
5 4 8 2



6 7 3 1

Fig B, 14<sup>1</sup>/<sub>2</sub>"-16", Part no. 200580-2

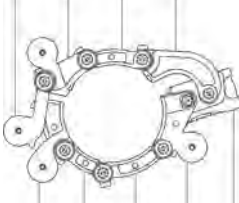
5 4 8 2



6 9 9 3 1

Fig C, 16"-17<sup>1</sup>/<sub>2</sub>", Part no. 200580-3

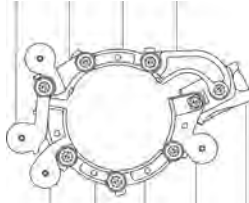
5 4 8 2



6 9 7 3 1

Fig D, 17<sup>1</sup>/<sub>2</sub>"-19", Part no. 200580-4

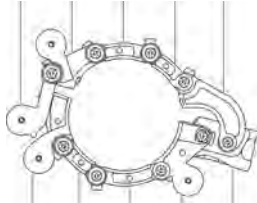
5 4 7 2



6 8 7 3 1

Fig E, 19"-20", Part no. 200580-5

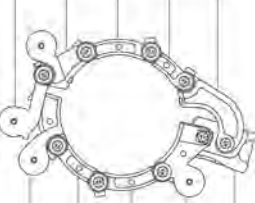
5 4 8 9 2



6 9 7 3 1

Fig F, 20"-21<sup>1</sup>/<sub>2</sub>", Part no. 200580-6

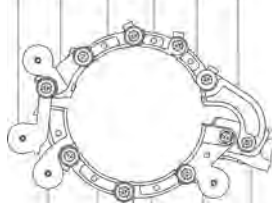
5 4 7 9 2



6 8 7 3 1

Fig G, 21<sup>1</sup>/<sub>2</sub>"-23", Part no. 200580-7

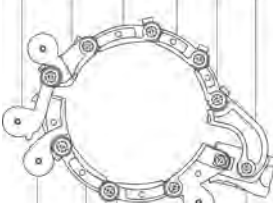
5 4 8 9 9 2



6 7 7 3 1

Fig H, 24"-25<sup>1</sup>/<sub>2</sub>", Part no. 200580-8

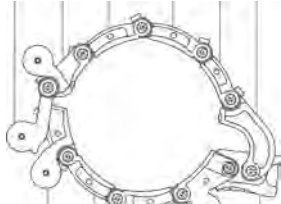
5 4 7 8 9 2



6 7 7 3 1

Fig I, 25<sup>1</sup>/<sub>2</sub>"-27", Part no. 200600-1

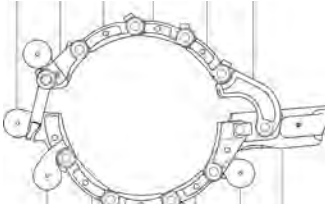
5 4 7 7 8 2



6 7 7 3 1

Fig J, 27"-28<sup>1</sup>/<sub>2</sub>", Part no. 200600-2

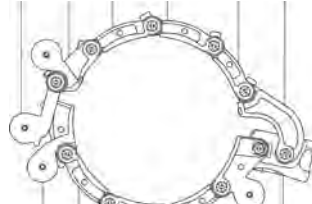
5 4 7 8 8 2



6 7 7 8 3 1

Fig K, 28<sup>1</sup>/<sub>2</sub>"-30", Part no. 200600-3

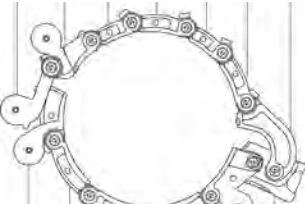
5 4 7 7 8 2



6 7 7 8 3 1

Fig L, 30"-31<sup>1</sup>/<sub>2</sub>", Part no. 200600-4

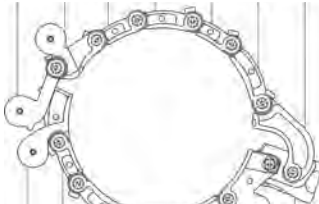
5 4 9 8 9 8 2



6 7 7 7 3 1

Fig M, 31<sup>1</sup>/<sub>2</sub>"-33", Part no. 200600-5

5 4 9 8 9 7 2



6 9 7 8 9 3 1

Fig N, 33"-34<sup>1</sup>/<sub>2</sub>", Part no. 200600-6

5 4 9 7 7 8 2



6 8 8 8 8 3 1

Fig O, 34<sup>1</sup>/<sub>2</sub>"-36", Part no. 200600-7



# CASING RUNNING TOOLS

## CRT350 & CRT500-14 & 20 CASING RUNNING TOOL

The CRT introduces step change in the way casing is run today. By combining the functionality of field proven tools such as the Top Drive, Flush Mounted Spider (FMS), Fill and Circulation Tool and Hydraulic Single Joint Elevator (H-SJH & UX), casing operations are now safer, faster and more efficient. The CRT, which is connected directly to the Top Drive main shaft, hoists and lowers casing, spins in and makes up the casing connection. Additionally, while reciprocating and rotating the casing string, the CRT has the ability to fill-up and circulate.

### Safety

- Eliminates stabbing-board operations (leading contributor to LTA's while running casing), less manual handling in the V-door and fewer safety hazards.
- Power casing tong operations and work platforms have been removed, allowing for better ergonomics and work space around the well center.

### Economics

- Drilling contractors or a reduced casing crew can run the casing, minimizing stand-by costs associated with weather or problematic well conditions.
- The CRT integral compensator substantially reduces the risk of damage due to cross-threading.
- Utilizing the Top Drive to control make-up reduces thread damage during the complete make-up cycle.

### Well Improvements

- Assures that the casing can be set to the casing point with the ability of the CRT to push casing to bottom, fill, circulate, rotate, and reciprocate.
- Reduces the risk of differential wall sticking.
- Ability to pressure test.

### Efficiency

- Less equipment to rig up; the CRT contains the single joint elevator, rigid link hoist and stabbing assembly, fill and circulation tool, and compensator in one assembly.
- Single load-path design eliminates links.
- The operator determines and controls the running/tripping speed, spin-in and make-up torques.
- When running mixed strings, size of components can be changed within minutes through the twist lock design.

### Features CRT Compensator

- Employs a patented cushioned weight compensator which balances out the weight of CRT.
- Soft stabbing and thread compensation minimizes casing thread damage.

### CRT Pipe Sensor

- The Pipe sensor detects the casing coupling so slips will set automatically at the correct position, ensuring casing connection integrity.
- Provides feedback to CRT operator that the correct CRT stabbing height is reached.

### CRT Fill-up and Circulation Tool

- Fill-up tool enables fast change out of seal and guide elements when mixed strings are run.
- Prevents possible spills of expensive fluids.
- Reduces the risk of environmental incidents.

### Single Joint Elevators

- Hydraulic operated SJ-elevator (H-SJH & UX)
- Hydraulic cylinder assembly to tilt the H-SJH elevator to the V-door.



CRT350 with H-SJH elevator



CRT500 with H-SJH elevator

## TECHNICAL SPECIFICATIONS CRT350

Description	Value
API 8C Hoist Rating [sTon/Ton]	350 / 317
Casing Size	4.1/2" to 9.7/8"
Fill-Up and Circulation	4.1/2" to 9.7/8" circulation and fill-up (fill-up, circulate, and recovery over the full range)
Maximum Mud Circulation Pressure [psi/kPa]	up to 5,000 / 34,500 (size dep.)
Rotational speed [rpm]	0-20 intermittent
Weight (fully dressed, typical) [lbs/kg]	10,500 / 4,762
Maximum Push Down Force [lbs/kg]	20,000 / 9,072 (static)
Temperature Range [°C/°F]	-20° to +55° / -4° to 131°
Maximum Torque [ft.lbs]	35,000
Shaft connection	6.5/8" API RH (box), 7.750" OD TJ.
Diameter of CRT body	32"
Width of CRT ass'y	44.3"
Height*	117" (compensator mid stroke, from shaft shoulder + CRT bell guide)
Height	139.8" (link arm fully in, from shaft shoulder to H-SJH)

## MAIN PART NUMBERS

Part number	Description
50008500Y*	CRT350 Casing Running Tool
50008610	Independent Control Panel
50008551	Portable service loop

## TECHNICAL SPECIFICATIONS CRT500

Description	CRT500-14	CRT500-20 **
API 8C Hoist Rating [sTon/Ton]	500 / 454	500 / 454
Casing Size	4.1/2" to 14"	16" to 20"
Fill-Up and Circulation	4.1/2" -14" Circulation / Fill-up & recovery over the full range.	4.1/2" -14" Circulation / Fill-up over the full range.
Maximum Mud Circulation Pressure [psi/kPa]	up to 5,000 / 34,500, size dependant	up to 5,000 / 34,500, size dependant
Rotational speed [rpm]	0-20	0-20
Weight (fully dressed) [lbs/kg]	17,636 / 8,000	18,739 / 8,500
Maximum Push Down Force [lbs/kg]	40,000 / 18,100	40,000 / 18,100
Temperature Range [°C/°F]	-20° to +55° / -4° to 131°	-20° to +55° / -4° to 131°
Maximum Torque [ft.lbs@psi / Nm @ kPa]	55,000 @ 2,500 / 74,540 @ 17,236)	55,000 @ 2,500 / 74,540 @ 17,236)
Shaft connection	7.5/8" API RH (box), 8.625"OD TJ.	7.5/8" API RH (box), 8.625"OD TJ.
Diameter of CRT body	40"	40"
Width of CRT ass'y	53.5"	53.5"
Height*	146.4"	166.4"
Height	166.8" (link arm fully in)	186.8" (link arm fully in)

\* Stackup length is from TDS Bell Guide to top of main shaft (w/o X-over sub) \*\* For the use of the 16" - 20" body, a CRT500-14 is needed.

## MAIN PART NUMBERS

Part number	Part
50002500Y*	CRT500-14
50002543**	Body Assembly for CRT500-20
50002551*	Interface kit for CRT500-20 (Leveling beam, catch plate, links etc)
50002552*	Link tilt extension kit for CRT500-20
50008610	Independent Control Panel
50008551	Portable service loop

\* Contact NOV for details.

\*\* For the use of the 16" - 20" body, a CRT500-14 pn 50002500Y is needed.

**SIZE COMPONENTS CRT350: SLIPS AND INSERTS**

Casing : 4.1/2" up to 9.7/8"				
Size	Insert Part Number	Qty (per slip ass'y)	Part Number, Slip Ass'y	
4".1/2"	2165	8	50008566Y412	
Slip #3 à 5.1/2" Nominal, CASING				
4.1/2"	2168	12	50008567Y412	
5"	2169	12	50008567Y500	
5.1/2"	2170	12	50008567Y512	
Slip #4 à 7.5/8" Nominal, CASING				
6.5/8"	2632	16	50008568Y658	
7"	2623	16	50008568Y700	
7.5/8"	2633	16	50008568Y758	
7.3/4"	2649	16	50008568Y734	
Slip #5 à 9.5/8" Nominal, CASING				
8.5/8"	2640	20	50008569Y858	
8.3/4"	2650	20	50008569Y834	
9.5/8"	2633	20	50008569Y958	
9.3/4"	2649	20	50008569Y934	
9.7/8"	2649	20	50008569Y978	

**SIZE COMPONENTS CRT500-14: SLIPS AND INSERTS**

Casing : 4.1/2" up to 14"				
Slip #4.1/2" à 5.1/2" Nominal, CASING				
Size	Insert Part Number	Qty (per slip ass'y)	Part Number, Slip Ass'y	
4.1/2"	2168	18	50002567Y412	
5"	2169	18	50002567Y500	
5.1/2"	2170	18	50002567Y512	
Slip #6.5/8" à 7.3/4" Nominal, CASING				
6.5/8"	2632	24	50002568Y658	
7"	2623	24	50002568Y700	
7.5/8"	2633	24	50002568Y758	
7.3/4"	2649	24	50002568Y734	
Slip #8.5/8" à 9.7/8" Nominal, CASING				
8.5/8"	2640	30	50002569Y858	
8.3/4"	2650	30	50002569Y834	
9.5/8"	2633	30	50002569Y958	
9.3/4"	2649	30	50002569Y934	
9.7/8"	2649	30	50002569Y978	
Slip #10.3/4" à 12" Nominal, CASING				
10.3/4"	2640	42	50002570Y1034	
10.7/8"	2650	42	50002570Y1078	
11.3/4"	2637	42	50002570Y1134	
11.7/8"-12"	2651	42	50002570Y1178	
Slip #12.3/4" à 14" Nominal, CASING				
12.3/4"	2657	42	50002571Y1234	
13.3/8"	2636	42	50002571Y1338	
13.1/2"	2652	42	50002571Y1312	
13.5/8"	2653	42	50002571Y1358	
14"	2635	42	50002571Y1400	



## SIZE COMPONENTS CRT500-20: SLIPS AND INSERTS

Casing : 16" up to 20"			
Nominal, CASING			
Size	Insert Part Number	Qty (per slip ass'y)	Part Number, Slip Ass'y
20"	17080	Tbd	50002576Y2000
18-5/8"	2635	Tbd	50002577Y1858
18"	2636	Tbd	50002577Y1800
16"	2635	Tbd	50002578Y1600

## SIZE COMPONENTS: CRT350: BOTTOM GUIDES

Part number for CRT350	Bottom guide (nominal pipe size)	Inner Diameter
50008588	4.1/2"	5.750"
50008589	5"	6.250"
50008590	5.1/2"	6.750"
50008591	6.5/8"	8.250"
50008592	7"	8.250"
50008593	7.5/8"	9.250"
50008594	8.5/8"	10.250"
50008595	9.5/8"	11.250"
50008596	9.3/4" & 9.7/8"	11.500"

## SIZE COMPONENTS CRT500-14: BOTTOM GUIDES

Part number for CRT500-14	Bottom guide (nominal pipe size)	Inner Diameter
50002583	4.1/2"	5.75"
50002584	5"	6.25"
50002585	5.1/2"	6.72"
50002586	6.5/8" & 7"	8.25"
50002587	7.1/2" upto 7.7/8"	9.25"
50002588	8.5/8" & 8.3/4"	10.25"
50002589	9.5/8"	11.25"
50002590	9.3/4" & 9.7/8"	11.50"
50002591	10.3/4" & 10.7/8"	12.38"
50002592	11.3/4" upto 12"	13.31"
50002593	12.3/4" & 12.7/8"	14.50"
50002594	13.3/8"	15.00"
50002595	13.1/2" upto 13.3/4"	15.25"
50002596	14"	15.62"

## SIZE COMPONENTS CRT500-20: BOTTOM GUIDES

Part number for CRT500-20	Bottom guide (nominal pipe size)	Inner Diameter
50002579	20"	Tbd
50002580	18-5/8"	Tbd
50002581	18"	Tbd
50002582	16"	Tbd

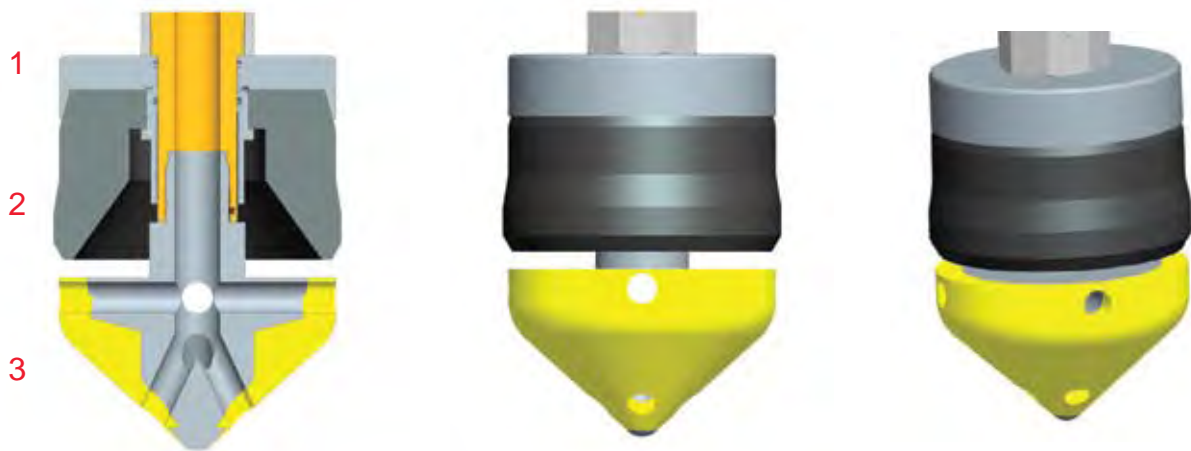
MAIN PART NUMBERS FAC TOOL

CRT	Part number	Range
CRT350	59000361*	4.1/2" - 6.5/8"
CRT350	59000360*	7" - 9.7/8"
CRT500-14	59000360*	7" - 14"
CRT500-20	59000416*	14" - 20"

\* Depends on size components



SIZE COMPONENTS: FAC TOOLS



- 1: Thimble
- 2: Packer Cup
- 3: Noze cone

## SIZE COMPONENTS FAC TOOL 4.1/2" - 5"

Pipe size	Pipe weight (range)	Casing I.D.	Thimble item 1	Packer Cup item 2 partnumber	Cup OD.	Nose cone item 3 partnumber	Nose cone OD.	Remarks
4.1/2"	9.5 -11.6 #	4.090" -4.000"	59000377-412-9	59000378-412-9	4.15"	59000379-412-9	3.875"	
4.1/2"	12.6 -13.5#	3.958" -3.920"	59000377-412-9	59000378-412-13	4.08"	59000379-412-13	3.795"	
4.1/2"	15.1#	3.826"	59000377-412-15	59000378-412-15	3.95"	59000379-412-15	3.710 "	Smallest possible drift
5.00"	15 -18#	4.408" -4.276"	59000377-500-15	59000378-500-15	4.62"	59000379-500-15	4.151"	
5.00"	18 - 21#	4.276" -4.126"	59000377-500-18	59000378-500-18	4.34"	59000379-500-15 59000379-500-21	4.151" 3.919"	5.00" 20.3# Upwards Cone 59000379-500-21

Available size components for 4.1/2" casing			Available size components for 5" casing		
Parts marked with a Qty are part of size component kit 59000362-412			Parts marked with a Qty are part of size component kit 59000362-500		
Qty	NOV Part number	Description	Qty	NOV Part number	Description
1	59000377-412-9	Thimble 4.1/2" 9.5/11 6# 12.6/13.5#	1	59000377-500-15	Thimble 5.00" 15/18# 18/21#
1	59000377-412-15	Thimble 4.1/2" 15.1#	1	59000378-500-15	Cup 5.00" 15/18#
1	59000378-412-9	Cup 4.1/2" 9.5/11.6#	1	59000378-500-18	Cup 5.00" 18/21#
1	59000378-412-13	Cup 4.1/2" 12.6/13.5#	1	59000379-500-15	Nose cone 5.00" 15/18#
1	59000378-412-15	Cup 4.1/2" 15.1#	1	59000379-500-21	Nose cone 5.00" 21/23#
1	59000379-412-9	Nose cone 4.1/2" 9.5/11.6#			
1	59000379-412-13	Nose cone 4.1/2" 12.6/13.5#			
1	59000379-412-15	Nose cone 4.1/2" 15.1#			

## SIZE COMPONENTS FAC TOOL 5.1/2" - 6.5/8"

Pipe size	Pipe weight (range)	Casing I.D.	Thimble item 1	Packer Cup item 2 partnumber	Cup OD.	Nose cone item 3 partnumber	Nose cone OD.	Remarks
5.1/2"	14 -17 #	5.012" -4.892"	59000377-512-17	59000378-512-17	5.20"	59000379-512-14	4.767"	
5.1/2"	17 -23 #	4.892" -4.670"	59000377-512-17	59000378-512-17	4.98"	59000379-512-14 59000379-512-20	4.767" 4.545"	5.1/2" 20# use cone 59000379-550-20
6.5/8"	24 -28 #	5.920" -5.791"	59000377-658-24	59000378-658-24	6.01"	59000379-658-24	5.67"	
6.5/8"	32 #	5.675"	59000377-658-24	59000378-658-32	5.83"	59000379-658-32	5.55"	

Available size components for 5.1/2" casing			Available size components for 6.5/8" casing		
Parts marked with a Qty are part of size component kit 59000362-512			Parts marked with a Qty are part of size component kit 59000362-658		
Qty	NOV Part number	Description	Qty	NOV Part number	Description
1	59000377-512-14	Thimble 5.1/2" 14/17-17/23#	1	59000377-658-24	Thimble 6.5/8" 24/28# 32#
1	59000378-512-14	Cup 5.112" 14/17#	1	59000378-658-24	Cup 6.5/8" 24/28#
1	59000378-512-17	Cup 5.112" 17/23#	1	59000378-658-32	Cup 6.5/8" 32#
1	59000379-512-14	Nose cone 5.1/2" 14/17#	1	59000379-658-24	Nose cone 6.5/8" 24/28#
1	59000379-512-20	Nose cone 5.1/2" 20/23#	1	59000379-658-32	Nose cone 6.5/8" 32#

## SIZE COMPONENTS FAC TOOL 7" - 7.5/8"

Pipe size	Pipe weight (range)	Casing I.D.	Thimble item 1	Packer Cup item 2 partnumber	Cup OD.	Nose cone item 3 partnumber	Nose cone OD.	Remarks
7.00"	17 -23 # (Premium)	6.538" -6.366"	59000377-700-17	59000378-700-17(PR)	6.62"	59000379-700-17	6.25"	
7.00"	26 -30 # (Premium)	6.276" -6.154"	59000377-700-17	59000378-700-26(PR)	6.38"	59000379-700-26	6.00"	
7.00"	32 # (Premium)	6.094"	59000377-700-22	59000378-700-32(PR)	6.20"	59000379-700-26	6.00"	Smallest drift dia. FAC #59000360: 5.695"
7.5/8"	24 -26.4 # (Premium)	7.025" -6.969"	59000377-758-24	59000378-758-24(PR)	7.25"	59000379-758-24	6.75"	
7.5/8"	29.7 -33.7 # (Premium)	6.875" -6.765"	59000377-758-24	59000378-758-30(PR)	6.92"	59000379-758-24 59000379-758-34	6.75" 6.50"	7.5/8" 33.7# use 59000378-758-34
7.5/8"	39 # (Premium)	6.625"	59000377-758-24	59000378-758-39(PR)	6.72"	59000379-758-34	6.50"	

Available size components for 7" Butress casing			Available size components for 7" Premium casing		
Parts marked with a Qty are part of size component kit 59000362-700			Parts marked with a Qty are part of size component kit 59000362-700PR		
Qty	NOV Part number	Description	Qty	NOV Part number	Description
1	59000377-700-17	Thimble 7.00" 17120#, 17123#, 26/30#	1	59000377-700-17	Thimble 7.00" 17120#, 17123#, 26/30#
1	59000377-700-22	Thimble 7.00" 22/24#, 12/26#, 32#	1	59000377-700-22	Thimble 7.00" 22/24#, 12/26#, 32#
1	59000378-700-17	Cup 7.00" 17/23#	1	59000378-700-17PR	Cup 7.00" 17/23# Premium
1	59000378-700-26	Cup 7.00" 26/30#	1	59000378-700-26PR	Cup 7.00" 26/30# Premium
1	59000378-700-32	Cup 7.00" 32#	1	59000378-700-32PR	Cup 7.00" 32# Premium
1	59000379-700-17	Nose cone 7.00" 17/23#	1	59000379-700-17	Nose cone 7.00" 17/23#
1	59000379-700-26	Nose cone 7.00" 26/32#	1	59000379-700-26	Nose cone 7.00" 26/32#

Available size components for 7.5/8" Butress casing			Available size components for 7.5/8" Premium casing		
Parts marked with a Qty are part of size component kit 59000362-758			Parts marked with a Qty are part of size component kit 59000362-758PR		
Qty	NOV Part number	Description	Qty	NOV Part number	Description
1	59000377-758-24	Thimble 7.5/8" (all weight ranges)	1	59000377-758-24	Thimble 7.5/8" (all weight ranges)
1	59000378-758-24	Cup 7.5/8" 24/26.4# Premium	1	59000378-758-24PR	Cup 7.5/8" 24/26.4# Premium
1	59000378-758-30	Cup 7.5/8" 29.7/33.7# Premium	1	59000378-758-30PR	Cup 7.5/8" 29.7/33.7# Premium
1	59000378-758-39	Cup 7.5/8" 39# Premium.	1	59000378-758-39P	Cup 7.5/8" 39# Premium
1	59000379-758-24	Nose cone 7.5/8" 24/29.7#	1	59000379-758-24	Nose cone 7.5/8" 24/29.7#
1	59000379-758-34	Nose cone 7.5/8" 33.7/39#	1	59000379-758-34	Nose cone 7.5/8" 33.7/39#

## SIZE COMPONENTS FAC TOOL 8.5/8" - 9.5/8"

Pipe size	Pipe weight (range)	Casing I.D.	Thimble item 1	Packer Cup item 2 partnumber	Cup OD.	Nose cone item 3 partnumber	Nose cone OD.	Remarks
8.5/8"	20 -24 #	8.191 "-8.097"	59000377 -858-20	59000378-858-20	8.26"	59000379-858-20	8.00"	
8.5/8"	28 -36 #	8.017 "-7.825"	59000377 -858-28	59000378-858-28	8.15"	59000379-858-28	7.70"	
9.5/8"	36 -43 # (Premium)	8.921"-8.755"	59000377-958-36	59000378-958-36(PR)	9.05"	59000379-958-36	8.625"	
9.5/8"	40 -47 # (Premium)	8.835" -8.681"	59000377-958-40	59000378-958-40(PR)	8.85"	59000379-958-36 59000379-958-47	8.625" 8.375"	9.5/8" 47# use 59000379-958-47
9.5/8"	47 -53 # (Premium)	8.681" -8.535"	59000377-958-40	59000378-958-47(PR)	8.75"	59000379-958-47	8.375"	
9.5/8"	53 -58 # (Premium).	8.535" -8.435"	59000377-958-53	59000378-958-53PR	8.65"	59000379-958-53	8.220"	

Available size components for 8.5/8" Buttress casing			Available size components for 9.5/8" Buttress casing		
Parts marked with a Qty are part of size component kit 59000362-858			Parts marked with a Qty are part of size component kit 59000362-958		
Qty	NOV Part number	Description	Qty	NOV Part number	Description
1	59000377-858-20	Thimble 8.5/8" 20/24#	1	59000377-958-36	Thimble 9.5/8" 36/43#
1	59000377-858-28	Thimble 8.5/8" 28/36#	1	59000377-958-40	Thimble 9.5/8" 40/47- 47/53#
1	59000378-858-20	Cup 8.5/8" 20/24#	1	59000378-958-36	Cup 9.5/8" 36/43#
1	59000378-858-28	Cup 8.5/8" 28/36#	1	59000378-958-40	Cup 9.5/8" 40/47#
1	59000379-858-20	Nose cone 8.5/8" 20/24#	1	59000378-958-47	Cup 9.5/8" 47/53.5#
1	59000379-858-28	Nose cone 8.5/8" 28/36#	1	59000379-958-36	Nose cone 9.5/8" 36/43#
			1	59000379-958-47	Nose cone 9.5/8" 47/53#

Available size components for 9.5/8" Premium casing		
Parts marked with a Qty are part of size component kit 59000362-958PR		
Qty	NOV Part number	Description
-	59000377-958-36	Thimble 9.5/8" 36/43#
1	59000377-958-40	Thimble 9.5/8" 40/47-47/53#
1	59000377-958-53	Thimble 9.5/8" 53/58#
-	59000378-958-36PR	Cup 9.5/8" 36/43# Premium.
1	59000378-958-40PR	Cup 9.5/8" 40/47# Premium.
1	59000378-958-47PR	Cup 9.5/8" 47/53# Premium.
1	59000378-958-53PR	Cup 9.5/8" 53/58# Premium.
1	59000379-958-36	Nose cone 9.5/8" 36/43#
1	59000379-958-47	Nose cone 9.5/8" 47/53#
1	59000379-958-53	Nose cone 9.5/8" 53/58#

SIZE COMPONENTS FAC TOOL 10.3/4"

Pipe size	Pipe weight (range)	Casing I.D.	Thimble item 1	Packer Cup item 2 partnumber	Cup OD.	Nose cone item 3 partnumber	Nose cone OD.	Remarks
10.3/4"	32-55 #	10.192" -9.760"	59000377-1034-32	59000378-1034-32	10.20"	59000379-1034-32	9.794"	10.3/4" 32-46#
10.3/4"	60-73 #	9.660" -9.406"	59000377-1034-60	59000378-1034-60	9.72"	59000379-1034-55 59000379-1034-65 59000379-1034-73	9.604" 9.404" 9.250"	10.3/4" 51-55# 10.3/4" 60-65# 10.3/4" 71-73#
10.3/4"	51-55 # Premium	9.850" -9.760"	59000377-1034-32	59000378-1034-51PR	10.10"	59000379-1034-51 59000379-1034-55	9.694" 9.604"	10.3/4" 51# 10.3/4" 55#
10.3/4"	60-65 # Premium	9.660" -9.560"	59000377-1034-60	59000378-1034-60PR	9.94"	59000379-1034-60 59000379-1034-65	9.504" 9.404"	10.3/4" 60# 10.3/4" 65#
10.3/4"	71-73 # Premium	9.450 " -9.406"	59000377-1034-60	59000378-1034-71PR	9.72"	59000379-1034-71 59000379-1034-73	9.294" 9.250"	10.3/4" 71# 10.3/4" 73#
10.3/4"	79-85 # Premium	9.282 " -9.156"	59000377-1034-79	59000378-1034-79PR	9.56"	59000379-1034-79 59000379-1034-85	9.125" 9.000"	10.3/4" 79# 10.3/4" 85#

Available size components for 10.3/4" Butress casing  
 Parts marked with a Qty are part of size component kit 59000362-1034

Qty	NOV Part number	Description
-	59000377-1034-32	Thimble 10.3/4" 32/55#
1	59000377-1034-60	Thimble 10.3/4" 60/73#
-	59000378-1034-32	Cup 10.3/4" 32/55#
1	59000378-1034-60	Cup 10.3/4" 60/73#
-	59000379-1034-32	Nose cone 10.3/4" 32/46#
-	59000379-1034-55	Nose cone 10.3/4" 51/55#
1	59000379-1034-65	Nose cone 10.3/4" 65#
1	59000379-1034-73	Nose cone 10.3/4" 73#

Available size components for 10.3/4" Premium casing  
 Parts marked with a Qty are part of size component kit 59000362-1034PR

Qty	NOV Part number	Description
1-	59000377-1034-32	Thimble 10.3/4" 32/55#
1	59000377-1034-60	Thimble 10.3/4" 60/73#
-	59000377-1034-79	Thimble 10.3/4" 79-85#
-	59000378-1034-51PR	Cup 10.3/4" 51/55# Premium.
1	59000378-1034-60PR	Cup 10.3/4" 60/65# Premium.
1	59000378-1034-71PR	Cup 10.3/4" 71/73# Premium.
-	59000378-1034-79PR	Cup 10.3/4" 79/85# Premium.
-	59000379-1034-51	Nose cone 10.3/4" 51#
-	59000379-1034-55	Nose cone 10.3/4" 55#
1	59000379-1034-60	Nose cone 10.3/4" 60#
1	59000379-1034-65	Nose cone 10.3/4" 65#
1	59000379-1034-71	Nose cone 10.3/4" 71#
1	59000379-1034-73	Nose cone 10.3/4" 73#
-	59000379-1034-79	Nose cone 10.3/4" 79#
-	59000379-1034-85	Nose cone 10.3/4" 85#

## SIZE COMPONENTS FAC TOOL 13.3/8"

Pipe size	Pipe weight ( range )	Casing I.D.	Thimble item 1	Packer Cup item 2 partnumber	Cup OD.	Nose cone item 3 partnumber	Nose cone OD.	Remarks
13.3/8"	48 -54#	12.710" -12.615"	59000377-1338-48	59000378-1338-48	12.95"	59000379-1338-54	12.459"	
13.3/8"	54 -72 #	12.615" -12.347"	59000377-1338-48	59000378-1338-54	12.72"	59000379-1338-72	12.181"	
13.3/8"	54 -61 #	12.615" -12.515"	59000377-1338-48	59000378-1338-54PR	12.87"	59000379-1338-54	12.459"	13.3/8" 54#
	Premium					59000379-1338-61	12.354"	13.3/8" 61#
13.3/8"	68-72 #	12.415" -12.347"	59000377-1338-48	59000378-1338-68PR	12.70"	59000379-1338-68	12.248"	13.3/8" 68#
	Premium					59000379-1338-72	12.181"	13.3/8" 72#
13.3/8"	77 #	12.275"	59000377-1338-48	59000378-1338-77PR	12.56"	59000379-1338-77	12.119"	13.3/8" 77#
	Premium							

### Available size components for 13.3/8" Butress casing

Parts marked with a Qty are part of size component kit 59000362-1338

Qty	NOV Part number	Description
1	59000377-1338-48	Thimble 13.3/8" 48/77#
-	59000378-1338-48	Cup 13.3/8" 48/61 #
1	59000378-1338-54	Cup 13.3/8" 54/72*
1	59000379-1338-54	Nose cone 13.3/8" 54*
1	59000379-1338-72	Nose cone 13.3/8" 72*

### Available size components for 13.3/8" Premium casing

Parts marked with a Qty are part of size component kit 59000362-1338PR

Qty	NOV Part number	Description
1	59000377-1338-48	Thimble 13.3/8" 48/77#
-	59000378-1338-54PR	Cup 13.3/8" 54/61# Premium.
1	59000378-1338-68PR	Cup 13.3/8" 68/72# Premium.
-	59000378-1338-77PR	Cup 13.3/4" 77# Premium.
-	59000379-1338-54	Nose cone 13.3/8" 54#
-	59000379-1338-61	Nose cone 13.3/8" 61#
1	59000379-1338-68	Nose cone 13.3/8" 68#
1	59000379-1338-72	Nose cone 13.3/8" 72#
-	59000379-1338-77	Nose cone 13.3/8" 77#

SIZE COMPONENTS KITS FAC TOOL CRT500-20

Part Number	Size
59000417-2000	FAC tool Size components Kit to run 20" Casing
59000417-1858	FAC tool Size components Kit to run 18.5/8" Casing
59000417-1800	FAC tool Size components Kit to run 18" Casing
59000417-1600	FAC tool Size components Kit to run 16" Casing



# ROTARY SUPPORT TABLES

## RST ROTARY SUPPORT TABLE

- Smaller, lighter and more cost effective for top drive equipped rigs.
- Uses hydraulic motors directly geared to the rotary drive gear.
- Eliminates the transmission and the drive train.
- Standard hydraulic operated lock permits the table to be locked at any position, in both directions.
- Reduces the rotary skid size.
- Lower maintenance costs.
- Hydraulic dynamic slip ring allows operation of PS21/30 power slip without manually breaking/making hydraulic connections, except RST755 + False
- Central lubrication system allows easy greasing of all moving RST-parts.
- Maximum back-up torque on locks is 120,000 ft-lbs.; RST375 max. 80,000 ft-lbs.
- Can be ordered with solid or hinged adapter in size range from 37.1/2" to 75.1/2".
- External skid mounted hydraulic controls station for easy maintenance.
- PS21/30 controls are included in the control station
- Recessed tracks optional
- PS Power Slip Autogreasing System available



### AVAILABLE TABLES

- RST375 is available with or without slip ring
- RST495 is available with or without slip ring
- RST605 is available with or without slip ring
- RST755 without slip ring
- RST495 and 605-False without drive motors / slip ring but including the hydraulic lock for positioning of the rotary bowl. Supplied with a hook up system for the RST and the PS21/30, provided with automated greasing for both the PS and the RST.
- RST605-H is the heavy duty version of the RST605 series with increased load capacity.

## TECHNICAL SPECIFICATIONS

RST-specifications*	RST375**	RST495**	RST495 False	RST605**	RST605 False	RST605 H**	RST755 w/o slip ring
Table size [inches]	37.1/2"	49.1/2"	49.1/2"	60.1/2"	60.1/2"	60.1/2"	75.1/2"
Load rating static [sTon/Ton]	750 / 680	1,000 / 907	1,000 / 907	1,000 / 907	1,000 / 907	1,375 / 1,250	1,375 / 1,250
Torque max. [ft.lbs] / Nm (@ 3000 psi / 20,684 kPa)	30,000 / 40,674	45,000 / 61,011	n/a	45,000 / 61,011	n/a	45,000 / 61,011	45,000 / 61,011
Speed max. [rpm]	15	15	***	15	***	15	15
Max. operational speed [rpm]	5	5	20 ***	5	20 ***	5	5
Dimensions [LxWxH] (incl. top cover)	89" x 61.75" x 28"	105" x 82" x 30.5"	105" x 82" x 30.5"	114" x 95" x 30.5"	114" x 95" x 30.5"	114" x 95"x 31.3"	135" x 114"x 31.25"
Dimensions [LxWxH] (frame only)	86.82" x 58.78" x 28"	99" x 82" x 30.5"	99" x 82" x 30.5"	109" x 91" x 30.5"	109" x 91" x 30.5"	109" x 91" x 31.3"	130" x 110" x 32.25"
Weight, approx. [lbs / kg]	14,102 / 6,396	22,082 / 10,016	19,026 / 8,630	25,823 / 11,713	22,949 / 10,409	28,050 / 12,723	39,748 / 18,029
Maximum working pressure [psi]	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Maximum flow [gpm]	75	115	10	115	10	115	115

\* All data subject to conformation by manufacturer.

\*\* Available w/ OR w/o slip ring

\*\*\* No motors.

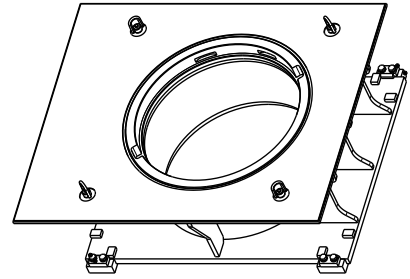
## MAIN PART NUMBERS

The RST Rotary Support Tables are customer specific, hence the part numbers are unique for all tables. When ordering a Rotary Support Table, customer will be requested to specify dimensions, I/O etc.

Rotary Support Tables delivery will include the Control Station, containing the required manifolds, greasing pumps and reservoirs.

## SST STATIC SUPPORT TABLE

- SST: Static table for support purposes only, has no moving parts and does not supply hydraulic fluids.
- Accommodates existing Power Slips with or without adapter rings.
- To be used as a auxiliary well center location.
- Table can back up torque via drive lug pockets.



## TECHNICAL SPECIFICATIONS

SST-specifications	SST375	SST495	SST605	SST755
Table size [inches]	37.1/2"	49.1/2"	60.1/2"	75.1/2"
Load rating [sTon/Ton]	750 / 680	1,000 / 907	1,250 / 1,134	1,375 / 1,247
Torque back-up [ft-lbs / Nm]	50,000 / 67,791	120,000 / 162,698	120,000 / 162,698	120,000 / 162,698
Dimensions [LxWxH] (incl. top cover)	89"x61.75"x28"	105"x88"x30.5"	120.13"x100.75"x35.25"	135"x114"x31.25"
Dimensions [LxWxH] (frame only)	TBD	TBD	103"x84"x35.25"	TBD
Weight, approx. [lbs/kg]	7,000 / 3,171	11,500 / 5,210	15,300 / 6,940	22,500 / 10,193

## MAIN PART NUMBERS

SST-model	SST375	SST495	SST605	SST755
Part number	50005457	50005459	50005452	50005453



# ADAPTER RINGS

## ADAPTER RINGS

Adapter rings, both solid and hinged to be used for creating a smaller hole for accommodating smaller (power) slips.



### TECHNICAL SPECIFICATIONS

Adapter-model from - to	Part number	Remark
NOV 75.1/2" to NOV 60.1/2"	50005448-1	Hinged
NOV 75.1/2" to National 49.1/2"	50005450-1	Solid
NOV 75.1/2" to National 60.1/2"	50005449-1	Solid
NOV 60.1/2" to National 49.1/2"	50004702-1	Solid, with recess for RST hoses
NOV 60.1/2" to National 49.1/2"	50004703-1	Solid
NOV 60.1/2" to National 49.1/2"	50004704-1	Hinged, with recess for RST hoses
National 49.1/2" to National 37.1/2"	50004995	Hinged
National 49.1/2" to National 37.1/2"	50004996	Hinged, with recess for RST hoses
National 49.1/2" to Emsco 37.1/2"	250360	Hinged
Oilwell 37.1/2" to National 37.1/2"	200990-11	Hinged, 6.25" raised load shoulder
Emsco 37.1/2" to National 37.1/2"	200991-11	Hinged, 6.25" raised load shoulder
National 37.1/2" to National 37.1/2"	200995-11	Hinged, 6.25" raised load shoulder
Ideco 37.1/2" to National 37.1/2"	201430-1	Hinged, 6.25" raised load shoulder
Emsco 37.1/2" to Emsco 37.1/2"	202244-1	Hinged, 9" raised load shoulder
Emsco 37.1/2" to API-standard 27.1/2"	50004994	Hinged
National 37.1/2" to API-standard 27.1/2"	50004998	Hinged
Oilwell 37.1/2" to API-standard 27.1/2"	50004999	Hinged

### TECHNICAL SPECIFICATIONS

Size [inches]	60.1/2 to 49.1/2	60.1/2 to 49.1/2	60.1/2 to 37.1/2	49.1/2 to 37.1/2	49.1/2 to 37.1/2	37.1/2 to 27.1/2
Type	solid	split	solid	solid	split	solid
<b>National</b>						
D605	655332	M441000396				
D495				650657A	650657-2A	
C495				650657A	650657-2A	
<b>Oilwell</b>						
A 49 1/2				21111004	21111173	
B 49 1/2				21111004	21111173	
<b>CE</b>						
T-6050	0-6407-0039-00	0-6407-0039-30	0-6407-0031-00	0-6406-0038-20	6406-0038-40	
T-4950				0-6406-0038-20	6406-0038-40	
<b>Ideco</b>						
LR-495				308-189		308-102
LR-375						308-102
<b>Skytop Brewster</b>						
RSB-375						062310-33-00
<b>Gardner Denver</b>						
RT37.5						GD197348



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