MOBILE RIGS

National Oilwell®, Cabot™, Cardwell®, Cooper®, Franks™, Ideco®, Kremco®, Skytop Brewster®, Wilson®

NOV NATIONAL OILWELL VARCO

MOBILE RIGS

Complete Line of Mobile Rig Solutions

National Oilwell Varco® designs, builds, and supports the widest range of self-propelled and trailer mounted well servicing, work-over, and drilling mobile rigs in the world. OEM support of Cabot™, Cardwell®, Cooper®, Franks™, Ideco®, Kremco®, National®, Skytop Brewster®, RMI®, and Wilson® is offered with certified service, repair, and replacement parts. Combining purpose built components with the rigorous attention to quality and construction by one of the most experienced engineering groups in the industry provides the customer with equipment that performs exceptionally well. This combination enables the customer to utilize the available capital in the most productive and beneficial way. Whether that customer is operating in the South American jungles, North African deserts, North American and Russian arctic regions, or any place in between, NOV® provides the solution.

API licenses that NOV holds for mobile rigs include 4F, 7K, 8A and 8C in Pampa, Texas.

Mobile Drilling Rig

Standard Features Include:

- A basic rig design that offers excellent value and proven dependability at market pricing
- New masts are equipped with rod transfer systems (certain models only), tong positioners and delayed racking board deployment, where applicable, to enhance safe operations and reduce operator fatigue
- OSHA compliant handrails and walkways
- Gear ratios may be set to customer specifications to match area roading conditions
- Placement of control panels that are located precisely to provide a clear view of racking boards, traveling equipment and work floor operations on all well servicing, work over and drilling rigs; controls are ergonomically set to assure maximum operator efficiency, while minimizing unwanted distractions
- New rigs are designed in accordance with the applicable local standards, in addition to the American Petroleum Institute (API) and the American Institute of Steel Construction

OEM Service, Repair and Refurbishment

OEM spare parts available for Cabot™, Cardwell®, Cooper®, Franks™, Ideco®, Kremco®, National®, National Oilwell®, RMI®, Skytop Brewster® and Wilson® equipment

- Mobile drilling and well servicing rigs
- Exchange drums, right angle drives and hydromatic brakes for most rigs are in stock
- Refurbishments and repairs are performed to exacting customer specifications and/or National Oilwell Varco Recommended Practices, which meet or exceed industry standards
- National Oilwell Varco's "Fits-All" line of replacement masts are available to fit most mobile rigs

In addition to OEM brands, National Oilwell Varco refurbishes and provides services for all major brands of mobile rig equipment. Machinery Service Centers located throughout the United States provide efficient service and parts inventories. Exchange programs for various assemblies and equipment are available. Rapid shipment of parts from the strategic inventories and worldwide deployment of field service technicians makes efficient repair of mobile drilling and well servicing machinery possible in virtually any location.

National Oilwell Varco C-Series Rig Specifications

Rig Model No.	Drawworks Model	Hoist Capacity Tons (Tonnes)	Nominal Engine Power HP (KW)	Mast Model No.	Depth Capacity 2-7/8 Tubing ft (m)	Depth Capacity 2-7/8 Drill Pipe ft (m)	Depth Capacity 3-1/2 Drill Pipe ft (m)	Depth Capacity 4-1/2 Drill Pipe ft (m)
3C	D300	62.5 (57)	300 (224)	72'-125	10,000' (3,049)			
4C	D500	105 (95)	425 (317)	102'-200	17,000' (5,183)			5,000' (1,524)
5C	D500	125 (113) 150 (136)	525 (392)	104'-250 108'-250 108'-300	20,000' (6,098)			6,500' (1,982)
6C	D700	150 (136) 175 (159)	630 (470)	108'-300 112'-300 117'-350	22,000' (6,707)			8,000' (2,439)
7C or 7T	D700	175 (159) 200 (181)	775 (578)	117'-350 117'-400	25,000' (7,622)			10,000' (3,040)

National Oilwell Varco Rigs Drawworks Specifications

Model No	Single Line Pull (on Lebus)	Drum Dia. inches (mm)	Drum Clutch	No. Hoist Speeds	Brake Size inches (mm)	Degree Of Wrap	Brake Cooling	Effec. Brake Area sq. in. (sq. m.)	Auxiliary Brake	Sandline Cap. / Size
D300*	35,500#	17" (434)	PO224	5	38" x 10" (970 mm X 255 mm)	330	Splash	2279 sq. in. (1.47 sq. m.)	*	8,230' of 9/16
D500*	40,000#	19⅝" (498)	PO224	5	42" x 12" (1067 mm X 305 mm)	330	Splash or Circulating	3054 sq. in. (1.97 sq. m.)	*	12,000' of 9/16
D700*	40,000#	19⅝" (498)	PO224	5	42" x 12" (1067 mm X 305 mm)	330	Circulating	3054 sq. in. (1.97 sq. m.)	*	14,500' of 9/16

* *Main Drum Disc Brakes, Auxiliary Disc Assist, Hydromatic Brakes and other Auxiliary Brake Systems available on application.*

Advanced Technology Rig

The National Oilwell Varco Mobile Rig Product Line has been developed intentionally as a result of listening to our customers. That listening has produced rigs that are not only oilfield rugged to withstand the physical demands of the industry but also with safety in mind. Safety is a major concern and the new designs increase the safety level by interfacing the advanced machinery with technologically improved controls and easier to read digital instrumentation. This combination allows the operator to work more efficiently in an environment that affords unprecedented control of user-friendly equipment; thereby reducing the stress and fatigue of the operator which provides a safer work area. All of this is accomplished by offering products that are cost effective to the customer; both at the time of initial purchase and throughout the life cycle of the equipment.

Standard features of the Advanced Technology Rigs include:

- A new drawworks design that eliminates the jackshaft, yielding improved maintenance and a quieter, safer work environment while retaining the benefits of the jackshaft
- Four cycle, electronically controlled engines that reduce noise are coupled to electronically controlled transmissions for maximum efficiency over a range of speed and pressure requirements
- National Oilwell Varco's newly designed mast line is manufactured from high-strength, cold drawn seamless square tubing; square tubing allows the maximum load carrying capacity with desired torsional stiffness, while minimizing mast weight
- New masts are designed with a reduced profile that lowers the center of gravity and enhances safety while moving
- Built-in steps on both sides of carrier improve accessibility to deck
- A larger, safer work platform, enhanced by Grip Strut flooring and fold out wings
- Additional working room at the crown block area for enhanced safety and reduced fatigue
- New design extended length leveling jacks are provided. These are equipped with terrain adjusting crane-type pads which eliminate the need for jack stands, improve safety, and allow faster rig-up. The new jacks are designed to be easily replaced as well, should the need arise.
- Improved surfacing (Fibergrate™) on all walkways for safer footing and lower weight
- Low entry, dropped profile cab, providing ease of entry and improved visibility

Kinetic Energy Control System (KECS) (Optional)

- PLC based instrumentation and controls increase the functionality of the engine, drawworks clutch and brakes
- Electric over hydraulic/pneumatic operation of the drawworks, engine and brakes ensures a maximum of safety and requires less physical exertion of the operators which reduces the likelihood of fatigue induced accidents
- Alarms and monitoring of selected rig parameters enable the operator to make more informed decisions
- Stainless steel NEMA 4X enclosures are suitable for hazardous area use
- Resilient mountings protect against shock and vibration

MOBILE RIGS

C Series Rigs

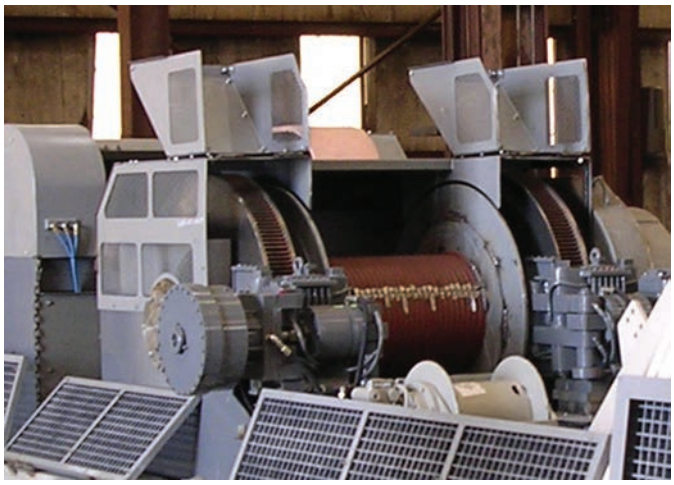
Series 6C Rig

Series 5C Rig

Series 4C Rig

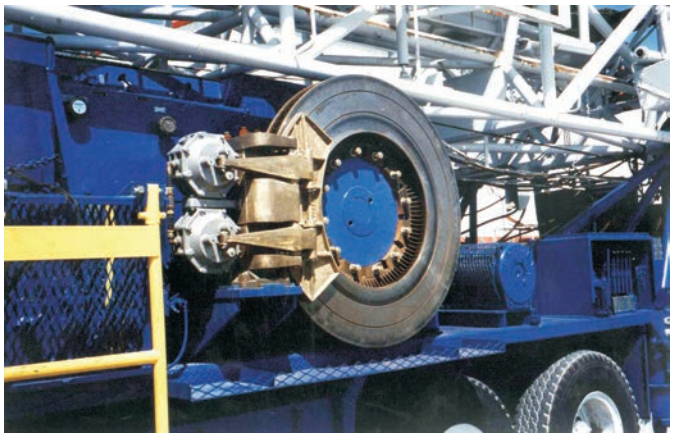
Series 3C Rig

National Oilwell Varco Braking Systems



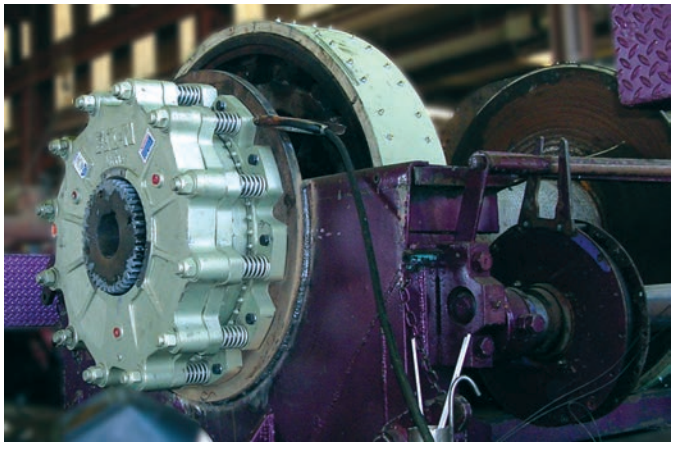
Disc Brake Features

- Single or double air cooled rotors mounted to drum spool with corresponding hydraulically controlled dual acting caliper assemblies
- Air cooled rotors with patented caliper brake technology designed to ensure proper flow through the rotor vanes
- Extremely long life of pads and rotors outlives typical brake pads and rims, allowing reduced maintenance costs
- Greater control and less heat generation than that of other systems
- Self adjusting caliper that automatically compensates for wear in the brake pads; the caliper design allows quick pad replacement
- National Oilwell Varco system design automatically applies spring brakes in event of loss of system pressure; the system also includes an emergency stop button and a parking brake button, either of which will ensure application of spring brakes to provide total redundancy in the event of a problem
- Patented pressure building control system as opposed to a high pressure system that releases pressure to the brakes as required
- EZ adjustable feature of the design allows it to be used as a retarder when a load is being lowered, negating the need for an auxiliary brake in most cases, increasing available workspace
- Grease fittings are easily accessible and centrally located for each caliper assembly



Disc Style Assist Brake

- Operates efficiently in extreme temperatures, no fluids to freeze
- Maintains a consistent efficiency throughout the operation cycle
- Maintains consistent trip cycle times
- Lowers operator fatigue
- Can be retrofitted to most existing well servicing, workover, and portable drilling rigs
- Available in two sizes and single or double caliper
- Applicable to main drum as an auxiliary brake and sand drum as a primary brake



Eaton™* Brake

- Single or dual piston provides wider range of applied tension with greater control
- Split wear spacers allow wear adjustment without disassembly of the brake
- Specially formulated friction material eliminates the stick-slip characteristic associated with ordinary frictional devices
- Copper interface conducts heat rapidly to the circulating coolant
- Torque can be obtained at all speeds and can withstand high thermal power loading throughout the cycle

* Eaton™ is proprietary to the Eaton Corporation

MOBILE RIGS

Optional Features Include:

- Unique and proprietary hydraulic disc braking, providing a safer, more powerful method to control today's increased hook loads; National Oilwell Varco Patented Disc Brake System reduces overall weight and environmentally sensitive fluids present on the rig; with a built-in retarder feature that generally eliminates the need for supplementary retarders, and also provides greater sensitivity and reliability than hydrotarders; working space on the carrier floor is substantially increased by a clean deck design
- Rig automation for new build rigs and retrofitting to existing equipment, increasing safety while decreasing operator fatigue
- An integrated operator platform and work platform promoting safety and quicker, simpler, safer rig-up is available. The integrated platform and telescoping stairways are raised and deployed smoothly at the height desired from controls at ground level. Heights may be adjusted to 6" intervals. Safety and operational benefits of having driller and floor hands together at any platform working height, cannot be over emphasized.
- Special heating and air conditioning systems are available for all styles and sizes of rigs
- Decking can be constructed of specially designed materials (such as non-static discharge fiber grating) to minimize the danger of slipping in adverse conditions, reduce overall rig weight, and reduce the likelihood of accidental sparks
- Rigs can be designed to accommodate weather protection on the racking board and work floor areas, utilizing special fabric and an all steel square tubing frame mounted securely to the rig structure
- Heaters for engines, hydraulic oils and work areas enable superior reliability in cold conditions
- Acoustic enclosures, driller's control cabins and operator's seating options are available
- Masts that range from 88,000 to 750,000 lbs. in hook load capacity and from 55 to 142 ft. under the crown
- Eaton® and disk style auxiliary braking systems are available on new builds and as retrofits to existing equipment
- Substructures, ranging in height from 8 feet to over 23 feet, are available in a variety of configurations to meet specific field requirements
- Removable sand drum feature can reduce overall fleet cost where applicable

Replacement Masts (Fits All)

- Full API rating and monogram
- Constructed of low alloy steels; no exotic alloys are used that are difficult to obtain when repairs are required
- Lightweight design greatly aids in meeting ever-increasing weight restrictions on highway permits
- Low-profile design enables the rig to travel over roads that are impossible for some rigs
- H-base design and Franks™ style rear mast support that allows derrick to be rigged up faster and on steeper grades
- Designed to fit on most carriers with some modification
- Sizes: 72'-125, 96'-210, 102'-200, 104'-250, 108'-300, 112'-300, and 117'-350
- Standard Polyurethane two-coat paint system with zinc rich primer
- Locking Pins (dogs) have a positive locking feature
- Hydraulic telescoping cylinder
- Automatic folding combination rod hanger support and platform with airlift rod transfer system
- Delayed action racking platform

Power Swivels

NOV offers a full line of Power Swivels combining the highest quality, safety and reliability into complete trailerized or skidded units. The Power Swivels can be utilized onto the following three transport options:

- Skid
- Gooseneck Trailer
- Bumper Pull Trailer

All complete Power Swivel units come standard with:

- Hydraulic Powered Hose Reel
- Full-Sized Spare tire (exception on skid)
- Battery Box
- Heavy-Duty Stainless Steel Too Box

The Most popular sizes are the S-85 and the S-120, and are detailed and shown below.

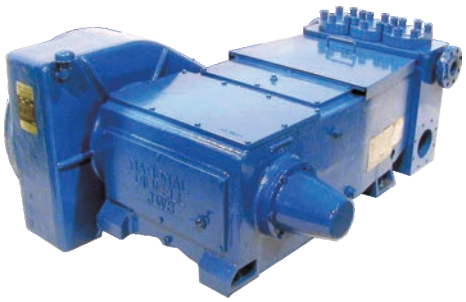
S-85 Power Swivel

Weight	1,115 lbs
Maximum Torque	3,950 ft-lbs
Maximum Speed	155 rpm
Nominal Load Rating	85 tons
100 RPM Load Rating	65 tons
Maximum Circulating Pressure	5,000 psi

S-120 Power Swivel

Weight	2,000 lbs
Maximum Torque	6,100 ft-lbs
Maximum Speed	150 rpm
Nominal Load Rating	120 tons
100 RPM Load Rating	45 tons
Maximum Circulating Pressure	5,000 psi

Companion Products



Well Service Pumps and Unitizations

- Single Acting Continuous Duty from 2 to 1,200 HP with pressures to 8,000 psi
  - Available Spherical Valves provide greater flow through area, higher volumetric efficiency and extend mean time between failure to optimize pump performance
- Double Acting Duplex Pumps from 12 to 250 HP with pressures to 1,800 psi
- Single acting Intermittent Duty Well Service Pumps from 185 to 800 HP with pressures in excess of 20,000 psi
  - Pistons and Plungers available
- Multiple gear reductions offered to perform a wide variety of well site operations
- Several metallurgies available to provide adaptability to differing well head environments
- Truck and skid mounted unitizations

Pump Unitization

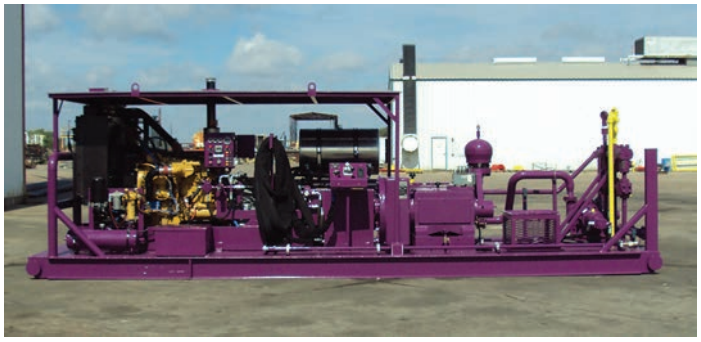
- NOV triplex mud pump unitizations between 185 and 800 hp are available with NOV's JWS-340 model, being the most popular.
- Power package features electronically controlled engine and transmission, and is on a separate skid for easy removal should significant maintenance of the power package be required. Tier III engines are available.

Standard Equipment

- 1810 drive shaft
- 4700 OFS transmission
- Heavy duty liner wash system
- Hydraulic driven centrifugal suction charge pump
- Oilfield type skid with tailboard headache rail provided at each end
- Pressure gauge
- Pulsation dampner
- Pup joint racks
- Remote operation control box assembly
- Resettable shear relief
- Stainless steel fuel and hydraulic tanks

Optional

- Auxiliary lube pump for pump gear end at slow speed operation and in case of internal lube pump failure
- Optional engines
- Special, customer required manifolds



Mathey™ Units

- Drilling Rig units such as the Surveyor (shown), Logger, and Retriever
- Open Hole and Cased Hole units for logging and perforating
- Truck mounted units, both single and double drum, can be adapted to fit the customer's desired truck body and application
- Skid mounted units, both single and double drum, can be configured to meet the customer's requirements
- Severe climate and hazardous area options available
- Diesel, gasoline, electric, or truck PTO power options available

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National Oilwell Varco's Additional Product Line Rig Specifications

Rig Model No.	Drawworks Model	Hoist Capacity Tons (Tonnes)	Nominal Engine Power HP (KW)	Mast Model No.	Depth Capacity 2-7/8 Tubing ft (m)	Depth Capacity 2-7/8 Drill Pipe ft (m)	Depth Capacity 3-1/2 Drill Pipe ft (m)	Depth Capacity 4-1/2 Drill Pipe ft (m)
CABOT								
550	1287W	125 (113)	525 (391)	108-250 108-300			7,500' (2,286 m)	6,500' (1,980 m)
750	2042	150 (136)	800 (596)	112-300 117-300 117-350				
900	2346	175 (159)	1000 (746)	KM 117-350	25,000' (7,620 m)		14,000' (4,267 m)	12,000' (3,658 m)
900	2346	220 (200)	1000 (746)	KM 117-440				
1100	2436-SHL	250 (227)	1100 (820)	136-500				12,000' (3,658 m)
1200	2550-HL	350 (318)	1500 (1120)	136-700				14,000' (4,267 m)
1500	2550-SHL	375 (341)	1600 (1194)	136-700 142-700 142-750				16,000' (4,877 m)
CARDWELL								
KB100	K 100	60 (54.5)	100 (75)	69-120 Single Pole	5,000' (1,524 m)	2,500' (762 m)		
KB 150	K 150	70 (63)	200 (149)	69-140	8,000' (2,438 m)		3,500' (1,067 m)	3,000' (915 m)
KB 200 C	K 200 C	107 (97) 90 (82)	300 (224)	96-125 96-180	12,000' (3,658 m)		6,000' (1,829 m)	4,500' (1,372 m)
KB 210 B	K 210 B	125 (113)	400 (298)	103-250/96-215	16,000' (4,877 m)		7,500' (2,286 m)	6,000' (1,839 m)
KB 250 A	K 250 A	125 (113)	400 (298)	108-250	16,000' (4,877 m) 20,000' (6,096 m)		7,500' (2,286 m) 10,000' (3,048 m)	6,000' (1,829 m) 8,000' (2,438 m)
KB 500	K 500/K 500 SD	150 (136)	700 (522)	112-300	20,000' (6,096 m)		10,000' (3,048 m)	8,000' (2,438 m)
KB 700	K 700/K 700 SD	187.5 (170)	800 (596)	118-375	25,000' (7,620 m)		14,000' (4,267 m)	12,000' (3,658 m)
COOPER								
LTO 150	150-3810	75 (68)	150 (111)	71-150	8,500' (2,590 m)			
LTO 250	250-3810	87.5 (79.3)	250 (185)	96-150	10,000' (3,048 m)	8,000' (2,438 m)		
LTO 350	350-4210	100 (90.7)	350 (259)	97-200	14,000' (4,267 m)	10,000' (3,048 m)		6,000' (1,829 m)
LTO 550	550-4212	125 (113.4)	550 (410)	104-250	18,000' (5,487 m)	14,000' (4,267 m)		8,000' (2,438 m)
LTO 750	750-4212	175 (158.7)	750 (559)	118-365	22,000' (6,706 m)	16,000' (4,877 m)		10,800' (3,290 m)
FRANKS								
200	1058	40 (36)	270 (201)	62-80 72-125 84-110	8,000' (2,438 m)		3,500' (1,067 m)	3,000' (915 m)
300T	1058	125 (113)	360 (268)	96-150	12,000' (3,658 m)		6,000' (1,829 m)	4,500' (1,372 m)
400	1287	125 (113) 107 (97)	515 (384)	96-215 102-215 102-250	16,000' (4,877 m)		7,500' (2,286 m)	6,000' (1,829 m)
500	1287W	150 (136)	525 (391)	102-250	16,000' (4,877 m)			
600	2042	175 (159) 150 (136)	650 (485)	112-300 117-300 117-350	20,000' (6,096 m)		10,000' (3,048 m)	8,000' (2,438 m)
750	2042	200 (181)	800 (596)	KM 117-400	20,000' (6,036 m)		12,000' (3,658 m)	10,000' (3,048 m)

National Oilwell 300

Skytop® SK-35

National Oilwell Varco Additional Product Line Rig Specifications (continued)

Rig Model No.	Drawworks Model	Hoist Capacity Tons (Tonnes)	Nominal Engine Power HP (KW)	Mast Model No.	Depth Capacity 2-7/8 Tubing ft (m)	Depth Capacity 2-7/8 Drill Pipe ft (m)	Depth Capacity 3-1/2 Drill Pipe ft (m)	Depth Capacity 4-1/2 Drill Pipe ft (m)
IDECO								
BIR 3000	H35KD	107 (97)	360 (268)	KM96-215GH	12,000' (3,658 m)		6,000' (1,829 m)	4,500' (1,372 m)
BIR 4000	H35KD	125 (113)	515 (384)	KM105-250GH	16,000' (4,877 m)		7,500' (2,286 m)	6,000' (1,829 m)
BIR 5000	H37E	135 (122)	525 (391)	KM108-270KH	16,000' (4,877 m)		7,500' (2,286 m)	6,500' (1,980 m)
BIR 7000	H44C	179 (162)	950 (708)	KM117-358AH KM112-358AH	20,000' (6,096 m)		12,000' (3,658 m)	10,000' (3,048 m)
BIR 8000	H1000	179 (162)	1000 (746)	KM117-358AH	25,000' (7,620 m)		14,000' (4,267 m)	12,000' (3,658 m)
KREMCO								
K36	K300	40 (36)	250 (185)	K35M-16S K36M-19S	6,000' (1,829 m)		3,000' (914 m)	
K40	K300	44 (40)	250 (185)	K40M-16S K40M-19S	6,000' (1,829 m)		3,000' (914 m)	
K50	K400	55 (55)	320 (240)	K50M-16S K50M-19S	8,000' (2,438 m)		5,000' (1,523 m)	
K 60	K400	55 (55)	320 (240)	K60M-19S K60M-22T	8,000' (2,438 m)		5,000' (1,523 m)	
K80	K600 or K100R for Russia	88 (80)	475 (354)	K80M-29T K80M-30T K80M-31T	12,000' (3,658 m)		8,000' (2,438 m)	
K100	K600 or K100R for Russia	110 (100)	475 (354)	K100M-29T K100M-30T K100M-31T	12,000' (3,658 m)		8,000' (2,438 m)	
K125	K650	136 (125)	475 (354)	K125M-33T K125M-34T	18,000' (5,490 m)		10,000' (3,048 m)	
K136	K650	150 (136)	475 (354)	K136-34T	18,000' (5,490 m)		10,000' (3,048 m)	
K160	K750	176 (160)	860 (641)	K160M-34T	20,000' (6,096 m)		11,000' (3,353 m)	
K180	K750	198 (180)	860 (641)	K180M-35T K180M-36T	20,000' (6,096 m)		11,000' (3,353 m)	
K220	1000PSD	220 (200)	920 (686)	K200M-42T	37,560' (11,448 m)		11,520' (3,512 m)	8,640' (2,634 m)
SKYTOP/BREWSTER								
SS30	SD-38	17.5 (16)	300 (224)	M18.45.2W	Swabbing Unit		Swabbing Unit	
SK20	25D2	60 (54.5)	200 (182)	M60.56.4	8,000' (2,440 m)			
SK30	35D2	75 (68)	300 (224)	M75.95.4	19,200' (5,850 m)		10,800' (3,293 m)	
SK45	45D1/D2	105 (95)	450 (335)	M105.96.4	21,000' (6,400 m)		10,800' (3,293 m)	
SK55	55D2	138 (125)	575 (429)	M139.110.4	21,000' (6,400 m)		14,280' (4,354 m)	
SK65	65D2	150 (136)	650 (485)	M150.112.4	29,400' (8,963 m)		15,960' (4,866 m)	10,920' (3,329 m)
SK75	75D2	175 (159)	750 (559)	M175.118.4	29,400' (8,963 m)		15,960' (4,866 m)	10,920' (3,329 m)
SK120	120D	355 (323)	1200 (895)	M355.136.4			31,680' (9,658 m)	21,060' (6,421 m)
SK150	150D	355 (323)	1500 (1,118)	M355.142.4			31,680' (9,658 m)	21,060' (6,421 m)
WILSON								
Super 32	32	50 (45)	200 (150)	70-100 70-140	6,000' (1,829 m)			
Super 38	38	70 (63) 75 (68) 95 (82)	300 (223)	70-140 96-150 96-182	10,000' (3,048 m)	8,000' (2,438 m)		4,500' (1,371 m)
Mogul 42B-300	42B	75 (68) 91 (82) 111 (100)	450 (335)	96-150 96-182 96-222	15,000' (4,572 m)	10,000' (3,048 m)		
Mogal 42B-400	42B	111 (100) 125 (113) 126 (114)	450 (335)	96-222 96-252 102-250	16,000' (4,877 m)	12,000' (3,657 m)		
Mogal 42B-500	42B	150 (136) 150 (136) 177 (160)	450 (335)	102-300 112-300 110-354	18,000' (5,486 m)	14,000' (4,267 m)		6,500' (1,981 m)
In-Line 700	700	177 (160) 184 (167)	700 (521)	110-354 116-369	30,000' (9,144 m)	25,000' (7,620 m)		10,000' (3,048 m)
65B	65B	150 (136) 150 (136) 177 (160)	700 (521)	102-300 112-300 110-354	30,000' (9,144 m)	25,000' (7,620 m)		10,000' (3,048 m)
75B	75B	172 (156) 177 (156) 184 (167)	900 (671)	110-354 131-344 116-369				12,000' (3,658 m)

MOBILE RIGS

National Oilwell Varco's Additional Product Line Drawworks Specifications

Model No	Single Line Pull (on Lebus)	Drum Dia. inches (mm)	Drum Clutch	No. Hoist Speeds	Brake Size inches (mm)	Degree Of Wrap	Brake Cooling	Effec. Brake Area sq. in. (sq. mm)	Auxiliary Brake	Sandline Cap. / Size
CABOT										
2346SHL*	60,000 lbs. (27,215 kg)	23⅛" (587 mm)	Plate	4 Fwd 1 Rev	12" x 46" (304 mm x 1,168 mm)	330	Circulating	3,324 sq. in. (21,443 sq. mm.)	V-80	Available
2550HL*	75,000 lbs. (34,020 kg)	25" (635 mm)	Plate	5 Fwd 1 Rev	12" x 50" (635 mm x 1,270 mm)	330	Circulating	3,600 sq. in. (23,224 sq. mm.)	V-80	Available
2550SHL*	75,000 lbs. (34,020 kg)	25" (635 mm)	Plate	4 Fwd 1 Rev	12" x 50" (635 mm x 1,270 mm)	330	Circulating	3,600 sq. in. (23,224 sq. mm.)	Tandem V-80	Available
CARDWELL										
K-100	23,100 lbs.** (10,478 kg)	13" (330 mm)	PO-218	5 Forward 1 Reverse	7" X 32" (180 mm X 813 mm)	330	Splash	1,276 sq. in. (8,232 sq. mm)		7,890' (2,405 m)
K-150	26,800 lbs.** (12,156 kg)	13" (330 mm)	PO-124	5 Forward 1 Reverse	8" X 36" (203 mm X 914 mm)	330	Splash	1,659 sq. in. (10,703 sq. mm)	122	10,700' (3,261 m)
K-200C	42,800 lbs.** (19,414 kg)	16" (406mm)	PO-224	5 Forward 1 Reverse	10½" X 40" (266 mm X 1,016 mm)	330	Splash	2,300 sq. in. 14,838 sq. mm)	122	12,500' (3,703 m)
K-210B	45,333 lbs.** (20,563 kg)	16" (406 mm)	33VC650	5 Forward 1 Reverse	9½" X 44" (241 mm X 1,118 mm)	330	Splash	2,280 sq. in. (14,710 sq. mm)	122	14,500' (4,420 m)
K-250A	45,333 lbs.** (20,563 kg)	16" (406 mm)	33VC650 20VC600	5 Forward 1 Reverse	9½" X 44" (241 mm X 1,118 mm)	330	Circulating	2,280 sq. in. (14,710 sq. mm)	122	14,500' (4,420m)
K-500	45,600 lbs.** (20,684 kg)	18" (457 mm)	33VC650	6 Forward 1 Reverse	10½" X 46" (266 mm X 1,168 mm)	330	Circulating	2,649 sq. in. (17,090 sq. mm)	V-80	16,114' (4,911 m)
K-700	57,200 lbs.** (25,945 kg)	18" (457 mm)	37VC650	6 Forward 1 Reverse	10½" X 46" (266 mm X 1,168 mm)	330	Circulating	2,649 sq. in. (17,090 sq. mm)	22DR	14,500' (4,420 m)
K1000	56,200 lbs.** (25,492 kg)	20" (508 mm)	PO-324	5 Forward 1 Reverse	12½" X 46" (317 mm X 1,168 mm)	330	Circulating	3,179 sq. in. (20,510 sq. mm)	V-80	14,500' (4,420 m)
COOPER										
L150	37,500 lbs. (17,010 kg)	12¾" (323.85 mm)	ATD 224	5 Forward 1 Reverse	38" x 10" (965.2 mm x 254 mm)	330	Circulated Water	2,280 sq. in. (14,710 sq. mm)	122	12,500' x 9/16" (3810m x 228.6mm)
L250	37,500 lbs. (17,010 kg)	12¾" (323.85 mm)	ATD 224	5 Forward 1 Reverse	38" x 10" (965.2 mm x 254 mm)	330	Circulated Water	2,280 sq. in. (14,710 sq. mm)	122	12,500' x 9/16" (3810m x 228.6mm)
L350	37,500 lbs. (17,010 kg)	16" (406.4 mm)	ATD 224	5 Forward 1 Reverse	42" x 12" (1066.8 mm x 304.8 mm)	330	Circulated Water	3,052 sq. in. (19,691 sq. mm)	122	12,500' x 9/16" (3810m x 228.6mm)
L550	51,500 lbs. (23,360 kg)	16" (406.4 mm)	ATD 224	5 Forward 1 Reverse	42" x 12" (1066.8 mm x 304.8 mm)	330	Circulated Water	3,052 sq. in. (19,691 sq. mm)	202	14,400' x 9/16" (4389m x 228.6mm)
L750	44,700 lbs. (20,276 kg)	18" (457.2 mm)	28 VC 1000	5 Forward 1 Reverse	42" x 12" (1066.8 mm x 304.8 mm)	330	Circulated Water	3,052 sq. in. (19,691 sq. mm)	202	16,500' x 9/16" (5029m x 228.6mm)
FRANKS										
1058	33,600 lbs.** (15,200 kg)	19⅝" (408 mm)	24" 2 Plate	5 Forward 1 Reverse	10" X 38" (264 mm X 965 mm)	330	Splash	2,280 sq. in. (14,710 sq. mm)	122	16,000' (4,800 m)
1287	37,000 lbs.** (16,500 kg)	19⅝" (408 mm)	24" 2 Plate	5 Forward 1 Reverse	12" X 42" (305 mm X 1,067 mm)	330	Circulating	3,052 sq. in (19,691 sq. mm)	122 202	16,000' (4,800 m)
2042	37,000 lbs.** (16,500 kg)	19⅝" (408 mm)	24" 2 Plate	5 Forward 1 Reverse	12" X 42" (305 mm X 1,067 mm)	330	Circulating	3,052 sq. in. (19,691 sq. mm)	202	16,000' (4,800 m)
2346	54,800 lbs.** (24,900 kg)	23⅛" (587 mm)	30" 2 Plate	5 Forward 1 Reverse	12" X 46" (305 mm X 1,168 mm)	330	Circulating	3,324 sq. in. (21,446 sq. mm)	V-80	16,000' (4,800 m)
2500	74,800 lbs.** (34,000 kg)	25" (635 mm)	36" 2 Plate	4 Forward 2 Reverse	12" X 50" (305 mm X 1,270 mm)	330	Circulating	3,600 sq. In. (23,224 sq. mm)	V-80	
IDECO										
H-35K	34,000 lbs.** (15,400 kg)	15¾" (400 mm)	30CB525	5 Forward 1 Reverse	10½" X 42" (267 mm X 1,067 mm)	330	Splash	2,420 sq. in. (15,163 sq. mm)	15" Double	13,000' (4,000 m)
H-37E	32,700 lbs.** (14,800 kg)	18¾" (467 mm)	32CB525	5 Forward 1 Reverse	10½" X 42" (267 mm X 1,067 mm)	330	Circulating	2,420 sq. in. (15,163 sq. mm)	122	13,000' (4,000 m)
H-44C	41,100 lbs.** (18,,600 kg)	18¾" (476 mm)	36CB525	5 Forward 1 Reverse	11¼" X 44" (292 mm X 1,117 mm)	330	Circulating	2,800 sq. in. (18,065 sq. mm)	202	15,000' (4,600 m)
H-1000	72,590 lbs.** (43,800 kg)	22⅝" (578)	37CB650	5 Forward 1 Reverse	10¾" X 46" (273 mm X 1,168 mm)	330	Circulating	2,650 sq. in. (17,097 sq. mm)	22" Double V-80	

** Main Drum Disc Brakes, Auxiliary Disc Assist, and other Auxiliary Brake Systems available on application.* ***** Single Line Pull, 2nd Layer***

National Oilwell Varco's Additional Product Line Drawworks Specifications (continued)

Model No	Single Line Pull (on Lebus)	Drum Dia. inches (mm)	Drum Clutch	No. Hoist Speeds	Brake Size inches (mm)	Degree Of Wrap	Brake Cooling	Effec. Brake Area sq. in. (sq. mm)	Auxiliary Brake	Sandline Cap. / Size
KREMCO										
K200 Main Drum	30,286 lbs.* (13,286 kg)	11" (279 mm)	26CB525	5 Fwd	7" X 32" (178 mm X 813 mm)	330	(Optional) Water Spray	1,230 sq. in. (830,000 sq. mm)		8,000' / 9/16" (2,439 m - 14 mm)
K300 Main Drum	37,170 lbs.* (16,860 kg)	13" (330 mm)	26CB525	5 Fwd	7" X 34" (178 mm X 864 mm)	330	Splash	1,360 sq. in. (880,000 sq. mm)		8,000' / 9/16" (2,439 m - 14 mm)
K400 Main Drum	41,381 lbs.* (18,770 kg)	14" (356 mm)	30CB525	5 Fwd	8" X 38" (203 mm X 965 mm)	330	Splash	1,750 sq. in. (1,300,000 sq. mm)	15" Double or 121	8,800' / 9/16" (2,684 m - 14 mm)
K600 Main Drum	44,537 lbs.* (20,202 kg)	16" (406 mm)	32CB525	5 Fwd	10" X 42" (254 mm X 1,067 mm)	330	Splash	2,420 sq. in. (1,560,000 sq. mm)	15" Double or 121	
K650 Main Drum	48,990 lbs.* (22,222 kg)	18" (457 mm)	33VC650	5 Fwd	10" X 42" (254 mm X 1,067 mm)	330	Water Circulating	2,420 sq. in. (1,560,000 sq. mm)	22" Single V80 or 23S	14,000' / 9/16" (4,308 m - 14 mm)
K750 Main Drum	55,671 lbs.* (25,252 kg)	18" (457 mm)	33VC650	5 Fwd	11" X 14" (279 mm X 1,188 m)	330	Water Circulating	2,800 sq. in. (1,810,000 sq. mm)	22" Single V80 or 23S	17,000' / 9/16" (5,182 m - 14 mm)
K1000 Main Drum	45,248 lbs.* (20,524 kg)	18" (457 mm)	28VC650	5 Fwd	10" X 42" (254 mm X 1,067 mm)	330	Water Circulating	2,420 sq. in. (1,560,000 sq. mm)	15" Double or 22" Single	
1000PSD Main Drum	72,000 lbs.* (32,659 kg)	24" (610 mm)	PO224	5 Fwd	10" X 46" (254 mm X 1,168 mm)	330	Water Circulating	2,640 sq. in. (1,700,000 sq. mm)	Double V80	15,000' / 9/16" (4,573 m - 14 mm)
SKYTOP/BREWSTER										
SD-38	Swabbing	13" (330 mm)	PO224	5	38" X 8" (965 mm X 203 mm)	330	Spray	1,752 sq in (1,130,000 sq mm)		
25D2	30,000 lbs. (13,608 kg)	16" (406 mm)	PO318	5	32" X 8" (813 mm X 203 mm)	343	Spray	1,534 sq in (990,000 sq mm)		12,000' of 9/16"
35D2	35,000 lbs. (15,876 kg)	16" (406 mm)	PO224	5	38" X 8" (965 mm X 203 mm)	330	Spray	1,752 sq in (1,130,000 sq mm)	122	5,000' of 9/16"
45D1/D2	44,600 lbs. (20,230 kg)	18" (457 mm)	PO324	5	42" X 10" (1,067 mm X 254 mm)	330	Spray or Circulating	2,418 sq in (1,560,000 sq mm)	122	15,000' of 9/16"
55D2	44,600 lbs. (20,230 kg)	18" (457 mm)	PO324	5	46" X 10" (1,168 mm X 254 mm)	300	Circulating	2,635 sq in (1,700,000 sq mm)	202	15,000' of 9/16"
150D	71,000 lbs. (32,205 kg)	27" (686 mm)	PO230 High PO236 Low	4	50" X 10" (1,270 mm X 254 mm)	330	Circulating	2,852 sq in (1,840,000 sq mm)	V80 or SSR28	15,000' of 9/16"
WILSON										
Super 32	34,742 lbs. (15,759 kg)	13¾" (349 mm)	ATD-224	5	31" X 8½" (787 mm X 216 mm)	335		1,379.5 sq in (890,000 sq mm)		9,800' of 9/16"
Super 38	41,864 lbs. (18,989 kg)	13¾" (349 mm)	ATD-224H	5	38" X 8½" (965 mm X 216 mm)	354	Splash	1,689.5 sq in (1,090,000 sq mm)	122 or Disc 27.5	11,500' of 9/16"
Mogal 42	51,184 lbs. (23,217 kg)	19" (482 mm)	ATD-230	5	42" X 10½" (1,066 mm X 267 mm)	347	Splash	2,356 sq in (1,520,000 sq mm)	122 or Disc 27.5	11,500' of 9/16"
Model 65B	50,868 lbs. (23,073 kg)	19" (482 mm)	ATD-230	5	42" X 10½" (1,066 mm X 267 mm)	347	Circulating	2,356 sq in (1,520,000 sq mm)	202 or V80	11,300' of 9/16"
Inline 700	50,868 lbs. (23,073 kg)	19" (482 mm)	ATD-230	6	42" X 10½" (1,066 mm X 267 mm)	347	Circulating	2,356 sq in (1,520,000 sq mm)	202 or V80	11,300' of 9/16"
Model 75	65,204 lbs. (29,576 kg)	19" (482 mm)	ATD-230H	6	42" X 10½" (1,066 mm X 267 mm)	347	Circulating	1,922 sq in (1,240,000 sq mm)	V-80	14,800' of 9/16"

** Single Line Pull, Main Drum* *** Single Line Pull, 2nd Layer*

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