

# Land Rig Portfolio

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## Introduction

Thanks to both our customers’ feedback and our team’s continual improvement of existing technology and development of new solutions, NOV offers our fleet of land drilling rigs to help you overcome today’s drilling challenges.

Our Land Rig Portfolio provides summaries of each land rig’s standard equipment suite and main features. Each rig listed can also be configured to better accommodate your needs. Let us support you with the world’s most advanced drilling solutions as we continually challenge the standards in the following realms:

- Technology and innovation
- Rig configurability
- Quality and performance

The Ideal™ Series

Ideal, Ideal Box, Ideal Prime, Drake

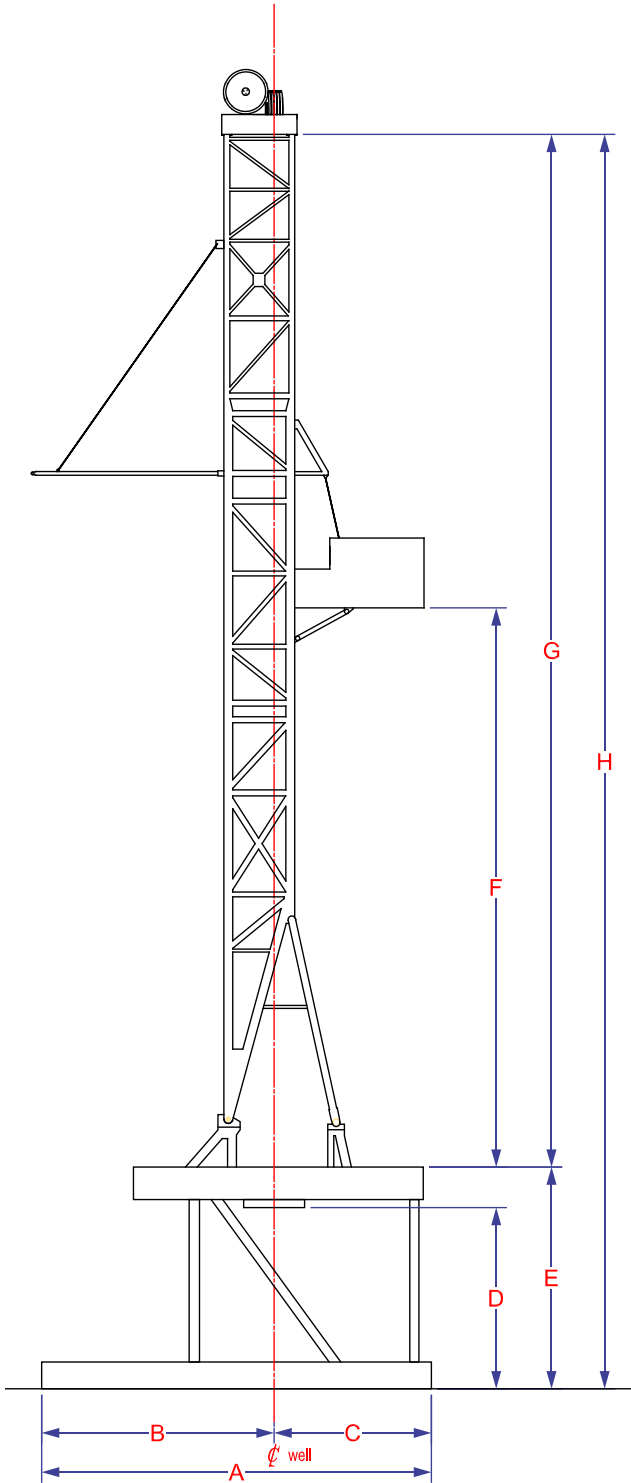
The Ideal™ Rig Series defines reliability and versatility. This versatile series with straight-leg mast design includes some of our most popular, field-proven rigs. Comprised of the Ideal, Ideal Prime, Drake and Ideal Box Rigs, the Ideal™ Series has evolved alongside the drilling industry to accommodate a wide array of your drilling demands, integrating improvements in technology and engineering with proven designs and equipment.

Ideal Series	units	A	B	C	D
Ideal Rig	ft/in	52'-5"	34'-3"	18'-2"	21'-8"
	meters	15.97	10.44	5.53	6.6
Ideal Box	ft/in	55'-0"	36'-0"	19'-0"	21'-8" to 31'-8"
	meters	16.76	10.97	5.79	6.6
Ideal Prime	ft/in	62'-11"	42'-5"	20'-6"	23'-0"
	meters	19.17	12.92	6.25	7.01
Drake Rig	ft/in	46'-8"	34'-2"	12'-6"	18'-0"
	meters	14.22	10.41	3.81	5.49

Ideal Series	units	E	F	G	H
Ideal Rig	ft/in	25'-0"	85'-0"	142'-0"	167'-0"
	meters	7.62	25.91	43.28	50.9
Ideal Box	ft/in	25'-0" to 35'-0"	85'-0"	142'-0"	167'-0" to 177'-0"
	meters	7.62 to 10.67	25.91	43.28	50.90 to 53.95
Ideal Prime	ft/in	28'-0"	85'-0"	142'-0"	170'-0"
	meters	8.53	25.91	43.28	51.81
Drake Rig	ft/in	22'-0"	85'-0"	136'-0"	158'-0"
	meters	6.71	25.91	41.45	48.16

Notes

- Ideal Rig base box measurement excludes attached Drawworks Skid Base and pin-on Steel Toe™ walking foot, pinned to V-door side of substructure base box.
- The Ideal Prime base box measurement excludes pin-on Steel Toe™ walking foot, pinned to V-door side of substructure base box.



Conventional Substructures and Drilling Masts — Ideal™ Series

Rig Model	units	AC Ideal Rig	Ideal Box	Ideal Prime	Drake Rig
Hook Capacity	ton	375	375	375	250
	metric ton	340.2	340.2	340.2	226.8
Mast Type		Cantilever (Straight Leg)	Cantilever (Straight Leg)	Cantilever (Straight Leg)	Cantilever (Straight Leg)
Mast Height	ft/in	142'-0"	142'-0"	142'-0"	136'-0"
	m	43.3	43.3	43.3	41.5
Base Width	ft/in	12'-0"	12'-0"	21'-0"	20'-0"
	m	3.66	3.66	6.40	6.10
Raising Method		Cylinder Raised	Cylinder Raised	Cylinder Raised	Cylinder Raised
Applicable Drawworks (Number of Lines)		ADS-10SD (12)	ADS-10SD (12)	DSGD-375 (12)	DSGS-375 (8)
Substructure Type		Slingshot-Cylinder	Box-on-Box	Slingshot-Cylinder	Slingshot-Cylinder
Pipe Set-Back Capacity	lb	500,000	500,000	575,000	350,000
	ton	250	250	287.5	175
	metric ton	226.8	226.8	260.8	158.8
Casing Capacity	lb	750,000	750,000	750,000	500,000
	ton	375	375	375	250
	metric ton	340	340	340	226.8
Pipe Racking Capacity (Stands)		5" DP: (208)	5" DP: (208)	5" DP: (224)	5" DP: (144)
		8" DC: (8)	8" DC: (8)	8" DC: (6)	8" DC: (6)
Floor Height	ft/in	25	25, 28, 30, or 35	28	22
	m	7.6	7.6, 8.5, 9.1 or 10.6	8.5	6.7
Cellar/Clearance Height	ft/in	21'-8"	24'-0" (based on 28' drill floor)	24'-0"	18'-0"
	m	6.6	7.3	7.3	5.4
Rotary Table Opening	in	37½"	37½"	37½"	37½"
Standard Crown Sheave Groove	in	1¾"	1¾"	1¾"	1¼"
# of Sheaves on Cluster (Fastline and Deadline sheaves not included)		5	5	5	3





**Mast and Substructure**

- Hydraulically raised mast and substructure with ground level assembly to ensure efficiency and safety
- Hydraulic raising cylinders with remote controls to keep personnel at a safe distance during operation



**Amphion and Driller's Cabin**

- Integrated control system for managing, controlling, and monitoring rig floor equipment for safe and efficient operations
- **Configurable control screens and a CCTV screen maximize the driller's operational efficiencies and awareness**
- **Touch screens are user-friendly, concise, respond quickly, and allow simultaneous monitoring of multiple equipment on one screen**
- **Ergonomic, adjustable, climate-controlled work station**
- **Multi-tool controllers, complete with battery back-up and redundant power network; protects the system against power loss**



**Top Drive — TDS-11SA**

- AC electric VFD-controlled drilling for safer operations
- Dependable torque and power
- Compact size and lightweight
- **800 HP**
- **500 ton hoisting capacity**
- **37,500 ft-lb continuous drilling torque at 125 RPM**



**Drawworks — ADS-10SD**

- AC motors perform main braking; motors in conjunction with the variable frequency drives are capable of stopping and holding maximum hook load at zero speed indefinitely
- No HPU or brake water cooling system required
- **Air-cooled friction-plate emergency/parking brake**



**BOP — Model 6012 Ram 13 5/8" 10,000 PSI**

- Rugged, powerful and capable of operating in harsh environments
- Hydraulically actuated doors for ease of service and ram replacement
- Proven performance in the field
- **Manufactured from forged materials that meet H<sub>2</sub>S Service in accordance with NACE MR0175**
- **Proven trim package is standard and includes Xylan coating in the through bore, ram cavities, and all wellbore wetted surfaces**
- **Hard coatings on dynamic sealing surfaces**
- **Only two hydraulic connections required per ram**
- **Optional large bore shear bonnets and boosters**
- **Optional Model 6000 Shear ram**

The 1500 HP, 375 ton capacity Ideal Rig epitomizes the reliability and versatility encapsulated by the Ideal Series. Teaming up innovative features with some of the industry's most trusted equipment, this safe, fast-moving and efficient rig has proven itself all over the world.

The tested equipment suite is outfitted with technology that enhances your overall drilling efficiency while maintaining our high standards for safety and reliability. Additionally, the Ideal Rig can be combined with cutting-edge optional solutions, such as the Stand Transfer Vehicle and Steel Toe Walking System to make your rig safer and rig moves faster.



**BOP Transporter**

- BOP can move, test and set at well center without breaking down stack to ease rig-up
- Remote controls allow the stack to move while keeping personnel out of danger



**Mud Pumps — FD-1600, Triplex**

- Quick access to fluid ends to ease maintenance
- Rugged construction and field-proven
- **1,600 HP at 120 SPM**
- **Dual motor drive**
- **Optional Mission™ Fluid King two-piece 7,500 psi fluid ends**



**Iron Roughneck — ST-80CL**

- Integrated spin and torque function and advanced controls maximize safety and efficiency
- Compact size and lightweight
- Adaptable for wide variety of applications
- **60,000 ft-lb makeup and 80,000 ft-lb breakout torque**
- **4 1/4" to 8 1/2" tubular connection range**



**Pipecat Laydown System**

- Personnel removed from danger area while picking up and laying down pipe
- Need for manual handling eliminated
- **Transfers tubulars from catwalk level to drill floor**
- **Wireless radio control or local control**
- **Manual V-door ramp functionality**



**Stand Transfer Vehicle (STV) (Optional)**

- Derrickman removed from diving board for increased safety and accelerated training with driller
- Intuitive, user-friendly, ergonomic controls
- **Greater consistency in tripping speed**
- **Two camera control system**
- **Manual racking possible**
- **Easily transports in and out of mast via transport skid**



**Steel-Toe Walking System (Optional)**

- Enhanced mobility, safer operations
- Critical equipment remains stationary or mounted in place on rig during walking operations
- Optional wireless controls maintain crew safety during walking operations
- **Well heads cleared with ease**
- **Rig can walk in X or Y direction**
- **Walking speed of 60 ft per hour**
- **Rig can walk 120 ft along one linear axis without using transfer tank**



**Mast and Substructure**

- Conventional box-on-box substructure
- Hydraulic mast raising cylinders with remote controls to keep personnel at a safe distance during operation



**Amphion and Driller's Cabin**

- Integrated control system for managing, controlling, and monitoring rig floor equipment for safe and efficient operations
- **Configurable control screens and a CCTV screen maximize the driller's operational efficiencies and awareness**
- **Touch screens are user-friendly, concise, respond quickly, and allow simultaneous monitoring of multiple equipment on one screen**
- **Ergonomic, adjustable, climate-controlled work station**
- **Multi-tool controllers, complete with battery back-up and redundant power network; protects the system against power loss**



**Top Drive — TDS-11SA**

- AC electric VFD-controlled drilling for safer operations
- Dependable torque and power
- Compact size and lightweight
- **800 HP**
- **500 ton hoisting capacity**
- **37,500 ft-lb continuous drilling torque at 125 RPM**



**Drawworks — ADS-10SD**

- AC motors perform main braking; motors in conjunction with the variable frequency drives are capable of stopping and holding maximum hook load at zero speed indefinitely
- No HPU or brake water cooling system required
- **Air-cooled friction-plate emergency/parking brake**

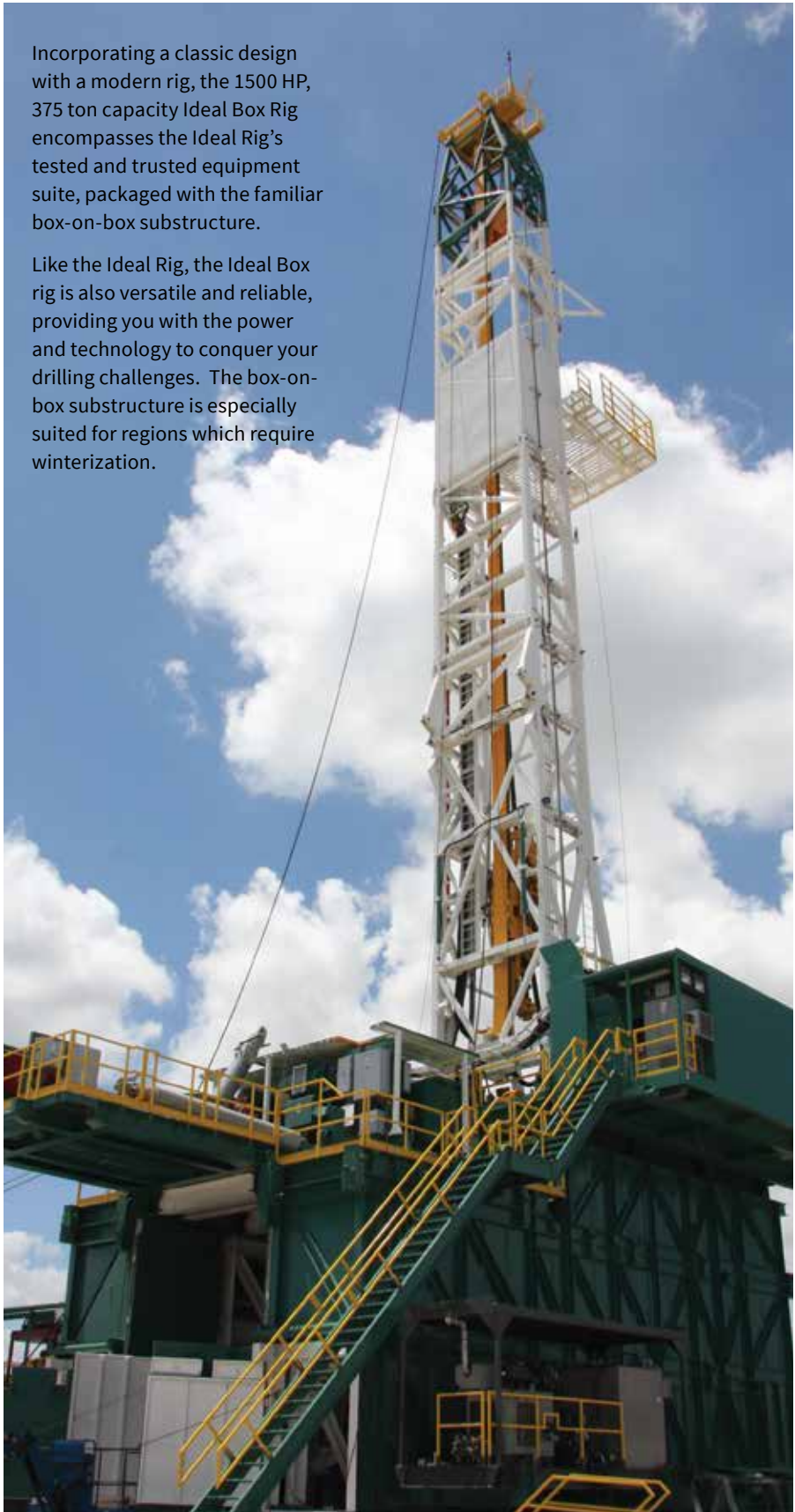


**BOP — Model 6012 Ram 13 5/8" 10,000 PSI**

- Rugged, powerful and capable of operating in harsh environments
- Hydraulically actuated doors for ease of service and ram replacement
- Proven performance in the field
- **Manufactured from forged materials that meet H2S Service in accordance with NACE MR0175**
- **Proven trim package is standard and includes Xylan coating in the through bore, ram cavities, and all wellbore wetted surfaces**
- **Hard coatings on dynamic sealing surfaces**
- **Only two hydraulic connections required per ram**
- **Optional large bore shear bonnets and boosters**
- **Optional Model 6000 Shear ram**
- **BOP hoists transport BOP to well center assembled**

Incorporating a classic design with a modern rig, the 1500 HP, 375 ton capacity Ideal Box Rig encompasses the Ideal Rig's tested and trusted equipment suite, packaged with the familiar box-on-box substructure.

Like the Ideal Rig, the Ideal Box rig is also versatile and reliable, providing you with the power and technology to conquer your drilling challenges. The box-on-box substructure is especially suited for regions which require winterization.



**Mud Pumps — FD-1600, Triplex**

- Quick access to fluid ends to ease maintenance
- Rugged construction and field-proven
- **1,600 HP at 120 SPM**
- **Dual motor drive**
- **Optional Mission™ Fluid King two-piece 7,500 psi fluid ends**



**Iron Roughneck — ST-80CL**

- Integrated spin and torque function and advanced controls maximize safety and efficiency
- Compact size and lightweight
- Adaptable for wide variety of applications
- **60,000 ft-lb makeup and 80,000 ft-lb breakout torque**
- **3/4" to 8 1/2" tubular connection range**



**Pipecat Laydown System (Optional)**

- Personnel removed from danger area while picking up and laying down pipe
- Need for manual handling eliminated
- **Transfers tubulars from catwalk level to drill floor**
- **Wireless radio control or local control**
- **Manual V-door ramp functionality**



**Stand Transfer Vehicle (STV) (Optional)**

- Derrickman removed from diving board for increased safety and accelerated training with driller
- Intuitive, user-friendly, ergonomic controls
- **Greater consistency in tripping speed**
- **Two camera control system**
- **Manual racking possible**
- **Easily transports in and out of mast via transport skid**



**Steel-Toe Walking System (Optional)**

- Enhanced mobility, safer operations
- Critical equipment remains stationary or mounted in place on rig during walking operations
- Optional wireless controls maintain crew safety during walking operations
- **Well heads cleared with ease**
- **Rig can walk in X or Y direction**
- **Walking speed of 60 ft per hour**
- **Rig can walk 120 ft along one linear axis without using transfer tank**



**Mast and Substructure**

- Mast shoes connect easily; unique pin design allows mast to pin into sub without precise alignment for easier and faster rig-up
- Greater setback capacity to rack more drill pipe for deeper wells and longer lateral drilling
- Spill containment system helps prevent environmentally hazardous spillage
- Higher drill floor fits taller BOP stack
- Substructure and mast hydraulic cylinders with same part number for easier tracking and reduced need for spares inventory
- Hydraulic raising cylinders with remote controls to keep personnel at a safe distance during operation



**Amphion and Driller's Cabin**

- Integrated control system for managing, controlling, and monitoring rig floor equipment for safe and efficient operations
- **Configurable control screens and a CCTV screen maximize the driller's operational efficiencies and awareness**
- **Touch screens are user-friendly, concise, respond quickly, and allow simultaneous monitoring of multiple equipment on one screen**
- **Ergonomic, adjustable, climate-controlled work station**
- **Multi-tool controllers, complete with battery back-up and redundant power network; protects the system against power loss**



**Top Drive — TDS-11SH**

- Most powerful top drive for its size enables faster, deeper drilling
- AC electric VFD-controlled drilling for safer operations
- **1,100 HP**
- **500 ton rotating and hoisting capacity**
- **51,000 ft-lb continuous drilling torque at 125 RPM**



**Drawworks — DSGD-375**

- AC motor performs main braking; motor in conjunction with the variable frequency drives is capable of stopping and holding the maximum hook load at zero speed indefinitely
- Dual speed gear box offers better tripping efficiencies at lower hook loads
- No HPU or brake water cooling system required
- **1,500 continuous HP**
- **375 ton capacity**
- **Two air-cooled caliper disc brakes**



**BOP — Model 6012 Ram 13 5/8" 10,000 PSI**

- Rugged, powerful and capable of operating in harsh environments
- Hydraulically actuated doors for ease of service and ram replacement
- Proven performance in the field
- **Manufactured from forged materials that meet H<sub>2</sub>S Service in accordance with NACE MR0175**
- **Proven trim package is standard and includes Xylan coating in the through bore, ram cavities, and all wellbore wetted surfaces**
- **Hard coatings on dynamic sealing surfaces**
- **Only two hydraulic connections required per ram**
- **Optional large bore shear bonnets and boosters**
- **Optional Model 6000 Shear ram**
- **BOP hoists transport BOP to well center assembled**

The 375 ton capacity Ideal Prime builds on the legacy of the Ideal Rig by incorporating field proven, dependable equipment with the latest NOV innovations and land rig technology.

Providing the foundation, the hydraulically raised substructure allows safe and efficient ground-level assembly.

To supplement that new equipment suite that boosts the power and drilling capacity, we also engineered small design solutions that yield big savings, safer operations, higher efficiency, faster rig moves and assembly, improved logistics and reduced flat-time.



**Mud System**

- Round-bottomed tanks allow for better circulation and more efficient mud flow
- Reliable Brandt™ shakers maintain constant G regardless of load
- **FD-1600 mud pumps – single motor drive, optional Mission™ Fluid King two-piece 7,500 psi fluid ends**
- **Three-cylinder, single-action, piston-type mud pump**



**Iron Roughneck — ST-100**

- Greater torque and power for eXtreme™ torque connections and deeper drilling requirements
- Integrated spin and torque function and advanced controls maximize safety and efficiency
- **100,000 ft-lb makeup and 120,000 ft-lb breakout torque**
- **4" to 9 3/4" tubular connection range**



**Pipecat Laydown System**

- Personnel removed from danger area while picking up and laying down pipe
- Need for manual handling eliminated
- **Transfers tubulars from catwalk level to drill floor**
- **Wireless radio control or local control**
- **Manual V-door ramp functionality**



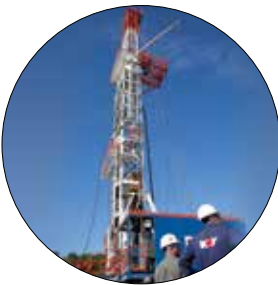
**Stand Transfer Vehicle (STV) (Optional)**

- Derrickman removed from diving board for increased safety and accelerated training with driller
- Intuitive, user-friendly, ergonomic controls
- **Greater consistency in tripping speed**
- **Two camera control system**
- **Manual racking possible**
- **Easily transports in and out of mast via transport skid**



**Steel-Toe Walking System**

- Enhanced mobility, safer operations
- Critical equipment remains stationary or mounted in place on rig during walking operations
- Wireless controls maintain crew safety during walking operations
- **Well heads cleared with ease**
- **Rig can walk in X or Y direction**
- **Walking speed of 60 ft per hour**
- **Rig can walk 120 ft along one linear axis without using transfer tank**



**Mast and Substructure**

- Hydraulically raised substructure with ground level assembly to ensure efficiency and safety
- Unique substructure design accommodates tight road restrictions during transportation
- Top drive and traveling block stay in mast during transport to ease rig-up
- Hydraulic mast and substructure raising cylinders with remote controls to keep personnel at a safe distance during operation
- Drawworks and driller's cabin lifted off truck with substructure hydraulic cylinders to ease rig-up



**Amphion and Driller's Cabin**

- Integrated control system for managing, controlling and monitoring rig floor equipment for safe and efficient operations
- **Configurable control screens and a CCTV screen maximize the driller's operational efficiencies and awareness**
- **Touch screens are user-friendly, concise, respond quickly, and allow simultaneous monitoring of multiple equipment on one screen**
- **Ergonomic, adjustable, climate-controlled work station**
- **Multi-tool controllers, complete with battery back-up and redundant power network; protects the system against power loss**



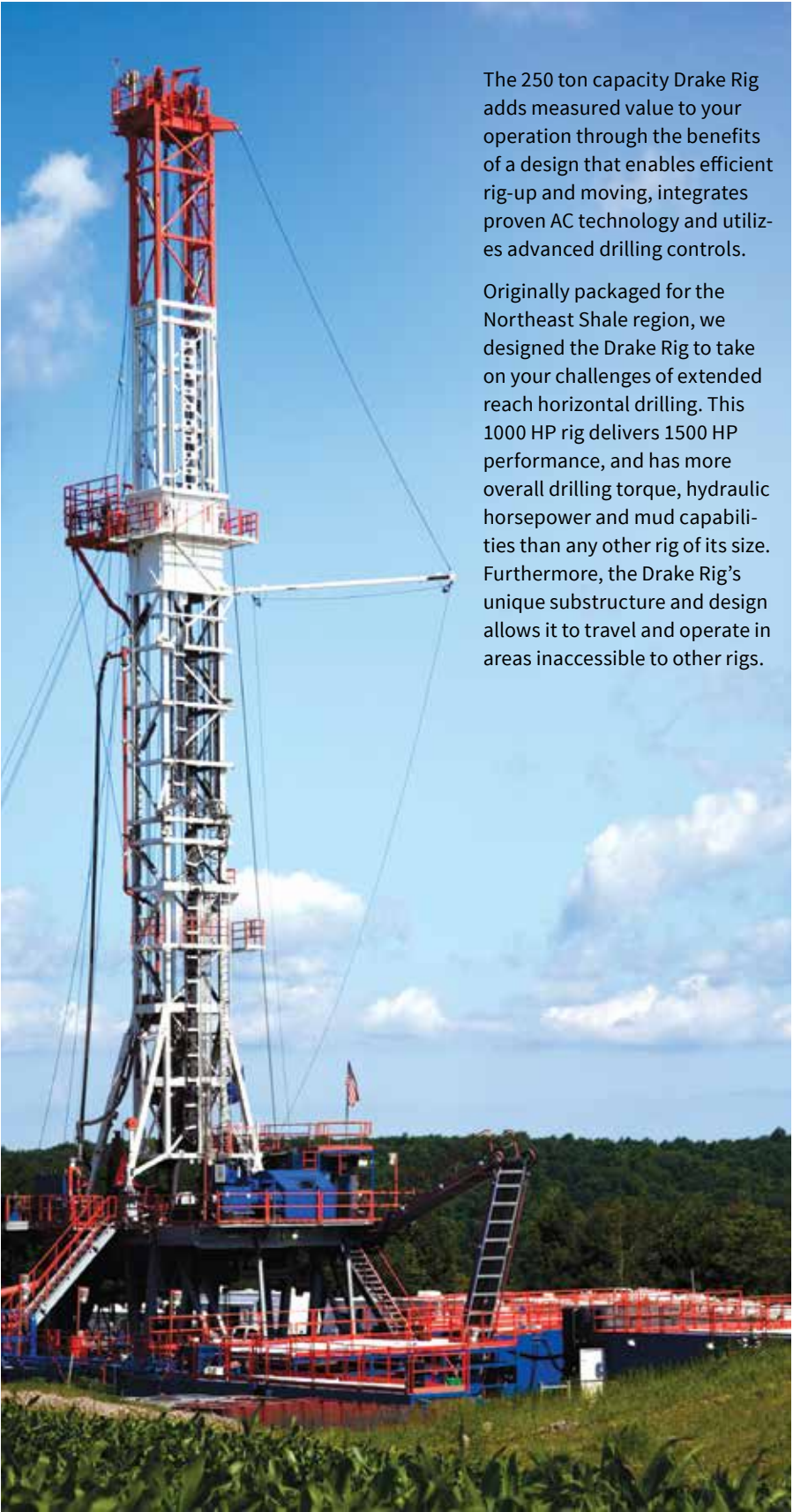
**Top Drive — TDS-11SA**

- AC electric VFD-controlled drilling for safer operations
- Dependable torque and power
- Compact size and lightweight
- **800 HP**
- **500 ton hoisting capacity**
- **37,500 ft-lb continuous drilling torque at 125 RPM**



**Drawworks — DSGD-375**

- AC motor performs main braking; motor in conjunction with the variable frequency drives is capable of stopping and holding the maximum hook load at zero speed indefinitely
- Dual speed gear box offers better tripping efficiencies at lower hook loads
- No HPU or brake water cooling system required
- **1,500 continuous HP**
- **260 ton capacity on 8 lines**
- **Two air-cooled caliper disc brakes**



The 250 ton capacity Drake Rig adds measured value to your operation through the benefits of a design that enables efficient rig-up and moving, integrates proven AC technology and utilizes advanced drilling controls.

Originally packaged for the Northeast Shale region, we designed the Drake Rig to take on your challenges of extended reach horizontal drilling. This 1000 HP rig delivers 1500 HP performance, and has more overall drilling torque, hydraulic horsepower and mud capabilities than any other rig of its size. Furthermore, the Drake Rig's unique substructure and design allows it to travel and operate in areas inaccessible to other rigs.



**BOP - LXT 11" 5,000 PSI**

- Lightweight and compact
- Compatible with the superior low force shear ram
- Easier maintenance and assembly of LXT ram
- **Only two hydraulic connections required per ram**
- **Boltless door locking system**
- **LXT ram only requires single removal of two lock rods and is a one-piece block assembly**
- **Optional 15¼" x 15¼" booster available**
- **BOP hoists transport BOP to well center assembled**



**Mud Pumps — FD-1600, Triplex**

- Quick access to fluid ends to ease maintenance
- Rugged construction and field-proven
- **1,600 HP at 120 SPM**
- **Dual motor drive**
- **Optional Mission™ Fluid King two-piece 7,500 psi fluid ends**



**Iron Roughneck — ST-80C**

- Integrated spin and torque function and advanced controls maximize safety and efficiency
- Compact size and lightweight
- Adaptable for wide variety of applications
- **60,000 ft-lb makeup and 80,000 ft-lb breakout torque**
- **4¼" to 8½" tubular connection range**



**Pipecat Laydown System (Optional)**

- Personnel removed from danger area while picking up and laying down pipe
- Need for manual handling eliminated
- **Transfers tubulars from catwalk level to drill floor**
- **Wireless radio control or local control**
- **Manual V-door ramp functionality**



**Steel-Toe Walking System (Optional)**

- Enhanced mobility, safer operations
- Critical equipment remains stationary or mounted in place on rig during walking operations
- Optional wireless controls maintain crew safety during walking operations
- **Well heads cleared with ease**
- **Rig can walk in X or Y direction**
- **Walking speed of 60 ft per hour**
- **Rig can walk 120 ft along one linear axis without using transfer tank**

The Velocity Series

Rapid, Vertical Slant

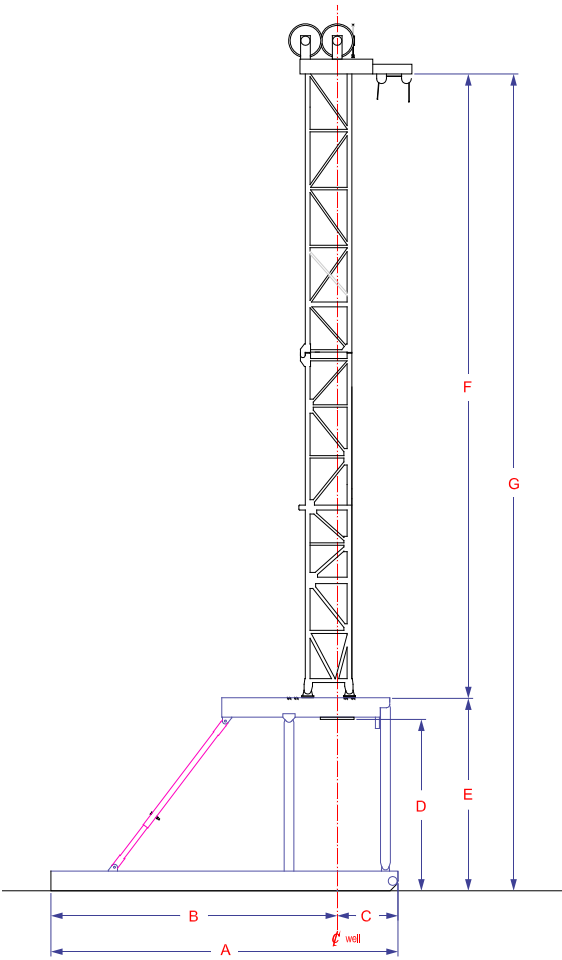
NOV’s Velocity Rig Series offers fast-moving “super singles” rigs designed with fewer transport loads, allowing for quick transport between rig sites. The Velocity Series sets the standard for speed.

Velocity Series	units	A	B	C	D	E	F	G
Rapid Rig	ft/in	36'-10"	30'-06"	6'-4"	18'-0"	20'-0"	80'-0"	100'-0"
	meters	11.23	9.30	1.93	5.49	6.10	24.38	30.48
Vertical Slant (VSR)	ft/in	20'-6"	19'-4"	1'-2"	12'-6"	14'-0" or 20'-0"	76'-0"	90'-0" or 96'-0"
	meters	6.25	5.89	0.36	3.81	4.27 or 6.10	23.16	27.43 or 29.26

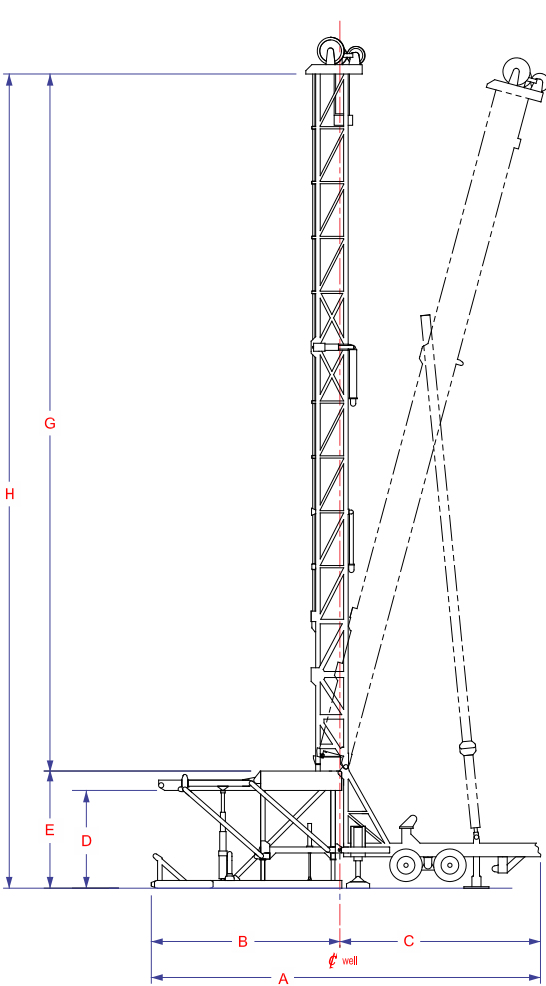
Notes

- All Velocity Series rigs are equipped with pipe handling systems which eliminate the need for a racking board and setback area.

Rapid Rig



Vertical Slant Rig (VSR)



Conventional Substructures and Drilling Masts — Velocity Series

Rig Model	units	Rapid Rig	Vertical Slant (VSR)
Hook Capacity	ton	250	100 or 150
	metric ton	226.79	90.71 or 136.07
Mast Type		Telescopic	Telescopic
Mast Height	ft/in	80'-0"	75'-4
	m	24.38	23.16
Base Width	ft/in	7'-0"	6'-4"
	m	2.13	1.93
Raising Method		Cylinder Raised	Cylinder Raised
Applicable Drawworks (Number of Lines)		SSGD-250 (8)	D700AC (6)
Substructure Type		Slingshot-Cylinder	Swing-up, Box-in-Box
Casing Capacity	lb	500,000	280,000
	ton	250	140
	metric ton	226	127
Floor Height	ft/in	20'-0"	14'-0" or 20'-0"
	m	6.1	4.2 or 6.1
Cellar/Clearance Height	ft/in	18'-0"	12'-6" or 18'-0"
	m	5.4	3.8
Drill Floor Opening	in	37½"	27½"
Standard Crown Sheave Groove	in	1¼"	1½"
# of Sheaves on Cluster (Fastline and Deadline sheaves not included)		3	2





**Mast and Substructure**

- Hydraulically raised mast and substructure with ground level assembly to ensure efficiency and safety
- Telescoping mast to assist with rig-up and minimize footprint
- Top drive, iron roughneck and traveling block stay in mast during transport to shorten rig-up time



**Amphion and Driller's Cabin**

- Integrated control system for managing, controlling, and monitoring rig floor equipment for safe and efficient operations
- Configurable control screens and a CCTV screen maximize the driller's operational efficiencies and awareness
- Touch screens are user-friendly, concise, respond quickly, and allow simultaneous monitoring of multiple equipment on one screen
- Ergonomic, adjustable, climate-controlled work station
- Multi-tool controllers, complete with battery back-up and redundant power network; protects the system against power loss



**Top Drive — TDS-10RR**

- Remains mounted in mast with block keeping drill line reeved in place during transport
- Portable design allows for faster rig-up and rig-down
- Link Tilt System allows elevator to "tilt" out and meet pipe for quicker maneuvering of pipe to well center
- 250 ton hoisting capacity
- 20,000 ft-lb continuous torque at 90 RPM
- 350 HP



**Drawworks — SSGD-250**

- Simple design allows for easy operation and maintenance
- Small footprint and light weight allows for easy moving between rig locations
- AC motor performs main braking; motor in conjunction with the variable frequency drives is capable of stopping and holding the maximum hook load at zero speed indefinitely
- No HPU or brake water cooling system required
- 1,150 HP
- 250 ton capacity



**BOP — Model 6012 Ram 11" 5,000 psi**

- Rugged, powerful and capable of operating in harsh environments
- Hydraulically actuated doors for ease of service and ram replacement
- Proven performance in the field
- Manufactured from forged materials that meet H<sub>2</sub>S Service in accordance with NACE MR0175
- Proven trim package is standard and includes Xylan coating in the through bore, ram cavities, and all wellbore wetted surfaces
- Hard coatings on dynamic sealing surfaces
- Only two hydraulic connections required per ram
- Optional large bore shear bonnets and boosters
- Optional Model 6000 Shear ram
- BOP Transporter allows BOP to be moved, tested and set at well center without breaking down stack to ease rig-up



The 250 ton capacity NOV Rapid Rig is an efficient "super singles" land rig delivering maximum speed, safety, and performance in a compact, road-legal drilling package. The Rapid Rig's efficient size and self-deploying design allows for ease of transport and faster on-site rig-up. The Rapid Rig's compact components and AC powered primary systems further reduce the environmental impact at the well site.



**Mud Pumps — F-1000, Triplex**

- Rugged Fabriform construction
- Design engineered for optimum performance under severe drilling conditions
- 1,000 HP at 140 SPM
- Low weight-to-horsepower ratio



**Iron Roughneck — ST-80R**

- Integrated spin and torque function and advanced controls maximize safety and efficiency
- Compact size and lightweight
- Adaptable for wide variety of applications
- 60,000 ft-lb makeup torque and 80,000 ft-lb breakout torque
- 4¼" to 8½" tubular connection range



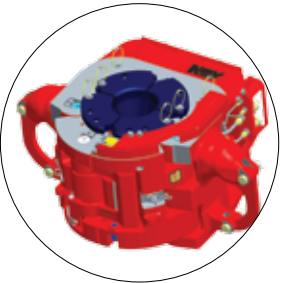
**Pipe Erector**

- Tubulars automatically fed into the central erector arm, which stands pipe up next to floor to be captured and held vertically by mousehole funnels
- Personnel removed from danger area while picking up and laying down pipe
- Need for manual handling eliminated
- Local control



**Power Slips — PS-21**

- Manual operations at well center eliminated
- Installation flush with the drill floor creates a safer work environment
- Reacts up to 45,000 ft-lb of torque
- Standard equipped with a centering device
- Handles all drill pipe, collars, tubing and casing sizes up to 14" OD



**BX Elevator**

- Hydraulically actuated elevator designed to improve rig safety and efficiency
- Ability to be interlocked with PS-21 as an additional safety feature
- Double-door design provides optimal balance and performance
- Changeable bushings allow one elevator frame to handle all pipe sizes and type requirements



**Mast and Substructure**

- Default is vertical, but capable of slant operation up to 45°
- Small footprint to accommodate small site areas
- Advanced hydraulics system allows mast to be positioned perfectly over wellbore at whatever angle is required
- Telescoping mast travels with top drive, torque wrench and pipe handler to shorten rig-up time
- Substructure quickly loads onto a separate trailer for easy transportation



**Amphion and Driller's Cabin**

- Integrated control system for managing, controlling, and monitoring rig floor equipment for safe and efficient operations
- **Configurable control screens and a CCTV screen maximize the driller's operational efficiencies and awareness**
- **Touch screens are user-friendly, concise, respond quickly, and allow simultaneous monitoring of multiple equipment on one screen**
- **Ergonomic, adjustable, climate-controlled work station**
- **Multi-tool controllers, complete with battery back-up and redundant power network; protects the system against power loss**



**Top Drive — TDS-150**

- Most powerful 150 ton AC top drive on the market
- Pull down capacity of 20,000 lb
- Slant drilling capability — available to run on mast rails with integrated block
- **150 ton dynamic and static capacity**
- **Dual 250 HP AC induction motors**
- **24,700 ft-lb continuous torque and 36,500 ft-lb intermittent torque at 100 RPM**



**Drawworks — D700 AC**

- AC motor performs main braking; motor in conjunction with the variable frequency drives is capable of stopping and holding maximum hook load at zero speed indefinitely
- No HPU or brake water cooling system required
- **700 HP**
- **150 ton hoisting capacity**
- **Two caliper disc breaks**

The 150 ton capacity VSR provides quicker access to the pay zone, which translates to cost savings and the ability to drill more wells. Ideal for shallow-well drilling, the VSR is a versatile rig that can navigate between slant increments, better positioning the rig to meet your drilling needs. The VSR is designed to be fully mobile, so whether you're operating at a slant or drilling vertically, the VSR meets your capability needs.



**BOP — Model 6012 Ram 11" 3,000/5,000 psi**

- Rugged, powerful and capable of operating in harsh environments
- Hydraulically actuated doors for ease of service and ram replacement
- Proven performance in the field
- **Manufactured from forged materials that meet H<sub>2</sub>S Service in accordance with NACE MR0175**
- **Proven trim package is standard and includes Xylan coating in the through bore, ram cavities, and all wellbore wetted surfaces**
- **Hard coatings on dynamic sealing surfaces**
- **Only two hydraulic connections required per ram**
- **Optional large bore shear bonnets and boosters**
- **Optional Model 6000 Shear ram**
- **BOP hoists transport BOP to well center assembled**



**Mud Pumps — F-1000, Triplex**

- Rugged Fabriform construction
- Design engineered for optimum performance under severe drilling conditions
- **1,000 HP at 140 SPM**
- **Low weight-to-horsepower ratio**

**Mud Pumps — 8-P-80, Triplex (Optional)**

- High strength and lightweight for easy portability
- Multiple liner sizes allow pressures and volumes to handle circulation requirements in deep drilling applications
- **800 HP at 160 SPM**



**Hydraulic Torque Wrench**

- Compact and lightweight
- Capable of operating at an angle
- Simple operation; ideal for quick, repetitive procedures
- **2 7/8" to 14 3/8" tubular connection range**
- **Makeup/breakout torque of 0-100,000 ft-lb**



**Pipe Handling System**

- Pipe brought directly to well center
- Personnel removed from danger area while picking up and laying down pipe
- Need for manual handling eliminated

The Signature Series

European, Middle East, Mono-Transit, SEAM

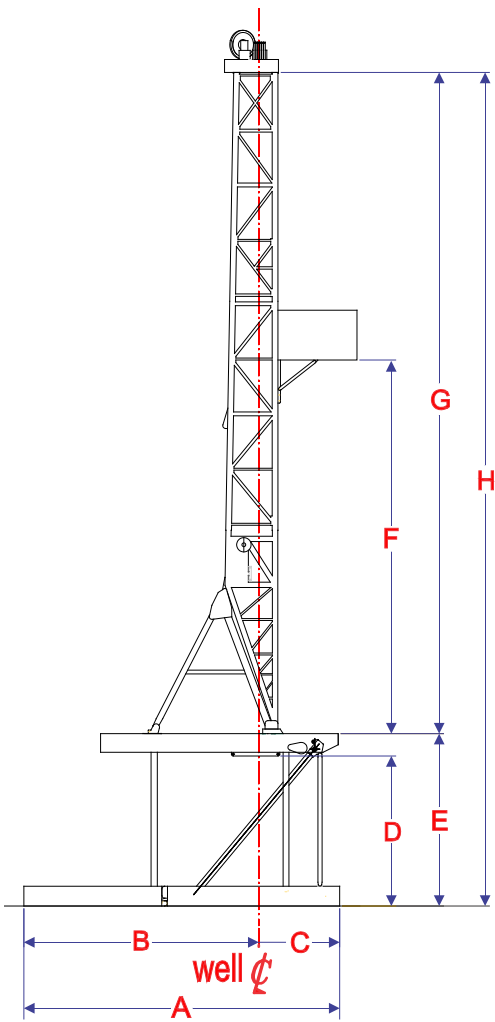
The Signature Series Rigs are built to specific market requirements and your unique needs. Products of many engineering hours, these rigs are configured to operate optimally in geographic arenas with stringent regulations or unrelenting, rugged environments.

Signature Series	units	A	B	C	D
SEAM 1000	ft/in	49'-6"	37'-2"	12'4"	21'-8"
	meters	15.09	11.33	3.76	6.60
SEAM 1500	ft/in	57'-4"	29'-7"	27'-9"	26'-8"
	meters	17.48	9.02	8.46	8.13
SEAM 2000	ft/in	54'-7"	42'-2"	12'-5"	26'-8"
	meters	16.63	12.85	3.78	8.13
European 1500	ft/in	57'-4"	29'-7"	27'-9"	26'-8"
	meters	17.48	9.02	8.46	8.13
European 2000	ft/in	54'-7"	42'-2"	12'-5"	26'-8"
	meters	16.63	12.85	3.78	8.13
ME 1500	ft/in	62'-6"	42'-0"	20'-6"	25'-0"
	meters	19.05	12.80	6.25	7.62
ME 2000 DC	ft/in	60'-0"	46'-8"	13'-4"	30'-0"
	meters	18.28	14.22	4.06	9.14
ME 2000 AC	ft/in	60'-0"	46'-8"	13'-4"	30'-0"
	meters	18.28	14.22	4.06	9.14
ME 2000	ft/in	74'-2"	49'-8"	24'-6"	39'-10"
	meters	22.61	15.14	7.47	12.14
Mono Transit	ft/in	61'-2"	30'-10"	30'-4"	16'-0"
	meters	18.65	9.40	9.25	4.88

Signature Series	units	E	F	G	H
SEAM 1000	ft/in	25'-0"	85'-0"	142'-0"	167'-0"
	meters	7.62	25.91	43.28	50.90
SEAM 1500	ft/in	30'-0"	85'-0"	142'-0"	172'-0"
	meters	9.14	25.91	43.28	52.42
SEAM 2000	ft/in	30'-0"	85'-0"	142'-0"	172'-0"
	meters	9.14	25.91	43.28	52.42
European 1500	ft/in	30'-0"	85'-0"	142'-0"	172'-0"
	meters	9.14	25.91	43.28	52.42
European 2000	ft/in	30'-0"	85'-0"	142'-0"	172'-0"
	meters	9.14	25.91	43.28	52.42
ME 1500	ft/in	30'-0"	85'-0"	152'-0"	182'-0"
	meters	9.14	25.91	46.33	55.47
ME 2000 DC	ft/in	35'-0"	86'-4"	156'-0"	191'-0"
	meters	10.67	26.31	47.55	58.22
ME 2000 AC	ft/in	35'-0"	86'-4"	156'-0"	191'-0"
	meters	10.67	26.31	47.55	58.22
ME 2000	ft/in	45'-0"	87'-6"	160'-0"	205'-0"
	meters	13.72	26.67	48.77	62.49
Mono Transit	ft/in	20'-0"	85'-0"	142'-0"	162'-0"
	meters	6.10	25.91	43.28	49.38

Notes

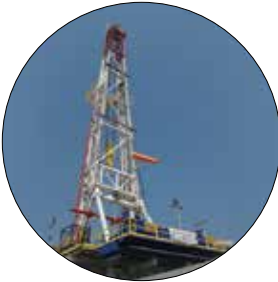
- Racking board height can be adjusted within a range of dimension F so as to accommodate varying stand heights.



Conventional Substructures and Drilling Masts — Signature Series

Rig Model	units	SEAM 1000	SEAM 1500	SEAM 2000	European 1500	European 2000
Hook Capacity	ton	250	350	500	350	500
	metric ton	226.8	317.5	453.6	317.5	453.6
Mast Type		Cantilever	Cantilever	Cantilever	Cantilever	Cantilever
Mast Height	ft/in	142'-0"	142'-0"	142'-0"	142'-0"	142'-0"
	m	43.3	43.3	43.3	43.3	43.3
Base Width	ft/in	21'-0"	21'-0"	25'-0"	21'-0"	25'-0"
	m	6.40	6.40	7.62	6.40	7.62
Raising Method		Sling-Line Raised	Sling-Line Raised	Sling-Line Raised	Sling-Line Raised	Sling-Line Raised
Applicable Drawworks (Number of Lines)		DSGD-250 (8)	DSGS-375 (8, 10, 12)	DSGS-500 (8, 10, 12)	DSGS-375 (8, 10, 12)	DSGD-500 (8, 10, 12)
Substructure Type		Slingshot-Winch	Slingshot-Winch	Slingshot-Winch	Slingshot-Winch	Slingshot-Winch
Pipe Set-Back Capacity	lb	325,000	500,000	500,000	500,000	600,000
	ton	162.5	250	250	250	300
	metric ton	147.4	226.8	226.8	226.8	330.7
Casing Capacity	lb	450,000	700,000	950,000	700,000	950,000
	ton	225	350	475	350	475
	metric ton	204.1	317.5	430.9	317.5	430.9
Pipe Racking Capacity (Stands)		5" DP: (180)	4½" DP: (132)	5" DP: (196)	5" DP: (180)	4½" DP: (132)
		6½" DC: (8)	6½" DC: (8)	8¼" DC: (8), 10" DC: (2)	6½" DC: (8)	6½" DC: (8)
Floor Height	ft/in	25'-0"	30'-0"	30'-0"	30'-0"	30'-0"
	m	7.62	9.14	9.14	9.14	9.14
Cellar/Clearance Height	ft/in	21'-0	26'-0	26'-1	n.a.	n.a.
	m	6.4	n.a.	7.92	n.a.	n.a.
Rotary Table Opening	in	37½"	37½"	37½"	37½"	37½"
Standard Crown Sheave Groove	in	1¼"	1¾"	1½"	1¾"	1½"
# of Sheaves on Cluster (Fastline and Deadline sheaves not included)		5	6	6	6	6

Rig Model	units	ME 1500	ME 2000 DC	ME 2000 AC	ME 3000	Mono-Transit
Hook Capacity	ton	412.5	500	500	777.5	375
	metric ton	374.2	453.6	453.6	705.3	340.2
Mast Type		Cantilever	Cantilever	Cantilever	Cantilever	Cantilever
Mast Height	ft/in	152'-0"	157'-0	157'-0"	160'-0"	142'-0"
	m	46.3	47.85	47.85	47.9	43.3
Base Width	ft/in	25'-0"	30'-0"	30'-0"	30'-0"	12'-6"
	m	7.62	9.14	9.14	9.14	3.81
Raising Method		Cylinder Raised	Cylinder Raised	Cylinder Raised	Sling-Line Raised	Cylinder Raised
Applicable Drawworks (Number of Lines)		110-UDBE (12)	1320-UDBE (12)	ADS-10SD (12)	ADS-30D (14)	DSGD-375L (8, 10, 12)
Substructure Type		Slingshot-Cylinder	Slingshot-Cylinder	Slingshot-Cylinder	Slingshot-Winch	1 Piece Telescoping
Pipe Set-Back Capacity	lb	550,000	800,000	800,000	1,000,000	460,000
	ton	275	400	400	500	230
	metric ton	249.4	362.9	362.9	453.6	208.7
Casing Capacity	lb	750,000	1,000,000	1,000,000	1,500,000	700,000
	ton	375	500	500	750	350
	metric ton	340.1	453.5	453.5	680.3	317.5
Pipe Racking Capacity (Stands)		5" DP: (190)	5" or 5½" DP: (285)	5" or 5½" DP: (285)	5½" DP: (264)	5" DP: (196)
		6½" DC: (8), 8¼" DC: (6), 10" DC: (2)	8" DC: (8), 9½" DC: (4)	8" DC: (8), 9½" DC: (4)	10" DC: (9), 14" DC: (1)	8" DC: (8)
Floor Height	ft/in	30'-0"	35'-0"	35'-0"	45'-0"	30'-0"
	m	9.1	10.6	10.6	13.7	9.1
Cellar/Clearance Height	ft/in	25'-0"	30'-0"	30'-0"	35'-0"	17'-7"
	m	7.6	9.1	9.1	10.6	5.3
Rotary Table Opening	in	37½"	37½"	37½"	47½"	37½"
Standard Crown Sheave Groove	in	1¾"	1½"	1½"	1¾"	1¼"
# of Sheaves on Cluster (Fastline and Deadline sheaves not included)		6	6	6	7	6



**Mast and Substructure**

- Dreco™ Slingshot substructure with ground level assembly to ensure efficiency and safety
- Modular load design for quick rig-up/down and transportation between well sites



**Amphion and Driller's Cabin**

- Integrated control system for managing, controlling, and monitoring rig floor equipment for safe and efficient operations
- **Configurable control screens and a CCTV screen maximize the driller's operational efficiencies and awareness**
- **Touch screens are user-friendly, concise, respond quickly, and allow simultaneous monitoring of multiple equipment on one screen**
- **Ergonomic, adjustable, climate-controlled work station**
- **Multi-tool controllers, complete with battery back-up and redundant power network; protects the system against power loss**



**Top Drive — TDS-11SH**

- Most powerful top drive for its size enables faster, deeper drilling
- AC electric VFD-controlled drilling for safer drilling
- **1,100 HP**
- **500 ton rotating and hoisting capacity**
- **51,000 ft-lb continuous drilling torque at 125 RPM**



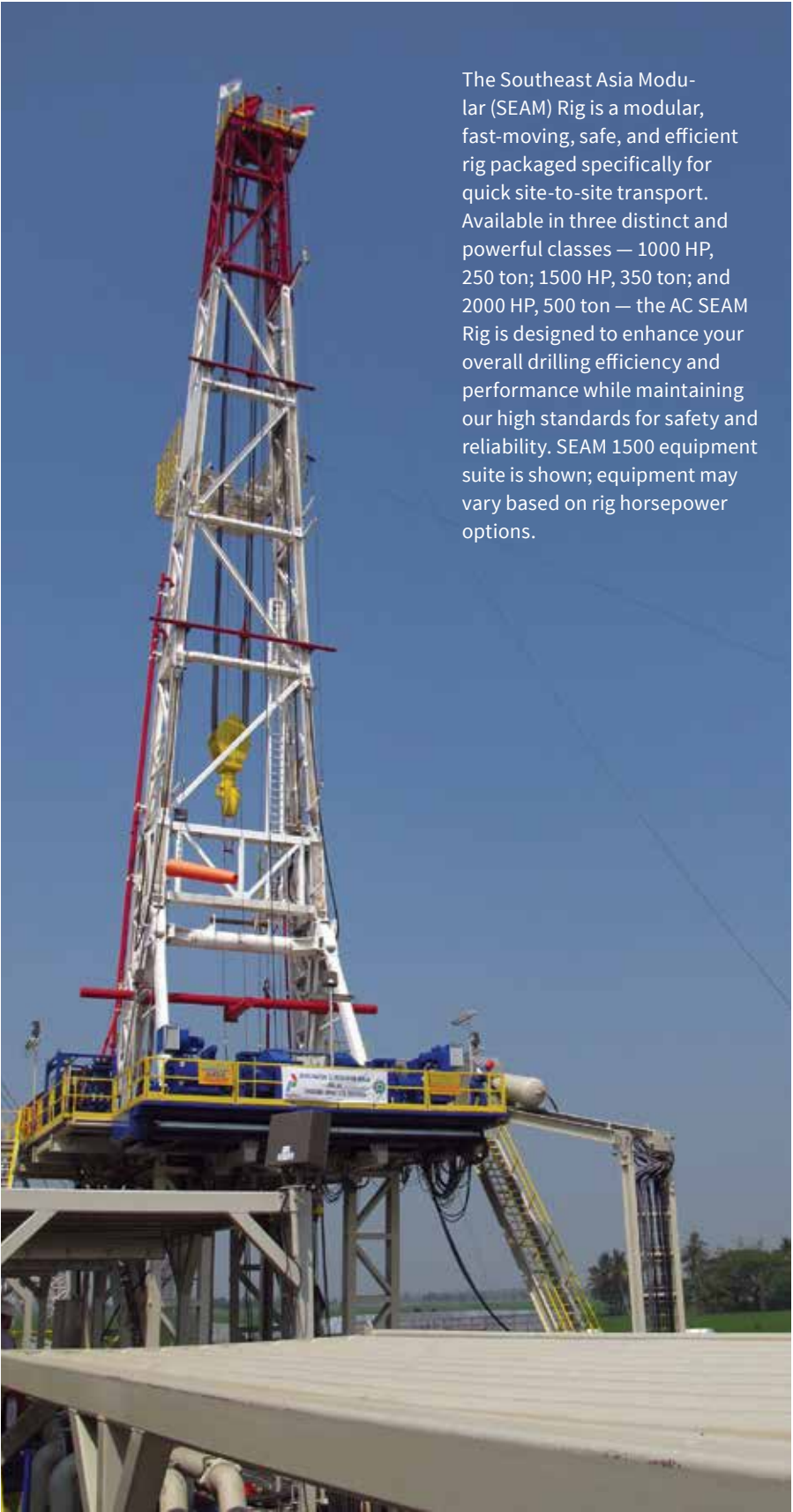
**Drawworks — DSGD-375**

- AC motor performs main braking; motor in conjunction with the variable frequency drives is capable of stopping and holding the maximum hook load at zero speed indefinitely
- Dual speed gear box offers better tripping efficiencies at lower hook loads
- No HPU or brake water cooling system required
- **1,500 continuous HP**
- **Two air-cooled caliper disc brakes**



**BOP — Model 6012 Ram 13 5/8" 10,000 PSI**

- Rugged, powerful and capable of operating in harsh environments
- Hydraulically actuated doors for ease of service and ram replacement
- Proven performance in the field
- **Manufactured from forged materials that meet H<sub>2</sub>S Service in accordance with NACE MR0175**
- **Proven trim package is standard and includes Xylan coating in the through bore, ram cavities, and all wellbore wetted surfaces**
- **Hard coatings on dynamic sealing surfaces**
- **Only two hydraulic connections required per ram**
- **Optional large bore shear bonnets and boosters**
- **Optional Model 6000 Shear ram**
- **BOP hoists transport BOP to well center assembled**



The Southeast Asia Modular (SEAM) Rig is a modular, fast-moving, safe, and efficient rig packaged specifically for quick site-to-site transport. Available in three distinct and powerful classes — 1000 HP, 250 ton; 1500 HP, 350 ton; and 2000 HP, 500 ton — the AC SEAM Rig is designed to enhance your overall drilling efficiency and performance while maintaining our high standards for safety and reliability. SEAM 1500 equipment suite is shown; equipment may vary based on rig horsepower options.



**Mud Pumps – FD-1600, Triplex**

- Quick access to fluid ends to ease maintenance
- Rugged construction and field-proven
- **1,600 HP at 120 SPM**
- **Single- and dual-motor drive configurations can both operate at full 1,600 HP**
- **Optional Mission™ Fluid King two piece 7,500 psi fluid ends**



**Iron Roughneck — ST-100**

- Greater torque and power for eXtreme™ torque connections and deeper drilling requirements
- Integrated spin and torque function and advanced controls maximize safety and efficiency
- **100,000 ft-lb makeup and 120,000 ft-lb breakout torque**
- **4" to 9 3/4" tubular connection range**



**PipeCat Laydown System**

- Personnel removed from danger area while picking up and laying down pipe
- Need for manual handling eliminated
- **Transfers tubulars from catwalk level to drill floor**
- **Wireless radio control or local control**
- **Manual V-door ramp functionality**



**Stand Transfer Vehicle (STV) (Optional)**

- Derrickman removed from diving board for increased safety and accelerated training with driller
- Intuitive, user-friendly, ergonomic controls
- **Greater consistency in tripping speed**
- **Two camera control system**
- **Manual racking possible**
- **Easily transports in and out of mast via transport skid**



**Power Slips — PS-21 (Optional)**

- Manual operations at well center eliminated
- Installation flush with the drill floor creates a safer work environment
- **Reacts up to 45,000 ft-lb of torque**
- **Standard equipped with a centering device**
- **Handles all drill pipe, collars, tubing and casing sizes up to 14" OD**



**Mast and Substructure**

- Dreco™ Slingshot substructure with ground level assembly to ensure efficiency and safety
- Compact design for smaller load sizes that meet strict European requirements while minimizing total number of loads required between locations
- Rig package meets strict CE requirements for safety, quality and environmental protection



**Amphion and Driller's Cabin**

- Integrated control system for managing, controlling, and monitoring rig floor equipment for safe and efficient operations
- **Configurable control screens and a CCTV screen maximize the driller's operational efficiencies and awareness**
- **Touch screens are user-friendly, concise, respond quickly, and allow simultaneous monitoring of multiple equipment on one screen**
- **Ergonomic, adjustable, climate-controlled work station**
- **Multi-tool controllers, complete with battery back-up and redundant power network; protects the system against power loss**



**Top Drive — TDS-11SA**

- AC electric VFD-controlled drilling for safer drilling
- Dependable torque and power
- Compact size and lightweight
- **800 HP**
- **500 ton hoisting capacity**
- **37,500 ft-lb continuous drilling torque at 125 RPM**



**Drawworks — DSGD-375**

- AC motor performs main braking; motor in conjunction with the variable frequency drives is capable of stopping and holding the maximum hook load at zero speed indefinitely
- Dual speed gear box offers better tripping efficiencies at lower hook loads
- No HPU or brake water cooling system required
- **1,500 continuous HP**
- **Two air-cooled caliper disc brakes**

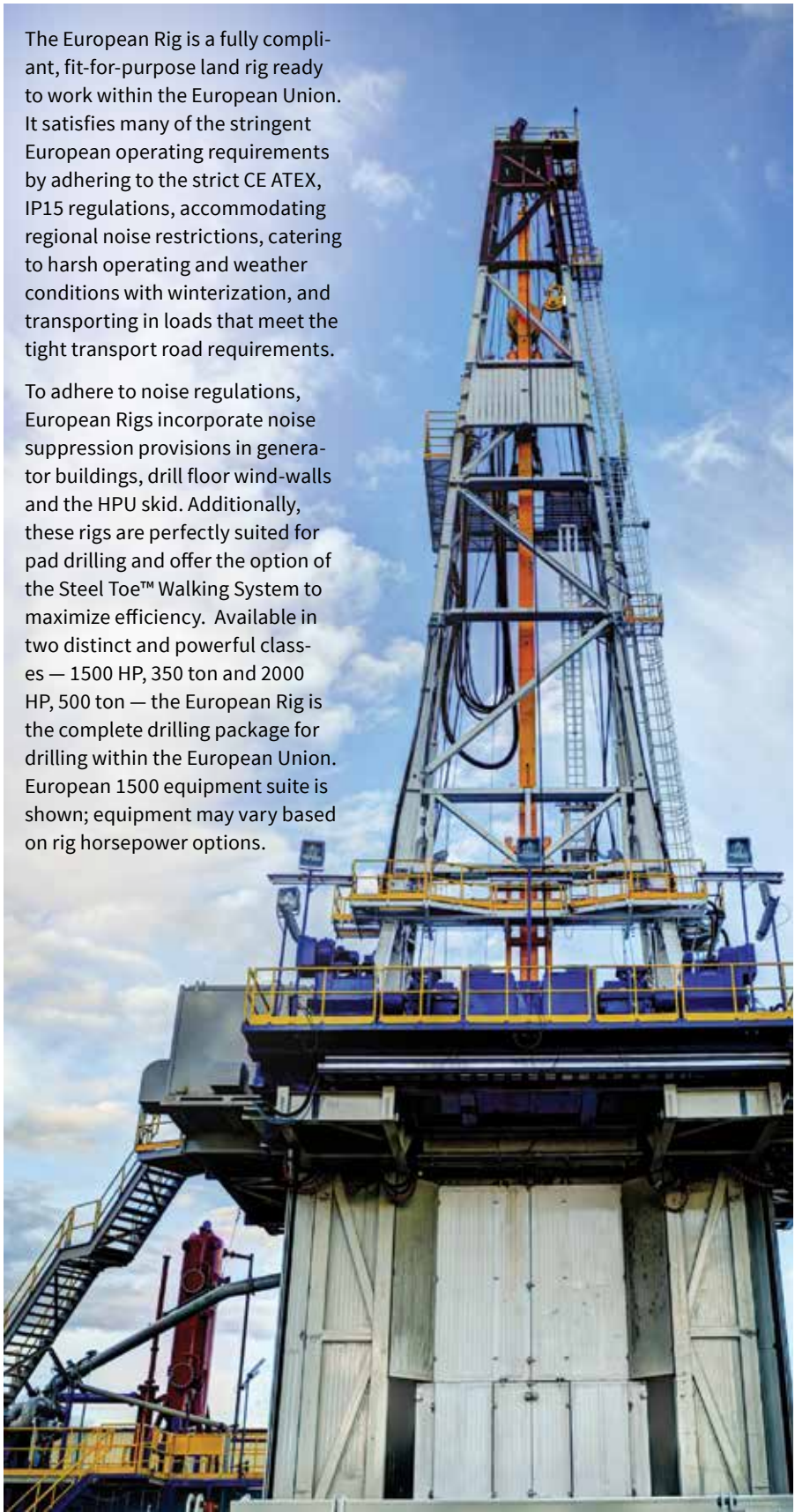


**BOP — LXT 13 5/8" 10,000 PSI**

- Lightweight and compact
- Compatible with the superior low force shear ram
- Easier maintenance and assembly of LXT ram
- **Only two hydraulic connections required per ram**
- **Boltless door locking system**
- **LXT ram only requires single removal of two lock rods and is a one-piece block assembly**
- **Optional 15 1/4" x 15 1/4" booster available**
- **BOP hoists transport BOP to well center assembled**

The European Rig is a fully compliant, fit-for-purpose land rig ready to work within the European Union. It satisfies many of the stringent European operating requirements by adhering to the strict CE ATEX, IP15 regulations, accommodating regional noise restrictions, catering to harsh operating and weather conditions with winterization, and transporting in loads that meet the tight transport road requirements.

To adhere to noise regulations, European Rigs incorporate noise suppression provisions in generator buildings, drill floor wind-walls and the HPU skid. Additionally, these rigs are perfectly suited for pad drilling and offer the option of the Steel Toe™ Walking System to maximize efficiency. Available in two distinct and powerful classes — 1500 HP, 350 ton and 2000 HP, 500 ton — the European Rig is the complete drilling package for drilling within the European Union. European 1500 equipment suite is shown; equipment may vary based on rig horsepower options.



**Mud System – 12-P-160, Triplex**

- Multiple liner sizes allow pressures and volumes to handle circulation requirements in deep drilling applications
- **1,600 HP at 120 SPM**
- **Press fit forged crankshaft design**
- **Herringbone gears**
- **Single- or dual-motor drives configurations available**
- **Two piece module design with either integral discharge connectors or separate discharge manifold and Fast Change or Blak-JAK™ Liner Retention and valve cover options**
- **5,000 psi or 7,500 psi pressure ratings configurations available**
- **Large installed base and long-standing, field-proven, premium pump design**



**Iron Roughneck — ST-100**

- Greater torque and power for eXtreme™ torque connections and deeper drilling requirements
- Integrated spin and torque function and advanced controls maximize safety and efficiency
- **100,000 ft-lb makeup and 120,000 ft-lb breakout torque**
- **4" to 9 3/4" tubular connection range**



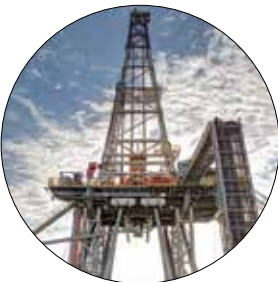
**PipeCat Laydown System**

- Personnel removed from danger area while picking up and laying down pipe
- Need for manual handling eliminated
- **Transfers tubulars from catwalk level to drill floor**
- **Wireless radio control or local control**
- **Manual V-door ramp functionality**



**Steel-Toe Walking System (Optional)**

- Enhanced mobility, safer operations
- Critical equipment remains stationary or mounted in place on rig during walking operations
- Optional wireless controls maintain crew safety during walking operations
- **Well heads cleared with ease**
- **Rig can walk in X or Y direction**
- **Walking speed of 60 ft per hour**
- **Rig can walk 120 ft along one linear axis without using transfer tank**



**Mast and Substructure**

- Drawworks or hydraulically raised substructure with ground level assembly to ensure efficiency and safety
- Mast and substructure can be transported different ways: with structures reinforced and moved while erect with tires, or with substructure scoped down and mast on dolly systems designed for tough roads and desert environments
- No mast sections are disassembled and top drive remains in the mast during transport with the dolly system



**Amphiion and Driller's Cabin**

- Integrated control system for managing, controlling, and monitoring rig floor equipment for safe and efficient operations
- **Configurable control screens and a CCTV screen maximize the driller's operational efficiencies and awareness**
- **Touch screens are user-friendly, concise, respond quickly, and allow simultaneous monitoring of multiple equipment on one screen**
- **Ergonomic, adjustable, climate-controlled work station**
- **Multi-tool controllers, complete with battery back-up and redundant power network; protects the system against power loss**



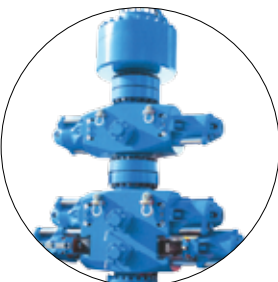
**Top Drive — TDS-11SH**

- Most powerful top drive for its size enables faster, deeper drilling
- AC electric VFD-controlled drilling for safer operations
- **1,100 HP**
- **500 ton rotating and hoisting capacity**
- **51,000 ft-lb continuous drilling torque at 125 RPM**



**Drawworks - ADS-10SD**

- AC motors perform main braking; motors in conjunction with the variable frequency drives are capable of stopping and holding the maximum hook load at zero speed indefinitely
- No HPU or brake water cooling system required
- **Air-cooled friction-plate emergency/parking brake**



**BOP — LXT 13 5/8" 10,000 PSI  
(Optional, Subject to Specifications)**

- Lightweight and compact
- Compatible with the superior low force shear ram
- Easier maintenance and assembly of LXT ram
- **Only two hydraulic connections required per ram**
- **Boltless door locking system**
- **LXT ram only requires single removal of two lock rods and is a one-piece block assembly**
- **Optional 15 1/4" x 15 1/4" booster available**
- **100-ton BOP hoists transport BOP to well center assembled**

Available in 1800 HP DC, 2000 HP DC and AC, and 3000 HP AC options, the Middle East Rig delivers the horsepower you need while withstanding the high ambient temperatures and rough road conditions of the desert. To ease rig moves and reduce rig move down-time, the mast and substructure transport on dolly systems designed for harsh roads, hard rock surfaces and desert environments. High quality materials, heavy-duty construction, state-of-the-art design technology and high manufacturing standards ensure reliable performance in the strenuous desert environment. Middle East 2000 AC equipment suite is shown; equipment may vary based on rig horsepower options.



**Mud Pumps – FD-1600, Triplex**

- Quick access to fluid ends to ease maintenance
- Rugged construction and field-proven
- **1,600 HP at 120 SPM**
- **Dual-motor drive**
- **Optional Mission™ Fluid King two-piece 7,500 psi fluid ends**
- **Two high pressure equipment and piping options: 5,000 psi and 7,500 psi**



**Iron Roughneck — ST-80C**

- Integrated spin and torque function and advanced controls maximize safety and efficiency
- Compact size and lightweight
- Adaptable for wide variety of applications
- **60,000 ft-lb makeup and 80,000 ft-lb breakout torque**
- **4 1/4" to 8 1/2" tubular connection range**



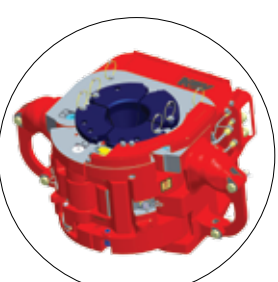
**Pipecat Laydown System (Optional)**

- Personnel removed from danger area while picking up and laying down pipe
- Need for manual handling eliminated
- **Transfers tubulars from catwalk level to drill floor**
- **Wireless radio control or local control**
- **Manual V-door ramp functionality**



**Power Slips — PS-21 (Optional)**

- Manual operations at well center eliminated
- Installation flush with the drill floor creates a safer work environment
- **Reacts up to 45,000 ft-lb of torque**
- **Standard equipped with a centering device**
- **Handles all drill pipe, collars, tubing and casing sizes up to 14" OD**



**BX Elevator (Optional)**

- Hydraulically actuated elevator designed to improve rig safety and efficiency
- Ability to be interlocked with PS-21 as an additional safety feature
- **Double-door design provides optimal balance and performance**
- **Changeable bushings allow one elevator frame to handle all pipe sizes and type requirements**



**Mast and Substructure**

- One-piece telescoping substructure transports at only 14 feet high, but operates at a full 20 feet when assembled
- Mast hydraulic raising cylinders with remote controls to keep personnel a safe distance during operation
- Compact, trailerized load sizes
- Fast, craneless rig-up and rig-down



**Amphion and Driller's Cabin**

- Integrated control system for managing, controlling, and monitoring rig floor equipment for safe and efficient operations
- **Configurable control screens and a CCTV screen maximize the driller's operational efficiencies and awareness**
- **Touch screens are user-friendly, concise, respond quickly, and allow simultaneous monitoring of multiple equipment on one screen**
- **Ergonomic, adjustable, climate-controlled work station**
- **Multi-tool controllers, complete with battery back-up and redundant power network; protects the system against power loss**



**Top Drive — TDS-11SH**

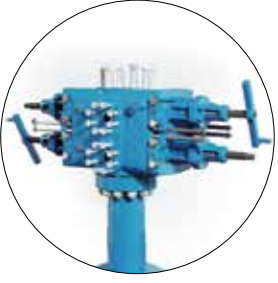
- Most powerful top drive for its size enables faster, deeper drilling
- AC electric VFD-controlled drilling for safer operations
- **1,100 HP**
- **500 ton rotating and hoisting capacity**
- **51,000 ft-lb continuous drilling torque at 125 RPM**



**Drawworks — DSGD-375L**

- AC motor performs main braking; motor in conjunction with the variable frequency drives is capable of stopping and holding the maximum hook load at zero speed indefinitely
- Dual speed gear box offers better tripping efficiencies at lower hook loads
- No HPU or brake water cooling system required
- **1,500 continuous HP**
- **375 ton capacity**
- **Two air-cooled caliper disc brakes**

The 375 ton capacity Mono-Transit Rig, manufactured for quick rig-up/down, is designed to handle the harsh weather and road conditions of Canada. Designed to have a small operating footprint, the rig travels in compact, trailerized load sizes with the substructure uniquely transporting as one load. To accommodate the Canadian winter weather, this 1500 HP rig is fully winterized with removable panels for summer weather. Additionally, the substructure can be modified to accommodate the Steel Toe™ Walking System.



**BOP — LXT 13½" 5,000 PSI**

- Lightweight and compact
- Compatible with the superior low force shear ram
- Easier maintenance and assembly of LXT ram
- **Only two hydraulic connections required per ram**
- **Boltless door locking system**
- **LXT ram only requires single removal of two lock rods and is a one-piece block assembly**
- **Optional 15¼" x 15¼" booster available**
- **The BOP Handling and Transport System is integrated with the substructure, which allows the BOP to adjust and move over the hole**



**Mud Pumps – FD-1600, Triplex**

- Quick access to fluid ends to ease maintenance
- Rugged construction and field-proven
- **1,600 HP at 120 SPM**
- **Single- and dual-motor drive configurations can both operate at full 1,600 HP**
- **Optional Mission™ Fluid King two piece 7,500 psi fluid ends**



**Iron Roughneck — ST-100**

- Greater torque and power for eXtreme™ torque connections and deeper drilling requirements
- Integrated spin and torque function and advanced controls maximize safety and efficiency
- **100,000 ft-lb makeup and 120,000 ft-lb breakout torque**
- **4" to 9¾" tubular connection range**



**Stand Transfer Vehicle (STV) (Optional)**

- Derrickman removed from diving board for increased safety and accelerated training with driller
- Intuitive, user-friendly, ergonomic controls
- **Greater consistency in tripping speed**
- **Two camera control system**
- **Manual racking possible**
- **Easily transports in and out of mast via transport skid**

Custom Terrain Series

Arctic, Desert, Heli, Train

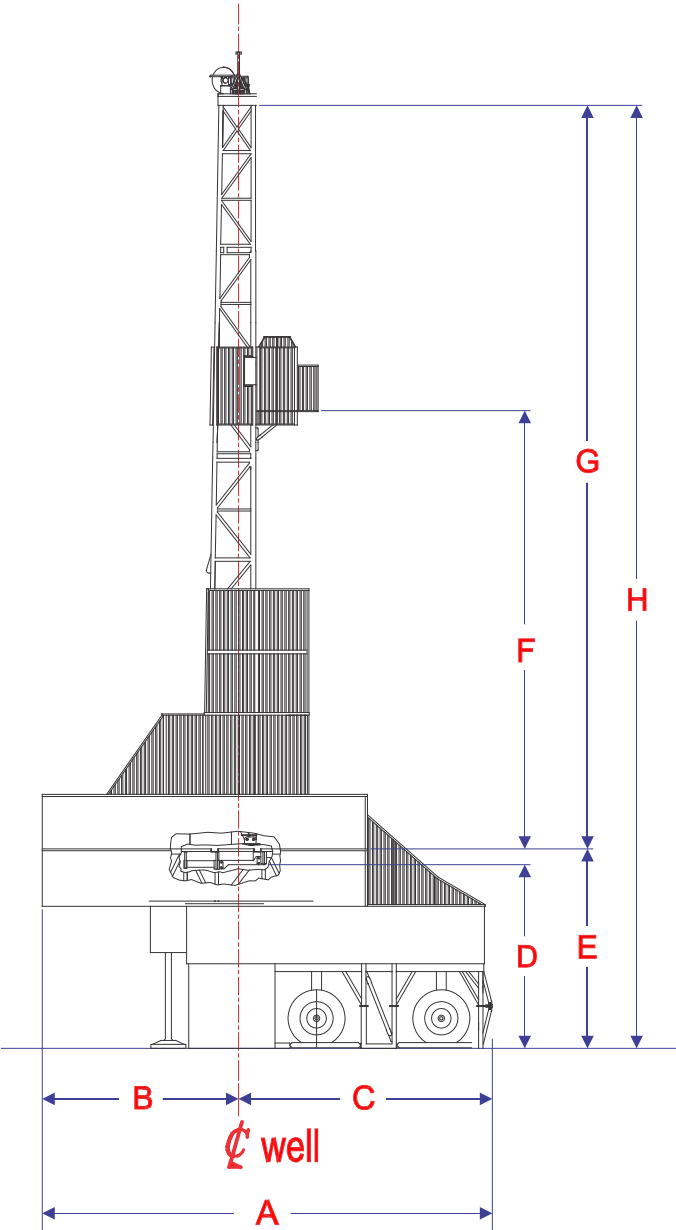
The Custom Terrain Series Rigs are purpose-built to perform in demanding terrains and extreme temperature environments. With many innovative designs, these rigs continue drilling downhole no matter the conditions above ground.

Ideal Series	units	A	B	C	D
Desert Rig	ft/in	62'-6"	42'-0"	20'-6"	25'-0"
	meters	19.05	12.80	6.25	7.62
Arctic Box	ft/in	86'-9"	37'-10"	48'-11"	26'-8"
	meters	26.44	11.53	14.91	8.13
Train Prime	ft/in	57'-1"	39'-0"	18'-1"	31'-10"
	meters	17.40	11.89	5.51	9.70
Heli Rig	ft/in	61'-2"	39'-7"	21'-7"	20'-4"
	meters	18.64	12.06	6.58	6.20

Ideal Series	units	E	F	G	H
Desert Rig	ft/in	30'-0"	85'-0"	152'-0"	182'-0"
	meters	9.14	25.91	46.33	55.47
Arctic Box	ft/in	30'-0"	85'-0"	142'-0"	172'-0"
	meters	9.14	25.91	43.28	52.42
Train Prime	ft/in	36'-0"	85'-0"	142'-0"	178'-0"
	meters	10.97	25.91	43.28	54.25
Heli Rig	ft/in	25'-0"	85'-0"	142'-0"	167'-0"
	meters	7.62	25.91	43.28	50.90

**Notes**

- Above dimensions represent our standard offering. Contact our sales team for more information.



Conventional Substructures and Drilling Masts — Custom Series

Rig Model	units	Desert Rig	Arctic Rig	Train Rig	Heli Rig
Hook Capacity	ton	250 to 750+	250, 350, or 500	250 to 750+	250
	metric ton	226.79 to 680.38+	226.79, 317.5, or 453.5	226.79 to 680.38+	226.79
Mast Type		Telescopic or Cantilever	Telescopic or Cantilever	Cantilever	Cantilever
Mast Height	ft/in	127'-0"+	120'-0"+	127'-0"+	142'-0"
	m	38.71+	36.58+	38.71+	43.28
Base Width	ft/in	15'-0" to 33'-0"	25'-0" (based on 350 and 375 ton)	25'-0" (based on 350 ton)	21'-0"
	m	4.57 to 10.06	7.62 (based on 350 and 375 ton)	7.62 (based on 350 ton)	6.40
Raising Method		Cylinder/Sling-line	Cylinder/Sling-line	Cylinder/Sling-line	Cylinder/Sling-line
Applicable Drawworks (Number of Lines)		1320-UDBE (10 to 14)	SSGD-360 (12)	DSGS-375 (12)	D700 (12)
Substructure Type		Slingshot-Cylinder/Winch/Drawworks	Slingshot-Cylinder/Winch	Slingshot-Cylinder/Winch	Slingshot-Cylinder/Winch/Drawworks
Pipe Set-Back Capacity	lb	250,000 to 700,000	250,000 to 600,000	350,000 or 575,000	n.a.
	ton	125 to 350	125 to 300	175 or 287.5	
	metric ton	113.4 to 317.5	113.4 to 272.1	158.7 or 260.8	
Casing Capacity	lb	400,000 to 1,500,000	750,000	700,000	600,000
	ton	200 to 750	375	350	300
	metric ton	226.7 to 680.3	340.1	323.8	272.1
Pipe Racking Capacity (Stands)		3½ to 5½" DP: (140-270) 8½ to 9½" DC: (up to 9)	5" DP: (200) 6¾" DC: (22)	5" DP: (180) 7" DC: (12) 8" DC: (8)	5" DP: (178) 10" DC: (8)
Floor Height	ft/in	20'-0" to 30'-0"	20'-0" or 35'-0"	25'-0" or 30'-0"	20'-0" or 25'-0"
	m	6.1 to 9.1	6.1 or 10.6	7.6 or 9.1	7.6 or 9.1
Cellar/Clearance Height	ft/in	19'-0" to 38'-0"	25'-6"	22'-0"	Up to 20'-4"
	m	5.7 to 11.5	7.7	6.7	6.1
Rotary Table Opening	in	27½"	37½"	37½"	27½"
Standard Crown Sheave Groove	in	1½" to 1¾"	1¼" to 1¾"	1¾" (based on 350 ton)	1¾"
# of Sheaves on Cluster (Fastline and Deadline sheaves not included)		5 to 7	6	6 (based on 350 ton)	6





Desert Rig

The Desert Rig is designed to take on the challenges of quick moving desert operations, high ambient temperatures and difficult transportation logistics.

Efficient Rig-up/down and Reduced Transit Time Between Well Sites

- Maximized load sizes with use of primary mover
- Reduced footprint and compact load size via rig’s ability to fold, bend or collapse
- Incorporation of drilling equipment during transit. BOP equipment is integrated into substructure during relocation.
- Use of pinned connections instead of bolted connections
- Unique substructure and trailer-mounted equipment

Ruggedness

- Rig design suited for high-ambient, desert temperature environments
- Durable equipment suite, high quality materials, heavy-duty construction, state-of-the-art design technology and ISO 9001 manufacturing standards

Enhanced Safety

- The Desert Rig is packaged with all the safety features and reliability you expect from us
- Integrated control system with our disc brake electronic auto-driller and wrap-around operator station automates many potentially hazardous tasks and improves visibility



The Custom Terrain Rig series rigs are specifically designed to operate on rugged terrain and withstand extreme temperatures. Catering to the vast variety on formations and environments, each Custom Terrain rig is purpose-built uniquely to satisfy your needs.



Arctic Rig

The Arctic Rig takes on cold weather environments through rig winterization with warming equipment and enclosed work areas.



Heli Rig

The Heli Rig is uniquely designed for use when road transportation to a remote location is not an option. True to its name, the Heli rig is transportable by helicopter and is ideal for isolated jungle locations.



Train Rig

When a traditional rig moving technique is not an option, the Train Rig can move on the pad using rails, ensuring mobility and drilling efficiency.

Rig Aftermarket Services

Field Service

Our growing staff of proven field service personnel is available 24/7 to support all NOV products. Knowledgeable field service technicians can quickly deploy to your operating site to resolve your equipment issues, whether structural, mechanical, electrical or software-related. Our FAST solution service trucks are pre-stocked with an extensive list of NOV's top drive, iron roughneck, BOP, EDS, and Amphion replacement parts, filters, consumables and tools to get your NOV equipment running at OEM specifications. Expert on-call technicians are ready to provide FAST, on-site service and repair.

Training

Field technicians train extensively on NOV Rig Systems product lines including competency training and evaluations through our NOV technical colleges and training facilities to ensure the highest quality service and support for your equipment repairs on-site.



NOV is with you every step of the way

Repair

Our highly skilled shop technicians overhaul, repair, rebuild, and re-certify a wide range of NOV equipment to the NOV Quality Assurance and OEM specifications — using only OEM parts. Our worldwide network of repair centers provides unrivaled quality customer service, on-time delivery and unmatched technical integrity. In addition, equipment exchange programs are available at various facilities. Through the Used Equipment Refurbishment Program, we provide viable, short turnaround solutions to immediate capital equipment needs, complete with data books and certificates of conformance as required.

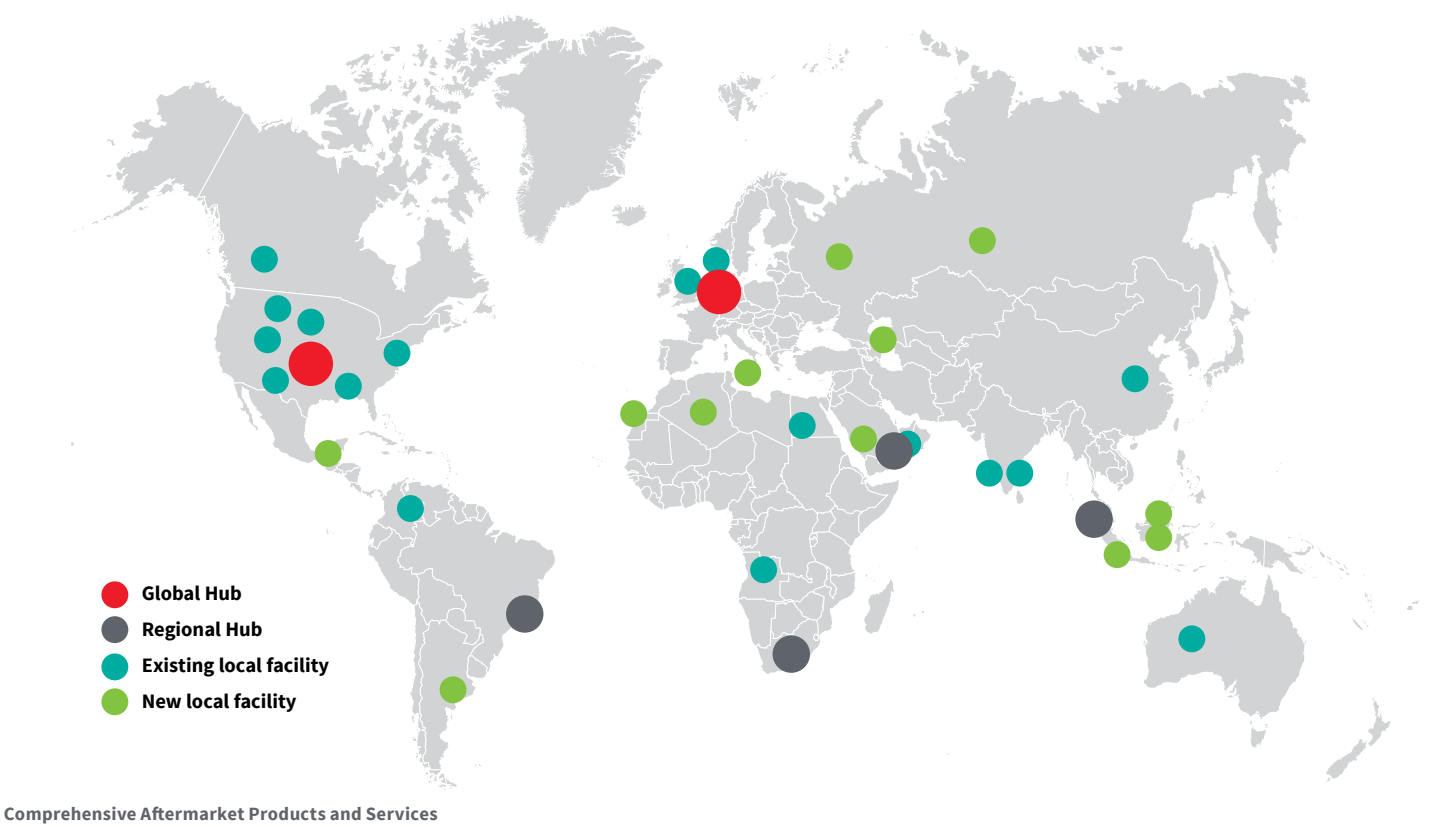
Technical Support

One phone call to one of our technical support centers initiates a technical support team of multi-skilled backgrounds to troubleshoot and resolve your worldwide equipment needs, 24/7/365. Our team of highly skilled and experienced technical support members work together with our global pool of qualified field service technicians and subject matter experts to keep your rigs operating. The technical support team utilizes our web-based application “Tracker” to record, manage, and resolve issues.

Field Engineering

Our field engineering groups offer the unique service of providing one-off, rig-specific equipment designs, modifications and solutions to your rig-specific issues. This includes rig surveys, proposal drawings, design drawings, product manufacturing, service manuals, data books, and equipment installations. Field Engineering capabilities include mechanical and electrical engineering, software/programming modifications, training and troubleshooting.

For 24/7 Support Services: +1 281 569 3050



Comprehensive Aftermarket Products and Services





Equipment Integration

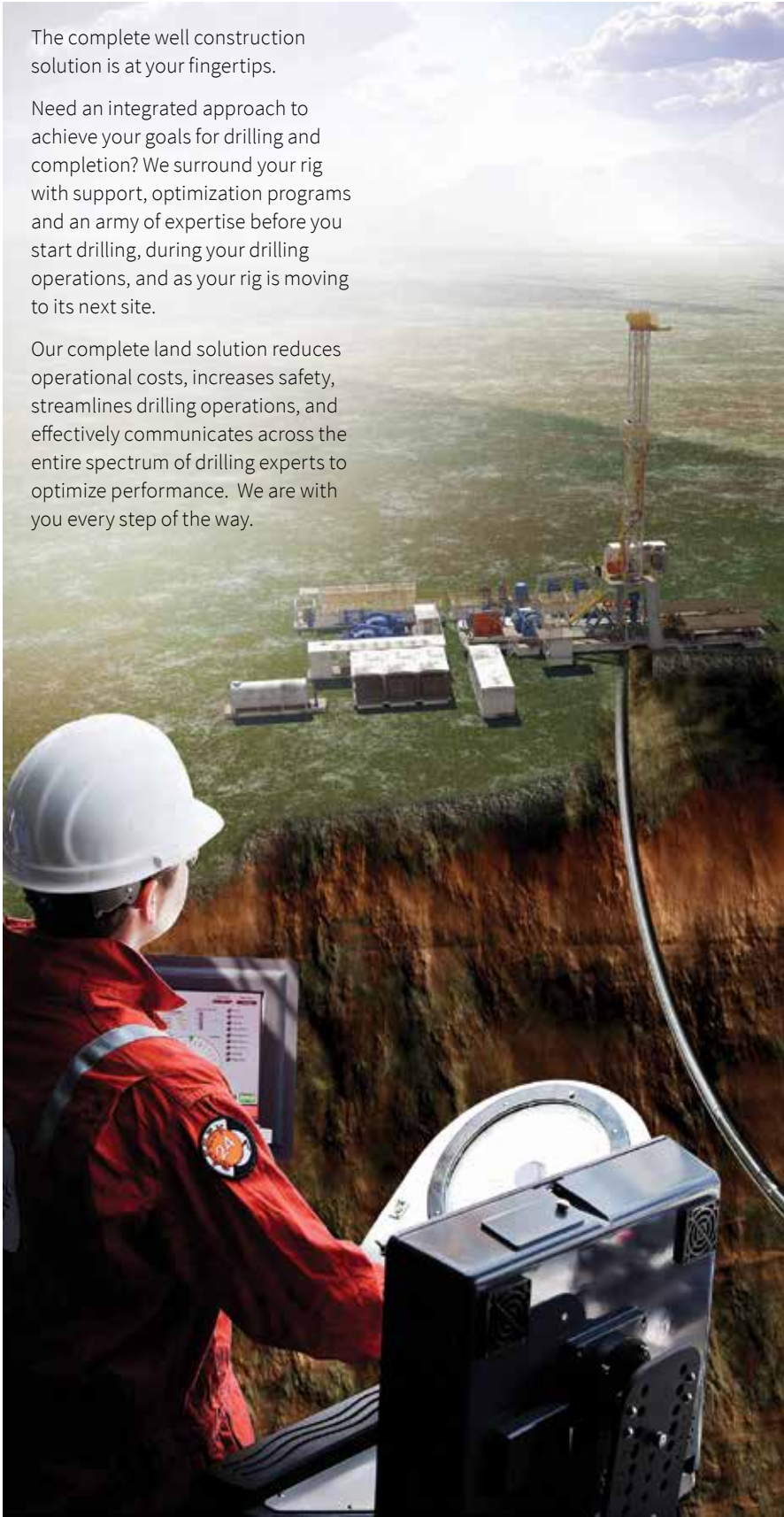
To meet the drilling challenges of the future, NOV provides the right selection of equipment for the job, backed by a thorough design and quality assurance process, as well as comprehensive simulation and testing prior to release.

We magnify and enhance your drilling power by combining the latest in land rig technology through rig and equipment designs responsive to application needs, full system integration, equipment optimization services, integrated reporting systems, drilling optimization services, and the most comprehensive aftermarket support network in the oil and gas industry. Our equipment is field proven and backed by a reputation of dependability, quality, and support. On a land rig, we can supply a complete integrated equipment package that includes hoisting, rotating, pipe handling, circulating, power, and pressure control systems. At the center of the operation is the Amphiion™ Integrated Drilling Control System, the most intuitive control system on the market today. From the comfort of a climate-controlled cabin, you control drilling operations from the Amphiion chair and monitor every aspect of the drilling process. Innovative tools such as the Stand Transfer Vehicle and Iron Roughneck™ remove your crew from dangerous areas improving safety, efficiency, and accuracy. Our long line of advanced top drive designs increase power and drilling torque, allowing you to reach previously unthinkable depths or in challenging resource areas.

Equipment Optimization

Avoiding equipment and rig downtime is essential to your operations. Rig crews are under increased pressure to ensure asset integrity maximizes uptime and is in compliance with regulations.

- eHawk™ Services remotely connects to your equipment controllers and logs data from your drilling operations. The eHawk service center, staffed by experienced engineers and former field service personnel, operates 24/7 to handle all issues relating to NOV control and instrumentation. Several eHawk functionalities include troubleshooting control systems, providing software upgrades, commissioning, reloading software, retrieving and analyzing data, and most importantly, remotely monitoring your drilling operations and providing instantaneous feedback so you and your crew can immediately resolve minor issues before they become big problems.
- The web-based RigMS™ enterprise asset management system is a complete integrated solution that provides fleet-wide tracking capabilities for all of your subsea and surface assets. We provide historical information, analysis, and maintenance scheduling so you can maintain control of your assets with minimal effort.



The complete well construction solution is at your fingertips.

Need an integrated approach to achieve your goals for drilling and completion? We surround your rig with support, optimization programs and an army of expertise before you start drilling, during your drilling operations, and as your rig is moving to its next site.

Our complete land solution reduces operational costs, increases safety, streamlines drilling operations, and effectively communicates across the entire spectrum of drilling experts to optimize performance. We are with you every step of the way.



Integrated Data Management

See the whole picture at your fingertips.

- RigSense is a versatile, integrated drilling instrumentation system that incorporates our leading sensor technologies with the latest in data acquisition systems, fostering your team's collaboration for fast and accurate decisions. RigSense includes productivity features, directional drilling tools, automated report generation, notes, messaging, wireless communication, and multilingual support.
- WellData bridges the gap between your rigs and your office by allowing you to view live drilling data and well reports on your web browser anywhere, anytime. WellData is a secure web portal that provides comprehensive drilling activity reports that are searchable by rig number or location.
- DrillWell is an integrated business system that consolidates all rig report data into a central database so the user can query and arrange data to highlight meaningful trends, identify trouble spots, and improve overall operations.



Drilling Optimization

- With increased pressure on drilling and completion budgets, safely maximizing ROP efficiency is vital to achieving production targets. We offer pre-well analysis, road maps for the driller, comprehensive feedback and autonomous adjustments to drilling programs, and remote support technologies to achieve optimum drilling performance.
- DrillShark is a comprehensive solution that learns optimization lessons from each well, and applies those lessons to successive wells within the field. DrillShark utilizes a remote-monitoring service team of engineers that configure adaptive drilling procedures to the needs of the customer's drilling program.
  - SoftSpeed II is a top drive software enhancement that helps reduce stick-slip oscillations. SoftSpeed's auto-tuning function identifies optimal parameters to dampen and prevent stick-slip oscillations, thereby improving ROP, borehole quality, and minimizing bit wear.
  - Twister is a top drive software enhancement that improves drilling efficiency and consistency by using algorithms and control theory based on calculated energy required to rotate the drill string through desired angles of rotation. More specifically, this software allows for precise tool face orientation and can induce torsional oscillations in the drill string to reduce that static friction that occurs during sliding operations.

A large, realistic hand is shown pointing its index finger towards a central point. Surrounding this point is a collage of various oil and gas industry images, including drilling rigs, wellheads, and industrial equipment. The background is a soft-focus grey with numerous glowing bokeh lights in warm tones. In the bottom right corner, the text "Build with us." is written in a large, white, sans-serif font, with the website "rigwizard.nov.com" in a smaller font below it.

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