



VDD 200 Super Single Rig - Automated Pipehandling System

Chapter 1 - General

General

Type Description	Rack and Pinion
Max. Hoisting Capacity	200 short tons (181 metric tonnes)
Max. Pushing Capacity	72.8 short tons (66 metric tonnes)
Max. Drilling Depth	11,480 ft (3,500 m)
Operating Tubulars	Range III - Singles
Overall Rig Height	108.2 ft (33.0 m)
Transportation	Street Legal Loads and Weights
Horsepower Rating Hoisting System	850 hp (634 kW)
Design Temperature	-4°F to 104°F (-20°C to +40°C)

Chapter 2 - Mast with Components

Mast

Type Description	STREICHER Welded Box Type
Max. Hoisting Capacity	200 short tons (181 metric tonnes)
Mast Height	79.7 ft (24.3 m)
Free Working Height	59.0 ft (18.0 m)

Auxiliary Winch

Max. Hoisting Capacity	11,000 lbs. (5,000 kg)
Max. Hook Speed	54.2 ft/m (16.5 m/min)

Chapter 3 - Substructure with Drillfloor Equipments

Substructure

Type Description	STREICHER Modular Box-On-Box Design
Substructure Footprint	19.7 ft x 26.2 ft (6 m x 8 m)
Substructure Height	28.5 ft (8.7 m)
Substructure Clear Inner Width	9.8 ft (3.0 m)
Clearance underneath Rotary Beams	24.6 ft (7.5 m)
Module Connection	Quick Connectors
Wind Walls	Existing

Cathead

Line Pull	31,500 lbs. (140,000 N)
Max. Torque With 4 ft. Rig Tong	125,000 ft-lbs. (170,000 Nm)
Max. Torque With 5 ft. Rig Tong	154,900 ft-lbs. (210,000 Nm)
Stroke of Wire	6.5 ft (2,000 mm)
Weight	2,200 lbs. (1,000 kg)



VDD 200 Super Single Rig - Automated Pipehandling System

Deadman	
Type Description	STREICHER Deadman
Max. Retention Force	31,500 lbs. (140,000 N)
Weight	1,100 lbs. (500 kg)

Driller's Cabin	
Type Description	STREICHER Driller's Cabin
Drilling Monitor Display	Standard
CCTV Station	Standard
Data Acquisition System	Standard
Remote Diagnostic & Service	Standard

Drillfloor Crane	
Max. Lifting Moment	132,840 ft-lbs. (180,000 Nm)
Max. Lifting Capacity	5,390 lbs. (2,450 kg)
Max. Outreach	20.3 ft (6.2 m)
Slewing Angle	400 degrees
Slewing Torque	17,000 ft-lbs. (23,000 Nm)
Weight	4,657 lbs. (2,117 kg)

Standpipe Manifold	
Max. Operating Pressure	5,000 psi (345 bar)
Standpipe Nominal Diameter	5"

BOP Handling System	
Type Description	Pneumatic
No. of Hoisting Units	2
Max. Carrying Capacity	2 x 44,000 lbs (2 x 20,000 kg)
Lifting Speed at Full Load	2.3 ft/min (0.7 m/min)
Lifting Speed without Load	4.6 ft/min (1.4 m/min)
Travelling Speed at Full Load	39.4 ft/min (12.0 m/min)
Travelling Speed without Load	44.3 ft/min (13.5 m/min)

Chapter 4 - Rotary Table	
Rotary Table (Assisting)	
Type Description	STREICHER Hydraulic Driven Rotary Table
Max. Rotary Load	200 short tons (181 metric tonnes)
Max. Rotation Speed	10 rpm
Max. Operating Torque	33,200 ft-lbs. (45,000 Nm)
Max. Opening	37 1/2" (952.5 mm)



VDD 200 Super Single Rig - Automated Pipehandling System

Slip Lifter	
Type Description	STREICHER Slip Lifter
Rotary Size	37 1/2" (952.5 mm)
Pipe Size Range	3 1/2" to 6 5/8" (88.9 mm to 168.3 mm)
Load Rating	200 short tons (181 metric tonnes)
Operating Pressure	870 psi (60 bar)
Flow Rate	5.3 gpm (20 l/min)
Additional Bushing sizes	Optional
Weight	550 lbs. (250 kg)

Chapter 5 - Drawworks

Drawworks (Push/Pull)	
Type Description	STREICHER Hydraulic Top Drive
Type of Drive	Hydraulic Motors
Max. Hoisting Capacity	200 short tons (181 metric tonnes)
Max. Pushing Capacity	72.8 short tons (66 metric tonnes)
Max. Travel Speed	164 fpm (50.0 m/min)
Weight	25,300 lbs. (11,500 kg)

Chapter 6 - Top Drive Unit

Top Drive System (Rotation)	
Type Description	STREICHER Hydraulic Top Drive
Type of Drive	Hydraulic Motors
Rated Capacity	200 short tons (181 metric tonnes)
Rated Power	850 hp (634 kW)
Operating Length (132" Links)	228" (5,800 mm)
Max. Continuous Drill Torque	29,520 ft-lbs. (40,000 Nm)
Intermittent Torque	40,590 ft-lbs. (55,000 Nm)
Max. Speed	190 rpm
Max. Circulating Pressure	5,000 psi (345 bar)
Weight	18,700 lbs. (8,500 kg)

Elevator	
Operation Mode	Hydraulic Remote Controlled
Component Rated Capacity	350 short tons (318 metric tonnes)
Size O.D. Range	2 3/8" to 7"
Suitable for Link Size	250 to 500 short tons
Weight	1,210 lbs. (550 kg)



VDD 200 Super Single Rig - Automated Pipehandling System

Elevator Links	
Link size	2 1/4" x 132" (57.15 mm x 3,353 mm)
Component Rated Capacity	250 short tons (227 metric tonnes)
Weight	775.3 lbs. (352,4 kg)

Chapter 7 - Tubular Handling Equipment	
Tubular Handling Equipment	
Type Description	STREICHER Horizontal to Vertical Pipehandler
Mode of Operation	Fully Automated
Drill Pipe Range	2 3/8" to 6 5/8"
Drill Collar Range	3 1/8" to 9 3/4"
Tubular/ Casing Range	4 1/2" to 20"
Max. Hoisting Capacity	6,600 lbs. (3,000 kg)
Max. Length of Tubulars	48.0 ft (14.6 m)
Max. Travel Speed	~164 ft/min (~50 m/min)
Max. Horizontal to Vertical Torque	73,800 ft-lbs. (100,000 Nm)
Modifications for Diameter Change	Not Necessary
Type Description	STREICHER Automated Pipe Feeding System
Max. Capacity (Drillpipes 5 1/2")	12
Tubular Range	2 3/8" to 20"
Loading	Forklift
Pipe Transportation	Chain Conveyor
Weight	17,600 lbs. (8,000 kg)

Roughneck System	
Tubular Connection OD Range	4 1/4" to 8 1/2"
Max. Spin Speed	75 rpm (nominal on 5" DP)
Max. Spin Torque	1,750 ft-lbs. (2,370 Nm)
Max. Make-Up Torque	60,000 ft-lbs. (81,500 Nm)
Max. Break-Out Torque	80,000 ft-lbs. (108,500 Nm)
Horizontal Travel	60" (1,524 mm)
Connection Height	23" to 59" (584 mm to 1,498 mm)
Weight	7,800 lbs. (3,538 kg)



VDD 200 Super Single Rig - Automated Pipehandling System

Chapter 8 - Power Generation

Generator Unit

Type Description	STREICHER Generator Set
No. of Generator Sets	3
Tank Capacity	264 gallons (1,000 liters)
Rated Power	1,080 hp (805 kW)
Rated Speed	1,500 rpm
Effective Power	1,145 hp (852 kW)
Generator Rating	1,065 kVA
Voltage/Frequency	690 V / 50 Hz

AC Drive & Monitoring System

Type Description	STREICHER AC Drive & Monitoring System
Installations	A/C System, Inverters, MCC, PLC
External Cable Connections	Plug Board and Plug Panels
Cooling System	Liquid Cooled

System Voltage Frequency

Voltage/ Frequency	690 V/ 50 Hz
Voltage/ Frequency	400 V/ 50 Hz
Voltage/ Frequency	230 V/ 50 Hz

Chapter 9.1 - Mud Pumps

Mud Pump Module

Type Description	STREICHER Mud Pump Module
Model	Triple Single Acting Piston Pump
Rated Power	1,000 hp (746 kW)
Transmission Mode	V-Belt Drive
No. of Mud Pump Modules	2
Max. Liner Diameter	6.7" (170.0 mm)
Max. Stroke	10" (254 mm)
Rated Stroke	140 spm
Max. Discharge Capacity	611 gpm (2,315 l/min)
Discharge Pulsation Dampener	19.8 gallons (75 liters)
Max. Working Pressure	5,000 psi (345 bar)
Weight	88,000 lbs. (40,000 kg)
Type of Drive	AC Motor
Max. Continuous Power	1,180 hp (880 kW)
Max. Continuous Torque	4,263 ft-lbs. (5,776 Nm)
Weight	8,360 lbs. (3,800 kg)



VDD 200 Super Single Rig - Automated Pipehandling System

Type Description	Centrifugal Pump
Rated Power	73.7 hp (55 kW)
Inlet Diameter	8" (203.2 mm)
Outlet Diameter	6" (152.4 mm)
Impeller Diameter	12" (304.8 mm)

Chapter 9.2 - Tank System

Sand Trap Module

Type Description	STREICHER Sand Trap Module
Dry Weight	18,920 lbs. (8,600 kg)
Tank Capacity	177 bbls. (28 m3)
Max. Specific Gravity of Fluids	7.3 kg/gallon (2.2 kg /liter)

Suction Tank Module

Type Description	STREICHER Suction Tank Module
Dry Weight	52,800 lbs. (24,000 kg)
Tank Capacity	190 bbls. (30 m3)
Mix Tank Capacity	95 bbls. (15 m3)
Pill Tank Capacity	31.7 bbls. (5 m3)
Suction Line Diameter	8" (203,2 mm)
Pressure Line Diameter	6" (152,4 mm)
Max. Specific Gravity of Fluids	7.3 kg/gallon (2.2 kg /liter)

Type Description	Agitator Unit
No. of Agitator Units	4
Rated Power	10 hp (7,5 kW)
Max. Motor Speed	1,440 rpm
Max. Agitator Speed	64 rpm
Weight	678 lbs. (308 kg)

Type Description	Centrifugal Pump
No. of Centrifugal Pumps	2
Inlet Diameter	6" (152.4 mm)
Outlet Diameter	5" (127 mm)
Impeller Diameter	14" (355.6 mm)
Rated Power	73.7 hp (55 kW)

Type Description	Low Pressure Hopper
No. of Hopper Units	1
Hopper Size	6" (152.4 mm)
Max. Volume Mud	1,650 gpm (6,250 l/min)
Weight	236 lbs. (107 kg)



VDD 200 Super Single Rig - Automated Pipehandling System

Intermediate Tank Module	
Type Description	STREICHER Intermediate Tank Module
Dry Weight	52,800 lbs. (24,000 kg)
Tank Capacity	506 bbls. (80 m3)
No. of Compartments	2 (190 bbls. each)
Suction Line Diameter	8" (203,2 mm)
Pressure Line Diameter	6" (152,4 mm)
Max. Specific Gravity of Fluids	7.3 kg/gallon (2.2 kg /liter)
Type Description	Agitator Unit
No. of Agitator Units	2
Rated Power	10 hp (7,5 kW)
Max. Motor Speed	1,440 rpm
Max. Agitator Speed	64 rpm
Weight	678 lbs. (308 kg)

Trip Tank Module	
Type Description	STREICHER Trip Tank Module
Dry Weight	18,600 lbs. (7,100 kg)
Trip Tank Capacity	18.9 bbls. (3.0 m3)
Flow-Line Diameter	14" (356 mm)
Max. Specific Gravity of Fluids	7.3 kg/gallon (2.2 kg /liter)
Type Description	Centrifugal Pump
Inlet Diameter	3" (76.2 mm)
Outlet Diameter	2" (50.8 mm)
Impeller Diameter	13" (330.2 mm)
Rated Power	37.5 hp (28 kW)

Chapter 9.3 - Mud Treatment

Shale Shaker Module	
Type Description	STREICHER Shale Shaker Module
Screen Mounting	Quick Release System
Max. Capacity	900 gpm (3,411 l/min)
Produced G Forces	7.3 G
No. of Shale Shakers Modules	2
Deck Angle Adjustment	-1° to +8°
Weight	9,100 lbs. (4,140 kg)



VDD 200 Super Single Rig - Automated Pipehandling System

Centrifuge Module	
Type Description	STREICHER Centrifuge Module
No. of Centrifuge Modules	1
Max. Capacity	200 gpm (758 l/min)
Bowl Size	14" (356 mm)
Bowl Type	Contour Cylinder
Max. Speed	4,000 rpm
Weight	13,200 lbs. (6,000 kg)

Mud/Gas Separator	
Type Description	STREICHER Mud/ Gas- Separator
Liquid Capacity	1,500 gpm (5,678 l/min)
Working Pressure	125 psi (8.6 bar)
Gas Capacity	17.5 MMscf/d (495.5 m3/d)
Ventline Diameter	6" (152.4 mm)
Weight	12,100 lbs. (5,500 kg)

Mud Lab Module	
Type Description	STREICHER Mud Lab Module
Equiped with	Mud Workplace & Control Station
Weight	11,000 lbs (5,000 kg)

Chapter 10 - Auxiliary Equipment

Fuel Tank	
Tank Capacity	126 bbls. (20 m3)
No. of Fuel Tanks	1
Layout	Double Walled
Autom. Generator Refill	Yes
Weight	10,600 lbs. (4,820 kg)

Compressed-Air System	
Rated Power	40 hp (30 kW)
Max. Capacity	24.6 bbls/min (3.9 m3/min)
Max. Operating Pressure	190 psi (13 bar)
Air Receiver	530 gallons (2,000 lites)
Air Dryer	Standard



VDD 200 Super Single Rig - Automated Pipehandling System

Hydraulic Power Unit	
Type Description	STREICHER Hydraulic Power Unit
Rated Power	2 x 805 hp (2 x 600 kW)
Layout	Redundant
Max. Working Pressure	5,000 psi (345 bar)
Max. Volume	145 gpm (550 l/min)
Tank Capacity	10.1 bbls (1.6 m ³)

Chapter 11 - Additional Options

Power Slip	
Type Description	Power Slip
Rotary Size	37 1/2" (952.5 mm)
Pipe Size Range	2 3/8" to 14" (60.3 mm to 355.6 mm)
Component Load Rating	500 short tons (454 metric tonnes)
Operating Pressure	2,500 psi (175 bar)
Flow Rate	10 gpm (37.9 l/min)

Manual Tong	
Type Description	Manual Drill Pipe Tong
Size Range lever	3 1/2" to 21 1/2"
Length of Lever Arm	46" (1,170 mm)

Driller's Cabin	
Redundant Drilling Operation Chairs	Optional
BOP and C/K Panel	Optional
Fire and Gas Display Panels	Optional
Satelite Communication	Optional

Drillfloor Crane	
Equipped with Work Basket	Optional

Well Control Equipment (Exemplary)	
Type Description	T3 7082 Annular BOP
Bore Size	13 5/8" (346 mm)
Operating Pressure	5,000 psi (345 bar)
Hydraulic Operating Pressure	1,500 psi (105 bar)
Weight	13,500 lbs. (6,120 kg)
Type Description	T3 6012 Double Ram BOP
Bore Size	13 5/8" (346 mm)
Operating Pressure	10,000 psi (690 bar)
Weight	27,720 lbs. (12,600 kg)



VDD 200 Super Single Rig - Automated Pipehandling System

Type Description	T3 Single Ram BOP with Tandem Shear Boosters
Bore Size	13 5/8" (346 mm)
Operating Pressure	10,000 psi (690 bar)
Weight	13,640 lbs. (6,200 kg)
Type Description	T3 BOP Control System (Accumulator Unit)
No. of Remote Controls	2
Bottle Capacity	240 gallons (910 liters)
Operating Pressure	3,000 psi (207 bar)
Weight	34,100 lbs. (15,500 kg)
Weight	34,100 lbs. (15,500 kg)
Type Description	T3 Choke- & Kill- Manifold
Max. Operating Pressure	10,000 psi (690 bar)
Choke Line Inside Diameter	3"

Active Tank Module	
Additional Hopper	Optional

Solids Control	
Mud Pre-Separator	Optional
Vacuum Degasser	Optional
Triple-Deck Shale Shakers	Optional
Flocculation System	Optional
Barite Silos	Optional
Water Silos	Optional
Additional Intermediate Tanks	Optional
Additional Mud Pumps	Optional
Additional Centrifuges	Optional

System Voltage - Frequency	
Different Type of Voltage/ Frequency	Optional



VDD 200 Super Single Rig - Automated Pipehandling System

Miscellaneous	
Side-Lighting	Optional
Winterisation Package	Optional
BOP-Trolley	Optional
Casing Running- /Casing Drilling	Optional
Soft Torque and Soft Pump	Optional
Different Type of Roughneck	Optional
Sound Proofing for Generator Package	Optional
Forklift	Optional
Piperacks	Optional
Drillpipe and Downholeequipment	Optional
Storagecontainer	Optional
Workshopcontainer	Optional
Officecontainer	Optional
Modules Skid Mounted	Optional
Modules Trailer Mounted	Optional
STREICHER Skidding-/ Walking System	Optional
STREICHER Fire & Gas System	Optional
Preparation for Grid Supply	Optional

Chapter 12 - Applied Standards & Regulations

Applied Standards & Regulations

European Machinery Directive 2006/42/EC (CE-Declaration of Conformity)
European Pressure Equipment Directive 97/23/EC
Explosion Proof Equipment Directive 94/9/EC
Low Voltage Equipment 2006/95/EC
Electromagnetic Compatibility 2004/108/EC
API Spec. 4F (Specification for Drilling and Well Servicing Structures)
API Spec. 8C (Specification for Drilling and Production Hoisting Equipment)