



## SDD 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	55.1 short tons (50 metric tonnes)
Max. Drilling Length	13,123 ft (4,000 m)
Operating Tubulars	Range III - Singles
Max. Overall Rig Height	108.2 ft (33.0 m)
Transportation	Street Legal Loads and Weights
Horsepower Rating Hoisting System	795 hp (593 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 Length	79.7 ft (24.3 m)
Free Working Length	59.0 ft (18.0 m)

### Chapter 3 - Substructure and Drillfloor Equipment

#### 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	0 ft up to 28.5 ft (0 m up to 8.7 m)
Substructure Clear Inner Width	9.8 ft (3.0 m)
Clearance underneath Rotary Beams	0 ft up to 24.6 ft (0 m up to 7.5 m)
Module Connection	Quick Connectors
Wind Walls	Optional

#### Driller's Cabin

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

#### Standpipe Manifold

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



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### Chapter 4 - Bracing Table

#### Bracing Table

Type Description	STREICHER Bowl Table
Max. Rotary Load	200 short tons (181 metric tonnes)
Max. Opening	37 1/2" (952.5 mm)

#### 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)
Flow Rate	5.3 gpm (20l/min)
Weight	550 lbs. (250 kg)
Additional Bushing sizes	Optional

### 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	55.1 short tons (50 metric tonnes)
Max. Hook 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)
Weight	18,700 lbs. (8,500 kg)
Operating Length (132" Links)	228" (5,800 mm)
Max. Continuous Drill Torque	40,590 ft-lbs. (55,000 Nm)
Intermittend Torque	44,280 ft-lbs. (60,000 Nm)
Max. Speed	200 rpm
Max. Circulating Pressure	5,000 psi (345 bar)

#### Elevator

Operation Mode	Hydraulic Remote Controlled
Component Rated Capacity	250 short tons (276 metric tonnes)
Size O.D. Range	2 3/8" - 5 1/4"
Suitable for Link Size	250 to 500 short tons
Weight	563 lbs. (256 kg)



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Elevator Links	
Link size	2 1/4" x 108" (57.15 mm x 2,743 mm)
Component Rated Capacity	250 short tons (227 metric tonnes)
Weight	680 lbs. (309 kg)

Chapter 7 - Tubular Handling Equipment	
Tubular Handling Equipment	
Type Description	STREICHER Horizontal to Vertical Pipehandler
Operation Mode	Automated in Sequences
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	11,000 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 (Drill Pipes 5 1/2")	12
Tubular Range	2 3/8" to 20"
Loading	Forklift
Pipe Transportation	Chain Conveyor
Weight	17,600 lbs. (8,000 kg)

Make Up/Break Out Tong	
Type Description	Make Up/Break Out Tong
Tubular Connection OD Range	4 1/4" to 16"
Max. Spin Speed	100 rpm
Max. Spin Torque	1,697 ft-lbs. (2,300 Nm)
Max. Make-Up Torque	88,560 ft-lbs. (120,000 Nm)
Max. Break-Out Torque	151,290 ft-lbs. (205,000 Nm)
Travel Length	55.8 ft (17 m)



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### Chapter 8 - Power Generation

#### Generator Unit

Type Description	STREICHER Generator Set
No. of Generator Sets	3
Service Tank Capacity (each)	264 gallons (1,000 liters)
Rated Power	1,080 hp (805 kW)
Rated Speed	1,500 rpm
Generator Type	Caterpillar SR4
Generator Rating	1,065 kVA
Voltage/Frequency	690 V / 50 Hz

#### AC Drive & Monitoring System

Type Description	STREICHER AC Drive & Monitoring System
Installations	AC 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 - Mud System

#### Chapter 9.1 - Mud Pumps

#### Mud Pump Module

Type Description	STREICHER Mud Pump Module
Kind of Pump	Triple Single Acting Piston Pump
Transmission Mode	V-Belt Drive
No. of Mud Pump Modules	3
Max. Liner Diameter	7" (177.8 mm)
Max. Stroke	8.5" (215.9 mm)
Rated Stroke	175 spm
Rated Power	750 hp (560 kW)
Max. Discharge Capacity	753 gpm (2,854 l/min)
Discharge Pulsation Dampener	19.8 gallons (75 liters)
Max. Working Pressure	5,000 psi (345 bar)
Weight	88,000 lbs. (24,000 kg)
Type of Driven	AC Motor
Max. Continuous Power	885 hp (660 kW)
Max. Continuous Torque	3,200 ft-lbs. (4,332 Nm)
Weight	6,930 lbs. (3,150 kg)



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Type Description	Centrifugal Charge Pump
Rated Power	73.7 hp (55 kW)
Inlet Diameter	6" (152.4 mm)
Outlet Diameter	5" (127.0 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)
Sand Trap Capacity	177 bbls. (28 m3)
Max. Specific Gravity of Fluids	18.36 lbs./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	18.36 lbs./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 Transfer Pump
No. of Centrifugal Pumps	1
Inlet Diameter	4" (101.6 mm)
Outlet Diameter	3" (76.2 mm)
Impeller Diameter	13" (330.2 mm)
Rated Power	30 hp (22 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)



## SDD 200 Super Single Rig – Automated Pipehandling System

Type Description	Centrifugal Mix Pump
No. of Centrifugal Pumps	1
Inlet Diameter	6" (152.4 mm)
Outlet Diameter	5" (127 mm)
Impeller Diameter	14" (355.6 mm)
Rated Power	73.7 hp (55 kW)

**Intermediate Tank Module**

Type Description	STREICHER Intermediate Tank Module
Dry Weight	52,800 lbs. (24,000 kg)
Tank Capacity	380 bbls. (60 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	18.36 lbs./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)
Tank Capacity	18.9 bbls (3.0 m3)
Flow-Line Diameter	14" (356 mm)
Max. Specific Gravity of Fluids	18.36 lbs./gallon (2.2 kg /liter)

Type Description	Centrifugal Trip Tank Pump
Inlet Diameter	3" (76.2 mm)
Outlet Diameter	2" (50.8 mm)
Impeller Diameter	13" (330.2 mm)
Rated Power	10 hp (7,5 kW)



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### 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 Shaker Modules	2
Deck Angle Adjustment	-1° to +8°
Weight	9,100 lbs. (4,140 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 Workplace Module

Type Description	STREICHER Mud Workplace Module
Installed Equipment	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 liters)
Air Dryer	Standard



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

## 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	200 short tons (181 metric tonnes)
Operating Pressure	2,500 psi (175 bar)
Flow Rate	10 gpm (37.9 l/min)

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

Auxiliary 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)
Equipped with Work Basket	Optional

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

Active Tank Module	
Additional Hopper	Optional





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

System Voltage - Frequency	
Different Voltage/Frequency	Optional

Miscellaneous	
Side-Lighting	Optional
Winterisation Package	Optional
BOP-Trolley	Optional
Casing Running- /Casing Drilling	Optional
Soft Torque and Soft Pump	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 Standars & 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)