



Drilling Supply & Mfg.



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The DSM/Mayhew “Tiger” 1500



Specifications and Features

Maximum Capacities

This rig is recommended for operation with a maximum drill string static loads (including yoke, swivel, kelly, drill pipe, collars, etc.) on three lines with standard ST-10 traveling block - 20,000 lb (9,072 kg) on four lines with optional ST-15 traveling block - 30,000 lb (13,608 kg). When operating with static load near maximum, avoid inducing dynamic load that may cause the total load to exceed maximum. Operation exceeding this limit may result in equipment overload and possible collapse or falling components that may be hazardous to personnel.

Maximum Capacities of Primary Load Bearing Components

(Based on equipment that is new or in top condition and under proper operating procedures)

Component	Maximum Capacity	
	Lb.	Kg.
Mast	60,000	27,216
2" Swivel (at 100 RPM)	32,800	14,878
ST-10 Traveling Block	20,000	9,072
Optional ST-15 Traveling Block	30,000	13,608
44M Drawworks		
(Single line pull, Bare Drum)	20,000	8,504
Optional		
(Single line pull, Bare Drum)	10,000	4,536

Consult the manufacture for capacities of components other than these standard components. If you substitute an alternate component to increase capacity, be sure you do not exceed the capacity of one of the other load-bearing components

Rotary Table

Model - DSM / Mayhew RT 7.5

Standard Opening - 7-1/2" (191 mm)

Frame Opening with Table Retracted - 16" (406 mm) max

Type - Enclosed rig gear and pinion

Drive - Torque tube

Transmission - 5 speeds forward, 1 reverse

Clutch - Mechanical with two 8" (203 mm) friction plates

Lubrication - Enclosed oil bath

Table Mounting - Retracting by hydraulic cylinder

Drawworks (Drilling and hoisting lines)

Model - DSM / Mayhew 44M

Single Line Pull (bare drum) - 20,000 lb (8,504 kg)

Typical Line Speeds - 282 ft/min (86 m/min)

Spooling Capacity (each drum) - 450 ft. of 5/8" line

Number of drums - 2

Drilling Line - 5/8" (16 mm) dia. 18 x 7 non-rotating

Hoisting Line - 5/8" (16 mm) dia. 18 x 7 non-rotating

Barrel Size - 8" (203 mm) dia. x 7-3/4" (197 mm) lg

Drive - Torque tube to drawworks ring gear and pinion

Clutches - Full air with three 14" (356 mm) friction plates

Brakes - Band on drum 8" (202 mm) wide x 22" (559 mm)

Net Braking Area (each drum) - 522 in. sq. (3,862 cm. sq.)

Pulldown

Power - Hydraulic through planetary gearbox

Feed - 1-1/2" (38 mm) pitch single roller chain

Engagement - Air actuated jaw clutch mechanism

Kelly Guides - Channel type

Mast

Maximum Capacity - 60,000 lb (27,216 kg)
Overall Length - 38 ft (11.6 m)
Construction - Tubular, box type, electrically welded
Crown Sheaves
Drawworks - Six 11-1/2" (292 mm) dia with ball bearings
Pulldown - Two 10-1/4" (260 mm) dia with bronze bushings
Sandline - Two 10-1/4" (260 mm) dia with bronze bushings

Chain Cases

	PTO	Transfer
Model	DSM / Mayhew 1500	
Type	Split shaft, full torque	Chain case
Chain	4-Strand	4-Strand
Bearings	Ball	Ball
Sprockets	Heat treated	Heat treated
Lubrication	Oil Bath	Oil Bath

Sandreeel (optional)

Model - Mayhew 1500
Single Line Pull (bare drum) - 10,000 lb. (4,536 kg)
Spooling Capacity - 1500 ft (457.2 m) 3/8" (9.5 mm)
Number of Drums - 1
Sandline - 3/8" (9.5 mm) dia 6 x 19 non-rotating
Barrel Size - 6-1/2" (165 mm) dia x 20-7/8" (530 mm) lg
Drive - Chain from drawworks
Clutch - Full air with three 11" (279 mm) friction plates
Brake - Single 6" (152 mm) wide x 16" (406 mm) dia
Net Braking Area - 250 in. sq. (1,612 cm. sq.)

Swivel

Model - DSM 2" Little Giant
Watercourse - 2" (50.8 mm)
Bearing Capacity - 32,000 lb (14,878 kg) at 100 rpm
Service - Air or mud
Main Bearing - Tapered cone & cup

Traveling Blocks

	Standard	Optional
Model	ST - 10	ST - 15
Capacity	20,000 lb (9,072 kg)	30,000 lb (13,608 kg)
Sheaves	One 11-1/2" (292 mm)	Two 11-1/2" (292 mm)
Weight	139 lb (63 kg)	180 lb (82 kg)

Kelly

Round 3-3/4" (95 mm) dia with 3 flutes and 1" (25.4 mm) drive pins, 24 ft (7.3 m) lg, flame hardened

Controls

Grouped at the drillers position for one man operation. Full air clutches on drawworks and optional sandreeel. Air actuated clutches on the mud pump and optional air compressors. Air actuated pulldown jaw clutch engagement. Mechanical actuated clutch on rotary. Hand and foot air throttle. Starter button, kill switch, and tachometer in panel. Expanded metal drillers and helpers platform.

Hydraulic System

Pump - Variable volume piston pump, 17 gal/min (64 lit/min) rated 2,000 PSI (140.6 kg/cm. sq.)
Pump Drive - Direct coupled into transfer
Typical Pump Speed - 1,200 RPM
Mast raising cylinders - Two, model 1500 double acting, telescoping cylinders with flow restrictors
Leveling Jacks - Four (2 front, 2 rear) with 5" (127 mm) piston, 24 and 36 in (610 and 914 mm) stroke with pilot check valves
Reservoir Capacity - 55 gal (208 lit)
Filter - Full flow type with built in by-pass

Mud Pumps

Model - Gardner-Denver FD-FXX
Displacement at max RPM - 222 gal/min (840 lit/min)
Liner Dia. - 5-1/2" (140 mm)
Stroke - 8" (203 mm)
Suction Hose - 4" (102 mm)
Drive - V-belt from in-line jackshaft clutch
Typical Operating Speed - 70 strokes/min
Manifolding - Relief valve, pressure gauge, and surge chamber
Hinge Hose, Stand Pipe, and Swivel Hose - 2" (50.8 mm)

Truck

Customer to furnish per DSM engineers specifications

Equipment Furnished with Standard Rig

Power take-off • Power transfer case • Five speed rotary transmission • Mayhew RT-7.5 rotary table with hydraulic retract mounting • Hydraulic / Planetary pulldown with air actuated jaw clutch disconnect • Doubledrum drawworks with full air clutches • Gardner-Denver FD-FXX mud pump with manifold, relief valve, pressure gauge, surge chamber, suction hose. and washdown hose • Mast • Two mast raising cylinders • Hinge pressure hose • Standpipe • Swivel pressure hose • 2" Little Giant swivel • Rotary master bushing • Kelly drive bushing and drive pins • Kelly bar • Kelly head adapter (swivel to kelly sub) • Kelly to drill pipe adapter • Set of breakout blocks • Breakout wrench for 3-1/2" tool joints • Drilling and hoisting lines • Hoist plug • Two ST-10 Traveling blocks • Air operated hand and foot throttle • One standard tool box.

Optional Equipment Available

Air compressors • Mud pumps • 43 ft. mast • Eight strand PTO • Six strand transfer case • RT-10 rotary with 10" (254 mm) opening and hydraulic retract • 1500 Sandreeel • 3" Swivel • 3" Stand pipe, pressure hose, and fittings • Breakout wrench for 4-1/2" tool joint • ST-15 Traveling blocks • Cathead-plain spool with master clutch • 10 Speed rotary transmission • Stacked drum drawworks •

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