

WELL SERVICE & DRILLING RIG EQUIPMENT



DRAGON

>>>WHAT YOU NEED. WHEN YOU NEED IT. | 800.231.8198

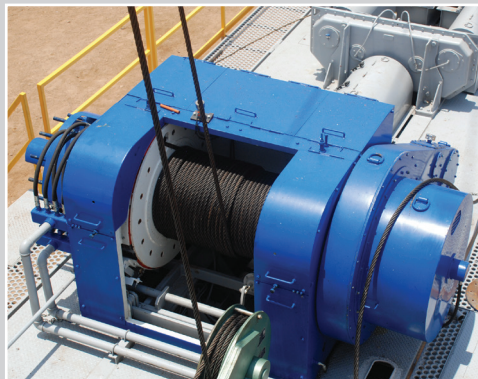
**YOU ARE IN THE
BUSINESS OF GETTING
THE JOB DONE.**

**WE ARE HERE TO
HELP YOU SUCCEED.**

We manufacture a full line of 300 to 1,000 HP Cooper rigs at our state-of-the-art U.S. facility, keeping close control over every detail to ensure high quality. Our mobile rigs are purposefully engineered and built to be simple, safe, strong, and easy to operate. Our efforts to facilitate your success do not stop with the design. Every rig that comes from Dragon comes with extra support before, during, and after the sale to help keep your equipment and your business operating. Including 24/7 access to our skilled service teams and vast parts inventories. We are always here for you, because we know you do not want downtime. If you want quality, dependability and the support of a long-standing mobile rig expert backing you up.

That's Dragon. Make it happen.



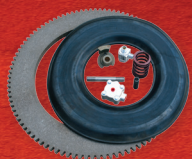


Dragon Rig Parts what you need to do the job – right.

Mobile rigs are so valuable because they're so versatile. The rig gets to the site and gets to work. Yet one worn out part can bring the whole system down. Having the right parts in the right place at the right time is essential to keeping your mobile rigs working and your operation running. This is where Dragon comes in.

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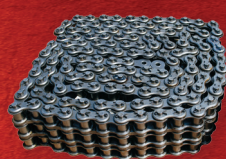
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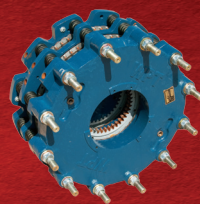
CLUTCH PARTS



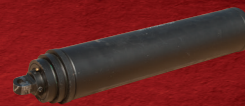
440 MUD PUMP



CHAIN



WPT WATER BRAKE



HYDRAULIC CYLINDER



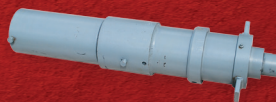
PARMAC
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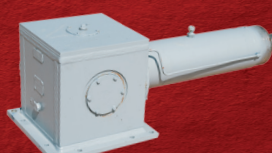
BEARINGS



AIR VALVES



HYDRAULIC JACKS



RIGHT ANGLE BOXES



MCKISSICK BLOCKS



BRAKE FLANGES



71-150-4-T MAST:
 Certification: API 4F, 4th Edition
 Clear height: 71'

MAXIMUM STATIC LOAD:
 150,000 lbs on 4-lines

ROD BOARD CAPACITY:
 (25' rod joints in double stands)
 312 stands (15,600')—1/2" sucker rod
 234 stands (11,700')—5/8" sucker rod
 208 stands (10,400')—3/4" sucker rod
 156 stands (7,800')—1" sucker rod

CAPACITY, TUBING BOARD:
 (31' long joints in single stands)
 11,780 ft—2 3/8 EUE tubing
 10,540 ft—2 3/8 DP
 7,750 ft—2 7/8" EUE tubing
 5,952 ft—2 7/8" DP

Maximum wind rate: 57 knots (66 mph)



Cooper SP300 Mobile Servicing Rig

Service Depth. 9,500 ft (2-1/2" tubing)
 Workover Depth 7,530 ft (2-7/8" DP)
 Rated horsepower, engine 350 hp
 Carrier. 4 axle—two steer and two drive axles
 Diameter, wireline 1"
 Road Traveling dimensions 43' long x 9'-4" wide x 13'-8" high
 Traveling weight 70,000 lbs estimated (not including drill line, sand line, tools, block)

DRAWWORKS SYSTEM

MAIN DRUM

Brake rim diameter x width 38" dia x 10" wide
 Barrel diameter x width 16" dia x 38" wide (excluding lebus)
 Model, clutch PO-224

SANDLINE DRUM

Brake rim diameter x width 38" dia x 8" wide
 Barrel diameter x width 12" 3/4 dia x 43" wide
 Model, clutch PO-124
 Sand drum capacity. 14,000' of 9/16" cable
 Spray brake water tank capacity 70 gal

Assist Brake Air cooled disc brake
 Brake caliper model Kobelt 5026
 Brake rotor measurements. 40" dia x 7" braking surface x 4" thick
 Maximum torque. 21,920 lbf



96-205-6-T MAST:

Certification: API 4F, 4th Edition
Clear height: 96'

MAXIMUM STATIC LOAD:

205,000 lbs on 6-lines
180,000 lbs on 4-lines

CAPACITY, TUBING BOARD:

(31' long joints in double stands) 23,188
2 3/8" ft — EUE tubing
19,840 ft — 2 3/8" DP
18,104 ft — 2 7/8" EUE tubing
13,640 ft — 2 7/8" DP
8,860 ft — 3 1/2" DP
9,920 ft — 3 1/2" EUE tubing

ROD BOARD CAPACITY:

(25' joints in triple stands) 288 stands
(21,600')—1/2" sucker rod
216 stands (16,200')—5/8" sucker rod
192 stands (14,400')—3/4" sucker rod
144 stands (10,800')—1" sucker rod

Maximum wind rate: 57 knots (66 mph)

Cooper SP400 Mobile Servicing Rig

Service Depth. 14,500 ft (2-1/2" tubing)
Workover Depth 10,500 ft (2-7/8" DP)
Rated horsepower, engine 350 hp or 425 hp
Carrier. 4 axle—two steer and two drive axles
Diameter, wireline 1"
Road Traveling dimensions 56'-5" long x 9'-4" wide x 13'-8" high
Traveling weight 75,000 lbs estimated (not including
drill line, sand line, tools, block

DRAWWORKS SYSTEM

MAIN DRUM

Brake rim diameter x width 42" dia x 10" wide
Barrel diameter x width 16" dia x 38" wide (excluding lebus)
Model, clutch WPT PO-224
Maximum fastline pull 39,566 lbf

SANDLINE DRUM

Brake rim diameter x width 42" dia x 8" wide
Barrel diameter x width 16" dia x 43" wide
Model, clutch WPT PO-124
Sand drum capacity. 16,000' of 9/16" cable
Spray brake water tank capacity 70 gal

Assist Brake Air cooled disc brake
Brake caliper model Kobelt 5026
Brake rotor measurements. 40" dia x 7" braking surface x 4" thick
Maximum torque. 21,920 lbf





104-250-8-T MAST:

Certification: API 4F, 4th Edition
Clear height: 104'

MAXIMUM STATIC LOAD:

250,000 lbs on 8-lines
225,000 lbs on 6-lines

CAPACITY, TUBING BOARD:

(31' long joints in double stands)
28,396 ft—2 3/8" EUE tubing
24,800 ft—2 3/8" DP
22,816 ft—2 7/8" EUE tubing
16,864 ft—2 7/8" DP
10,540 ft—3 1/2" DP
11,780 ft—3 1/2" EUE tubing

ROD BOARD CAPACITY:

(25' joints in triple stands) 288 stands
(21,600')—1/2" sucker rod
216 stands (16,200')—5/8" sucker rod
192 stands (14,400')—3/4" sucker rod
144 stands (10,800')—1" sucker rod

Maximum wind rate: 57 knots (66 mph)



Cooper SP550 Mobile Servicing Rig

Service Depth 20,000 ft (2-1/2" tubing)
Workover Depth 14,500 ft (2-7/8" DP)
Rated horsepower, engine 500 hp / 2,100 rpm
Carrier 5 axle—two steer, two drive axles
and one drag axle
Diameter, wireline 1"
Road Traveling dimensions 63'-5" long x 10' wide x 13'-11" high
Traveling weight 104,000 lbs estimated (includes drill line,
tubing block, sand line, standpipe, and
fluids).

DRAWWORKS SYSTEM

MAIN DRUM

Brake rim diameter x width 42" dia x 12" wide
Barrel diameter x width 18" dia x 38" wide (excluding lebus)
Model, clutch PO-324
Maximum fastline pull 45,000 lbf

SANDLINE DRUM

Brake rim diameter x width 42" dia x 8" wide
Barrel diameter x width 16" dia x 43" wide
Model, clutch PO-224
Sand drum capacity 16,000' of 9/16" cable
Spray brake water tank capacity 80 gal

Assist Brake Air cooled disc brake (other options are
available)

Brake caliper model Kobelt 5028
Brake rotor measurements 48" dia x 10" braking surface x 4" thick
Maximum torque 36,500 lbf



116-250-8-T MAST:

Certification: API 4F, 4th Edition
Clear height: 116'

MAXIMUM STATIC LOAD:

250,000 lbs on 8-lines
225,000 lbs on 6-lines

CAPACITY, TUBING BOARD:

(31' long joints in double stands)

25,296 ft—2 3/8" DP
28,272 ft—2 3/8" EUE tubing
19,344 ft—2 7/8" DP
23,064 ft—2 7/8" EUE tubing
11,160 ft—3 1/2" DP
11,904 ft—3 1/2" EUE tubing

ROD BOARD CAPACITY:

(25' joints in triple stands)
208 stands (15,600')—3/4" sucker rod
156 stands (11,700')—1" sucker rod

Maximum wind rate: 57 knots (66 mph)



Cooper SP550L Mobile Servicing Rig

Service Depth.....20,000 ft (2-1/2" tubing)
Workover Depth14,500 ft (2-7/8" DP)
Rated horsepower, engine500 hp / 2,100 rpm
Carrier.....Standard: 5 axle—two steer, two drive axles
and one drag axle
Optional: 6 axle —three steer, two drive
axles and one drag axle
Diameter, wireline1"
Road Traveling dimensions70'-3" long x 10'-11" wide x 14'-4" high
Traveling weight—5 axle configuration—115,200 lbs estimated
—6 axle configuration—117,700 lbs estimated
(weights include drill line, tubing block, sand
line, standpipe, and fluids).

DRAWWORKS SYSTEM

MAIN DRUM

Brake rim diameter x width42" dia x 12" wide
Barrel diameter x width18" dia x 38" wide (excluding lebus)
Model, clutchPO-324
Maximum fastline pull45,000 lbf

SANDLINE DRUM

Brake rim diameter x width42" dia x 8" wide
Barrel diameter x width16" dia x 43" wide
Model, clutchPO-224
Sand drum capacity.....16,000' of 9/16" cable
Spray brake water tank capacity80 gal

Assist BrakeParmac 202 hydromatic
Hydromatic ClutchPO224
Hydromatic Brake Water
Tank Capacity.....410 gal



112-300-8-T MAST:

Certification: API 4F, 4th Edition
Clear height: 112'

MAXIMUM STATIC LOAD:

300,000 lbs on 8-lines
275,000 lbs on 6-lines

CAPACITY, TUBING BOARD:

26,040 ft—2 7/8" EUE tubing (3.668 dia)
22,320 ft—2 7/8" DP (4.125 dia)
14,136 ft—3 1/2" EUE tubing (4.50 dia)
12,648 ft—3 1/2" DP (4.75 dia)
8,928 ft—4 1/2" EUE tubing (5.536 dia)
8,184 ft—4 1/2" DP (6.25 dia)

ROD BOARD CAPACITY:

(25' joints in triple stands)
208 stands (15,600')—3/4" sucker rod
156 stands (11,700')—1" sucker rod

Maximum wind rate: 57 knots (66 mph)

Cooper SP600 Mobile Servicing Rig

Service Depth.	14,100 ft (3 1/2" EUE tubing)
Workover Depth	12,600 ft (3 1/2" DP)
Rated horsepower, engine	550 hp / 2,100 rpm
Carrier.	For Single Drum Drawworks-5 axle- two steer, two drive, and one drag axle. For Double Drum Drawworks-6 axle- three steer, two drive, and one drag axle.
Diameter, wireline	1" for 265,000 lb capacity 1 1/8" for 300,000 lb capacity
Road Traveling dimensions	68'-1" long x 10' wide x 14'-1" high
Traveling weight	5 axle Single Drum Drawwork configuration - 105,000 lbs estimated 6 axle Double Drum Drawwork configuration - 121,000 lbs estimated (weights include drill line, tubing block, sandline, standpipe, and fluids)

DRAWWORKS SYSTEM (Single drum drawworks available)

MAIN DRUM

Brake rim diameter x width	42" dia x 12" wide
Barrel diameter x width	18" dia x 38" wide (excluding lebus)
Model, clutch	PO-324
Maximum fastline pull	45,000 lbf
Brake rim cooling	Splash

SANDLINE DRUM

Brake rim diameter x width	42" dia x 8" wide
Barrel diameter x width	16" dia x 43" wide
Model, clutch	PO-224
Sand drum capacity.	16,000' of 9/16" cable
Spray brake water tank capacity	80 gal

ASSIST BRAKE (other options available)

Brake model.	WPT 224 water cooled brake
Torque rating	223,200 lb-in @ 100 psi (standard friction material)





117-350-8-U MAST:

Certification: API 4F, 4th Edition
Clear height: 117'

MAXIMUM STATIC LOAD:

350,000 lbs on 8-lines

CAPACITY, TUBING BOARD:

24,552 ft—2 7/8" EUE tubing
14,508 ft—3 1/2" EUE tubing
8,928 ft—4 1/2" EUE tubing

ROD BOARD CAPACITY:

(25' joints in triple stands)
208 stands (15,600')—3/4" sucker rod
156 stands (11,700')—1" sucker rod

Maximum wind rate 57 knots (66 mph)



Cooper SP650 Mobile Servicing Rig

Service Depth 14,600 ft (3 1/2 EUE tubing)
Workover Depth 13,200 ft (3 1/2 DP)
Rated horsepower, engine 550+ hp / 2,100 rpm
Carrier 6 axle—three steer, two drive
and one drag axle
Diameter, wireline 1 1/8"
Road Traveling dimensions 71'-3" long x 11'-6" wide x 14'-4" high

Maximum speed 55 mph
Traveling weight 122,900 lbs estimated (weight includes
drill line, tubing block, sand line,
standpipe, and fluids)

DRAWWORKS SYSTEM

MAIN DRUM

Brake rim diameter x width 42" dia x 12" wide
Barrel diameter x width 18" dia x 38" wide (excluding lebus)
Model, clutch PO-324
Maximum fastline pull 47,500 lbf
Brake rim cooling Splash or Water circulating

SANDLINE DRUM

Brake rim diameter x width 42" dia x 8" wide
Barrel diameter x width 16" dia x 43" wide
Model, clutch PO-224
Sand drum capacity 16,000' of 9/16" cable
Spray brake water tank capacity 80 gal

ASSIST BRAKE (other options available)

Brake model WPT 224 water cooled brake
Torque rating 223,200 lb-in @ 100 psi
(standard friction material)



118-425,000 MAST:
 Certification: API 4F, 3rd Edition
 Clear height: 118'

MAXIMUM STATIC LOAD:
 425,000 lbs on 10-lines
 340,000 lbs on 8-lines
 Capacity, tubing board:
 9,000 ft - 5" DP (6.5 dia)
 Tubing board finger position
 Parallel to mast face (side rack)

Maximum wind rate: 60 knots (69 mph)

SUBSTRUCTURE:
 Working height: 17'
 Clearance under rotary beams: 13'-3"
 Maximum Setback Capacity: 300,000 lbs
 Maximum Rotary Capacity: 425,000 lbs
 Maximum Simultaneous
 Capacity: 725,000 lbs
 Rotary Table Size: 27 1/2"



Cooper TR750 Mobile Drilling Rig

Service Depth. 25,000 ft (2 7/8 EUE tubing)
 Workover Depth 16,000 ft (3 1/2 DP)
 Drilling Depth 10,500 ft (4 1/2 DP)
 Rated horsepower, engine (Two) 425 hp / 2,100 rpm x Two
 Trailer Four axle
 Diameter, wireline 1 1/8"
 Road Traveling dimensions
 (excluding tow vehicle). 70'-5" long x 11'-2" wide x
 15'-2" high
 Trailer dimensions (excluding mast) . . 62'-11" long x 11'-2" wide x
 10'-11" high

DRAWWORKS SYSTEM

MAIN DRUM
 Brake rim diameter x width 42" dia x 12" wide
 Barrel diameter x width 18" dia x 41" wide (excluding lebus)
 Model, clutch WPT PO-324
 Maximum fastline pull 47,000 lbf
 Brake rim cooling Water circulating

ASSIST BRAKE (other options available)
 Brake model WPT 324 water cooled brake
 Torque rating 334,800 lb-in @ 100 psi
 (standard friction material)



124-450-10-T MAST:

Certification: API 4F, 4th Edition
Clear height: 124'

MAXIMUM STATIC LOAD:

450,000 lbs on 10-lines
340,000 lbs on 8-lines

CAPACITY, TUBING BOARD:

12,000 ft- 5" DP (6.5 dia)
Tubing board finger position
Parallel to mast face (side rack)

Maximum wind rate: 57 knots (66 mph)

SUBSTRUCTURE:

Working height: 21'
Clearance under rotary beams: 17'-6"
Design: Cantilever
Maximum Setback Capacity: 300,000 lbs
Maximum Rotary Capacity: 425,000 lbs
Maximum Simultaneous
Capacity: 725,000 lbs
Rotary Table Size: 27 1/2"



Cooper TR1000 Drilling Rig

Service Depth.....	25,000 ft (2 7/8 EUE tubing)
Workover Depth	16,000 ft (3 1/2 DP)
Drilling Depth	12,000 ft (4 1/2 DP)
Rated horsepower, engine (Two).....	550 hp / 2,100 rpm x Two
Trailer	Four axle
Diameter, wireline	1 1/8"
Road Traveling dimensions for Trailers and Mast (excluding tow vehicle).....	75'-6" long x 12'-2" wide x 15'-9" high

DRAWWORKS SYSTEM

MAIN DRUM

Brake rim diameter x width	46" dia x 12" wide
Barrel diameter x width	20" dia x 41" wide (excluding lebus)
Model, clutch.....	PO-330
Maximum fastline pull	53,000 lbf
Brake rim cooling	Water circulating

ASSIST BRAKE (other options available)

Brake model.....	WPT 324 water cooled brake
Torque rating.....	334,800 lb-in @ 100 psi (standard friction material)



Base Beams

Dragon Rig Sales and Services, LTD. offers base beams specifically designed for its Cooper SP Series of mobile workover rigs.

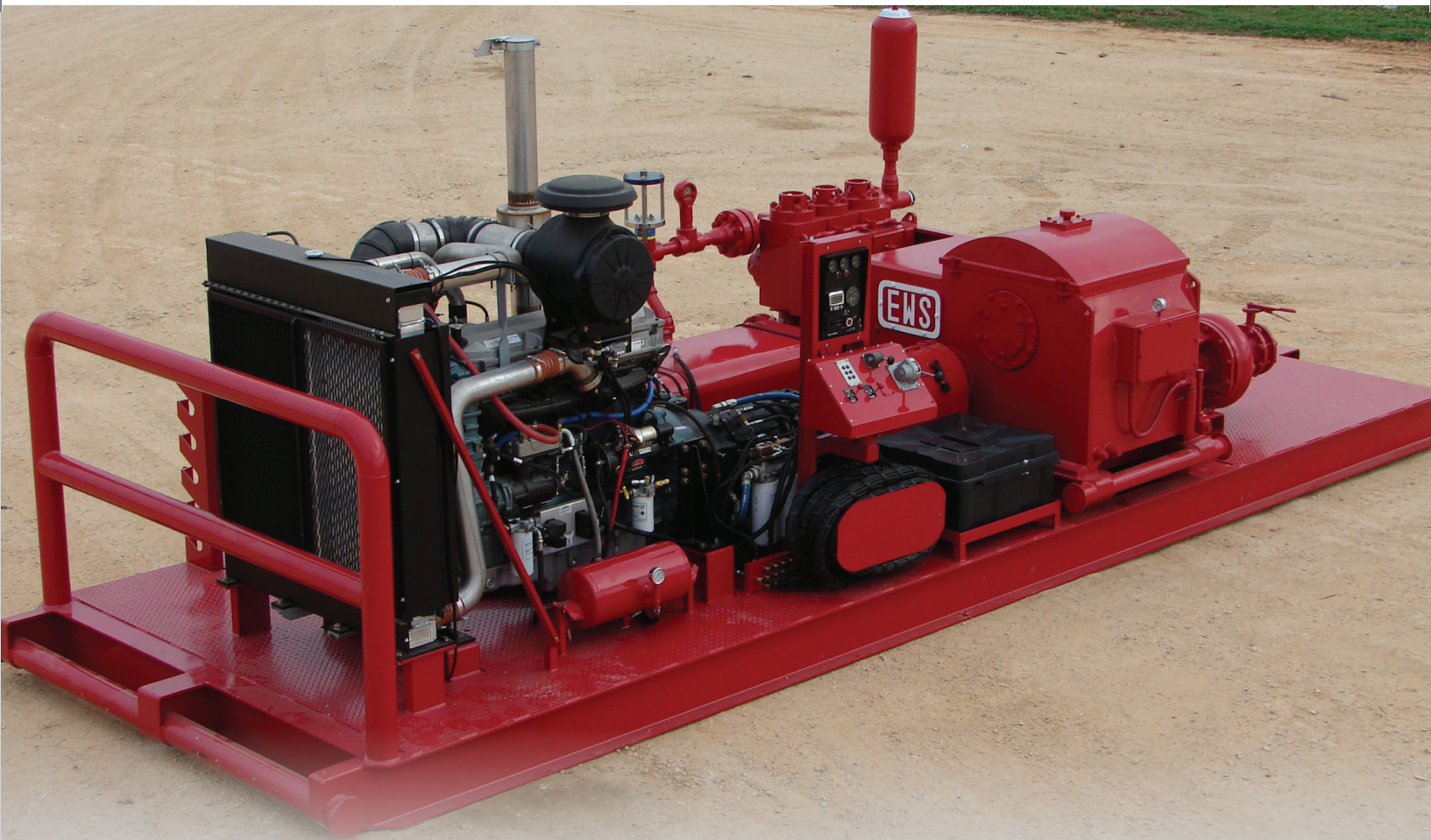
Dragon Rig Sales and Services does not offer base beams for other OEM mobile workover rigs.

Operation on a base beam will derate the hook load and wind capacity of the mast.

Dimensions. 40' long x 5' wide x 15" tall

Weight 17,000 lbs





440 Triplex Mud Pump

Package Dmensions 25' long x 8'-3" wide x 7'-10" high
Package Weight..... 20,500 lbs
Rated engine horsepower 425 hp
Transmission Allison HT750DR
Rated input horsepower to pump.... 440 hp
Fuel tank capacity 100 gal
Charge pump..... Dragon Products 5x4x14
centrifugal, belt drive

MUD PUMP SPECIFICATIONS

Model Dragon Products W-440
Input horsepower rating..... 440 hp
Pump speed rating 320 cycles per minute (960 SPM)
Stroke length..... 6"
Fluid end working pressure 5000 psi
Discharge connection size 2"
Suction connection size 6"
Accessory connection size 2" NPT
Maximum piston and liner size 4 1/2"
Valve size API-4
Piston rod end..... SA-4
Internal gear ratio 4.578:1
Pump weight 8940 lbs

W-440		HP			
		260	320	380	440
		SPM	510	660	810
		GPM	94	121	149
LINER SIZE	MAX PSI	GPS	94	121	149
3	5000	.184	127	165	202
3 1/2	4045	.25	146	189	232
3 3/4	3523	.287	167	215	264
4	3130	.326	188	243	299
4 1/4	1917	.368	211	273	335
4 1/2	1710	.413			397

Also available:
360 Triplex Mud Pump

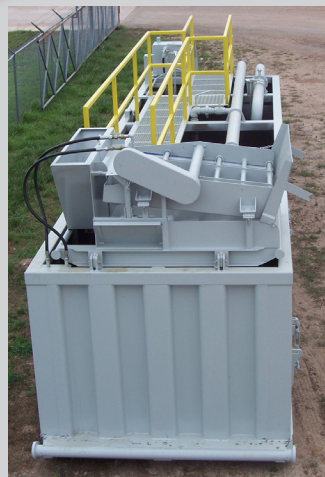


225BBL Premix Mud System

Active Capacity - 225BBL (This includes a 35BBL slug compartment) **Dimensions - 41' long x 8' 6" wide.**

Construction- Three runner 8" I-beam skid. 3/8" Plate floors. 1/4" Heavy crimp walls. Handrail, walkway and stairs. 5" square tubing top runner.

Equipment - The 6 x 8 centrifugal pump is powered by a new John Deere 4.5 liter electric engine. It is also equipped with a 6" hopper, 3 mud guns, hydraulic shale shaker, and all necessary internal piping and manifolds.



Dimensions:
41' long x 9'-4" wide x 10' high

Capacity: 225 bbl

- 35 bbl slug compartment
- 140 bbl suction compartment
- 50 bbl shale shaker compartment

Weight: 30,000 lbs

Engine: New John Deere 4045—140 hp
Equipped with PTO

Centrifugal pump:
Dragon Products-8 x 6 x 11—250 series
with mechanical seal.

Hopper: Dragon Products—6"

Shaker:
Hydraulic drive—4'x5'—single screen

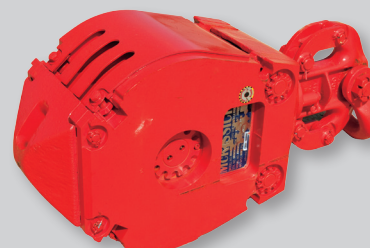
Mud guns: Dragon Products mud guns
3" dual nozzle . One is slug compartment. Two in suction compartment

Fuel tank: 150 gal

Hydraulic tank: 40 gal

Oilfield Accessories

Authorized Distributor of McKissick Block & Parts.



MCKISSICK BLOCKS



320BBL Premix Mud System

This unit consists of a skid mounted mud tank with equipment to mix and clean drilling mud. The pump will be controlled from a panel on the front porch, the mixers and shaker will be controlled from remote stations mounted near each unit. There are three guidable 3" mud guns to facilitate mud suspension. This unit has separate weirs for fluid control. The first weir is near the shaker and is an overflow/flow thru type. The remaining weir is on the opposite end and is a flow thru type.

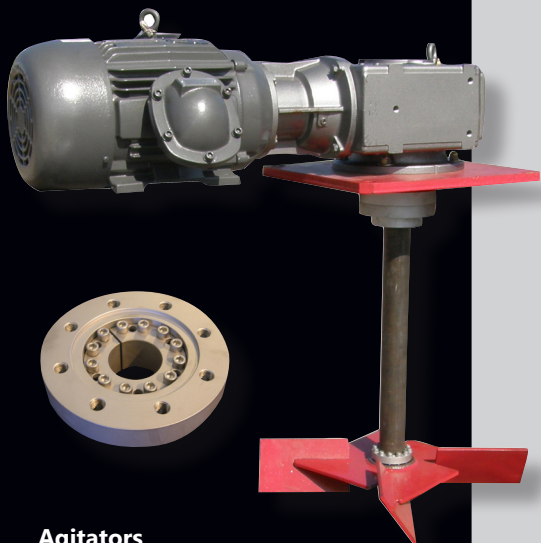
- Three beam skid construction with a 94" outside dimension
- Sloped floor
- Top rail height 64"/60"
- Three compartments each has a 65BBL compartment and a 190BBL compartment in the middle
- Three removable manways are flush with grating and have internal ladder rungs
- Swing gate in handrail to allow placement of material to be loaded into the shredding hopper, which is mounted on the top deck

Pump - 6 x 5 x 14RH
Impeller Diameter - 11
Electric Motor - 50 HP Baldor
Power - 230/460V-3Ph - 60Hz

Shaker Specification:
Model - 2-PANEL-1560052147
Motor - (2) 1 1/2 HP
Power - 230/460V-3Ph-60Hz

Mac 2000
Model - M2A10-C
Electric Motor - 10 HP Baldor
Mixer Paddle - 4 Blade with 36" Dia.

Electrical Control Specification:
Centralized Power Disconnect and Control Panels Remote Operation
Motor Control near each component on top deck.



Agitators



Mud Hoppers



Mud Guns

We are strong in Well Servicing & Drilling Drawworks Brake Blocks

Indutex SA, a Peruvian Company founded in 1980, is a major manufacturer of industrial textiles and friction materials and is a member of the FRENOSA group, one of the largest friction product makers in South America.

Their Oilfield Brake Block and Woven Brake Linings are manufactured in one piece with uniform surfaces and densities. Each are woven in Fletcher special looms under proper tension to insure a tightly woven and superior quality product. The woven blocks and linings are manufactured in asbestos, non-asbestos or natural fibers.

To maximize resistance and conductivity the brake blocks are woven with yarns strengthened by brass or copper wires which allows high temperatures at friction points to dissipate. These metallic inserts can be incorporated throughout the block thickness or only in the backing, leaving the friction surface free of them.

Brake Block Technical Specifications

Available sizes: Width 1" - 13"

Thickness 3/16" - 1 1/2"

PHYSICAL PROPERTIES	ASBESTOS	NON-ASBESTOS
SPEC GRAVITY (gr x cc)	1.4	1.25
APPARENT DENSITY (lb/in ³)	0.05	0.044
HARDNESS, GROGAN	21-24	20-23
COMPRESS, psi x 5% deflect	600-900	550-850

COEFFICIENT OF FRICTION	ASBESTOS	NON-ASBESTOS
NORMAL	.42	.51
HOT	.39	.34
WEAR RATE (in ³ /HP-hr)	.008	.008
FRICTION CODE	FF	FE
MAX UNIT PRESSURE PSI	250	250
TEMPERATURE DEGREES F		
MAX (INTERMITTENT)	650° F	600° F
MAX (CONTINUOUS)	500° F	550° F
MAX RUBBING SPEED	5000 f x m	5000 f x m

The woven textiles are impregnated with special saturates and treated in ovens under strict controls to achieve a complete and uniform curing of the impregnate. The curing process creates a continuous and stable friction coefficient in extreme temperatures.

Brake blocks are arced to the correct rim diameter, easy to install, and are recommended for the deepest digging under the most severe conditions. Engineered for security, friction capacity and longer life - Indutex manufactures some of the best brake block on the market today.



**Master Distributor for
Indutex in the USA.**

Drawworks System

Our long term maintenance and upkeep is one of the most economical in the industry.

The draw works consists of a right angle drive gear box, draw works frame and shield, main drum and brake system, sand drum and brake system (if equipped), crown saver, etc. All draw works clutches are placed outboard for easy clutch maintenance. The brake rims of main drum and sand drum are one-piece forged by alloy steel with proper hardness, anti-wear, and heat-resistant performance. All rotating components at deck level are covered with heavy-duty protective guards that include access panels for necessary maintenance.

Drawworks Frame Features:

Utilization of square/rectangular tubing for the base of the frame.

One piece drawworks side plates.

- Increases the rigidity and strength of the drawworks.
- Creates better seal area for chain guards.
- Allows for removal of each drum independently without having to remove upper side walls as on a conventional Cooper.

Centralized lubrication point located on each side of the drawworks frame.

- Allows for application of grease to all bearings and brake system components from the outside.

All guards use the same diameter bolts.

- Allows removal of every guard on the drawworks with a $\frac{3}{4}$ " wrench or socket.

Clutches are mounted outside the drawworks walls for easier maintenance.

Right Angle Drive Gearbox:

The right angle drive gear box mainly consists of input shaft, output shaft, ring and pinion spiral taper gears, output, bearing seat, box body, support, flange, sprocket and various bearings. The input and output shafts are machined from premium alloy steel. Double row tapered roller bearings and single row radial cylindrical bearings are used for high strength and good performance. It is designed with group seals and oil bath splash lubrication to ensure sealing performance and reliable lubrication. The sprocket teeth are flame hardened and quenched to provide long lasting and reliable performance.

Right Angle Drive Features:

Integrated torque tube.

- Creates a stronger assembly with better torque transfer than a conventional Cooper chain coupling.

Main Drum and Sand Drum (if equipped):

The main drum assembly is complete with split grooving and double fast line provisions (if requested). Both the main drum and sand drum shafts are machined from premium alloy steel for strength and durability. The main drum and sand drum brake systems are a mechanical band brake configuration. After finish machining and assembly, the main drum is dynamically balanced and the sand drum (if equipped) is static balanced to ensure smooth operation.

Brake System Features:

Brake rollers are used to roll the band in place for engagement and disengagement of brakes.

- Makes for smoother brake action and easier adjustment.
- Easier removal of brake bands.

Cooper 250 HP

Double Drum Model

Main Drum

Brake rim diameter x width 38" dia x 10" wide

Barrel diameter x width 16" dia x 38" wide
(excluding lebus)

Model, clutch WPT PO-224
(two plate clutch)

Grooving $\frac{7}{8}$ " or 1"

SANDLINE DRUM

Brake rim diameter x width 38" dia x 8" wide

Barrel diameter x width $12 \frac{3}{4}$ " dia x 43" wide

Model, clutch WPT PO-124

(single plate clutch)

Sand drum capacity 14,000' of 9/16" cable

Brake Rim Cooling Splash

Assist brake Air cooled disc brake

Brake caliper model Kobelt 5026

Brake rotor measurements 40" dia x 7" braking
surface x 4" thick

Cooper 400 HP

Double and Single Drum Models Available

Main Drum

Brake rim diameter x width 42" dia x 10" wide

Barrel diameter x width 16" dia x 38" wide

(excluding lebus)

Model, clutch WPT PO-224

(two plate clutch)

Grooving 1"

SANDLINE DRUM

Brake rim diameter x width 42" dia x 8" wide

Barrel diameter x width 16" dia x 43" wide

Model, clutch WPT PO-124

(single plate clutch)

Sand drum capacity 16,000' of 9/16" cable

Brake Rim Cooling Splash

Assist brake Air cooled disc brake

Brake caliper model Kobelt 5026

Brake rotor measurements 40" dia x 7" braking
surface x 4" thick

Cooper 550 HP

Double and Single Drum Models Available

Main Drum

Brake rim diameter x width 42" dia x 12" wide

Barrel diameter x width 16" dia x 38" wide

[excluding lebus] or

18" dia x 38" wide

[excluding lebus]

Model, clutch WPT PO-324

(three plate clutch)

Grooving 1"

SANDLINE DRUM

Brake rim diameter x width 42" dia x 8" wide

Barrel diameter x width 16" dia x 43" wide

Model, clutch WPT PO-224

(two plate clutch)

Sand drum capacity 16,000' of 9/16" cable

Brake Rim Cooling Splash

Assist brake—Option A Air cooled disc brake

Brake caliper model Kobelt 5028

Brake rotor measurements 48" dia x 10" braking
surface x 4" thick

Assist brake—Option B Hydromatic

Model Parmac 202

Clutch WPT PO-224

(two plate clutch)

Assist brake—Option C Shaft Mounted Water

Cooled Brake

Model WPT 224 (two plate)

Cooper 600 HP

Double and Single Drum Models Available

Main Drum

Brake rim diameter x width 42" dia x 12" wide

Barrel diameter x width 18" dia x 38" wide

(excluding lebus)

Model, clutch WPT PO-324

(three plate clutch)

Grooving 1" or 1 1/8"

SANDLINE DRUM

Brake rim diameter x width 42" dia x 8" wide

Barrel diameter x width 16" dia x 43" wide

Model, clutch WPT PO-224

(two plate clutch)

Sand drum capacity 16,000' of 9/16" cable

Brake Rim Cooling Splash or Water

Circulating

Assist brake—Option A Hydromatic

Model Parmac 202

Clutch WPT PO-224

(two plate clutch)

Assist brake—Option B Shaft Mounted Water

Cooled Brake

Model WPT 224 (two plate)

Cooper 750/1000 HP

Single Drum Model Available

Main Drum

Brake rim diameter x width 46" dia x 12" wide

Barrel diameter x width 20" dia x 41" wide

(excluding lebus)

Model, clutch WPT PO-330

(three plate clutch)

Grooving 1 1/8"

Brake Rim Cooling Water Circulating

Assist brake Shaft Mounted Water

Cooled Brake

Model WPT 324 (three plate)

DRAGON MAST

71-150-4-T MAST

Certification: API 4F, 4th Edition

Clear height: 71'

**Maximum static load:
150,000 lbs on 4-lines**

96-205-6-T MAST

Certification: PI 4F, 4th Edition

Clear height: 96'

**Maximum static load:
205,000 lbs on 6-lines
180,000 lbs on 4-lines**

97-205-6-FS MAST

Certification: API 4F, 4th Edition

Clear height: 97'

**Maximum static load:
205,000 lbs on 6-lines
180,000 lbs on 4-lines**

104-250-8-T MAST

Certification: API 4F, 4th Edition

Clear height: 104'

**Maximum static load:
250,000 lbs on 8-lines
225,000 lbs on 6-lines**

112-265-8-T MAST

Certification: API 4F, 4th Edition

Clear height: 112'

**Maximum static load:
265,000 lbs on 8-lines
240,000 lbs on 6-lines**

112-300-8-T MAST

Certification: API 4F, 4th Edition

Clear height: 112'

**Maximum static load:
300,000 lbs on 8-lines
275,000 lbs on 6-lines**

116-250-8-T MAST

Certification: API 4F, 4th Edition

Clear height: 116'

**Maximum hook load:
250,000 lbs on 8-lines
225,000 lbs on 6-lines**

117-350-8-U MAST

Certification: API 4F, 4th Edition

Clear height: 117'

**Maximum hook load:
350,000 lbs on 8-lines**

121-300-8-T MAST

Certification: API 4F, 4th Edition

Clear height: 121'

**Maximum hook load:
300,000 lbs on 8-lines
275,000 lbs on 6-lines**

124-450-10-T MAST

Certification: API 4F, 4th Edition

Clear height: 124'

**Maximum hook load:
450,000 lbs on 10-lines**







DRAGON

WELL SERVICE



& DRILLING RIG EQUIPMENT





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