



1 General Description

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1.2 *MAIN DATA (CHAPTER 2, USER MANUAL)*



1.1 TECHNICAL DESCRIPTION (CHAPTER 3, USER MANUAL)



3. TECHNICAL DESCRIPTION

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3.1 THE HYDRAULIC AUTO ROUGHNECK - MH 1899

The MH Hydraulic Roughneck MH 1899 is a machine designed to spin in / torque up and break out / spin out drill pipe and drill collars from 3 1/2" through 9 1/2". This Hydraulic Roughneck is also designed to make "chute" connection, 11° backward tilt.

The gateless torque wrench will deliver a precise torque for each pipe dimension being run. The clamping force is automatically set when torque is adjusted.

Maximum make up torque available is 135.500 Nm (100.000 ft lbs) and max. break out torque is 169.000 Nm (125.000 ft lbs).

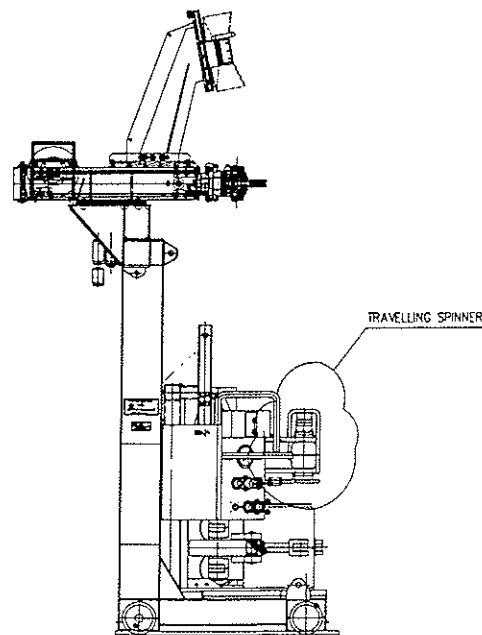
The MH hydraulic roughneck travels on rails welded to drill floor on each side of the rotary table.

The two front wheels are hydraulically driven giving positive drive for the travel by means of constant mesh sprocket to rail.

The power spinner and torque wrench are trolley mounted for vertical adjustment by means of a hydraulic cylinder.

The spinner is also designed to run up and down independent from the torque wrench.

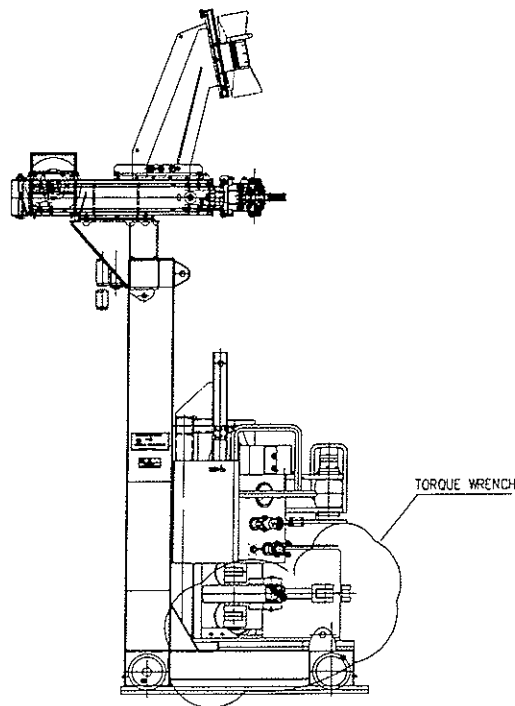
The power spinner is placed on a spring supported tray. The springs allow the spinner to deflect up and down independent of the torque wrench when spinning in or out.



The power spinner has four equally sized aluminium rollers, each direct hydraulically driven to ensure that the spinning torque is equally distributed on the four rollers. This gives the spinner rollers a minimum of slip.

The torque wrench is mounted directly below the spinner. It consists of two parts, assembled on top of each other. By means of two hydraulic cylinders, the two parts can be rotated through approx. 30 degrees relative to each other. The torque wrench is gateless.

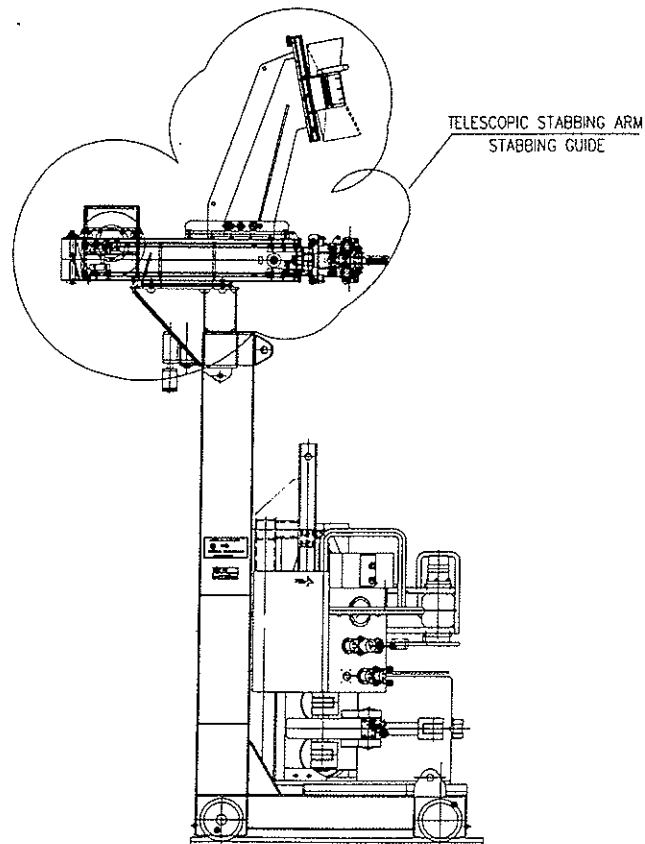
Two built-in hydraulic operated clamping cylinders secure the tool joints to each rotating part. By regulating the pressure on the torque cylinders, the tool joint can be connected to precisely the correct torque. The MH 1899 is hydraulically controlled from a local panel, placed on the side of the machine, with indication of the torque on a specially calibrated pressure gauge. The pressure, and hence the torque, is regulated from the roughneck's remote torque control panel, located in the driller's house.



The roughneck is equipped with a hydr, operated telescopic stabbing arm and a stabbing guide on top of the main frame of the roughneck.

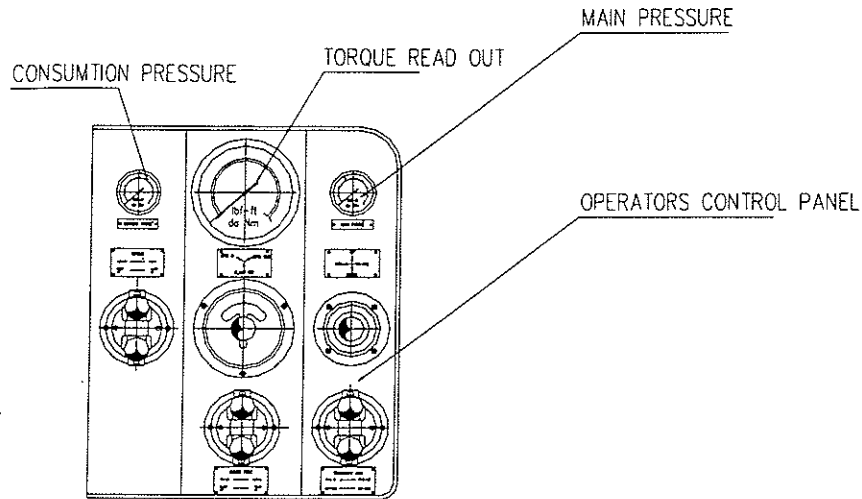
The telescopic stabbing arm is equipped with a gripperhead for tubulars from 3 1/2" to 13 3/8" A gripperhead for 20" and 30" csg can be changed with tubular gripping head.

The stabbing guide on top of the telescopic arm is adjustable for 3 1/2" to 9 1/2" tubulars.



3.2 CONTROL SYSTEM

The machine has local controls and electric remote control (see separat description for electric control system).



The local controls are independent hydraulic pilot operated and are located at the side of the machine. The panel includes two pressure gauges, one measuring the main pressure and one the consumer pressure. In addition there are a make up torque calibration valve and a large gauge showing the make up torque measured in both lb-ft and daNm.

The electric control system is described in a separat user manual for control system .



3.3 SCOPE OF SUPPLY (MH 1899)

Hydraulic roughneck

Size : W = 2700mm H = 4500mm D = 2370mm

Control cubicle

Size : W = H = D =

Hoses with manifold

The hose bundle delivered is 12 metres

Weight manifold : 150 Kg
Weight loop : 15 Kg/m

Rails

The rail length delivered is according to Rail arrangement drawing (1904 -13)
Four rail end stops will be supplied.

Weight : 650 Kg

Jaws

The delivery includes one set of jaws covering 3 1/2" D.P. to 9 1/2" D.C.



1.2 MAIN DATA (CHAPTER 2, USER MANUAL)



2. MAIN DATA

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2.3 PAINTING

All items painted where required with Jotun Epoxy System or equal. Colour: Red.

2.4 WEIGHT / SIZE

Hydraulic roughneck:	7000 kg / w=2700 mm, h=3800 mm, d=1525 mm
Rails:	700 kg
Bracket in derrick:	125 kg / w=850mm, h=900mm , d=500mm
Service loop:	150 kg

2.1 GENERAL DESCRIPTION

The Hydraulic Roughneck MH 1899 is designed to spin in / torque up and break out / spin out drill pipe and drill collars from 3 ½" DP to 9 ½" DC. The machine is also designed to make-up (MU) break-out (BO) stabilizers, cross-over subs and other BHA equipment. The machine can also perform "mousehole" connections.

The Hydraulic Roughneck MH 1899 is designed to carry out an automatic MU/BO sequence very fast and efficiently .

The MH Hydraulic Roughneck is designed to avoid and minimize the possibility of personnel injuries, equipment damage and operations being interrupted due to these factors.

A risk analysis has been performed on MH Hydraulic Roughneck, and it has determined that the machine is equipped with a reasonable amount of safety derricks to further decrease the risk level during operation.

The machine can also be equipped with a remote control that consequently further minimizes chances for injuries.

2.2 TECHNICAL DATA

Max. make-up torque:	135.000 Nm (100.000 lbf. ft.)
Max. break-out torque:	169.000 Nm (125.000 lbf. ft.)
Max. spinning moment (5" DP):	2500 Nm (1850 lbf. ft.)
Max. spinner rpm (5" DP):	0-140 rpm
Max. vertical travel (TW/spinner):	800 mm (31,5")
Vertical spinner travel:	500 mm (20")
Hydraulic power requirements:	180 bar 180 l/min. (240 l/min. recommended)
Rail span:	2614 mm (outside / outside rail)
Electric power consumption:	240 V / 60 HZ / 750 W

Note: The hydraulic system is a closed center system.