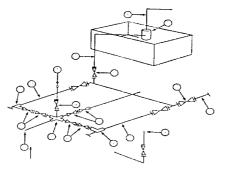
## Mack Energy Corporation

MIMIMUM CHOKE MANIFOLD 3,000, 5,000, and 10,000 PSI Working Pressure 2 M will be used or greater 3 MWP - 5 MWP - 10 MWP



Mud Pit

Reserve Pit

\* Location of separator optional

Below Substructure

Mimimum requirements

No.		I.D.	00 MWP NOMINAL	I n	5,000 MWP			10,000 MWP		
1	Line from drilling Spool	1.17.	3"	Rating	I.D.	Nominal	Rating	LD.	Nominal	Rating
2	Cross 3" x 3" x 3" x 2"	<del> </del> -	3	3,000		3"	5,000		3"	10,000
2	Cross 3" x 3" x 3" x 2"	<del></del>		3,000			5,000			
3	Valve Gate Plug	3 1/8		3,000	3 1/8		5.000	2.1.0		10,000
4	Valve Gate	1					5,000	3 1/8		10,000
4a	Plug Valves (1)	2 1/16		3,000	1 13/16		5,000	1 13 16		10,000
5	Pressure Gauge	1 4 1/10	ļ	3,000	2 1/16		5,000	2 1/16		10,000
	Valve Gate	<del> </del>		3,000			5,000	-		10,000
6	Plug	3 1/8		3,000	3 1/8		5,000	3 1/8		10,000
7	Adjustable Choke (3)	2"		3,000	2"		5,000	2"		
8	Adjustable Choke	1"		3,000	1"	<del> </del>	5,000	2"		10,000
9	Line		3"	3,000		3"	5,000		311	10,000
10	Line		2"	3,000		2"	5,000		3"	10,000
11	Valve Gate Plug	3 1/8		3,000	3 1/8		5,000	3 1/8	2"	10,000
12	Line		3"	1,000		3"	1.000			L
13	Line		3"	1,000		3"	1,000		3"	2,000
14	Remote reading compound Standpipe pressure quage			3,000		3	1,000 5,000		3"	2,000
15	Gas Separator	<del></del>	2' x5'			21 (1	-,000			10,000
16	Line		4"	1,000		2' x5'			2' x5'	
17	Valve Gate	3 1/8			2.170	4"	1,000		4"	2,000
	Plug	3 1/0		3,000	3 1/8		5,000	3 1/8		10,000

- Only one required in Class 3M
- Gate valves only shall be used for Class 10 M (2)
- Remote operated hydraulic choke required on 5,000 psi and 10,000 psi for drilling.

## EQUIPMENT SPECIFICATIONS AND INSTALLATION INSTRUCTION

- 1. All connections in choke manifold shall be welded, studded, flanged or Cameron clamp of comparable rating.
- All flanges shall be API 6B or 6BX and ring gaskets shall be API RX or BX. Use only BX for 10 MWP.
- All lines shall be securely anchored. 3.
- 4. Chokes shall be equipped with tungsten carbide seats and needles, and replacements shall be available.
- Choke manifold pressure and standpipe pressure gauges shall be available at the choke manifold to assist in regulating chokes. As an alternate with automatic chokes, a choke manifold pressure gauge shall be located on the rig floor in conjunction with the standpipe pressure gauge.
- 6. Line from drilling spool to choke manifold should bee as straight as possible. Lines downstream from chokes shall make turns by large bends or 90 degree bends using bull plugged tees.

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