

STARTEC MUD CHILLER TECHNICAL SPECIFICATIONS

EQUIPMENT DESCRIPTION

DRIVER

RAM electric motor

- 250 HP Ram electric motor 460 v 3 ph 60hz 2 pole
 - 3,550 RPM
 - 1.15 SF
 - class F insulation
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COMPRESSOR

Howden screw compressor model XRV 204 110 (2.8) with automatic capacity control from full load to 10 %

- Direct drive coupling sized for maximum horse power and speed
 - Removable suction strainer
 - Suction isolating valve and suction check valve
 - Suction and discharge temperature and pressure indicators
 - Discharge stop and check valve
 - Oil lubrication glycol pump
 - Oil filter and isolating valves
 - Oil level sight glass
 - Dual relief valves with three way valve
 - Pressure and temperature transducers and thermo couple.
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OIL SYSTEM

Horizontal Oil Separator

Designed to ASME Sect. VIII, Div I DWP 300 psig., DWT -20 / 230 Deg. F. Alberta registration c/w

- 1/16" corrosion allowance
- high efficiency coalescing elements
- coalescing section oil drain
- 10 micron oil filter complete with isolating valves
- oil separator eye glass , oil sump manual drain, oil heater
- discharge stop and check valves
- forced lubrication oil pump c/w valve and relief
- oil charging valve, discharge three way and dual relief valves
- manual blow down valve
- oil pressure and temperature indicators
- oil pressure and temperatures transducer and thermocouple
- three way Amot temperature regulating valve

EQUIPMENT DESCRIPTION

CONDENSER

- Colmac Coil vertical coil condenser
- Fan motor 10 x 5 hp
- Aluminum tubes/ aluminum fins
- Casing of galvanized mild steel
- PVC coated fan guard

ACCUMULATOR

- 24" dia x 10 ft seam to seam
- 300 psi working pressure
- Rated at -20 / 230 working temperature
- Pressure indicator
- Temperature indicator
- Dual pressure relief valves and three way valves
- Drain and fill valves
- Inlet and outlet valves

MUD COOLER

Alfa Laval spiral chiller heat exchanger

- Alfa Laval carbon steel spiral heat exchanger for glycol to mud
- Cooling duty of 693 kW
- Heat transfer area of 72.7 m²
- Horizontal unit with bolted cover at each end

EQUIPMENT DESCRIPTION

CONTROLS AND INSTRUMENTATION

Compressor:

- Ram solid state screw compressor starter
 - NEMA 1 enclosure
 - Over sized control transformer
 - HP Contactor with auto bypass control
 - CUL listed to 700 HP

Glycol Pump: Solid state soft start

Mud Pump: VFD Controlled

Condenser Fans: VFD Controlled

Custom controller

- Communication ports
- Programmable logic
- Approved for ammonia atmosphere
- Single front access door
- All tubing and fitting ss 304

End devices – transmitters and thermocouples

- Compressor suction pressure
- Compressor discharge pressure
- Compressor oil header pressure
- Compressor filter pressure
- Discharge temperature
- Oil separator temperature
- Suction temperature

Capacity control

- From 100% to 10% capacity control , capacity indicator, load/unload limit switches locally mounted on the compressor slide valve.
- The Microprocessor senses the suction pressure for automatic compressor capacity control complete with three position selection switch – manual load / off / manual unload, one two position switch for auto / manual selection and two discrete outputs for load / unload signals.

WEIGHT

MUD CHILLER PACKAGE WEIGHT

ITEM	SIZE	WEIGHT (lb)	WEIGHT (kg)
STEEL	37'-1" x 12'-0"	17500	7938
BUILDING	10'-9" x 12'-0"	3000	1361
CONDENSERS	2x AERO 17"x105"x26'-0"	16800	7620
OIL COOLER	FLATPLATE FPN10x20-80	100	45
COMPRESSOR	HOWDEN XRV 204/110	1402	636
DRIVER	RAM 250HP	1250	567
UNIT HEATERS		N/A	0
SUCTION SCRUBBER	36" OD 6'-0" S/S	2100	953
OIL SEPARATOR	24" OD 7'-0" S/S	1400	635
ACCUMULATOR	24" OD 10'-0" S/S	1400	635
GLYCOL PUMP	GOULD	150	68
MUD PUMP	GORMAN-RUPP	600	272
GLYCOL PUMP	SUMMIT	300	136
CONTROL PANEL		600	272
PIPING & MISC.		6000	2722
OIL FILTER	2x PARKER 80CN	80	36
GLYCOL COIL	AERO 9"x54"x25'-9"	1900	862
HEAT EXCHANGER	ALFA LAVAL MK15-BWFD	4433	2011
MUD COOLER	ALFA LAVAL 1H-L-1C	18100	8210
FAN ASSEMBLY	5x AERO 100"x50"	4500	2041
	SUBTOTAL WEIGHT	81615	37020
	10%	8162	3702
	TOTAL WEIGHT	89777	40722

LENGTH=12405 (40'-8-3/8") WIDTH= 3658 (12'-0") HEIGHT=4600 (15'-1")

ENERGY REQUIREMENT

POWER REQUIREMENT

Compressor	250 HP	268 amps
Glycol Pump	3 HP	3.9 amps
Glycol Pump	15 HP	18 amps
Mud Pump	40 HP	47.8 amps
Condenser Fans	10 x 5 HP	6.48 x 10 = 64.8 amps
Oil Heater	750 w x 2	
Glycol Heater	7.5 Kw	
Control Panel		30 amps
Lighting and others		40 amps