

OPERATING MANUAL
FOR THE
GAS REFRIGERATION PACKAGE
FOR
FORT ENERGY
C/O
BDR ENGINEERING

LOCATION: SANDHILLS GAS PLANT

BY

ALCO GAS & OIL PRODUCTION EQUIPMENT LTD.

ALCO S.O.: 2005-7498

BOOK 1 OF 2

ALCO GAS & OIL PRODUCTION EQUIPMENT LTD.

FORT ENERGY

GAS REFRIGERATION
PLANT

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SECTION A: ACCESSORIES

ACE
ALLTEMP
BLANCETT
BROOKS
CCS
CENTURY
CROSBY

DEANLINE
FISHER

FMC
FOXBORO

KAYDEN

KIMRAY

MIDWEST
MURPHY

MYCOM - 47000 hrs.

NORTHSTAR
NUOVA FIMA
OIL/AIR
PARKER

*44000 hrs (last oil change)
Shut in Oct 5/2011*

PENBERTHY

H.A. PHILLIPS
ROMET
ROSEMOUNT

RUFFNECK
SENTINEL
SOR
SPORLAN
VIKING PUMP
WIKA

AIR COOLED EXCHANGERS, INC.
SENSORS THERMOCOUPLE
MODEL 1100 TURBINE FLOW METER
MODEL MT 3810 AREA FLOWMETER
6900 PRESSURE SWITCH
CM2, CM3 NEEDLE VALVE
3K4 JOS-E-35-J RELIEF VALVE, OMNI RELIEF VALVES
CENTRIFUGAL PUMPS
67, 119, 627, 630, 912 REGULATOR, D2, D4, 119
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CONTROLLERS, 546 ELECTRO-PNEUMATIC
TRANSDUCERS, 249 CAGELESS WAFER STYLE
LEVEL SENSOR
M0406 PUMP MANUAL
43AP SERIES PNEUMATIC INDICATING
TEMPERATURE CONTROLLER
810 THERMAL FLOW, LEVEL, INTERFACE &
TEMPERATURE SWITCHES
DP-30 LOW PRESSURE DRIP POT, T-12DA
TEMPERATURE CONTROLLER BASE ASSEMBLY
120AA DIFFERENTIAL PRESSURE GAUGE
MILLENNIUM COMPRESSOR CONTROL PANEL,
PD8100 SERIES PULSATION DAMPNER, VS2, VS2C
& VS2-EX VIBRATION /SHOCK SWITCHES
MODEL 200VMD-T-350 "V" SERIES MICRO-COLD
SCREW COMPRESSOR PACKAGE
ORIFICE EQUIPMENT
MGS18/3A-421 PRESSURE GAUGE
PULSATION DAMPNER
A4A-ST DISCHARGE PRESSURE REGULATOR,
A4AO-ST CONDENSER BYPASS PRESSURE
REGULATOR, CK4 LIQUID DRAIN CHECK VALVE
330J GAUGE COCKS, 1RL9, 3RL9, 1RL8 REFLEX
LEVEL GAUGE, N7A GAUGE COCKS
LEVEL EYE SERIES 1100
RM30 FUEL GAS METER
3144P TEMPERATURE TRANSMITTER, 3051
PRESSURE TRANSMITTER
FX4 SERIES ELECTRIC BUILDING HEATER
8-8A THIEF HATCH
TYPE 1510 ELECTRIC LEVEL SWITCH
FILTER DRIER
SG PUMPS
111.10 PRESSURE GAUGES

ALCO GAS & OIL PRODUCTION EQUIPMENT LTD.

MYCOM International Refrigeration, Ltd.[Engineering Group]
16825 IH-35 North, Selma, TX 78154 Tel:210-599-4518,ext 125 FAX: 210-599-1778

MYCOM Job No: SU-2295

Customer: ALCO GAS & OIL

Model: N200VMD-TE-350
Thermosyphon Oil Cooling

Motor: 350 HP, 3550 RPM
TEFC, 449TS Frame
460V/3PH/60HZ

Control Power: 120V/1Ph/60Hz

Compressor S/N: S/N: 2036068

Design Conditions: High Stage Application
-20°F S.E.T. / 120°F S.C.T.

Refrigerant: R-290 (PROPANE)

Sales Office: Mycom Canada Vancouver (MCV)
Unit# 110, 6620 McMillan Way
Richmond, B.C., V6W 1J7
Canada
Ph: 604-270-1544
Fax: 604-270-9870

Customer Service/Emergency Contact:

USA:	East:	717-779-0138
	Central:	210-599-4518
	West:	209-545-9752
Canada:	Toronto:	905-564-0664
	Vancouver:	604-270-1544

Alco Gas & Oil
 Production Equipment Ltd.
 Edmonton, Alberta
 (780) 465-9061
 pamela.pilipchuk@alco gasoil.com

Case Name: H:\QUOTES\Q2005-12,762 30MM REFRIG\Q2005-12,762_LP.HSC
 Unit Set: Field
 Date/Time: Tue Aug 09 11:54:51 2005

Workbook: Case (Main)

Name	Raw Gas	Streams				Fluid Pkg:	All
		1	2	3	4		
Vapour Fraction	1.000000	1.000000	0.992232	0.989969	0.986237		
Temperature (F)	120.2 *	120.2	122.4	30.07	30.92		
Pressure (psia)	593.5 *	593.5	593.5	588.5	588.5		
Molar Flow (lbmole/hr)	3294 *	3305	3330	3330	3342		
Mass Flow (lb/hr)	5.982e+004	6.002e+004	6.098e+004	6.098e+004	6.151e+004		
Liquid Volume Flow (barrel/day)	1.257e+004	1.259e+004	1.266e+004	1.266e+004	1.269e+004		
Heat Flow (Btu/hr)	-1.159e+008	-1.170e+008	-1.206e+008	-1.240e+008	-1.260e+008		
Power (hp)	-4.556e+004	-4.600e+004	-4.740e+004	-4.872e+004	-4.952e+004		
Molar Enthalpy (Btu/lbmole)	-3.519e+004	-3.541e+004	-3.622e+004	-3.723e+004	-3.770e+004		
Std Gas Flow (MMSCFD)	30.00	30.10	30.33	30.33	30.44		
Std Liquid Volume Flow (barrel/day)	---	---	---	---	---		
Molecular Weight	18.16	18.16	18.31	18.31	18.40		
Mass Density (lb/ft3)	1.877	1.877	1.898	2.406	2.419		
Mass Heat Capacity (Btu/lb-F)	0.5709	0.5708	0.5733	0.5848	0.5850		
Thermal Conductivity (Btu/hr-ft-F)	2.241e-002	2.239e-002	---	---	---		
Viscosity (cP)	1.300e-002	1.299e-002	---	---	---		
Surface Tension (dyne/cm)	---	---	50.85	---	---		
Specific Gravity	---	---	---	---	---		
Specific Gravity rel Air (rel_to_air)	0.6270	0.6270	---	---	---		
Comp Mole Frac (Helium)	0.000300 *	0.000299	0.000297	0.000297	0.000296		
Comp Mole Frac (Nitrogen)	0.009000 *	0.008970	0.008906	0.008906	0.008872		
Comp Mole Frac (CO2)	0.020000 *	0.019934	0.019826	0.019826	0.019750		
Comp Mole Frac (Methane)	0.903700 *	0.900706	0.894684	0.894684	0.891273		
Comp Mole Frac (Ethane)	0.045100 *	0.044951	0.044814	0.044814	0.044643		
Comp Mole Frac (Propane)	0.013300 *	0.013256	0.013198	0.013198	0.013148		
Comp Mole Frac (i-Butane)	0.002500 *	0.002492	0.002480	0.002480	0.002471		
Comp Mole Frac (n-Butane)	0.002600 *	0.002591	0.002579	0.002579	0.002570		
Comp Mole Frac (i-Pentane)	0.001000 *	0.000997	0.000992	0.000992	0.000988		
Comp Mole Frac (n-Pentane)	0.000800 *	0.000797	0.000793	0.000793	0.000790		
Comp Mole Frac (n-Hexane)	0.000800 *	0.000797	0.000793	0.000793	0.000790		
Comp Mole Frac (n-Heptane)	0.000900 *	0.000897	0.000891	0.000891	0.000888		
Comp Mole Frac (EGlycol)	0.000000 *	0.000000	0.003470	0.003470	0.005505		
Comp Mole Frac (H2O)	0.000000 *	0.003313	0.006277	0.006277	0.008018		