

TOROMONT PROCESS SYSTEMS

BRENT
MILLARD

Bill of Materials

**BOM
Rev. # 6**

Name: 11957 12-15 mmscf Stock Gas Plant
Location: Clear Prairie Gas Plant

QTY	Tag #	Item Description	
2	ESDV-114 ESDV-325	Norriseal auto blowdown valve Model 2275, 1" npt, with size 9, Fail open actuator, Flow over seat , 20 psi spring, 3/8" quick opening trim , sweet service, Part Number 1-2275-s40-DTV9BA2, 6-30 psig signal Maximum shutoff pressure: 4000 psig Process Fluid: Natural Application: Blowdown Valve	Rev # 3
1	ESDV-713	Kimray ESD Valve Kimray Model 112 SMT-DAB Process Fluid: Natural Gas Application: Regenerator burner shutdown valve Supplied with Petro-Tech Regenerator	Rev # 0
3	FI-105 FI-110 FI-203	Brooks Flow Meter Model: 3810A11D1TAA1A1 Connection: 1/2"NPT Tube: 07-1.2. 316SS Float: 7-D(S) 316SS Accuracy: +/- 5% FS Flow Range : 0.42 TO 4.16 LPM OF GLYCOL AT 1414PSIG Process Fluid: Glycol Application:Glycol injection Flow indicators	Rev. # 0
1	F-102	Glycol Filter Assembly Make: Peacock Model: 1B1-G78C8IN Shell Material: 304SS Head Material: 304SS Weight: 5 KGS MAWP: 1034 kpag @ -29 / 177 deg C Note: MTR's N/A Certificate of Conformance Required	Rev. # 0
1	F-103	Carbon Filter Assembly Make: Peacock Model: 1B2-JJCACS19.5F Shell Material: 304SS Head Material: 304SS Weight: 6 KGS MAWP: 1034 kpag @ -29 / 177 deg C Note: MTR's N/A Certificate of Conformance Required	Rev. # 0
1	FM-325	2" s/40 150# WCB, RFWN, Model 011C, Grease fitting, Sweet, Senior Meter Run c/w (1) Nitrile Seal Ring, & (1) Model Cat500, 316SS, 1/8" thk Orifice Plate. - Bore: TBA - Outer Ends: A-105-N 150# Flange - Orifice Fitting Material: WCB - Pipe Material: 2" A106 Gr. 6 Cold Drawn - Bolting: B7/2H - Gaskets: 316SS Flex. - Downstream Connections: (1) 1" (1) 3/4" TOL 3000# A-105-N Downstream connections - AGA Report No.3 - 4th Edition (2000) catch all - CPA TBR - Overall Length: 54' OAL - Radiography: Yes 10% One Weld - Hydrotest: Yes - Copy: Dimensional Drawing, IOM, Material Test Reports, Daniel Inspection Certificate, & NDE Reports. . 2 1 Orifice Bore confirmation / sizing calculations (Optional) - Available upon customers request	Rev. # 2

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QTY	Tag #	Item Description	Rev. #
1	FM-514	<p>Nu Flo Flow Meter 100003519 736.00000 736.00 3/8" X 1" NPT Turbine Meter Linear Flow Range: 1.6 - 16 m³/day (0.3 - 3 U.S. GPM) Accuracy: +/- 2 % Installation: Threaded, requires 10 upstream 1" pipe diameters and 5 downstream pipe diameters of 1" straight pipe for proper operation (with no valves or obstructions). Materials of Construction: 316L stainless steel body and vanes, CD-4MCu alloy rotor, tungsten carbide shaft and bearings NACE MR01-75 Compliant</p> <p>Nu Flo Pickup 100002337 164.00000 164.00 Magnetic Pickup For meters 3/4" and smaller turbines (internals size) Higher resolutions than the standard pickup to ensure no pulses are missed with the higher speed rotors. -55 C to 121 C (-65 F to 250 F)</p> <p>Nu Flo Totalizer 101001044 1,332.00000 1,332.00 MC-II+ EXP Flow Analyzer Power Supply Options: Internal lithium battery (included), 8 - 30 VDC external power (loop powered) 4 - 20 mA, two wire, loop powered, 1 second update period, 16 bit resolution Volumetric pulse output, optically isolated open collector, 40 mA max @ 30VDC</p>	Rev. # 2
1	HS-408	<p>Amp & square wave output of turbine Whitey 3 Way Switching Valve Model SS-44XF4 c/w 316SS body and stem, black nylon handle, 1/4" NPT connections Process Fluid: Instrument Air</p>	Rev. # 0
1	H-101 A/B/C	<p>H-101A Cata-Dyne Infra-Red Heater Model# WX-24x48 120 VAC Starter CSA Rated Input of 32000 BTU/H Class 1 Division 1, Group D, CSA approved.</p> <p>H-101B Cata-Dyne Infra-Red Heater Model# WX-24x48 120 VAC Starter CSA Rated Input of 32000 BTU/H Class 1 Division 1, Group D, CSA approved.</p> <p>H-101C Cata-Dyne Infra-Red Heater Model# WX-24x48 120 VAC Starter CSA Rated Input of 32000 BTU/H Class 1 Division 1, Group D, CSA approved.</p> <p>Heater Package(s) Include: Protective Grill, Low Temperature Safety Shutoff Valve, Maxitrol Pressure Regulator for 1/2 psi to 7" WC, Temperature Control Thermostat, Pressure Regulator for Maximum 250 psi to 11" WC, 3/8" NPT Isolation Valve.</p>	Rev. # 1

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1	HTR-431	Oil Heater Model ASPA-26518ER Set at 38 deg C c/w 1/60/115 VAC, 300 W element, integral thermostat, 1" NPT connection, 7" insertion, Nema 7 enclosure (explosion resistant) CSA Approved Class 1 Div 2 Gr D Process Fluid: Compressor Oil To fit Mycom P8WB compressor	Rev. # 4
1	LC-205	Fisher Level Controller Model L3 Model 2500 controller, 41 to 207 kpag (6 to 30 psig) reverse acting throttle output Model 249W 4" LCC wafer to fit 150#RF ANSI flange K-Monel standard wall torque tube, 3" X 14" 304ss displacer MAWP of wafer = class 600 (1440 psig @ 120 F) Temperature range: -40 to 450 F Process Fluid: Propane Specific Gravity: 0.54 Application: Gas Chiller Level Controller	Rev #0
1	LC-211	Fisher Level Controller Model L3 Model 2500 controller, 41 to 207 kpag (6 to 30 psig) direct acting throttle output Model 249W 4" LCC wafer to fit 6000#RF ANSI flange K-Monel standard wall torque tube, 3" X 14" 304ss displacer MAWP of wafer = class 600 (1440 psig @ 120 F) Temperature range: -40 to 450 F Process Fluid: Natural Gas / Gas Condensates / Ethylene Glycol / Water Specific Gravity: HC Liquid = 0.6 E. Glycol = 1.1 Application: Low Temperature Separator Glycol / Hydrocarbon Level controller	Rev #0
1	LC-217	Fisher Level Controller Model L3 Model 2500 controller, 41 to 207 kpag (6 to 30 psig) direct acting throttle output Model 249W 4" LCC wafer to fit 6000#RF ANSI flange K-Monel standard wall torque tube, 3" X 14" 304ss displacer MAWP of wafer = class 600 (1440 psig @ 120 F) Temperature range: -40 to 450 F Process Fluid: Natural Gas Condensates Specific Gravity: 0.64 Application: Low Temperature Separator HC Liquid Level controller	Rev #0
1	LC-307	Murphy Pneumatic Level Controller Model L-1200-N-DVO for dump valve operation c/w "Bouyglass" float, 2" NPT process connection, plated carbon steel body, 1/8" NPT instrument gas connection, 1/4" NPT outlet and vent connections, MAWP 1500 psig (103.45 barg) Process Fluid: Natural Gas / Gas Condensates / Water (SG 1) Instrument Gas: Process Gas Application: Fuel gas scrubber level control valve Note: Natural Gas is water saturated,	Rev #0

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QTY	Tag #	Item Description	
1	LC-323	Fisher Level Controller Model L3 Model 2500 controller, 41 to 207 kpag (6 to 30 psig) direct acting throttle output Model 249W 4" LCC wafer to fit 3000#RF ANSI flange K-Monel standard wall torque tube, 3" X 14" 304ss displacer MAWP of wafer = class 600 (1440 psig @ 120 F) Temperature range: -40 to 450 F Process Fluid: Natural Gas / Gas Condensates Specific Gravity: 0.64 Application: Deethanizer Column level controller	Rev #0
1	LC-608	Fisher Level Controller Model L2, 2" npt connection c/w 1 7/8" x 12" 316SS displacer, LCC sensor body, SS pivot assembly and sensor spring, fluoroelastomer o-rings 41 to 207 kpag (6 to 30 psig) direct throttle output Application: Glycol Flash Vessel Level Process Fluid:Glycol Specific Gravity: 1.10	Rev #0
1	LG-208	Reflex Level Gauge Make: Jerguson Glass Model# 26R20 Valve Model# 146 (1 pair) Description: 501mm visible length reflex glass, 540 mm total length, 3/4" NPT process connection, 1/2" NPT gauge connection, c/w 3" frost shield Rated 2260 psig at 200 ° F, Process Fluid Liquid Propane Application: Chiller Level Gauge	Rev. # 1
1	LG-212	Reflex Level Gauge Make: Jerguson Glass Model# 25T20 Valve Model# 146 (1 pair) Description: 438 mm visible length reflex glass, 476 mm total length, 3/4" NPT process connection, 1/2" NPT gauge connection, c/w 3" frost shield Rated 1440 psig at 200 ° F, Process Fluid: Natural Gas / Ethylene Glycol / Water / HC Condensate Application: Low Temperature Separator HC Condensate Level	Rev. # 0
1	LG-215	Reflex Level Gauge Make: Jerguson Glass Model# 28R20 Valve Model# 146 (1 pair) Description: 641mm visible length reflex glass, 679 total length, 3/4" NPT process connection, 1/2" NPT gauge connection, c/w 3" frost shield Rated 2260 psig at 200 ° F, Process Fluid: Natural Gas / HC Condensate Application: Low Temperature Separator HC Condensate Level	Rev. # 0
1	LG-310	Reflex Level Gauge Make: Jerguson Glass Model# 25R20 Valve Model# 146 (1 pair) Description: 438 mm visible length reflex glass, 3/4" NPT process connection, 1/2" NPT gauge connection, overall length = 476mm Application: Fuel Gas Scrubber Level Gauge Process Fluid: Natural Gas / Water / HC Condensate	Rev. # 1

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QTY	Tag #	Item Description	
1	LG-318	Reflex Level Gauge Make: Jerguson Glass Model# 28R20 Valve Model# 146 (1 pair) Description: 641 mm visible length reflex glass, 679 mm overall length, 3/4" NPT process connection, 1/2" NPT gauge connection, Application: De-Ethanizer Tower Level Gauge Process Fluid: Natural Gas / HC Condensate	Rev. # 1
1	LG-512	Reflex Level Gauge Make: Jerguson Glass Model# 28R20 Valve Model# 146 (1 pair) Description: 641mm visible length reflex glass, 679 total length, 3/4" NPT process connection, 1/2" NPT gauge connection Rated 2260 psig at 200 ° F, Process Fluid Liquid Propane Application: Receiver Level Gauge	Rev. # 0
1	LG-607	Reflex Level Gauge Make: Jerguson Glass Model# 25T20 Valve Model# 146 (1 pair) Description: 438 mm visible length reflex glass, 476 mm total length, 3/4" NPT process connection, 1/2" NPT gauge connection, c/w 3" frost shield Rated 1440 psig at 200 ° F, Process Fluid: Ethylene Glycol / HC Condensate Application: Glycol Flash Tank	Rev. # 0
1	LG-714	Penberthy level Gauge Application: surge tank level gauge Supplied with Petro-Tech regenerator	Rev. # 0
1	LI-604	Phillips Reflex Level Eye Model# 1100AT-RN c/w 1.5" MNPT connection Normal Operation: 345 kpag, 80 deg C Design: 1034 kpag @ -29 to 177 deg C Application: Glycol Flash Vessel Level Process Fluid: Ethylene Glycol / HC Condensate	Rev. # 5
6	LSHH-209 LSH-216 LSHH-306 LSL-319 LSH-321 LSLL-715A	Murphy Level Control Switch Model L1100-, Electric Level Switch c/w enp nickel plated body, 1 1/2" MNPT Process Connection, SPST snap switch, Buoyglass float Explosion Proof Class 1, Groups A,B,C,D, CSA approved. Process Fluid: Natural Gas, Glycol, Condensate Application:Chiller / LTS / Scrubber / de-Ethanizer shutdown and alarm	Rev. # 0
1	LSHH-606	Murphy Level Control Switch Model L1100-, Electric Level Switch c/w enp nickel plated body, 1 1/2" MNPT Process Connection, SPST snap switch, stainless steel float for SG of Glycol (1.1 SG) Explosion Proof Class 1, Groups A,B,C,D, CSA approved. Process Fluid: Glycol, Condensate Application:Glycol flash tank Note: The stainless steel float is required. Do not replace with the Buoyglass float	Rev. # 0

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6	LSL-715B	Murphy Level Control Switch Model L1100-, Electric Level Switch c/w enp nickel plated body, 1 1/2" MNPT Process Connection, SPST snap switch, Buoyglass float Explosion Proof Class 1, Groups A,B,C,D, CSA approved. Process Fluid: Natural Gas, Glycol, Condensate Application:Low regenerator glycol level switch Note: Supplied by Petro-tech with Glycol regenerator	Rev. # 0
1	LV-205	CVS Series D, Control Valve, 1" NPT, 667-34, ATO Fail Closed Actuator, 6-30 psig signal, 3/4", 316 SST M-form trim, LCC Steel Body, Nace, Low Temp Maximum shutoff pressure = 639 psig Process Fluid: Propane Application: Chiller Level Control Valve	Rev. # 0
1	LV-211	Norriseal level control valve Model 2275, 1" npt, with size 9, Fail closed actuator, 20 psi spring, 1/8" modified percent, Part Number 1-2275-s40-RTV9BA4, 6-30 psig signal Maximum shutoff pressure: 4000 psig Process Fluid: Glycol Application: LTS Glycol Dump Valve	Rev. # 0
1	LV-217	CVS Series D, Control Valve, 1" NPT, 667-34, ATO Fail Closed Actuator, 6-30 psig signal, Trim 1/4", 1 Flute, 316 SST, LCC Steel Body, Nace, Low Temp Maximum shutoff pressure = 4230 Process Fluid: Condensate Application: LTS Condensate level control valve	Rev. # 0
1	LV-307	Norriseal Dump Valve Model 2275 1" npt process connections, 1/4" quick open trim, 285 psi WOG rating, carbon steel body (A350 LF2) and 316 SS trim, Viton seals and Neoprene diaphragm, reverse acting non-adjustable size 9 spring return actuator (FAIL CLOSED), 1.38 barg actuation pressure, 1/4" NPT instrument gas connection Process Fluid: Natural Gas / Gas Condensates / Water Instrument Gas: Instrument Air Application: Fuel Gas scrubber dump valve	Rev. # 0
1	LV-323	CVS Series D, Control Valve, 1" NPT, 667-34, ATO Fail Closed Actuator, 6-30 psig signal, Trim 1/4", 1 Flute, 316 SST, LCC Steel Body, Nace, Low Temp Maximum shutoff pressure = 4230 Process Fluid: Condensate Application: Deethanizer Level Control Valve	Rev. # 0
1	LV-608	Norriseal level control valve Model 2275, 1" npt, with size 9, Fail closed actuator, 20 psi spring, 1/8" modified percent, Part Number 1-2275-s40-RTV9BA4, 6-30 psig signal Maximum shutoff pressure: 4000 psig Process Fluid: Glycol Application: Glycol Flash tank Dump Valve	Rev. # 0

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QTY	Tag #	Item Description	
	LY-205	<p>ASCO 3-Way Solenoid Valve Model EF8314G301 c/w 303 ss body, 24VDC operation, low powered 1.4 W coil, universal operation. 1/4" NPT process connections, 3/32" orifice, CSA approved as explosion proof for Zone 1, XP / watertight enclosure Application: Gas Chiller Level Shutoff Process Fluid: Instrument Air 552 to 690 kpag (80 to 100 psig)</p>	Rev. # 2
1	PC-313	<p>CVS 4150 PRESSURE CONTROLLER - 0 - 400 psi 316 SST bourdon tube - 6-30 psi output, reverse acting Application: De-Ethanizer Column Pressure Control Process Fluid: Instrument Air</p>	Rev. # 0
1	PC-402	<p>CVS 4150 PRESSURE CONTROLLER - 0 - 100 psi 316 SST bourdon tube - 6-30 psi output, reverse acting Application: Compressor Suction pressure Controller Process Fluid: Instrument Air</p>	Rev. # 0
9	<p>PCV-205 PCV-211 PCV-217 PCV-307 PCV-313 PCV-317 PCV-323 PCV-402 PCV-608</p>	<p>Fisher Outlet Pressure Regulator Model 67CFR Set at 240 kpag (35 psig) c/w 1/4" NPT connections, 0-240 kpag (0-35 psig) spring range. c/w Wika Model# 111.10 CBM Pressure Indicator Process Gas: instrument air Application: Controller Instrument Air</p>	Rev. # 0
1	PCV-113	<p>Fisher Outlet Pressure Relief Regulator Model 627R Set at 50 psig c/w 1" NPT connections, 35 to 80 psi spring range, 3/16" orifice ductile iron material of construction. Process Gas: Natural Gas</p>	Rev. # 0
1	PCV-206	<p>Refrigeration Specialties Outlet Pressure Control Valve Set at 40 kpag (23 psig) Model: 3/4" A4AOE-ST c/w 3/4" port, "V" spring range (20 in HG to 120 psg), 3/4" SW pipe flanges, external sensing connection, metal seat, stainless steel diaphragm, strainer. Operating Conditions: 40 kpag, deg C Design: 2760 kpag @ -29 to 149 deg C Process Fluid: Propane Vapour Application: Hot Gas Bypass</p>	Rev. # 0
2	<p>PCV-302A PCV-302B</p>	<p>Fisher Pressure Reducing Regulator Set at 680 kpag Model # 627 c/w 1" NPT connections, 1/4" port, 480 to 1030 kpag (70 to 150 psig) spring range, nylon inlet disk, steel body. Maximum inlet pressure = 13790kpag (2000 psig) Maximum allowable outlet pressure = 60 psig above setpoint = 1100 kpag Application: Fuel Make-Up Process Fluid: Natural Gas</p>	<p>1 - Rev. # 0 1 - Rev # 3</p>
1	PCV-312	<p>CVS Pressure back pressure Regulator Set at 750 kpag Model # 630R-103 1" NPT connections, 1/2" port, 517 to 1200 kpag (75 to 175 psig) spring range, ductile iron body Maximum working pressure = 2475 kpag (250 psig above setpoint) Application: fuel gas scrubber relief regulator Process Fluid: Natural Gas</p>	Rev. # 0

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1	PCV-403	Fisher Inlet Pressure Regulator Set at 650 kpag (95 psig) Model # 1805 c/w 3/4" NPT connections, 138 to 862 kpag (20 to 125 psig) spring range Application: Oil Pressure Regulator Process Fluid: Propane	Rev. # 0
1	PCV-407	Fisher Pressure Regulator Model # 67 c/w 1/4" NPT connections, handwheel, 1 hole panel mounting spring case, 21 to 124 kpag (3 to 18 psig) spring range Application: Compressor Capacity Control Process Fluid: Instrument Air	Rev. # 0
1	PCV-415	Fisher 3-Way Switching Valve Set at 80 kpag (12 psig) Model # 164A c/w 3/8" NPT connections, 34 to 172 kpag (5 to 25 psig) spring range Application: Compressor Capacity Control Process Fluid: Propane and Lube Oil	Rev. # 0
1	PCV-417	Fisher 3-Way Switching Valve Set at 120 kpag (17 psig) Model # 164A c/w 3/8" NPT connections, 34 to 172 kpag (5 to 25 psig) spring range Application: Compressor Capacity Control Process Fluid: Propane and Lube Oil	Rev. # 0
1	PCV-419	Fisher 3-Way Switching Valve Set at 160 kpag (23 psig) Model # 164A c/w 3/8" NPT connections, 34 to 172 kpag (5 to 25 psig) spring range Application: Compressor Capacity Control Process Fluid: Propane and Lube Oil	Rev. # 0
1	PCV-501	Refrigeration Specialties Inlet Pressure Control Valve Set at 1200 kpag (236 psig) Model: 3" A4A-ST c/w 2-1/2" port, "D" spring range (75 to 280 psg), 3" SW pipe flanges, metal seat, stainless steel diaphragm, strainer. Operating Conditions: 1629 kpag, 69 deg C Design: 2760 kpag @ -29 to 149 deg C Process Fluid: Propane Application: Compressor Discharge Backpressure	Rev. # 0
1	PCV-508	Refrigeration Specialties Outlet Pressure Control Valve Set at 945 kpag (137 psig) Model: 3/4" A4AOE-ST c/w 50% reduced 3/4" port, "D" spring range (75 to 280 psg), 3/4" SW pipe flanges, metal seat, stainless steel diaphragm, strainer. Operating Conditions: 1629 kpag, 69 deg C Design: 2760 kpag @ -29 to 149 deg C Process Fluid: Propane Application: Refrigerant Receiver Winter Pressure	Rev. # 0
	PCV-602	Fisher Back Pressure Regulator Set at 500 kpag (72 psig) Model # 98H-29 c/w 1" NPT connections, 9/16" orifice, cast iron, 172 to 517 kpag (25 to 75 psig) spring range Application: Glycol Flash Tank Holdback Valve Process Fluid: Steam / Hydrocarbon Vapour	Rev. # 5

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QTY	Tag #	Item Description	
1	PCV-603	Fisher Pressure Reducing Regulator Set at 310 kpag (45 psig) Model # 627R c/w 1" NPT connections, 3/16" port, 241 to 551 kpag (35 to 80 psig) spring range Application: Glycol Flash Tank Pressure-Up Valve Process Fluid: Natural Gas	Rev. # 0
1	PCV-623	Fisher Back Pressure Regulator Set at 345 kpag (50 psig) Model # 98H-33 c/w 1" NPT connections, 9/16" orifice, cast iron, 172 to 517 kpag (25 to 75 psig) spring range Application: Glycol Flash Tank Holdback Valve Process Fluid: Steam / Hydrocarbon Vapour	Rev. # 5
1	PCV-711	Fisher Outlet Pressure Regulator Model 67CFR Set at 35 kpag (5 psig) c/w 1/4" NPT connections, 0-240 kpag (0-35 psig) spring range. Process Gas: Natural Gas Application: Regenerator Fuel Gas burner pilot regulator Supplied with Petro-Tech regenerator	Rev #0
1	PCV-712	Fisher Pressure Reducing Regulator Set at 75 kpag Model # 627 c/w 1" NPT connections, 1/4" port, 35 to 135 kpag (5 to 20 psig) spring range, nylon inlet disk, steel body. Maximum inlet pressure = 13790kpag (2000 psig) Maximum allowable outlet pressure = 60 psig above setpoint = 1100 kpag Process Gas: Natural Gas Application: Regenerator Fuel Gas burner regulator Supplied with Petro-Tech regenerator	Rev #0
1	PCV-718	Fisher Pressure Reducing Regulator Set at 310 kpag (80 psig) Model # 627R c/w 1" NPT connections, 3/16" port, 241 to 551 kpag (35 to 80 psig) spring range Application: Glycol Flash Tank Pressure-Up Valve Process Fluid: Natural Gas	Rev. # 5
1	PCV-719	Fisher Pressure Reducing Regulator Set at 300 kpag (80 psig) Model # 627R c/w 1" NPT connections, 3/16" port, 241 to 551 kpag (35 to 80 psig) spring range Application: Glycol Flash Tank Pressure-Up Valve Process Fluid: Natural Gas	Rev. # 5
1	PCV-303	Fisher Outlet Pressure Regulator Model Y600 set at 7" WC c/w 1 1/4" NPT connections, 9/16" orifice Note: Supplied with engine Process Gas: Fuel Gas	Rev. # 0
2	PD-612 PD-613	Oil-Air Pulsation Dampener Model 1QT-100-1 c/w 1" FNPT connection, 3000 psig MAWP Design: 9756 kpag @ -29 / 177 deg C Working Pressure: 3500 to 7000 kpag Working Temperature: 100 deg C Process Fluid: Glycol Application: Glycol Pump Discharge Pulsation Dampeners	Rev. # 0

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QTY	Tag #	Item Description	
2	PDI-620 PDI-622	Wika Differential Pressure Gauge Model: 700.01 0-100 kPad c/w 1/4" NPT back connection ports, 3" dial, 0-100 kPad scale, 316 ss body, aluminum housing, MAWP 1500 psig (10340 kpag) Working Pressure: 400 kpag Working Temperature: -13 deg C Process Fluid: Glycol Application: Glycol Filter Element Differentia	Rev. # 0
1	PDSHH-420	High Compressor Differential Pressure Switch SOR- Mini Hermet, Cu free aluminum housing Suitable for class 1 Div 1 Model 121-AG-EF45-M4-C1A Set for 1482 kPad rising Application:High Differential pressure Switch Process Fluid: Propane	Rev. # 0
1	PDSL-409	Low Compressor Oil Pressure Switchgauge Minimum Oil pressure setpoint 25 psig above suction Pressure Application: Low Compressor Oil pressure Switch Process Fluid: Propane Supplied With Control Panel	Rev. # 0
3	PI-102 PI-104 PI-214	Wika Local Mounted Pressure Gauge Model# 233.54 c/w dual psi / kpag scale, 0 to 1500 psig / 0 to 10342 kpag, 100mm dial, 316 stainless steel tube, socket and tip material, stainless steel case, 1/2" NPT lower connection, Liquid (Silicone) filled, blow out vent and filling plug Process Fluid: Natural Gas Application:High Pressure process gas pressure indicators	Rev. # 0
2	PI-207 PI-509	Wika Local Mounted Pressure Gauge Model# 233.54 c/w dual psi / kpag scale, 0 to 300 psig / 0 to 2070 kpag, 100mm dial, 316 stainless steel tube, socket and tip material, stainless steel case, 1/2" NPT lower connection, Liquid (Silicone) filled, blow out vent and filling plug Application: Gas Chiller / receiver level gauge Process Fluid: Propane	Rev. # 0
1	PI-303	Wika Local Mounted Pressure Gauge Model# 233.54 c/w dual psi / kpag scale, 0 to 300 psig / 0 to 2070 kpag, 100mm dial, 316 stainless steel tube, socket and tip material, stainless steel case, 1/2" NPT lower connection, Liquid (Silicone) filled, blow out vent and filling plug Application: Fuel Gas Scrubber Pressure Indicator Process Fluid: Natural Gas	Rev. # 0
1	PI-320	Wika Local Mounted Pressure Gauge Model# 233.54 c/w dual psi / kpag scale, 0 to 400 psig / 0 to 2700 kpag, 100mm dial, 316 stainless steel tube, socket and tip material, stainless steel case, 1/2" NPT lower connection, Liquid (Silicone) filled, blow out vent and filling plug Application: De-Ethanizer Column Process Fluid: Natural Gas / Condensate	Rev. # 0

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1	PI-404	Wika Local Mounted Pressure Gauge Model 233.54 0 to 200 psig, 2 1/2" dial, 316 SS tube, socket and tip material, 304 ss casing 1/4" NPT back mount connection, liquid filled, Process Fluid: Natural Gas Application: Unloader actuation indication MAWP of Gauge: 2200 psig Application: Propane Oil Cooler Process Fluid: Propane	Rev. # 0
2	PI-407 PI-701	Wika Panel Mounted Pressure Gauge Model# 111.10 CBM/UC c/w dual psi / kpag scale, 0 to 30 psig / 0 to 207 kpag, 63.5 mm dial, copper alloy tube, socket and tip material, 1/4" NPT center back connection. Application: Manual Capacity Control Process Fluid: Instrument Air / Glycol	Rev. # 0
1	PI-605	Wika Local Mounted Pressure Gauge Model# 233.54 c/w dual psi / kpag scale, 0 to 100 psig / 0 to 2700 kpag, 100mm dial, 316 stainless steel tube, socket and tip material, stainless steel case, 1/2" NPT lower connection, Liquid (Silicone) filled, blow out vent and filling plug Application: Glycol Flash Tank Process Fluid: Natural Gas / Glycol	Rev. # 0
4	PI-410 PI-414 PI-416 PI-418	Wika Local Mounted Pressure Gauge Model 233.54 0 to 100 psig, 2 1/2" dial, 316 SS tube, socket and tip material, 304 ss casing 1/4" NPT back mount connection, liquid filled, MAWP of Gauge: 1750 psig Application: Compressor Oil Pressure Gauge Process Fluid: Compressor Oil	Rev. # 0
2	PI-611 PI-616	Wika Local Mounted Pressure Gauge Model# 233.54 c/w dual psi / kpag scale, 0 to 1500 psig / 0 to 10342 kpag, 2.5" dial, 316 stainless steel tube, socket and tip material, stainless steel case, 1/4" NPT lower connection, Liquid (Silicone) filled, blow out vent and filling plug Process Fluid: Glycol Application: Glycol Pump Discharge Pressure	Rev. # 0
2	PI-708 PI-709	Pressure indicator 1/4" bottom mount, 0-30 psig Process Fluid: Natural Gas Application: Burner Regulator pressure indicators Supplied with Petro-Tech regenerator	Rev. # 0
1	PSLL-610	CCS Dual-Snap Pressure Switch Set @ 2750 kpag (400 psig) FALLING Model 6900GE20 c/w 1724 to 6549 kpag (250 to 950 psig) range, aluminum wetted parts, 1/4" NPT connections, Viton seals, SPDT switch, CSA approved Class 1 Div 2 Group D Design: 9756 kpag @ -29 to 177 deg C Application: Glycol Pump Discharge Process Fluid: Rich Glycol	Rev. # 0

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1	PSLL-717	<p>CCS Dual-Snap Pressure Switch Set @ 70 kpag (10 psig) FALLING Model 6900GE12 c/w 7 to 125 kpag (1 to 18 psig) range, aluminum wetted parts, 1/4" NPT connections, Viton seals, SPDT switch, CSA approved Class 1 Div 2 Group D Design: 2069 kpag @ -29 to 149 deg C Application: low glycol regen instrument air s/d Process Fluid: Inst Air</p>	Rev. # 0
1	PSV-201	<p>Pressure Safety Valve AG Crosby Model 4 M 6 JOS-E-15-J4 Set @ 1861 kpag @ 66 Deg C, 4 - 4" Inlet, M - Effective Orifice Area, 6 - 6" Outlet, JOS-E - Conventional Design, 1 - Pressure Class (150# RF x 150# RF) 5 - Temperature Class (-20F thru 650F) J - Screwed Cap ASME Sect VIII Gas/Vapour Process Fluid: Propane Application: Propane Chiller Pressure Safety Valve</p>	Rev. # 0
1	PSV-218	<p>Pressure Safety Valve AG Crosby Omni Series Model 961101MA9 Set @ 9756 KPag @ 66 Deg C 900 Series6 - 0.110 in² Orifice, 1 - Max. Set Pressure 1500 psig, 1 - Metal Seated, 0 - CS Cylinder/316SS Base, 1 - 3/4" nps x 1" nps, M - MNPT x FNPT, A - Screwed Cap ASME Sect VIII Gas/Vapour</p> <p>Process Fluid: Natural Gas Application: Low temperature Separator PSV</p>	Rev. # 0
1	PSV-304	<p>Pressure Safety Valve AG Crosby Model 1-1/2 H 3 JOS-E-15-J Set @ 1034 KPag @ 66 Deg C 1-1/2 - 1-1/2" Inlet H - Effective Orifice Area 3 - 3" Outlet JOS-E - Conventional Design 1 - Pressure Class (150# RF x 150# RF) 5 - Temperature Class (-20F thru 650F) J - Screwed Cap ASME Sect VIII Gas/Vapour</p> <p>Process Fluid: Natural Gas Application: Fuel Gas Scrubber PSV</p>	Rev. # 1
1	PSV-314	<p>Pressure Safety Valve AG Crosby Omni Series Model 961101MA9 Set @ 2415 KPag @ 148 Deg C 900 Series6 - 0.110 in² Orifice, 1 - Max. Set Pressure 1500 psig, 1 - Metal Seated, 0 - CS Cylinder/316SS Base, 1 - 3/4" nps x 1" nps, M - MNPT x FNPT, A - Screwed Cap ASME Sect VIII Gas/Vapour</p> <p>Process Fluid: Natural Gas Application: De-Ethanizer Column PSV</p>	Rev. # 0
1	PSV-324	<p>Pressure Safety Valve AG Crosby Model 3 J 4 JOS-E-35-J Set @ 2069 kpag @ 121 Deg C, 3 - 3" Inlet, J - Effective Orifice Area, 4 - 4" Outlet, JOS-E - Conventional Design, 3 - Pressure Class (300# RF x 150# RF) 5 - Temperature Class (-20F thru 650F) J - Screwed Cap ASME Sect VIII Gas/Vapour Process Fluid: Glycol / Propane Application: Propane Sub Cooler PSV</p>	Rev. # 0

TOROMONT PROCESS SYSTEMS

QTY	Tag #	Item Description	Rev. #
1	PSV-422	Hansen Pressure Safety Valve Set at 2069 kpag (300 psig) Model# H5602 c/w carbon steel body and bonnet, 316 stainless steel trim, 3/4" NPT inlet connection, 1" NPT outlet connection. Note: Comes Supplied with Mycom Compressor Process Fluid: Propane Application: Mycom P8WB and piping	Rev. # 0
1	PSV-426	AG Crosby Omni Series Model 991107MA Set @ 2069 kpag @ 148 Deg C 9 – 900 Series, 6 – 0.503 in ² Orifice 1 – Max. Set Pressure 1500 psig, 1 – Metal Seated 0 – CS Cylinder/316SS Base, 7 – 1-1/2" nps x 2-1/2" nps M – MNPT x FNPT, A – Screwed CapASME Sect VIII Gas/Vapour Process Fluid: Propane Application: Compressor Discharge PSV	Rev. # 0
1	PSV-502	Crosby Omni Series Model 981105MA Set @ 2069 kpag @ 148 Deg C 9 – 900 Series, 8 – 0.307 in ² Orifice 1 – Max. Set Pressure 1500 psig, 1 – Metal Seated 0 – CS Cylinder/316SS Base, 5 – 1-1/2" nps x 2" nps M – MNPT x FNPT, A – Screwed CapASME Sect VIII Gas/Vapour Process Fluid: propane Application: Condenser PSV	Rev. # 0
1	PSV-511	AG Crosby Omni Series Model 991107MA Set @ 2069 kpag @ 148 Deg C 9 – 900 Series, 6 – 0.503 in ² Orifice 1 – Max. Set Pressure 1500 psig, 1 – Metal Seated 0 – CS Cylinder/316SS Base, 7 – 1-1/2" nps x 2-1/2" nps M – MNPT x FNPT, A – Screwed CapASME Sect VIII Gas/Vapour Process Fluid: propane Application: Receiver	Rev. # 0
1	PSV-601	Pressure Safety Valve AG Crosby Omni Series Model 961101MA9 Set @ 1034 KPag @ 77 Deg C 900 Series6 – 0.110 in ² Orifice, 1 – Max. Set Pressure 1500 psig, 1 – Metal Seated, 0 – CS Cylinder/316SS Base, 1 – ¾" nps x 1" nps, M – MNPT x FNPT, A – Screwed Cap ASME Sect VIII Gas/Vapour Process Fluid: Natural Gas Application: Glycol Flash Tank PSV	Rev. # 5
2	PSV-619 PSV-621	Pressure Safety Valve AG Crosby Omni Series Model 961101MA9 Set @ 1034 KPag @ 77 Deg C 900 Series6 – 0.110 in ² Orifice, 1 – Max. Set Pressure 1500 psig, 1 – Metal Seated, 0 – CS Cylinder/316SS Base, 1 – ¾" nps x 1" nps, M – MNPT x FNPT, A – Screwed Cap ASME Sect VIII Gas/Vapour Process Fluid: Natural Gas / Glycol Application: Glycol Filter PSV	Rev. # 6
2	PSV-613 PSV-618	Pressure Safety Valve AG Crosby Omni Series Model 961101MA9 Set @ 9756 KPag @ 77 Deg C 900 Series6 – 0.110 in ² Orifice, 1 – Max. Set Pressure 1500 psig, 1 – Metal Seated, 0 – CS Cylinder/316SS Base, 1 – ¾" nps x 1" nps, M – MNPT x FNPT, A – Screwed Cap ASME Sect VIII Gas/Vapour Process Fluid: Natural Gas / Glycol Application: Glycol Filter PSV	Rev. # 0

TOROMONT PROCESS SYSTEMS

QTY	Tag #	Item Description	
2	PT-401 PT-428	Rosemount Intrinsically Safe Transmitter Model# 3051 TG-3A-2B-21A-C6 0-800 psig maximum range, set to 0-400 psig, 4-20 ma output, 1/2" npt female connectors, 316 ss diaphragm, silicone filled, No display, XP, intrinsically safe, Aluminum body , Process fluid: Propane Application: Suction / Discharge pressure Note: Mount Transmitters at control panel	Rev. # 2
1	PV-313	CVS Series D, Control Valve, 1" NPT, 657-30, ATO Fail Open Actuator, 6-30 psig signal, Trim 1/4", 1 Flute, 316 SST, LCC Steel Body, Nace, Low Temp Maximum shutoff pressure = 1410 psid Process Fluid: Natural Gas Application: De-Ethanizer Pressure control valve	Rev. # 0
1	RO-213	Reducing orifice, 1" 600#, 1/8" Thk, c/w 3/32" hole, 316ss	Rev. # 0
3	RO-411 RO-412 RO-413	Restriction Orifice Application: Compressor Oil Note: Supplied with Mycom Compressor	Rev. # 0
1	RO-717	Reducing orifice, 1" 300#, 1/8" Thk, c/w 3/18" hole, 316ss	Rev # 3
3	SN-106 SN-111 SN-204	Spray Nozzle: Spraying systems company, Model: 3/8 G9.5 Designed for 5 psi pressure drop, 2.6 LPM, 45 degree spray angle Process Fluid: Glycol Application:Glycol injection Nozzles	Rev. # 0
1	TE-317	Alltemp Thermocouple Temperature Detector Model: AF-8113-T02-U-14-R-3-K-6 ungrounded, 1/4" diameter, 316 ss, 6" stem length c/w Thermowell C34-2.25-4.0-.25-6-.5-P-.260-0.750-.5 threaded stepped Thermowell, 304 ss , 2.25" head length, 4.0" insertion length, .250" tip thickness, 6" stem length, 0.5" lag, .260" bore, 0.750 " tip diameter, Minimum Allowable MAWP to be 300 psig @300 F Process Fluid: Compressor Oil / Propane Application: Compressor Oil / Discharge Temperature	Rev # 0
2	TE-425 TE-427	Alltemp Thermocouple Temperature Detector Model: AI-8113-T02-U-14-R-60-K-5 Type K thermocouple, 5' armoured cable extension c/w, 12-0111-0 compression fitting c/w: 304ss Thermowell 3/4" x 1/2" x , 1" insertion length Minimum Allowable MAWP to be 300 psig @300 F Process Fluid: Compressor Oil / Propane Application: Compressor Oil / Discharge Temperature	Rev # 0
6	TI-101 TI-103 TI-108 TI-210 TI-202 TI-510	Trend Local Temperature Indicator Model # 50090A002G4 c/w dual scale, -40 to 50° C/ -40 to 120° F, 5" dial, 9" stem, 1/2" NPT back connection, external re-calibrator, Glass Face c/w Thermowell E34-4.5-4.75-.25-9-P-.260-0.50 SW straight Thermowell, 304 ss , 4.5" head length, 4.75" insertion length, .250" tip thickness, 9" stem length, .260" bore, 0.50 " tip diameter, suitable for 3000# or 6000# couplings suitable for a 6" pipe with 3" insulation Process Fluid: Natural Gas / Propane Application: SW TI's for insulated items on propane circuit	Rev. # 0

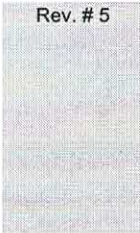
TOROMONT PROCESS SYSTEMS

QTY	Tag #	Item Description	
1	TW-510	Replacement thermowell for TI-510 Thermowell E34-1.75-7.5-.250-9-P-.26-0.50 SW straight Thermowell, 304 ss , 1.75" head length, 7.5" insertion length, .250" tip thickness, 9" stem length, .260" bore, 0.50 " tip diameter, suitable for 3000# or 6000# couplings suitable for a 6" pipe with 3"extra long coupling Process Fluid: Natural Gas Application: High Pressure Process Thermowells	Rev # 5
1	TI-308	Trend Local Temperature Indicator Model # 50090A002G4 c/w dual scale, -40 to 50° C/ -40 to 120° F, 5" dial, 9" stem, 1/2" NPT back connection, external re-calibrator, Glass Face c/w Thermowell C34-1.75-7.5-.25-9-0-P-.260-0.750-.5 threaded stepped Thermowell, 304 ss , 1.75" head length, 7.5" insertion length, .250" tip thickness, 9" stem length, 0" lag, .260" bore, 0.750 " tip diameter, Process Fluid: Natural Gas Application: Fuel Gas scrubber Temperature Indicator	Rev. # 0
4	TI-315 TI-316 TI-503 TI-504	Trend Local Temperature Indicator Model # 50025A0190G4 c/w dual scale, -40 to 70° C/ -40 to 160° F, 5" dial, 2.5" stem, 1/2" NPT back connection, external re-calibrator, Glass Face c/w Thermowell B34-1.75-1.0-.25-2.5-0-P-.260-0.750-.5 threaded stepped Thermowell, 304 ss , 1.75" head length, 1.0" insertion length, .250" tip thickness, 2.5" stem length, 0" lag, .260" bore, 0.750 " tip diameter, Process Fluid: Natural Gas/ condensate Application: De-Ethanizer Temperature Indicator	Rev. # 0
1	TI-322	Trend Local Temperature Indicator Model # 50060A0080G4 c/w dual scale, 10 to 150° C/ 50 to 300° F, 5" dial, 6" stem, 1/2" NPT back connection, external re-calibrator, Glass Face c/w Thermowell C34-2.25-4.0-.25-6-.5-P-.260-0.750-.5 threaded stepped Thermowell, 304 ss , 2.25" head length, 4.0" insertion length, .250" tip thickness, 6" stem length, 0.5" lag, .260" bore, 0.750 " tip diameter, Process Fluid: Natural Gas/ condensate Application: De-Ethanizer Temperature Indicator	Rev. # 0
1	TI-609	Trend Local Temperature Indicator Model # 50090A006G4 c/w dual scale, -20 to 120° C/ 0 to 120° F, 5" dial, 9" stem, 1/2" NPT back connection, external re-calibrator, Glass Face c/w Thermowell E34-1.75-7.5-.25-9-P-.260-0.750-.5 sw straight Thermowell, 304 ss , 1.75" head length, 7.5" insertion length, .250" tip thickness, 9" stem length, 0" lag, .260" bore, 0.750 " tip diameter, Process Fluid: Glycol Application: Glycol flash Temperature Indicator	Rev. # 0
2	TI-703 TI-716	Glycol Heater temperature indicator, Supplied by Petro-tech with regenerator	Rev #0
1	TIC-705	Kimray temperature controller Model T-12 Process Fluid: Glycol Application:Regenerator Temperature Supplied by Petro-tech with regenerator	Rev #0

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QTY	Tag #	Item Description	
1	TSHH-704	GLYCOL Regenerator High temperature switch Kimray High temperature Shutdown Model T-12M with manual reset Supplied by Petro-tech with regenerator	Rev #0
1	TV-317	2" 300RF FISHER D4 Control Valve - LCC steel body - 1-1/4" M-Form trim, 416SST plug & 17-4PH SST seat - ENVIRO-SEAL PTFE packing - Integral size 40 actuator - Fail closed - Maximum differential 290 psid - 0-30 psi operating range - Face to face is 10.00" Includes Fisher DVC6010 digital positioner 4-20 mA input HART communicating Process Fluid: Hot Glycol Application: Stabilizer reboiler control valve	Rev. # 2
1	TV-705	Burner Temperature Control Valve Kimray Model 112 SMT-DAB Process Fluid: Natural Gas Application: Regenerator Burner Temperature Control valve Supplied by Petro-tech with regenerator	Rev. # 0
2	TW-109 TW-110	Thermowell E34-1.75-7.5-.250-9-P-.26-0.50 SW straight Thermowell, 304 ss, 1.75" head length, 7.5" insertion length, .250" tip thickness, 9" stem length, .260" bore, 0.50" tip diameter, suitable for 3000# or 6000# couplings suitable for a 6" pipe with 3" extra long coupling Process Fluid: Natural Gas Application: High Pressure Process Thermowells	Rev. # 5
1	UV-405	Fisher 3-Way Switching Valve Set at 345 kpag (50 psig) Model # 164A c/w 1/2" NPT connections, 275 to 690 kpag (40 to 100 psig) spring range Application: Oil Cooler Stop Valve Process Fluid: Propane	Rev. # 0
5	UY-114 UY-325 UY-326 UY-405 UY-718	ASCO 3-Way Solenoid Valve Model EF8314G301 c/w 303 ss body, 24VDC operation, low powered 1.4 W coil, universal operation. 1/4" NPT process connections, 3/32" orifice, CSA approved as explosion proof for Zone 1, XP / watertight enclosure Application: Gas Chiller Level Shutoff Process Fluid: Instrument Air 552 to 690 kpag (80 to 100 psig)	2 - Rev. # 2 3 - Rev # 3
1	VSHH-421	Murphy Vibration Switch Model VS-2-EX c/w aluminum alloy housing, CSA approved as explosion proof for Zone 1, 2 x SPDT switches, adjustable, NC and NO contacts Application: Compressor Vibration Switch	Rev. # 0
1	VSHH-507	Murphy Vibration Switch Model VS-2-EX c/w aluminum alloy housing, CSA approved as explosion proof for Zone 1, 2 x SPDT switches, adjustable, NC and NO contacts Application: Cooler Vibration Switch Supplied with cooler	Rev. # 0

QTY	Tag #	Item Description	Rev. #
1	XCV-429	Armstrong Liquid Drainer Model 11LD #38 c/w 3/4" NPT inlet connection, 1/2" NPT outlet connection, #38 orifice Process Fluid: Lube Oil / Propane Vapour Application: Oil Return	Rev. # 0
<u>MAJOR EQUIPMENT (standard Package)</u>			
1	C-101	Refrigeration Compressor Mycom P8WB Operating Speed 1185 RPM Suction Pressure: 80 - 225 kpag Suction Temperature: -21 to -18.5 C Discharge pressure: 1457 kpag Discharge Temperature: 72 Deg C Max Flow Rate: 2611 kg/hr Weight: 1550 Kg	Rev. # 0
1	CE-101		Rev. # 0
1	CP-101	Altronic Process Control Panel Model DE-2500 Suitable for Class 1 Div 2	Rev. # 0
1	H-101	Glycol Regenerator Regen Shell: 762 mm x 3657 mm Surge Shell: 609.6 mm x 3048 mm Shell Material: SA-53-B Head Material: SA-36 Duty 146 KW Weight: 3025 kg	Rev. # 0
2	PD-101A PD-101B	Glycol Pump and Motor Make: David Brown Textron Model SX3 Design Flow Rate: 7.9 LPM @ 7585 kpag Fluid: Glycol Power Draw: 1.88 KW Motor 2.2 KW 3/60/460/230 V TEFC	Rev. # 0
1	PD-102	Glycol Pump and Motor Make: Carver Model BCX-2-1/2x2x6.25 (6.25" trimmed impeller) Design Flow Rate: 283 LPM @ 10.6 M head Fluid: Glycol Power Draw: .55 KW Motor 1.11 KW 3/60/460V TEFC	Rev. # 0
1	P-103 PD-103	Glycol Pump and Motor Make: Price Model CD100-AI-425-P Size : 1" x 1-1/4" x 5" Design Flow Rate: 20 usgpm @ 28 psig Fluid: Glycol Gas Motor Gast 4AM-FRV-13C 1.2 bhp @ 3000 RPM	Rev. # 5



QTY	Tag #	Item Description	Rev. #
1	E-101	Gas to Gas heat Exchanger Manufacturer: Cimco 324 mm OD x 914 mm T/L, 2 units in series MAWP Shell side: 9756 kpag @ 66 Deg C MDMT Shell Side: -29 Deg C @ 9756 kpag MAWP Tube side: 9756 kpag @ 66 Deg C MDMT Tube side: -29 Deg C @ 9756 kpag Design Duty 553 KW per unit Surface Area 289 M2 per unit Weight: 2804 KG per unit	Rev. # 0
1	E-102	Gas Chiller Manufacturer: Cimco Chiller: 406 mm OD x 6096 mm Surge Drum: 406 MM OD x 4877 MM OAL MAWP Shell side: 1861 kpag @ 66 Deg C MDMT Shell Side: -29 Deg C @ 1861 kpag MAWP Tube side: 9756 kpag @ 66 Deg C MDMT Tube side: -29 Deg C @ 9756 kpag Design Duty 278 KW Surface Area: 52.3 M2 Weight: 1892 KG	Rev. # 0
1	E-103	Propane Sub Cooler Manufactured by: Cimco Size: 168 mm OD x 4267 mm T/L NEM Type" NEN Class C MAWP Shell side: 2069 kpag @ 121 Deg C MDMT Shell Side: -29 Deg C @ 2069 kpag MAWP Tube side: 9756 kpag @ 66 Deg C MDMT Tube side: -29 Deg C @ 9756 Kpag Design Duty: 15.6 KW Surface Area: 6.44 m2 Weight: 530 kg	Rev. # 0
1	E-104	Stabilizer reboiler Manufactured by Cimco Size: 219 mm OD x 1524 MM T/L TEMA Type NEN Class C MAWP Shell side: 1862 Kpag @ 148 Deg C MDMT Shell Side: - 29 Deg C @ 1862 Kpag MAWP Tube Side: : 2415 kpag @ 250 Deg C MDMT Tube Side: -29 deg C @ 2415 kpag Design Duty 21.44 KW Surface Area: 3.78 M2 Weight 355 Kgs	Rev. # 0
1	E-105	Ace Model E-108-115-15 Fan - 1 Moore series 30 2743 mm diameter 6 blade fan 389 RPM Motor - Frame 160 L, 14.9 kw @ 1800 rpm 3/60/460V TEFC E-105 section - High performance marine fins MAWP - 2415 kpag @ 204 C MDMT -29 Deg C @ 2415 kpag Duty 15 W	Rev. # 0

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QTY	Tag #	Item Description	
1	E-106	E-106 fan and motor (see E-105)	Rev. # 0
		E-106 condenser section fins: High Performance marine MAWP: 2069 kpag @ 149 C MDMT: -29 C @ 2069 kpag Duty: 218 KW	
1	F-101	Refrigerant Filter / Drier Sporlan, Model C4-0016-P MAWP 3448 kpag	Rev. # 0
1	V-101	Low Temperature Separator Manufacturer: Toromont Process Systems Size: 1067mm ID x 3048 mm s/s MAWP 9756 kpag @ 66 Deg C MDMT -29 Deg C @ 9756 kpag C/A 1.6 mm Shell Material: SA-516-70N Head Material: SA-516-70N Weight: 4800kgs	Rev. # 0
1	V-102	Fuel Gas Scrubber Manufactured by: Cimco Size: 324 mm OD x 1524 mm s/s MAWP 1862 kpag @ 66 Deg C MDMT -29 Deg C @ 1862 kpag CA: 1.6 mm Shell Material: SA-106B Head Material: SA-234-WPB	Rev. # 0
1	V-103	De-Ethanizer Column Manufactured by : Toromont Energy Systems 219 mm OD x 10972 mm s/s MDMT -29 Deg C @ 2415 Kpag CA 1.6 MM Shell Material: SA-106B Head Material: SA-234 WPB	Rev. # 0
1	V-104	Secondary Oil Separator Chilcon Model COS 0070 Size : 324 mm od x 1092 mm oal MAWP: 2756 kpag @ 121 C MDMT -29 C @ 2758 kpag 2-1/2" RF Flanged inlet and outlet Shell Material: SA-53B Head Material: SA-516-70-N Weight: 111 Kg	Rev. # 0
1	V-105	Refrigerant Receiver Manufactured by: Cimco size: 610 mm OD x 3658 mm s/s MAWP 2069 kpag @ 148 C MDMT -29 c @ 2069 KPAG CA: 1.6 mm Shell Material : SA-106B Head materials-516-70	Rev. # 0
1	V-106	Glycol Flash Tank Manufactured by: Cimco size: 324 mm OD x 1524 mm s/s MAWP 1034 kpag @ 77 C MDMT -29 c @ 1034 KPAG CA: 1.6 mm Shell Material : SA-106B Head material: SA-234-WPB	Rev. # 0

QTY	Tag #	Item Description	
<u>HAND VALVES (standard Package)</u>			
8	1/2"BCN1	Ball Valve, 1/2" NPT, Carbon Steel c/w regular port, 3000# rating, standard trim Nutron T3-F05S30B	Rev. # 1
6	3/4"BCN1	Ball Valve, 3/4" NPT, Carbon Steel c/w regular port, 3000# rating, standard trim Nutron T3-R07S30B	Rev. # 1
23	1"BCN1	Ball Valve, 1" NPT, Carbon Steel c/w regular port, 3000# rating, standard trim Nutron T3-R10S30B	19-Rev. # 2 +2 - Rev # 3 +2- Rev # 5
3	1-1/2"BCN1	Ball Valve, 1-1/2" NPT, Carbon Steel c/w regular port, 3000# rating, standard trim Nutron T3-F15S30B	Rev. # 1
4	2"BCN1	Ball Valve, 2" NPT, Carbon Steel c/w regular port, 3000# rating, standard trim Nutron T3-R20S30B	2 - Rev. # 2 2 - Rev # 3
5	2"BC31	Ball Valve, 2" 300# ANSI, Carbon Steel c/w regular port, standard trim Navco B2-R20R03S	Rev. # 1
2	2"BC31	Ball Valve, 2" 300# ANSI, Carbon Steel c/w regular port, standard trim, c/w locking device Navco B2-R20R03S	Rev. # 1
1	3"BC31	Ball Valve, 3" 300# ANSI, Carbon Steel c/w regular port, standard trim, c/w locking device	Rev. # 5
<u>CHECK VALVES</u>			
3	1/2" CCN2	Swing Check Valve, c/w 1/2" NPT connections, Carbon Steel body, Carbon Steel trim, API 800# rating Newco 38T-FS2	Rev. # 1
2	1" CCN2	Swing Check Valve, c/w 1" NPT connections, Carbon Steel body, Carbon Steel trim, API 800# rating Newco 38T-FS2	Rev. # 1
2	1" CCS2	Swing Check Valve, c/w 1" sw connections, Carbon Steel body, Carbon Steel trim, API 800# rating Newco 38S-FS2	Rev. # 5
1	2" CCS2	Swing Check Valve, c/w 2" sw connections, Carbon Steel body, Carbon Steel trim, API 800# rating Newco 38S-FS2	Rev. # 1
1	2" CCN2	Swing Check Valve, c/w 2" npt connections, Carbon Steel body, Carbon Steel trim, API 800# rating Newco 38T-FS2	Rev. # 3
1	3" CC31	Twin Flapper Wafer Check Valve, c/w 3"-300# ANSI flanged connections, Carbon Steel body, Carbon Steel trim, metal seats, inconel spring, serrated face Sureflow FE300CS-MIR	2 Rev. # 1 -1 Rev # 5
1	3" CCS3	3"-SW, 2.5" port, Model CK-1, Refrigeration specialties piston check valve, Carbon Steel body, Carbon Steel trim,	Rev. # 5
<u>GATE VALVES</u>			
17	1/2" GCN1	Gate Valve, c/w 1/2" npt connections, Newco 18T-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	Rev. # 1
5	1/2" GCC1	Gate Valve, c/w 1/2" sw X NPT connections, Newco 18X-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	Rev. # 1
1	1/2" GCS1	Gate Valve, c/w 1/2" sw connections, Newco 18S-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	Rev. # 1
15	3/4" GCC1	Gate Valve, c/w 3/4" sw X NPT connections, Newco 18X-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	Rev. # 1

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QTY	Tag #	Item Description	
5	3/4" GCS1	Gate Valve, c/w 3/4" SW connections, Newco 18S-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	Rev. # 1
3	1" GCN1	Gate Valve, c/w 1" npt connections, Newco 18T-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	Rev. # 1
2	1" GCC1	Gate Valve, c/w 1" sw X NPT connections, Newco 18X-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	Rev. # 1
21	1" GCS1	Gate Valve, c/w 1" SW connections, Newco 18S-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	Rev. # 5
7	1-1/2" GCS1	Gate Valve, c/w 1-1/2" SW connections, Newco 18S-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	6 Rev. # 1 +1 Rev #5
5	2" GCS1	Gate Valve, c/w 2" SW connections, Newco 18S-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	Rev. # 1
1	2" GC11	Gate Valve, c/w 2" 150# RF connections, Carbon Steel body, Carbon Steel trim, c/w locking port	Rev # 5
1	2" GC31	Gate Valve, c/w 2" 300# RF connections, Newco 23F-FS2-LD Carbon Steel body, Carbon Steel trim, c/w locking port	Rev. # 1
2	3" GC31	Gate Valve, c/w 3" 300# RF connections, Newco 23F-CB2-LD Carbon Steel body, Carbon Steel trim, c/w locking port	1 Rev. # 1 +1 Rev # 5
<u>GLOBE VALVES</u>			
3	1/2" LCN1	Globe Valve, c/w 1/2" NPT connections, Carbon Steel body and trim, API 602 800# rating Newco 28T-FS2	Rev. # 1
5	1" LCN1	Globe Valve, c/w 1" NPT connections, Carbon Steel body and trim, API 602 800# rating Newco 28T-FS2	3 - Rev. # 1 2 - Rev # 3
4	1" LCS1	Globe Valve, c/w 1" SW connections, Carbon Steel body and trim, API 602 800# rating Newco 28S-FS2	3 - Rev. # 1 1 - Rev # 3
1	1-1/2" LCN1	Globe Valve, c/w 1-1/2" NPT connections, Carbon Steel body and trim, API 602 800# rating Newco 28T-FS2	Rev. # 1
2	2" LCS1	Globe Valve, c/w 2" SW connections, Carbon Steel body and trim, API 602 800# rating Newco 28S-FS2	Rev. # 1
1	2" LC31	Globe Valve, c/w 2" 300# connections, Carbon Steel body and trim Newco 23F-CB2	Rev. # 1
<u>NEEDLE VALVES</u>			
16	1/4" NCN1	Needle Valve, c/w 1/4" FNPT x 1/4" FNPT connections, Carbon Steel body, Stainless Steel trim, integral seat, teflon packing, 10,000# WOG rating Century CM25-2-F22T- FT	20 Rev. # 1 -4 Rev # 5
4	1/2" NCN1	Needle Valve, c/w 1/2" FNPT x 1/2" FNPT connections, Carbon Steel body, Stainless Steel trim, integral seat, teflon packing, 10,000# WOG rating	4 Rev # 5
5	1/4" NCM1	Needle Valve, c/w 1/4" FNPT x 1/4" MNPT connections, Carbon Steel body, Stainless Steel trim, integral seat, teflon packing, 10,000# WOG rating Century CM25-2-M22T-FT	Rev. # 1

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<u>QTY</u>	<u>Tag #</u>	<u>Item Description</u>	
3	1/2" NCM4	Needle Valve, c/w 1/2" MNPT x 1/2" FNPT connections, Carbon Steel body, Stainless Steel trim, integral seat, teflon packing, 10,000# WOG Century CM2-2-M44T-CT	Rev. # 1
8	3/4" NCM3	Needle Valve, c/w 3/4" MNPT x 1/2" FNPT connections, Carbon Steel body, Stainless Steel trim, integral seat, teflon packing, 10,000# WOG rating Century CM25-2-M64T-CT	Rev. # 1

STRAINERS

3	1/2" YCN1	Y strainer, steel body, 1/2" NPT, 600# rating, Stainless Steel mesh, standard 1/16" perforations ALTA YS600	Rev. # 1
1	1" YCS1	Y strainer, cast steel body, 1" sw, 600# rating, Stainless Steel mesh, standard 1/16" perforations	Rev. # 5
3	2" YCS1	Y strainer, cast steel body, 2" SW, 600# rating, Stainless Steel mesh, standard 1/16" perforations ALTA YS600	Rev. # 1

ENGINE DRIVE OPTION

1	LG-813	Tubular Level Gauge Glass Model # N7A Gauge Glass 5/8" OD red line glass by 14" OAL, Gauge Valve 1/2" (1 pair), Steel Material, c/w 1/2" NPT process connection Process Fluid: Engine Oil	Rev. # 0
2	LISLL-815 LISLL-816	Murphy Level Indicating Switch Model 45-EL150K1-E, Electric Low Level Switch c/w SPDT snap acting switch Process Fluid: 50/50 Glycol/water Application: Low engine jacket water / Aux water level	Rev. # 0
1	LICSL-814	Murphy Level Controller Model LM301 Mounting Bracket M/N 115000371PB SPDT switch, 1/4" Orifice. Process Fluid: Engine Lube Oil	Rev. # 0
1	PCV-801	Fisher Outlet Pressure Regulator Model 627R Set at 25 psig c/w 1" NPT connections, 15 to 40 psi spring range, 3/16" orifice ductile iron material of construction Max. inlet fault pressure of 550 Psig to prevent outlet pressure from rising above 100 Psig Process Gas: Fuel Gas	Rev. # 0
1	PCV-808	Fisher Outlet Pressure Regulator Model 627 Set at 60 psig c/w 1" NPT connections, 35 to 80 psi spring range, 1/2" orifice ductile iron material of construction Process Gas: Natural Gas	Rev. # 0
1	PCV-817	Fisher Outlet Pressure Regulator Model 67CFR Set at 138 kpag (20 psig) c/w 1/4" NPT connections, 0-240 kpag (0-35 psig) spring range. c/w Wika Model# 111.10 CBM Pressure Indicator Process Gas: instrument air Application: Controller Instrument Air	Rev. # 0

TOROMONT PROCESS SYSTEMS

QTY	Tag #	Item Description	
1	PISLL-806	Murphy Panel Mount Pressure Indicating Switch Model# A25PE-75 Set at 15 psig c/w 0 to 75 psi scale, 2-1/2" dial, 1/8" rear connection, brass / copper wetted parts, SPDT switch Process Fluid: Engine Oil Supplied with Control Panel	Rev. # 0
1	SE-812	Engine Speed Pickup Supplied with control panel	Rev. # 0
1	TE-809	Alltemp Thermocouple Temperature Detector Model: AI-8113-T02-U-14-R-60-K-5 Type K thermocouple, 5' armoured cable extension c/w, 12-0111-0 compression fitting Process Fluid: Air / natural gas Application: Engine manifold temperature	Rev # 0
1	TE-810	Alltemp Thermocouple Temperature Detector Model: AI-8113-T02-U-14-R-60-K-5 Type K thermocouple, 5' armoured cable extension c/w, 12-0111-0 compression fitting c/w: 304ss Thermowell 1/2" x 1/2" x , 1" insertion length Minimum Allowable MAWP to be 300 psig @300 F Process Fluid: Engine oil Application: Engine Oil temperature	Rev # 0
1	TC-817	Kimray Temperature Controller Set at 70°F Model# HT12, 3-15 psig signal reverse acting Process Fluid: Room Air	Rev # 0
1	TV-817	Johnson Controls Actuator Model# D-3153-5 c/w spring return, 3 to 15 psi	Rev # 0
1	UV-802	Norriseal Dump Valve Model 2275 1" npt process connections, 1/2" quick open trim, 285 psi WOG rating, carbon steel body (A350 LF2) and 316 SS trim, Viton seals and Neoprene diaphragm, reverse acting non-adjustable size 9 spring return actuator (FAIL CLOSED), 1.38 barg actuation pressure, 1/4" NPT instrument gas connection Process Fluid: Natural Gas / Gas Condensates / Water Instrument Gas: Instrument Air Application:Engine Fuel gas valve	Rev. # 0
1	UY-805	ASCO 3-Way Solenoid Valve Model EF8314G301 c/w 303 ss body, 24VDC operation, low powered 1.4 W coil, universal operation. 1/4" NPT process connections, 3/32" orifice, CSA approved as explosion proof for Zone 1, XP / watertight enclosure Application: Gas Chiller Level Shutoff Process Fluid: Instrument Air 552 to 690 kpag (80 to 100 psig)	2 - Rev. # 2 3 - Rev # 3
1	VSHH- 807	Murphy Vibration Switch Model VS-2-EX c/w aluminum alloy housing, CSA approved as explosion proof for Zone 1, 2 x SPDT switches, adjustable, NC and NO contacts Application: Compressor / Engine Vibration Switch	Rev. # 0

QTY	Tag #	Item Description	
1	ZS-804	LPS-DZ1NA2 Go switch Enclosure: 3.96" x 1", 316 series stainless steel Magnetic Target: 1.05" x 0.65", 316 series stainless steel Conduit Outlet: 1/2" NPT Operating Temperature: -40° to 160°F (-40° to 71°C) Environment Zone 1 (Class I, Div 1): NEMA Type 4, 4X, 7 and 9 Zone 2 (Class I, Div 2): NEMA Type 4, 4X	Rev. # 4
<u>Mechanical Equipment (Engine Drive Option)</u>			
1	401	Compressor / Engine Belts and Sheaves Compressor Sheaves: 17.56" PD, 8 Groove, C type (supplied by Mycom) Engine Sheave: 11.4" OD, C type, 8 groove, Engine Bushing: F Bushing, 2.5" shaft Belts: 10 Groove C Type, To be measured and fit by Shop	Rev. # 4
1	801	Clutch assembly, Twin disk Suitable for 200 Hp at 1800 RPM SAE1 Adapter Plate SP-211 clutch model, 11-1/2" clutch size, 2-1/2" diameter keyed shaft	Rev. # 0
1	802	Pilot bearing for clutch SKF 6206-2RS1/C3 - MED. DEEP GROOVE BALL BRG, SIZE GROUP (30mm ID x62 mm OD x16 mm wide)	Rev. # 4
1	803	Bearing, Pillow Block, 2.6875" diameter, bore, exp. Imperial style Taper Lock, Dodge	Rev. # 4
1	804	Bearing, Pillow Block, 2.6875" diameter, bore, non-exp. Imperial style Taper Lock, Dodge	Rev. # 4
1	805	Idler Sheave: 11.4" OD, C type, 8 groove, Idler Bushing: F Bushing, 2.6875" shaft	Rev. # 4
1	806	TDI Turbostart Engine Turbine Pneumatic Starter Model# T312-60017-02R c/w 1" NPT inlet, 2" NPT exhaust, Model No. T30-27398 - straight exhaust kit, right hand rotation, inertia drive	Rev. # 0
1	807	Baldwin Filter Assembly Model BF-914 assembly Model BF-915 Filter c/w 1" NPT inlet / outlet Process Fluid: Engine oil Application Filter make-up oil to LICSL-314	Rev. # 0
1	808	Exhaust System for Caterpillar 3306TA Make: Silex Model: JDDS-5-SO12-FO9-GO-AL-A c/w 5"-150# ANSI FF end Inlet, 5"-150# ANSI FF top outlet (12 o'clock), gussets on outlet, "FO" dimension minimum, shell drain located for bottom entry, aluminized steel, aluminum paint. Include Mounting Band Kit for mounting on building roof	Rev. # 0

QTY	Tag #	Item Description	
1	812	MAJOR EQUIPMENT (Engine Drive Option)	Rev. # 1
		Caterpillar Engine Model# 3306TA 203 HP @ 1800 RPM c/w natural gas power unit, CSA ignition system, Turbo Charged, 3 groove A-belt sheave, 2 groove 'B' belt sheave	
1	CD-101	Global Heat Transfer Engine Radiator Combined EJW / AJW cooler EJW Section Flow - 189 L/min EJW Section Duty - 175 KW AJW Section Flow - 132 L/Min AJW Section Duty - 13 KW	Rev. # 0
1	E-107	68 US GAL Oil Day Tank 1/8" thk. HSS 12" x 12" x 120" long Note Manufactured by TPS	Rev. # 0
1	T-101	Used Oil Storage Tank Size TBD Note Manufactured by TPS	Rev. # 0
1	T-102		Rev. # 0
		HAND VALVES (Engine Drive Option)	
3	1/2"BCN1	Ball Valve, 1/2" NPT, Carbon Steel Nutron T3-F05S30B c/w regular port, 3000# rating, standard trim	
2	1"BCN1	Ball Valve, 1" NPT, Carbon Steel c/w regular port, 3000# rating, standard trim Nutron T3-R10S30B	Rev. # 1
1	1-1/2"BCN1, L	Ball Valve, 1-1/2" NPT, Carbon Steel Nutron T3-F15S30B c/w regular port, 3000# rating, standard trim , c/w locking device	Rev. # 1
1	1-1/2"BCN1, S	Ball Valve, 1-1/2" NPT, Carbon Steel Nutron T3-F1S30BZ2 c/w regular port, 3000# rating, standard trim, spring return handle	Rev. # 1
		GATE VALVES	Rev. # 1
1	1/2" GCN1	Gate Valve, c/w 1/2" npt connections, Newco 18T-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	
1	1" GCN1	Gate Valve, c/w 1" npt connections, Newco 18T-FS2 Carbon Steel body, Carbon Steel trim, API 602 800# rating	Rev. # 1
		NEEDLE VALVES	Rev. # 1
1	1/4" NCN1	Needle Valve, c/w 1/4" FNPT x 1/4" FNPT connections, Carbon Steel body, Stainless Steel trim, integral seat, teflon packing, 10,000# WOG rating Century CM25-2-F22T- FT	Rev. # 1

