

ONSTREAM Engineering Ltd.

ISSUED FOR
CONSTRUCTION
30/03/2005

- COMPRESSOR INSTALLATION ISSUED FOR CONSTRUCTION - MARCH 30, 2005 ONSTREAM JOB

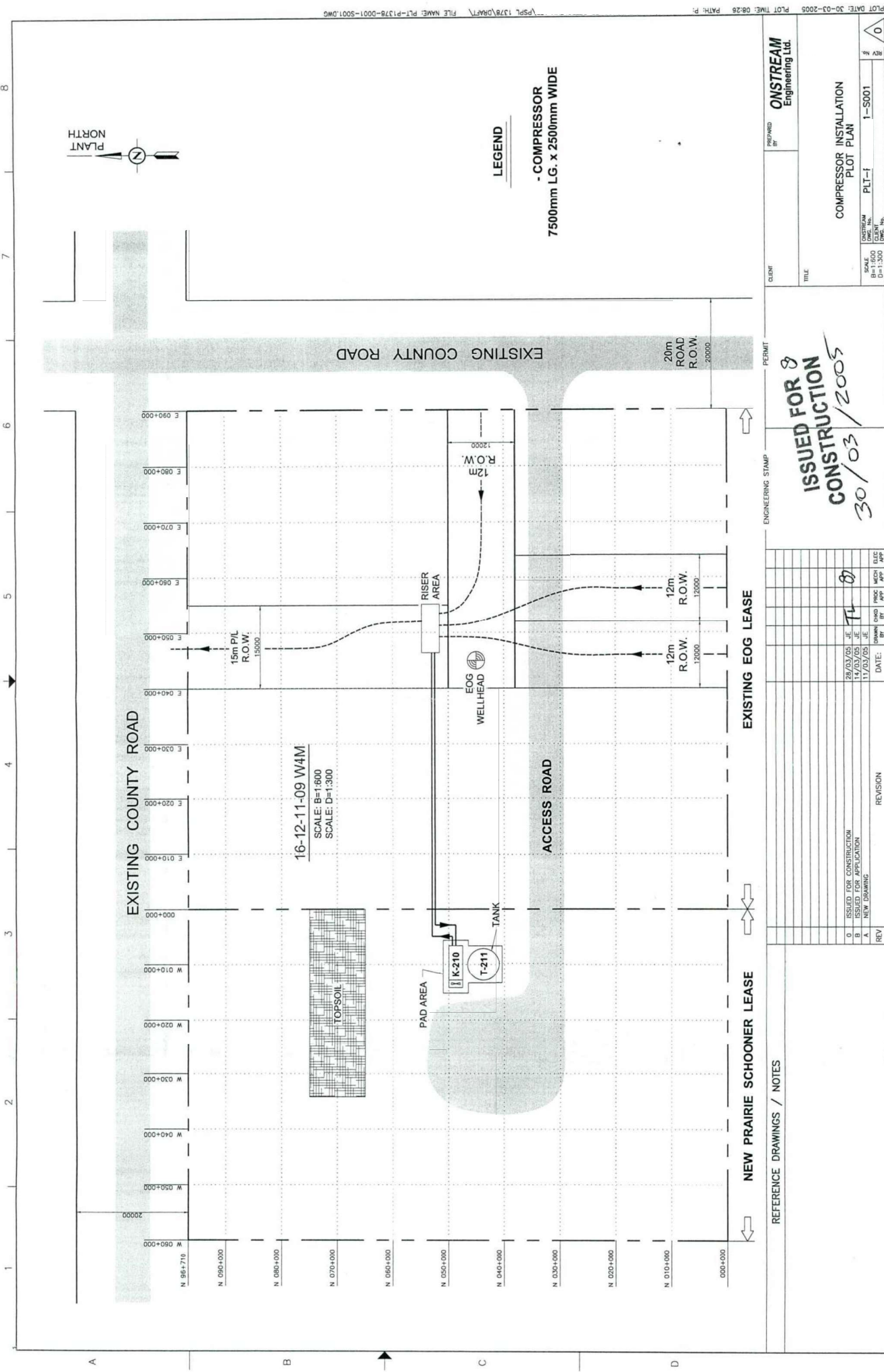
COPY

P&ID PLOT PLAN AND STANDARDS DRAWING LIST

DRAWING No.	DRAWING NAME:	REVISION DATE:	REVISION DESCRIPTION:	REV:
PID-P1378-D001-S001	KICK ENERGY CORP 06-35-46-12 WSM to 07-02-47-12 WSM COMPRESSOR INSTALLATION PROCESS & INSTRUMENTATION DIAGRAM	March 30, 2005	ISSUED FOR CONSTRUCTION	0
PID-P1378-D002-S001	KICK ENERGY CORP 06-35-46-12 WSM to 07-02-47-12 WSM COMPRESSOR INSTALLATION PROCESS & INSTRUMENTATION DIAGRAM	March 30, 2005	ISSUED FOR CONSTRUCTION	0
PID-P1378-D003-S001	KICK ENERGY CORP 06-35-46-12 WSM to 07-02-47-12 WSM COMPRESSOR INSTALLATION PROCESS & INSTRUMENTATION DIAGRAM	March 30, 2005	ISSUED FOR CONSTRUCTION	0
PLT-P1378-D001-S001	KICK ENERGY CORP 06-35-46-12 WSM to 07-02-47-12 WSM COMPRESSOR INSTALLATION PLOT PLAN	March 30, 2005	ISSUED FOR CONSTRUCTION	0
PID-STD-001	ONSTREAM ENGINEERING VALVE TAGS, LINE #S AND TERMINOLOGY P&ID LEAD SHEET	March 9, 2005	ADDED SPRAY ON FOAM INSULATION	F
PID-STD-002	ONSTREAM ENGINEERING FLOW & INSTRUMENT SYMBOLS P&ID LEAD SHEET	November 20, 2004	ADDED PIG BALL VALVE	D
PID-STD-003	ONSTREAM ENGINEERING EQUIPMENT SYMBOLS P&ID LEAD SHEET	August 3, 2004	ADDED BELT DRIVE UTILITY PUMP	C

VENDOR DRAWING LIST

DRAWING No.	DRAWING NAME:	REVISION DATE:	REVISION DESCRIPTION:	REV:
11790-101 Sheet 1 of 4	TOROMONT PROCESS SYSTEMS 200 HP - 233XL BOOSTER COMPRESSOR PROCESS & INSTRUMENTATION DIAGRAM	March 8, 2005	ISSUED FOR CONSTRUCTION	1
11790-101 Sheet 2 of 4	TOROMONT PROCESS SYSTEMS 200 HP - 233XL BOOSTER COMPRESSOR PROCESS & INSTRUMENTATION DIAGRAM	March 8, 2005	ISSUED FOR CONSTRUCTION	1
11790-101 Sheet 3 of 4	TOROMONT PROCESS SYSTEMS 200 HP - 233XL BOOSTER COMPRESSOR PROCESS & INSTRUMENTATION DIAGRAM	March 8, 2005	ISSUED FOR CONSTRUCTION	1
11790-101 Sheet 4 of 4	TOROMONT PROCESS SYSTEMS 200 HP - 233XL BOOSTER COMPRESSOR P&ID LEAD SHEET	March 8, 2005	ISSUED FOR CONSTRUCTION	1
11790-201 Sheet 1 of 4	TOROMONT PROCESS SYSTEMS 200 HP - 233XL BOOSTER COMPRESSOR GENERAL ARRANGEMENT	March 23, 2005	ADDED A9	2
11790-201 Sheet 2 of 4	TOROMONT PROCESS SYSTEMS 200 HP - 233XL BOOSTER COMPRESSOR GENERAL ARRANGEMENT	March 23, 2005	ADDED A9	2
11790-201 Sheet 3 of 4	TOROMONT PROCESS SYSTEMS 200 HP - 233XL BOOSTER COMPRESSOR ELEVATION 9-9	March 23, 2005	ADDED A9	2
11790-201 Sheet 4 of 4	TOROMONT PROCESS SYSTEMS 200 HP - 233XL BOOSTER COMPRESSOR ELEVATION C-C / 3D ISOMETRIC	March 23, 2005	ADDED A9	2
11790-301 Sheet 1 of 5	TOROMONT PROCESS SYSTEMS 200 HP - 233XL BOOSTER COMPRESSOR S&ID STEEL	March 2, 2005	ISSUED FOR INFORMATION	1



CLIENT: ONSTREAM Engineering Ltd.

PROJECT: COMPRESSOR INSTALLATION PLOT PLAN

DATE: 30/03/2005

ISSUED FOR 3

CONSTRUCTION

30/03/2005

SCALE: B=1:600 D=1:300

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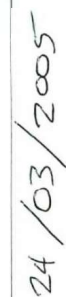
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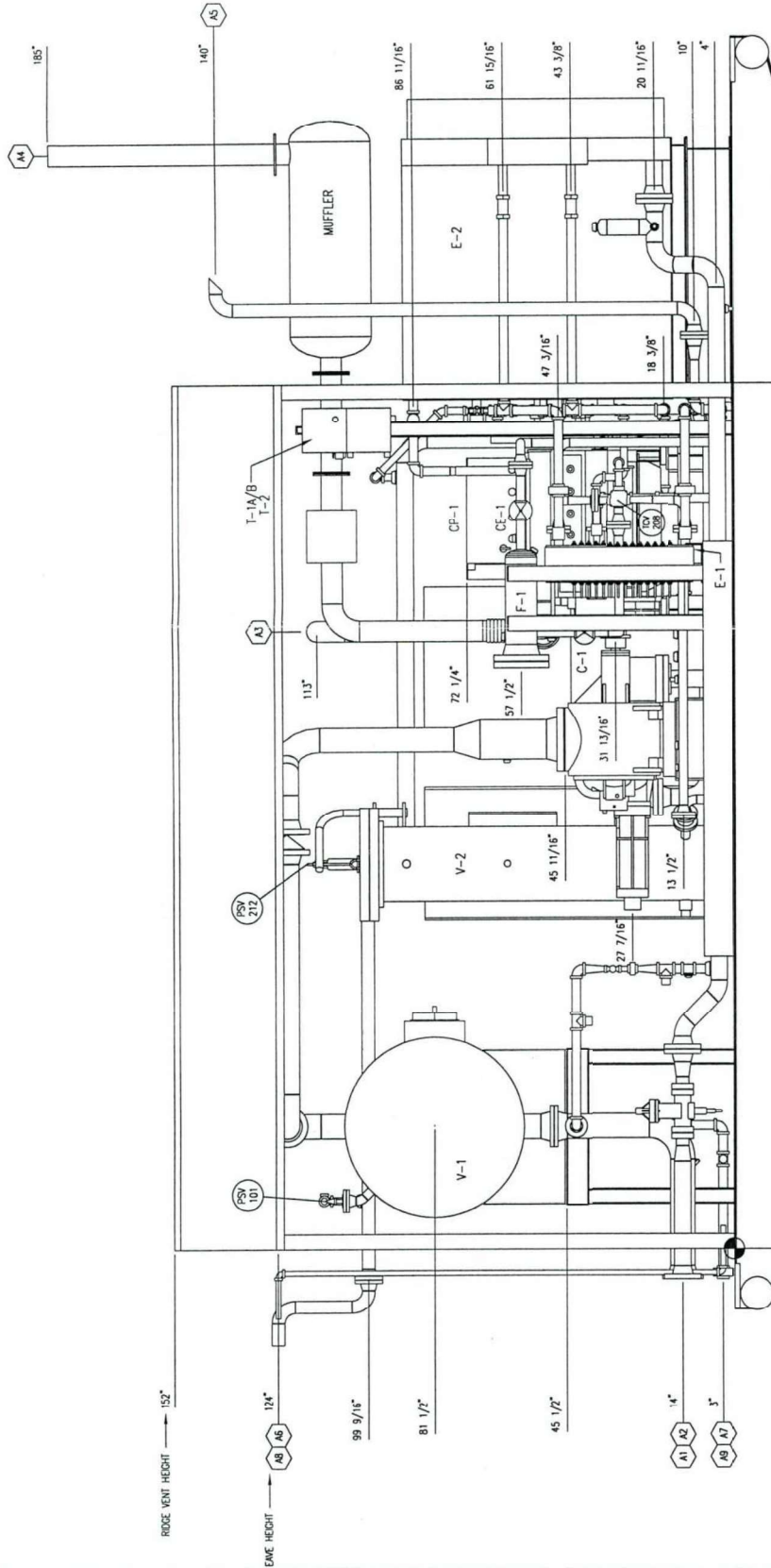
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 MONT PROCESS SYSTEMS.



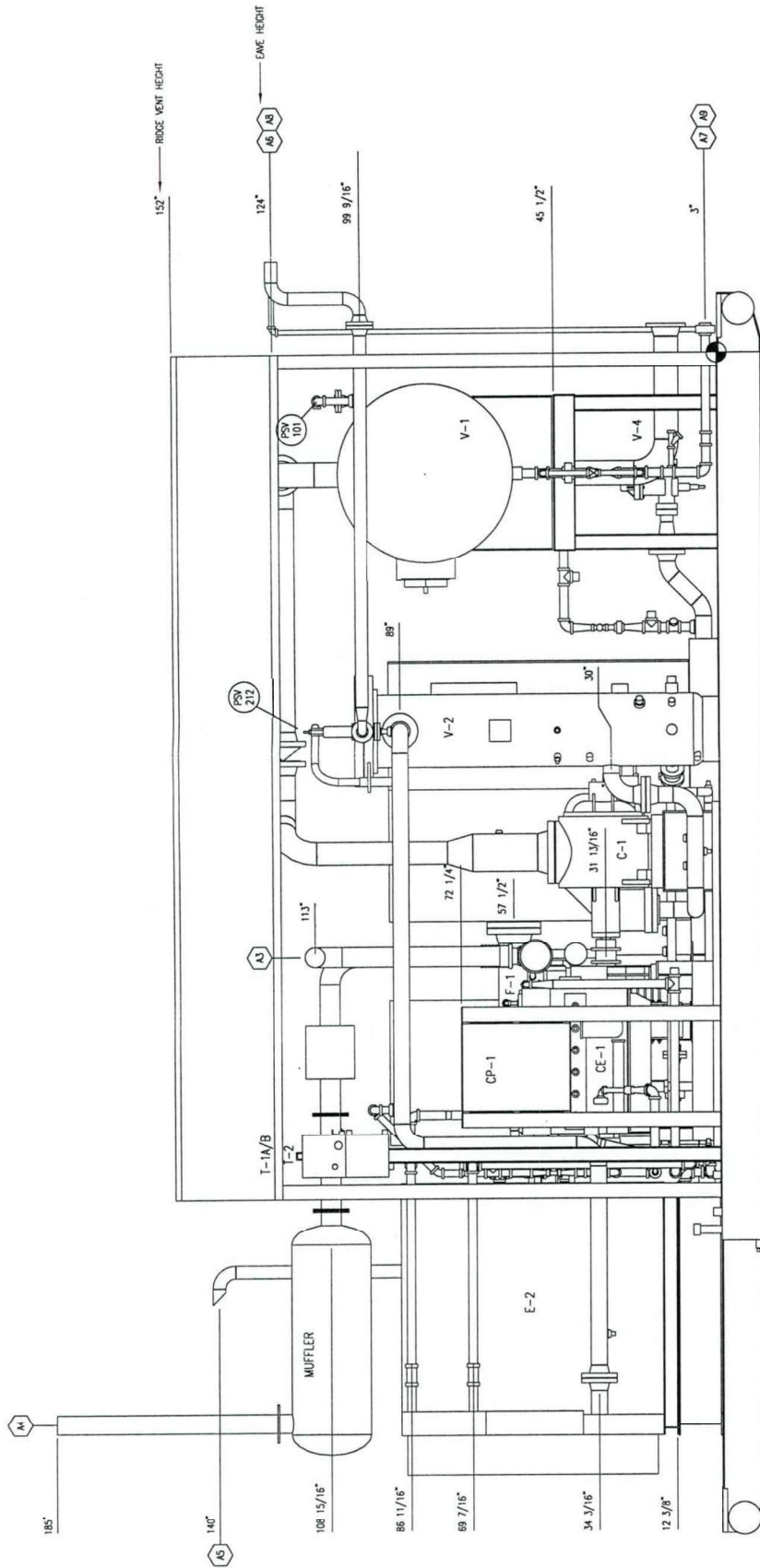


ELEVATION 'A-A'

24/03/2005

THOROMONT PROCESS SYSTEMS		ELEVATION 'A-A'	
DATE	FEB 24/05	SCALE	3/4"=1'-0"
DRAWN BY	C. DAVIDSON	CHECKED BY	L. JOHNSON
APPROVED BY	L. JOHNSON	CUSTOMER PO NO.	
200 HP-233XL BOOSTER COMPRESSOR		SHEET NO. 2 OF 2	

PERMIT TO PRACTICE STAMP		OWNER STAMP	
REV.	DATE	BY	APPR.
2	MAR 23/05	AF	
1	MAR 8/05	CD	LI
DESCRIPTION ADDED AS ISSUED FOR CONSTRUCTION			

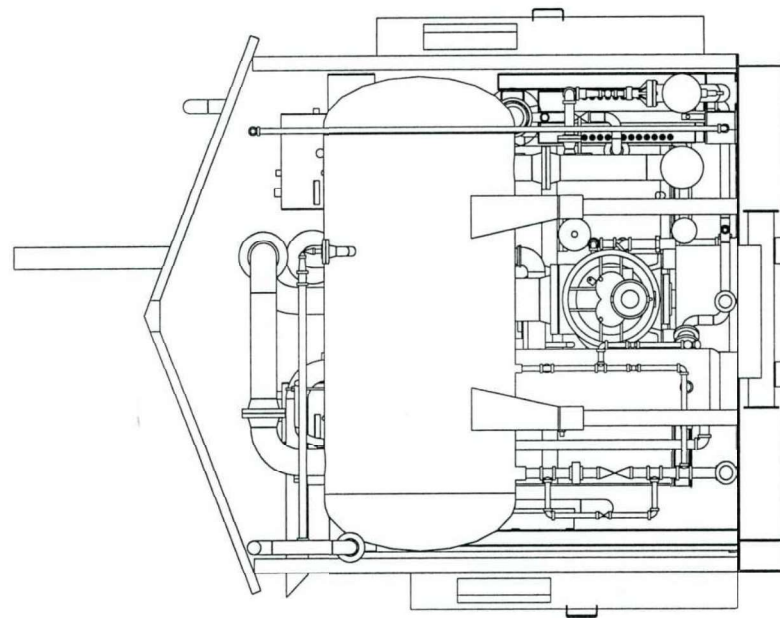


ORIGINAL VENDOR
DRAWING
DO NOT MARK UP

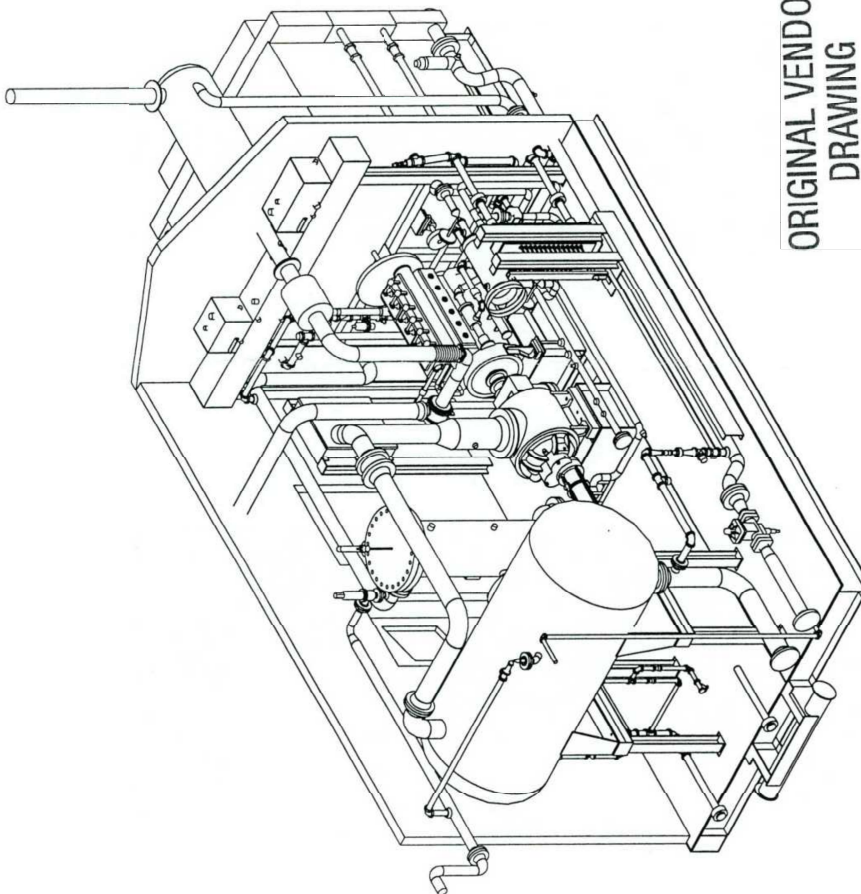
ELEVATION 'B-B'

24 / 03 / 2005

TOROMONT PROCESS SYSTEMS		TITLE: ELEVATION 'B-B'	
DATE: FEB 24/05		FOR:	
DESIGNED BY: C. DAVIDSON	SCALE: 3/4" = 1'-0"	PROJECT: 700 HP-233XV BOOSTER COMPRESSOR	
CHECKED BY: L. JOHNSON	W.D. NO.	SHEET NO. 3 OF 4	
APPROVED BY: L. JOHNSON	CUSTOMER NO.	REV. 2	
ENGINEER STAMP		-201	
FORNIT TO FINISHED STAMP		DATE: MAR 23/05 BY: AF	
REV.		DATE: MAR 7/05 BY: LJ	
DESCRIPTION		2. APPROVED FOR CONSTRUCTION	
		1. ISSUED FOR CONSTRUCTION	



ELEVATION 'C-C'



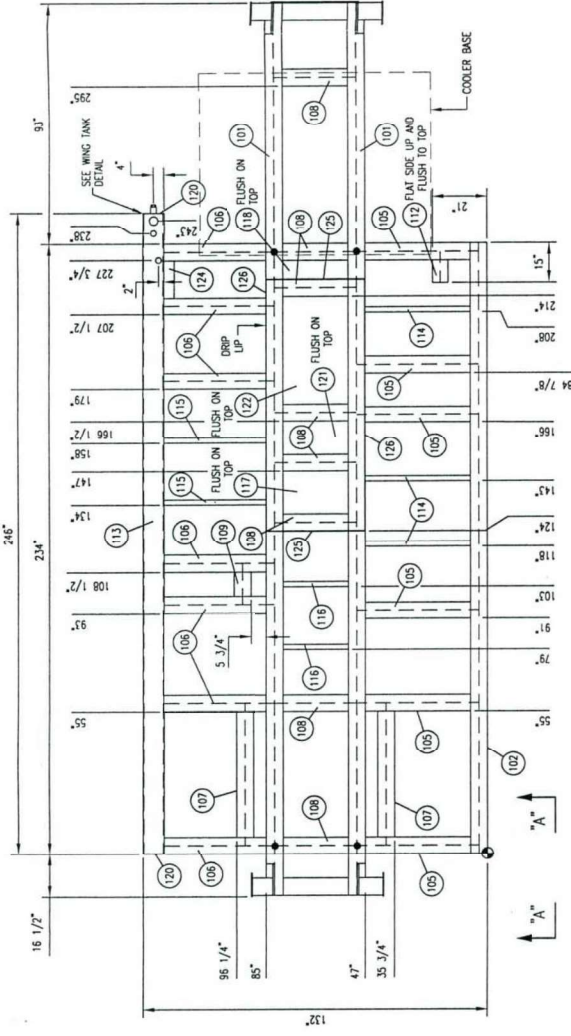
3D

ORIGINAL VENDOR
DRAWING
DO NOT MARK UP

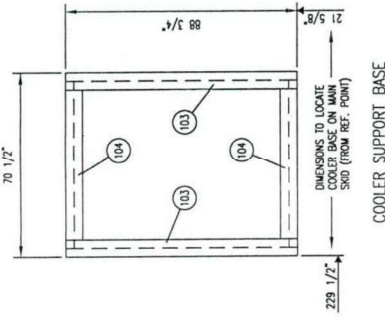
24 / 03 / 2005

TOROMONT		TOROMONT PROCESS SYSTEMS		TITLE: ELEVATION 'C-C' / 3D ISOMETRIC	
DRAWN BY: C. DAVIDSON		DATE: FEB 24/05		FOR: 200 HP-233XL BOOSTER COMPRESSOR	
CHECKED BY: L. JOHNSON		SCALE: 3/4"=1'-0"		DWG. NO.:	
APPROVED BY: L. JOHNSON		REV. NO.:		SHEET NO. 4 OF 4	
CUST. PO. NO.:		ENGR. NO.:		REV. NO.:	
PERMIT TO PRACTICE STAMP		ENDORSE STAMP			
REV.		DESCRIPTION		DATE	
2		ADDED AS		MAR 23/05 AF	
1		ISSUED FOR CONSTRUCTION		MAR 8/05 CD	
				BY: APPR:	

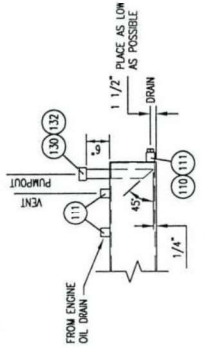
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101	2	W 12 X 25 X 34.5 LG.	C40.2150W
102	1	W 12 X 25 X 23.4 LG.	C40.2150W
103	2	W 12 X 25 X 88 3/4 LG.	C40.2150W
104	2	W 12 X 25 X 63 3/4 LG.	C40.2150W
105	6	W 12 X 25 X 46 3/4 LG.	C40.2150W
106	7	W 12 X 25 X 42 7/8 LG.	C40.2150W
107	2	W 12 X 25 X 54 3/4 LG.	C40.2150W
108	8	W 12 X 25 X 31 1/4 LG.	C40.2150W
109	1	W 12 X 25 X 19 1/4 LG.	C40.2150W
110	1	FLUG 1/2" X 1/2" X 1/2" NPT	SA-105
111	3	COUPLER 1/2" X 1/2" NPT	SA-105
112	1	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
113	1	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
114	3	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
115	2	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
116	2	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
117	1	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
118	1	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
119	4	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
120	2	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
121	1	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
122	1	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
123	2	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
124	2	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
125	2	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
126	2	FLUG 1/2" X 1/2" X 1/2" NPT	C40.2150W
127	1	CHECKER PLATE 3/16" THK 82 3/4" X 233 1/2" LG	SA-35
128	1	CHECKER PLATE 3/16" THK 82 3/4" X 233 1/2" LG	SA-35
129	2	PIPE 2" NOM SCH STD WT X 20' LG. (05)	SA-106-B
130	2	PIPE 2" NOM SCH STD WT X 20' LG. (05)	SA-106-B
131	2	PIPE 2" NOM SCH STD WT X 20' LG. (05)	SA-106-B
132	1	PIPE 2" X 3000 NPT	SA-234-WPB



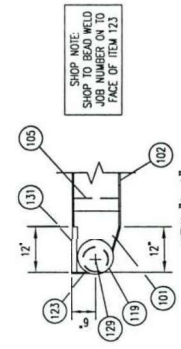
PLAN VIEW



COOLER SUPPORT BASE



WING TANK DETAIL



CHECKER PLATE DETAIL

ORIGINAL VENDOR DRAWING DO NOT MARK UP

24 / 03 / 2005

GENERAL NOTES:

- ALL TAIL DIMENSIONS FROM REFERENCE POINT.
- WEIGHT OF SKID STEEL BASE: 5295 LBS
WEIGHT OF RAISED BASE: 640 LBS
TOTAL WEIGHT: 5935 LBS
- COPE FLANGES WHERE REQUIRED.
- ALL WELDS TO BE 1/4" FILETS ALL AROUND UNLESS OTHERWISE NOTED.
- ALL CUT LENGTHS ARE EXACT TOL +0.07/-0.12" (10 MM/-3 MM)
- ALL BOLT HOLES ARE 3/4"(19 MM) UNLESS OTHERWISE NOTED.
- SURFACE PREP: SSPC-SP2
PRIMER: ONE COAT PR-1 RED OXIDE
PAINT: ONE COAT FM-1
- FULL PENETRATION STRENGTH WELD IS REQD AT THESE LOCATIONS.
- PERIMETER AND ALL PANEL JOINTS OF CHECKER PLATE ARE TO BE SEAL WELDED. SKID MEMBERS TO UNDERSIDE OF CHECKER PLATE TO BE STITCH WELDED AT 2"(50 MM) OF FILET ON 16(406 MM) CENTERS.

TOROMONT		SKID STEEL	
DATE:	2/2/05	DATE:	2/2/05
BY:	C. DAVIDSON	BY:	C. DAVIDSON
CHKD BY:	L. JOHNSON	CHKD BY:	L. JOHNSON
APP'D BY:	L. JOHNSON	APP'D BY:	L. JOHNSON
CUST. PO. NO.:		CUST. PO. NO.:	
SHEET NO.:	1 OF 5	SHEET NO.:	1 OF 5

REV	DESCRIPTION	DATE	BY	APPR
1	ISSUED FOR INFORMATION	MAR 2/05	CD	

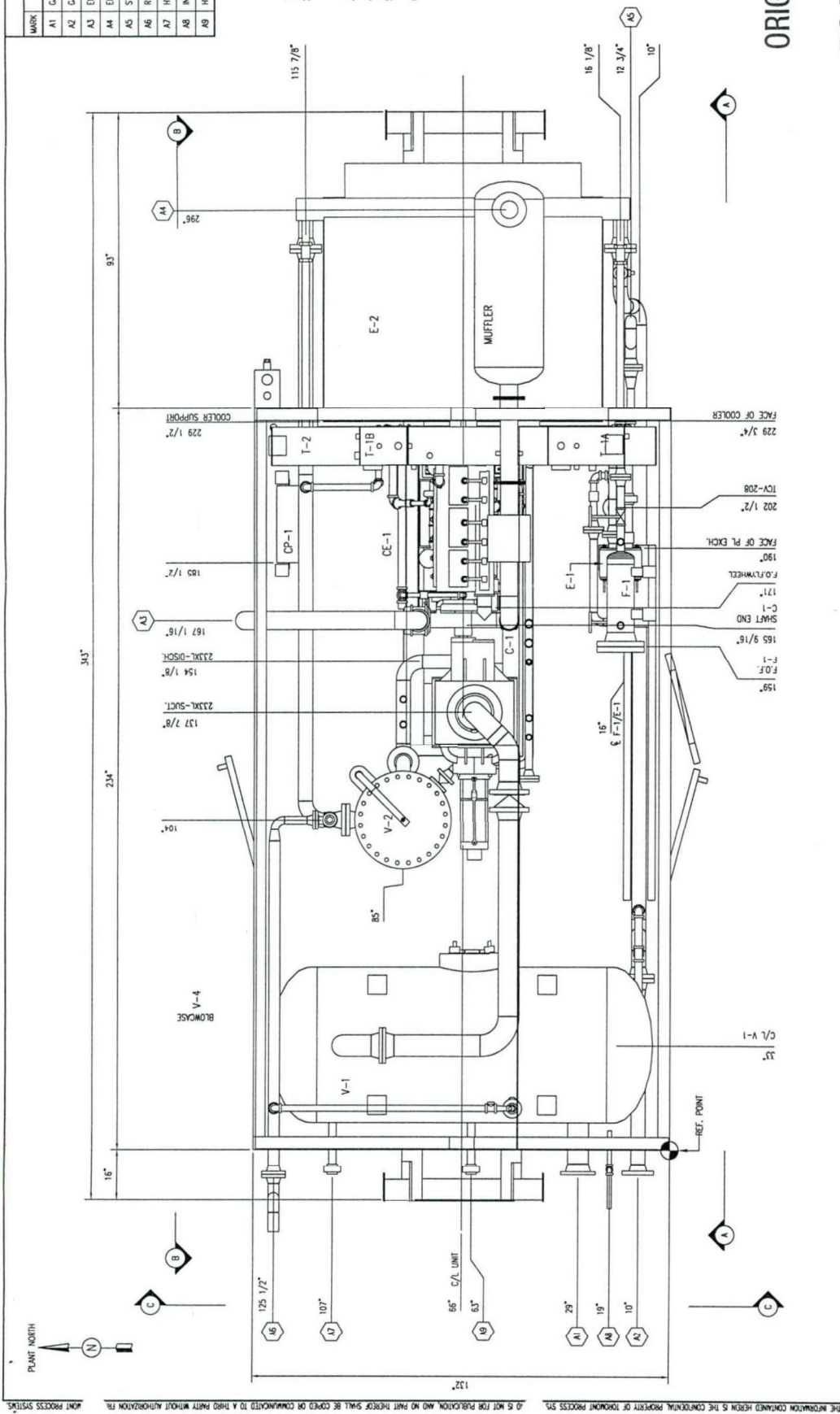
ENGINEER STAMP	PROJECT TO PRACTICE STAMP

NOTES:	1. FULL PENETRATION WELD ON FLANGE.
	2. BACK GROUT TO SOUND METAL AFTER WELDING SQUARE WELD

NOZZLE SCHEDULE			
MARK	SERVICE	SIZE	RATING
A1	GAS INLET	6"	1500
A2	GAS OUTLET	4"	3000
A3	ENGINE AIR INTAKE	5"	-
A4	ENGINE EXHAUST	5"	-
A5	START GAS VENT	3"	-
A6	RELIEF HEADER	3"	1500
A7	HYDROCARBON DRAIN	2"	3000
A8	INSTRUMENT VENT	1"	3000
A9	HYDROCARBON DRAIN	2"	3000

GENERAL NOTES:

1. ALL TAIL DIMENSIONS FROM REFERENCE POINT.
2. SHIPPING LENGTH: 34'4"
3. SHIPPING WIDTH: 14'2"
4. SHIPPING HEIGHT: 16'5"
5. OVERALL SKID DEPTH: 12 7/16"
6. NOZZLE ELEVATIONS ARE FROM CENTERLINE OF PIPE TO TOP OF BASE (REFERENCE POINT).
7. (*) DENOTES ELEVATION FROM FACE OF FLANGE TO TOP OF BASE (REFERENCE POINT).

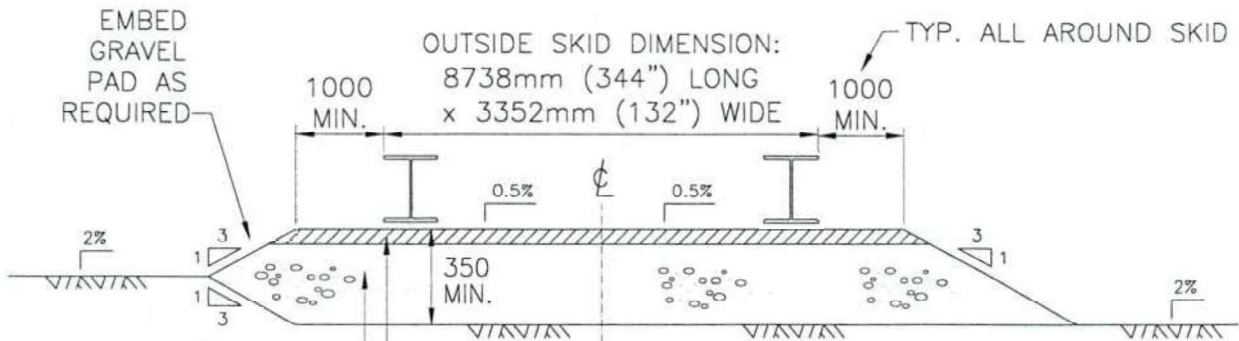


ORIGINAL VENDOR
DRAWING
DO NOT MARK UP

24 / 03 / 2005

TITLE: GENERAL ARRANGEMENT	
DATE: FEB 24/05	FOR: 200 HP-233XL BOOSTER COMPRESSOR
DESIGNED BY: C. DAVIDSON	CHECKED BY: L. JOHNSON
DRAWN BY: L. JOHNSON	SCALE: 1/4" = 1'-0"
CUST. PO. NO.	SHEET NO. 1 OF 4

POINT TO PRACTICE STAMP		UNLESS STAMP	
REV.	DESCRIPTION	DATE	BY
2	ADDED AS	MAR 23/05	AF
1	ISSUED FOR CONSTRUCTION	MAR 8/05	CD



ISSUED FOR
CONSTRUCTION

30/03/2005

LEVELLING COURSE

- PLACE 50mm LEVELLING COURSE AS SHOWN.
- COMPACT TO 100% STANDARD PROCTOR DRY DENSITY.
- MATERIAL SHALL CONSIST OF WELL GRADED 19mm GRUSHED GRAVEL WITH 6-10% FINES OR COARSE SAND.

BASE GRAVEL

- PLACE 300mm GRAVEL PAD AS SHOWN IN 150mm LIFTS.
- COMPACT TO 100% STANDARD PROCTOR DRY DENSITY.
- MATERIAL SHALL CONSIST OF WELL GRADED 75mm GRUSHED GRAVEL WITH 2-10% FINES.

SUBGRADE

- EXCAVATE TO LINE AND GRADE.
- PROOFROLL TWO DIRECTIONS.
- REMOVE SOFT OR OTHERWISE UNSUITABLE MATERIAL AND BACKFILL IN 150mm LIFTS, COMPACTING TO 95% STANDARD PROCTOR DRY DENSITY.
- BACKFILL MATERIAL SHALL CONSIST OF APPROVED NATIVE SOIL OR BASE GRAVEL.

SKID GRAVEL PAD FOUNDATION

NOTES:

COMPRESSOR SITE

- 1) CONTRACTOR SHALL RELOCATE ALL TOPSOIL AND ORGANIC MATERIAL TO APPROVED LOCATION.
- 2) GRAVEL PAD SHALL BE PROTECTED FROM RAIN AND SNOW WITH TARPS UNTIL THE COMPRESSOR IS INSTALLED. IN THE EVENT OF COLD WEATHER THE PAD SHALL BE PROTECTED FROM FROST PENETRATION.
- 3) ALL CONSTRUCTION MATERIALS SHALL BE FREE OF FROST, SNOW, ORGANICS OR OTHER UNSUITABLE MATERIAL.
- 4) FOUNDATION DESIGN IS BASED ON 100 kPa ALLOWABLE BEARING ON SUBGRADE SOILS. CONTRACTOR SHALL CONFIRM NATIVE SUBGRADE BEARING CAPACITY PRIOR TO CONSTRUCTION.
- 5) CONTRACTOR TO ENSURE SURFACE WATER DRAINS AWAY FROM THE FOUNDATION.

0	ISSUED FOR CONSTRUCTION	28/03/2005	TGL	TGL	8
B	ISSUED FOR REVIEW	23/03/2005	TGL	TGL	
A	NEW DRAWING	23/03/2005	TGL		
REV	REVISIONS	DATE:	DRN	CHK	ENG
CLIENT	ONSTREAM ENGINEERING CIVIL STANDARD 350mm GRAVEL PAD CONSTRUCTION SKETCH				
ONSTREAM Engineering Ltd.		SCALE	Onstream	REV No. 0	
		NONE	CLIENT		
			DWG. No.		

Bill of Materials

BOM

Name: TPS200-233XL

Rev. # 0

Location:

Tag #	Item Description	
FG-211	ALCO Sight Flow Glass Model ALCO-SG-1004 1/2" c/w 1pc Cross, 1/2", 3000#, NPT, SA-105N Process Fluid: Compressor Lube Oil/ Natural Gas	Rev. # 0
FO-206	Frick Compressor Oil Flow Orifice Supplied with Compressor	Rev. # 0
FO-205	Minimum Flow Orifice Plate 1/8" Opening, 304 SS, to fit 3/4" - 300# Flanged conn 2 5/8" O.D, c/w 1/8" Bore. No handle, No stamp required Process Fluid: Compressor Lube Oil	Rev. # 0
LC-103	Murphy Level Controller Model L-1200-N-DVO for dump valve operation c/w buoyglass displacer, 2" NPT process connection, 1/8" NPT inlet connection, 1/4" NPT outlet connection Fluid: Water / Natural Gas Condensate Note: Level Cage Supplied by TPS	Rev. # 0
LG-106	Reflex level Gauge Make: Penberthy Glass Model# 2RL4 Gauge Valve Model# 330J (1 pair) Description: 15" visible length reflex glass, 3/4" NPT process connection, 1/2" NPT gauge connection. Rated 2020 psig at 300 ° F Process Fluid: Water / Condensate / Natural Gas	Rev. # 0
LG-213	Reflex level Gauge Make: Penberthy Glass Model# 1RL9 Gauge Valve Model# 330J (1 pair) Description: 12 5/8" visible length reflex glass, 3/4" NPT process connection, 1/2" NPT gauge connection. Rated 1680 psig at 300 ° F Process Fluid: Compressor Lube Oil / Natural Gas	Rev. # 0
LG-313	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
LICSL-314	Murphy Level Controller Model LM301 Mounting Bracket M/N 115000371PB SPDT switch, 1/4" Orifice. Process Fluid: Engine Lube Oil	Rev. # 0

**ISSUED FOR
CONSTRUCTION**

**ORIGINAL VENDOR
DRAWING
DO NOT MARK UP**

31/03/2005

Name: Rev. # 0

Location:

<u>Tag #</u>	<u>Item Description</u>	
LISLL-315	Murphy Level Indicating Switch Model 45-EL150K1-E, Electric Low Level Switch c/w SPDT snap acting switch Process Fluid: 50/50 Glycol/water	Rev. # 0
LISLL-316	Murphy Level Indicating Switch Model 45-EL150K1-E, Electric Low Level Switch c/w SPDT snap acting switch Process Fluid: 50/50 Glycol/water	Rev. # 0
LSHH-102	Murphy Level Control Switch Model L1100, Electric Level Switch c/w 1 1/2" MNPT Process Connection, SPDT snap switch Explosion Proof Class 1, Div. 1, Group D, CSA approved. Process Fluid: Water/ Natural Gas Condensate	Rev. # 0
LSLL-210	Murphy Level Control Switch Model L1100, Electric Level Switch c/w 1 1/2" MNPT Process Connection, SPDT snap switch Explosion Proof Class 1, Div. 1, Group D, CSA approved. Process Fluid: Natural Gas/ Lube Oil	Rev. # 0
LV-103	Fisher Control Valve Model# D4 c/w 2" NPT connections, 3600 Psig rating, LCC steal body, 1-1/2" M-Form trim, 416SST plug & 17-4PH, DHT H1150M SST seat, Enviro-Seal PTFE packing, Integral size 40 actuator (Fail Closed), 0-33 Psi signal, face to face = 9" Process Fluid: Water / Condensate Application: Suction Scrubber Drain	Rev. # 0
PCV-103	Fisher Outlet Pressure Regulator Model 67CFR Set at 35 psi c/w 1/4" NPT connections, 30 to 60 psi spring range c/w Wika Model# 111.10 CBM Pressure Indicator Process Gas: Instrument Gas	Rev. # 0
PCV-154	Fisher Outlet Pressure Regulator Model 67CFR Set at 40 psi c/w 1/4" NPT connections, 30 to 60 psi spring range WIKI Model # 111.10 CBM Pressure Indicator Process Gas: Instrument Gas Application: Fire Loop	Rev. # 0
PCV-301	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

TOROMONT PROCESS SYSTEMS

Page 3 of 13

Name: TPS200-233XL Rev. # 0

Location:

<u>Tag #</u>	<u>Item Description</u>	
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
PCV-308	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
PCV-318	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	Rev. # 0
PDCV-160	R/S Differential Pressure Control Valve Model#: 3" A4ALE Differential Pressure Set at 95 psi c/w: 3" port, 3" weld neck flanges, Fail Closed, "A" spring range on differential, external sensing port on differential, Factory certified to 400 psig max body design pressure Process Fluid: Natural Gas Application: Backpressure Valve	Rev. # 0
PDISHH-202	Murphy Panel Mount Differential Pressure Indicating Switch Model# 25DPEF-50 Set to 30 psi rising c/w 0 to 50 psi scale, 2-1/2" dial, 1/4" lower connection, SPDT switch Process Fluid: Compressor Lube Oil Supplied with Control Panel	Rev. # 0
PDISLL-207	Murphy Panel Mount Differential Pressure Indicating Switch Model# 25DPEF-400 Set to 15 psi falling c/w 0 to 400 psi scale, 2-1/2" dial, 1/4" lower connection, SPDT switch Process Fluid: Compressor Lube Oil Supplied with Control Panel	Rev. # 0
PISLH-200	Murphy Panel Mount Pressure Indicating Switch Model# 45PEF-R-200-TS Hi Set at 100 psig Low Set at 10 psig c/w 0 to 200 psi scale, 4-1/2" dial, 1/4" lower connection, 316 SS wetted parts, SPDT switch Process Fluid: Natural Gas Supplied with Control Panel	Rev. # 0

Name: TPS200-233XL Rev. # 0

Location:

<u>Tag #</u>	<u>Item Description</u>	
PISLH-204	Murphy Panel Mount Pressure Indicating Switch Model# 45PEF-R-400 Hi Set at 325 psig Low Set at 15 psig c/w 0 to 400 psi scale, 4-1/2" dial, 1/4" lower connection, 316 SS wetted parts, SPDT switch Process Fluid: Natural Gas Supplied with Control Panel	Rev. # 0
PISLL-306	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: Natural Gas Supplied with Control Panel	Rev. # 0
PSLL-154	CCS Panel Mounted Pressure Switch Model# 6900GZE14 Set to 25 psi falling c/w 3-69 psi adjustable setpoint range on decreasing pressure, approximate deadband 6 psi, maximum system pressure 500 psi, 1/2" NPT SS pressure port, SPDT switch, SS diaphragm, XP, CSA approved, Class 1, Div. 1 Process Fluid: Instrument Gas Application: Fire Loop	Rev. # 0
PSV-101	Farris Pressure Safety Valve Model# 27DA23-M20/00 Farris 2700 Set at 245 psig c/w 3/4" MPT inlet connection x 1" FPT outlet connection, 0.125 sq. in. orifice ("D" designation), standard materials. Process Fluid: Natural Gas Note: Sizing Based On Fire	Rev. # 0
PSV-212	Farris Pressure Safety Valve Model# 26EA12-120 Farris 2600 Set at 375 psig c/w 1"-300# inlet connection, 2" - 150# outlet connection, 0.196 in ² orifice ("E" designation), standard materials, conventional style Process Fluid: Natural Gas Note: Sizing Based on full flow of C-1	Rev. # 0
PY-154	Amot Directional Control Valve (2-position, 3-port, single pilot) Model 4057D 023 H 1 c/w gulf-proofed (aluminium) body, Viton O-rings, standard spooling, pressure or manually operated / spring return Process Fluid: Sweet Natural Gas Actuation Fluid: Sweet Natural Gas Application: Fire Loop Manual Reset	Rev. # 0

Name: TPS200-233XL Rev. # 0

Location:

<u>Tag #</u>	<u>Item Description</u>	
SISHH-312	Murphy Panel Mounted Tachometer / Overspeed Switch and Hour meter Model TTDJR-IGN-T Set at 2000 RPM c/w digital display Note: Part of Selectronic Tattletale Annunciator Supplied with Control Panel	Rev. # 0
TCV-208	Fluid Power Energy 3 Way Thermostatic Control Valve Model # S1530-E-150 c/w 1 1/2" NPT connections, 150 degree F element full open at 160 degree F, standard trim, Neoprene oil rings, Cast steel body, MAWP - 500 psig Process fluid: Compressor Lube Oil	Rev. # 0
TE-201	Murphy Type "K" Thermocouple Model 02-2008-K-240 Temperature Scanner set at 250 F rising c/w 1/2" NPT connection, 4" stem, 2.5" insertion Thermowell Model 36-S34040260-304 c/w 3/4" NPT process connection, Gland fitting Model 35- CG1850, Armoured Cable 20 ft Process Fluid: Natural Gas / Compressor Lube Oil	Rev. # 0
TE-209	Murphy Type "K" Thermocouple Model 02-2008-K-240 Temperature Scanner set at 190 F rising c/w 1/2" NPT connection, 4" stem, 2.5" insertion Thermowell Model 36-S34040260-304 c/w 3/4" NPT process connection, Gland fitting Model 35- CG1850, Armoured Cable 20 ft Process Fluid: Compressor Lube Oil	Rev. # 0
TE-309	Murphy Type "K" Thermocouple Model 02-2008-K-360 Temperature Scanner set at 155 F rising c/w 1/2" NPT connection, 4" stem, 2.5" insertion Swedge-lok fitting Model 4MSC8N-C5, Armoured Cable 30 ft Process Fluid: Engine Manifold	Rev. # 0
TE-310	Murphy Type "K" Thermocouple Model 02-2008-K-360 Temperature Scanner set at 210 F rising c/w 1/2" NPT connection, 4" stem, 2.5" insertion Thermowell Model 36S12025260 1/2" NPT process connection, Gland fitting Model 35-CG1850, Armoured Cable 30 ft Process Fluid: 50/50 Glycol - Engine Jacket water	Rev. # 0

Name: TPS200-233XL Rev. # 0

Location:

Tag #	Item Description	
TI-354	Trend Temperature Indicator Model# 30060 c/w Dual scale, -20 to 120 °C / 0 to 250 °F scale, 3" dial, 6" back connection stem, external re-calibrator, 3/4" NPT 304 stainless steel stepped thermowell. Process Fluid: Natural Gas	Rev. # 0
TISHH-201	Altronic Temperature Scanner 2 Model# DPYH1392U-K 2 Scanner2/ Channel 1 set at 250 F rising - Input from TE-201, Powered from CD Ignition, NC contacts, I/s barrier required. Application: Compressor Discharge Temp. Note: Supplied with Control Panel	Rev. # 0
TISHH-209	Altronic Temperature Scanner 1 Model# DPYH1392U-K 2 Scanner1/ Channel 1 set at 190 F rising - Input from TE-209, Powered from CD Ignition, NC contacts, I/s barrier required. Application: Compressor Oil Temp. Note: Supplied with Control Panel	Rev. # 0
TISHH-309	Altronic Temperature Scanner 1 Model# DPYH1392U-K 2 Scanner1/ Channel 2 set at 155 F rising - Input from TE-309, Powered from CD Ignition, NC contacts, I/s barrier required. Application: Engine Manifold Temp. Note: Supplied with Control Panel	Rev. # 0
TISHH-310	Altronic Temperature Scanner 2 Model# DPYH1392U-K 2 Scanner2/ Channel 2 set at 210 F rising - Input from TE-310, Powered from CD Ignition, NC contacts, I/s barrier required. Application: Engine Jacket Water Temp. Note: Supplied with Control Panel	Rev. # 0
UV-302	Murphy Fuel Gas Shutoff Valve Model M-2582-C-E 1" NPT pipe size, vent port, manual latch reset, Class 1, Div 2, Gr D, Entela approved Process Fluid: Fuel Gas	Rev. # 0
VSHH-203	Murphy Vibration Switch Model# VS2-E c/w manual reset, 1-SPDT switch, Weather Proof Enclosure, Entela Approved. Application: Compressor Vibration	Rev. # 0

Name: TPS200-233XL Rev. # 0

Location:

Tag #	Item Description	
VSHH-307	Murphy Vibration Switch Model# VS2-E c/w manual reset, 1-SPDT switch, Weather Proof Enclosure, Entela Approved Application: Engine Vibration	Rev. # 0
VSHH-317	Murphy Vibration Switch Model# VS2-E c/w manual reset, 1-SPDT switch, Weather Proof Enclosure, Entela Approved. Application: Air Cooler Vibration	Rev. # 0
XCV-104	Watson McDaniel Liquid Drainer Model WLD1811 3/4" NPT inlet, 1/2" NPT outlet, 0.078" orifice, (400) Psi rating, Stainless steel construction Process: Water / Natural Gas Condensate	Rev. # 0
100	CP-1 Murphymatic Control Panel c/w front access enclosure- hinged RHS c/w 24x30x9 front access enclosure (front hinge on right) TTDJR-IGN-T Selectronic Tattletale / Tachometer / Overspeed / Hour Meter Ignition Powered Annunciator (2) DPYH1392U-K, 2 channel Altronic Pyrometer (1) 45PEF-R-200 Suction Pressure swichgage (1) 45PEF-R-400TS Discharge Pressure swichgage (1) A25PEF-100 Engine Oil Pressure swichgage (1) 25CDPEF-400SF15 Differential Pressure swichgage (1) 25CDPEF-50SR30 Differential Pressure swichgage	Rev. # 0
101	V-1 Horizontal Suction Scrubber Make: Chil-Con or TPS Size: 48" O.D. X 92" S/S MAWP: 245 psig @ 250 °F MDMT: -20 °F @ 245 psig C.A.: 0.0625" c/w 6"-150# RF Inlet and Outlet Register in AB, BC and SK	Rev. # 0
155	Cajon Fusible Fitting Model # SS-6-FTA-160 c/w 3/8" size, 160 deg F melting temperature, MAWP 250 psi, requires adapters to 1/4" tubing. Application: Fire Detection NOTE: 6 ARE REQUIRED	Rev. # 0
156	Amot Flow Restriction Orifice Model 2185L-002 c/w nickel-plated brass body, 0.031" orifice, 1/4" MNPT x FNPT connections, MAWP 300psig Process Fluid: Sweet Natural Gas Application: Fire Loop Burst Flow Restrictor	Rev. # 0

TOROMONT PROCESS SYSTEMS

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Name: TPS200-233XL Rev. # 0

Location:

<u>Tag #</u>	<u>Item Description</u>	
200	C-1 Frick Screw Compressor Model# TDSH-233XL c/w 10"-300# suction flange, 6"-300# discharge flange, Manual Slide Valve (Handwheel) Max Speed: 4500 RPM Design Pressure: 375 PSIG	Rev. # 0
201	Thomas Coupling Model CMR-312 5 5/16" DBSE Flywheel Adapter Plate, 18 3/8" OD, 17 1/4" SAE Bolt Circle Compressor Bore: 233 = 2.499" to 2.500" with 5/8" keyway 193 = 2.249" to 2.250" with 1/2" keyway	Rev. # 0
202	V-2 Oil Separator Make: Chil-Con or TPS Size: 20" O.D. X 90" S/F MAWP: 375 psig @ 250 deg F MDMT: -20 deg F @ 375 psig C.A.: 0.0625" c/w 4"-300# RF Inlet and Outlet Register in AB, BC and SK Elements: (1) RSC18321 - Supplied by TPS	Rev. # 0
203	E-1 ViEX Oil Cooler Model# VX-20-FN1-75 29 Plates, 58.10 sq. ft. Design Pressure 375 psig @ 250 deg F c/w 2" NPT Connections - Glycol side (F1/F4) 2" 300# ANSI Flange connections - Oil side (F2/F3)	Rev. # 0
204	F-1 Standard Oil Filter Make: Chil-Con or TPS Size: 8 5/8" OD X 27 1/2" S/F MAWP: 400 psig @ 250 F MDMT: -20 deg F @ 400 psig C.A.: 0.0625" c/w 2" pipe stub inlet and outlet Register in AB, BC and SK Element: One 1833C - Supplied by TPS	Rev. # 0
300	F-2 Finite Fuel Gas Filter Model# HN-4S-10-CN Element Model# 38-152-70C c/w 1" NPT connections, MAWP 500 psig, 95 percent efficiency 0.1 micron coalescer element Application: Fuel Gas Filter Process Fluid: Natural gas	Rev. # 0

TOROMONT PROCESS SYSTEMS

Page 9 of 13

Name: TPS200-233XL Rev. # 0

Location:

Tag #	Item Description	
301	<p>H-1A Cata-Dyne Infra-Red Heater Model# WX-24x24 12 VDC CSA Rated Input of 16000 BTU/H, Class 1 Division 1, Group D, CSA approved</p> <p>H-1B Cata-Dyne Infra-Red Heater Model# WX-24x24 12 VDC CSA Rated Input of 16000 BTU/H, Class 1 Division 1, Group D, CSA approved</p> <p>Heater Package(s) Include: 25' Battery Leads, 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. # 0
302	<p>E-2 Air-X-Changer Heat Exchanger Model# 60 BVI c/w 3 sections (Aftercooler, Engine jacket water, Engine Turbo Water & Oil Cooler), Manual Louvres on inlet of Gas section, Manual Louvres on inlet of cooling water sections, Design pressure 400 psig @ 300 °F on aftercooler coil, Engine drive 9.1 hp power draw Fan: Moore 6 blade, 613 RPM, 30524 CFM, Low noise design.</p>	Rev. # 0
303	<p>T-3 "Used Oil" Storage tank 222" x 12" x 8" capacity 80 US gallons</p>	Rev. # 0
304	<p>(1) Silex Cat square x 5" -125# flexible exhaust connector part # FF-5-12-263</p>	Rev. # 0
305	<p>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</p>	Rev. # 0
306	<p>CE-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</p>	Rev. # 0
307	<p>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</p>	Rev. # 0

Name: TPS200-233XL

Rev. # 0

Location:

<u>Taq #</u>	<u>Item Description</u>	
308	T-2 68 US GAL Oil Day Tank 1/4" thk. HSS 12" x 12" x 120" long Note Manufactured by TPS	Rev. # 0
309	T-1 A/B Engine Glycol Expansion Tank T-1A - TAW / CLOW Tank 1/4" HSS. 12" x 12" x 24" Long 12 US-gal capacity T-1B - JW Tank 1/4" HSS. 12" x 12" x 15" Long 8 US-gal capacity Note: Manufactured by TPS	Rev. # 0
310	Input End Sheave Configuration Engine: 7.0" datum, 3 groove 'A' belt design 8.0" datum 2 groove 'B' belt design (Supplied with engine) Cooler: (1) Product No. 2002B - 20.35" OD, 20.0" datum, 2 groove 'B' section sheave, SF2-316 bushing idler Idler: (1) 8.35" OD, 8.0" datum, 3 groove 'B' section sheave, SK2-316 bushing Note: Optional Generator to be run off the cooler idler.	Rev. # 0
312	Hospital Grade Silencer - 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.	Rev. # 0
400	Building, Self - Framing 11' W x 17' 6" L x 10' 4" E c/w 22 Ga Galvanized Steel Exterior, 24 Ga Perforated Aluminum Interior - R12 Insulation Wall/Roof, 4mm vapour barrier (1) 6'x7' Mandoor c/w panic hardware, IGW window in active door (1) 3'x7' Mandoor c/w panic hardware, IWG window (2) 40"x40" double windows c/w 1/2 screen (1) continuous roof ridge vent (2) 12"x12" wall louvres Continuous ice rakes	Rev. # 0

Name: TPS200-233XL Rev. # 0

Location:

Tag #	Item Description
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Rev. # 0

Instrumentation General Notes:

- All electrical equipment to be CSA approved
- Electrical area classification is Class 1, Div II, Group D
- Instrument Gas is available
- Tubing to be stainless steel, fitting to be cadmium plated with Stainless Steel primary ferrule & Carbon steel secondary ferrule.

BALL VALVES

1/2" BCN1	Qty 6 Ball Valve, 1/2" NPT, Carbon Steel c/w regular port, API 602 800 lb rating, standard trim	Rev. # 0
3/4" BCN1	Qty 7 Ball Valve, 3/4" NPT, Carbon Steel c/w regular port, API 602 800 lb rating, standard trim	Rev. # 0
3/4" BCN1,L	Qty 2 Ball Valve, 3/4" NPT, Carbon Steel c/w regular port, API 602 800 lb rating, standard trim	Rev. # 0
1" BCN1	Qty 3 Ball Valve, 1" NPT, Carbon Steel c/w regular port, API 602 800 lb rating, standard trim	Rev. # 0
1 1/2" BCN1	Qty 1 Ball Valve, 1 1/2" NPT, Carbon Steel c/w regular port, API 602 800 lb rating, standard trim	Rev. # 0
1 1/2" BCN1,S	Qty 1 Ball Valve, 1-1/2" NPT, Carbon Steel c/w regular port, API 602 800 lb rating, standard trim, spring return handle	Rev. # 0

BUTTERFLY VALVESCHECK VALVES

1/2" CCN2	Qty 1 Swing Check Valve c/w 1/2" NPT connections, carbon steel body, stainless steel trim, API 800# rating	Rev. # 0
2" CC31	Qty 1 Twin Flapper Wafer Check Valve c/w 2" 300# carbon steel body, carbon steel trim, metal seats, inconel spring, serrated face	Rev. # 0

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Location:

Tag #	Item Description	
6"	Qty 1	Rev. # 0
CC31	Twin Flapper Wafer Check Valve c/w 6" 300# carbon steel body, carbon steel trim, metal seats, inconel spring, serrated face	
	<u>GATE VALVES</u>	
3/4"	Qty 2	Rev. # 0
GCN1	Gate Valve, 3/4" NPT, Carbon Steel Body and Trim c/w regular port, API 602 800 lb rating	
1"	Qty 2	Rev. # 0
GCN1	Gate Valve, 1" NPT, Carbon Steel Body and Trim c/w regular port, API 602 800 lb rating	
2"	Qty 2	Rev. # 0
GCS1	Gate Valve, 2" SW connections , Carbon Steel Body and Trim c/w regular port, API 602 800 lb rating	
	<u>GLOBE VALVES</u>	
1"	Qty 3	Rev. # 0
LCN1	Globe Valve, 1" NPT, Carbon Steel Body and Trim, API 602 800 lb rating	
1"	Qty 1	Rev. # 0
LCS1	Globe Valve, 1" SW connections, Carbon Steel Body and Trim, API 602 800 lb rating	
	<u>NEEDLE VALVES</u>	
1/4"	Qty 1	Rev. # 0
NCN1	Needle Valve, 1/4" FNPT x 1/4" FNPT c/w Carbon Steel Body, carbon Steel Trim, Integral Seat, Teflon Packing, 6000# WOG rating	
1/2"	Qty 5	Rev. # 0
NCN1	Needle Valve, 1/2" FNPT x 1/2" FNPT c/w Carbon Steel Body, Carbon Steel Trim, Integral Seat, Teflon Packing, 6000# WOG rating	
	<u>STRAINERS</u>	
1/2"	Qty 1	Rev. # 0
YCN1	"Y" Strainer, 1/2" NPT, Cast Steel Body, 600# rating, Stainless Steel Mesh	
3/4"	Qty 1	Rev. # 0
YCN1	"Y" Strainer, 3/4" NPT, Cast Steel Body, 600# rating, Stainless Steel Mesh	

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Name: TPS200-233XL Rev. # 0

Location:

<u>Tag #</u>	<u>Item Description</u>	
1 1/2" YCN1	Qty 1 "Y" Strainer, 1 1/2" NPT, Cast Steel Body, 600# rating, Stainless Steel Mesh	Rev. # 0
10" SC31	Qty 1 Start-up basket strainer, Carbon Steel, c/w 10"-300# ANSI flange connection, 200% open area, 3/32" perforations	Rev. # 0