

BILL OF MATERIALS		
ITEM	QTY	PART NUMBER
1	1	GASKET, FLAT 3.5"Ox1.63"X.06"
2	1	MOTOR, SHP 4P TFC 3/208-230/460V FLTS
3	1	GAUGE VAC 0-30"HG BRASS 2-1/2" DIAL
4	1	GAUGE COMP 30.0/0.15 BRASS 2-1/2" DIAL
5	1	GAUGE TEMP 20/240 --- 10/110 3" DIAL
6	1	GAUGE LEVEL 6" LONG X 1/2"NH AL/BR/ST
7	1	SWITCH LEVEL, 1" XP BR/SS
8	1	HT EXCHANGER 03X14 4P BR/CHR/CI
9	1	STRAINER Y 1" THD CI
10	1	COUPLING, DRIVE BS 1.125 CI
11	1	COUPLING, DRIVE BS 28MM CI
12	1	ELEMENT, COUPLING SIZE 6-JE
13	2	VAV BALL 1/2" THD SP BR/RS/PTE
14	1	VAV BALL 1" THD FP BR/RS/PTE
15	1	VAV CR HNG 1-1/2" THD CS/AL/BUVA
16	1	VAV GLOBE 1" THD BRZ/TF
17	1	VALVE VACUUM RELIEF 3/4" NHPT BR/SS
18	1	VAV SOL 1/2" MA NC BR/BUVA
19	1	SEPARATOR FR 10" DIA X 36" LG CS
20	1	BASEPLATE H2O FR 45"X20"X20" CS
21	1	M-BLOCK ASSY TRMB40 21ST
22	1	VAC PUMP LIO RING SINGLE STAGE W/MECH SEALS TRMB40-110/RX

SYSTEM NOTES:
 1) LOCATE AND SECURE VACUUM SYSTEM ON A FLAT LEVEL SURFACE.
 2) PLUG UNUSED PORTS WITH SQUARE HEAD NPT PIPE PLUGS.

GENERAL ARRANGEMENT DRAWING ONLY

REV	DESCRIPTION	DATE	APPR
REVISIONS			

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TOLERANCES
 DECIMAL 3. 0025"
 FRACTIONAL 3. 1/32"
 ANGLE 3. 0° 30' 00"
 UNLESS OTHERWISE SPECIFIED IN DRAWING

PART NO. SC2LX110TF1BX2
 DIMS BR: DATE
 RR 11/11/09
 MW
 APPROVED BR: SCALE: 1 = 6

DESCRIPTION: LIQUID RING VACUUM SYSTEM WATER SEALED 7.5 HP FULL RECOVERY
 MODEL NO. TRM070V-TFR
 DIMS NO. 0911052-D

TRAWANI PUMPS USA
 Liquid Ring & Steam Vacuum Recovery and Systems

QUOTATION

Date : September 4, 2009
To : GEA Process Engineering – Columbia MD
Attn : Lars Boysen (lars.boysen@geagroup.com)
Phone : (410) 997-6665
From : Radovan Radovic (RRadovic@travaini.com)
Quote : TRS09-0204.RRrev1 (*To expedite, please refer to this quote # when ordering*)

Ref : Evaporator Application / GEA contract# 2001-6247-1-01

We are pleased to offer the following Travaini Simplex Liquid Ring Vacuum Pump Partial Recovery Water Sealed Systems.

Based upon customer requirements of:

- 282.5 ft³ to be evacuated in 30 minutes or less at a final pressure of 111.6 mbara (with one pump).
- Maintain vacuum of 111.6 mbara with 2.20 lb/hr air leakage
- Simplex Water Sealed Partial Recovery Liquid Ring Pump System
- Pump consisting of cast iron housing stainless steel shaft and impeller
- 304 stainless steel partial recovery separator with stainless steel seal fluid piping is required

Selection: TRW70V-1PR-SS, Simplex Water-Sealed, Partial Recovery Vacuum System

Pump Assembly:

- (1) - Travaini liquid ring, single-stage vari-port vacuum pump model TRVB40-110/RX
 - Nominal Capacity : 70 ACFM @ 20 in Hg
 - Maximum Vacuum : 28.7" HgV (at sea level)
 - Pump Speed : 1750 RPM
 - Pump Materials : AISI 304 SS impeller, AISI 420 SS shaft, cast iron casing and housing
 - Shaft Seals : Single carbon face mechanical seals with Viton elastomers
- (1) - Washdown duty electric motor, 7.5 HP, TEFC, 3Ph/60Hz/208-230/460V with a 1.15 SF
- (1) - Mono-block assembly complete with flexible coupling and guard
- (1) - Fabricated carbon steel frame

Sealing Fluid Re-circulation System:

- (1) - Sealing fluid reservoir manufactured in AISI 304 stainless steel complete with NPT inlet, outlet, and overflow connection. Tank drain and partial recirculation port to be NPT.
- (1) - Seal fluid in-line strainer complete with flow regulator, flow restrictor, compound gauge, temperature gauge, normally closed solenoid valve, and manual shutoff valve.
- (1) - Pump overflow swing check valve for pump unloading between shutdown and startup.
- (1) - Suction inlet vacuum relief valve assembly

ELECTRICAL CONTROL PANEL:

All options priced without control panel

SYSTEM PRE-PIPED AND WIRED AT THE FACTORY:

All components will be mounted on a fabricated steel frame complete with inter-connecting mix of 304, and or 316 stainless steel schedule 40 piping. The complete system shall be given a mechanical run test to ensure all components are functioning properly.

Exception to Specification:

1. Packed stuffing box is not available. Supplied with mechanical seals only. (see pump description above)
2. Formed base plate will be primed then painted with Travaini standard paint # 2117-6378 Metallic Charcoal WR Air Dry (See MSDS sheets attached.)
3. Customer is responsible for providing an inlet check valve to prevent backflow and keeping pressure loss at a minimum.

Net System Price (less motor)

\$6,948.00

Optional Motor Adder

- 5HP, 208-230/460V, 3Ph, 60Hz, TEFC wash down motor

NET PRICE ADDER

\$723.00ea

Optional Motor Adder

- 7.5HP, 208-230/460V, 3Ph, 60Hz, TEFC wash down motor

NET PRICE ADDER

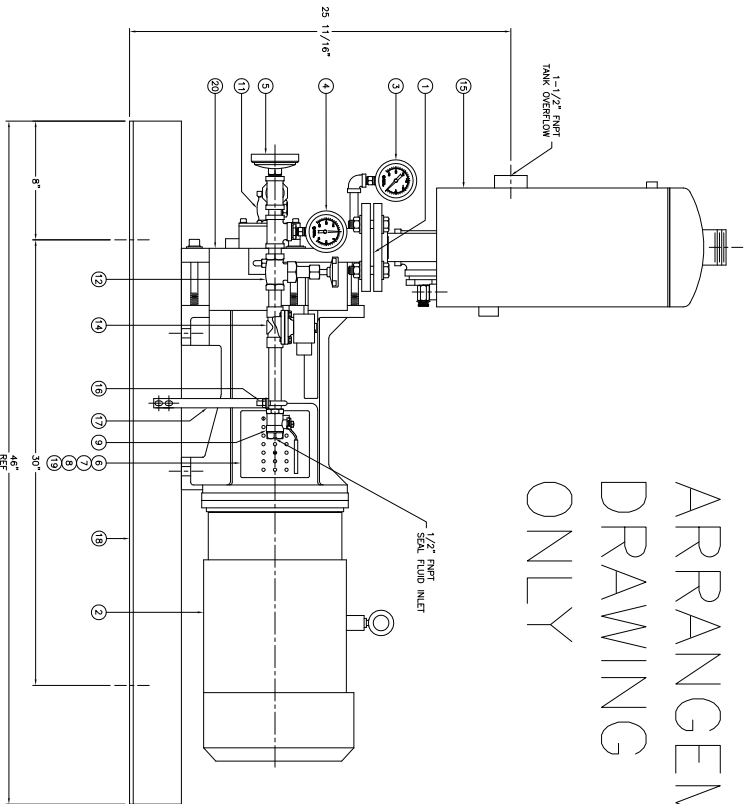
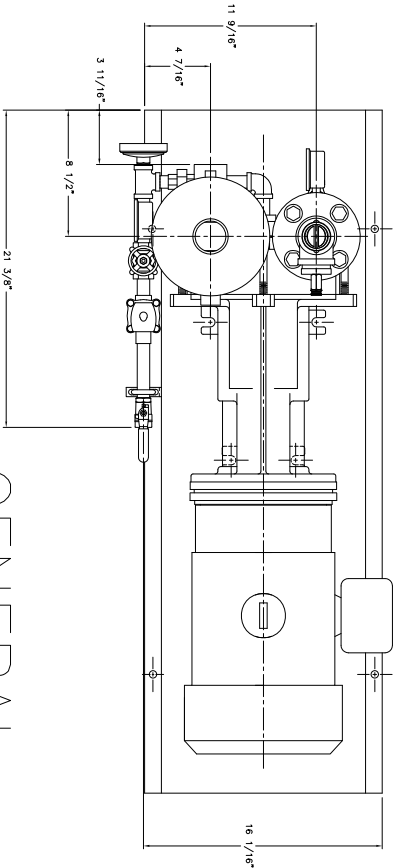
\$869.00ea

DELIVERY, TERMS, AND CONDITIONS:

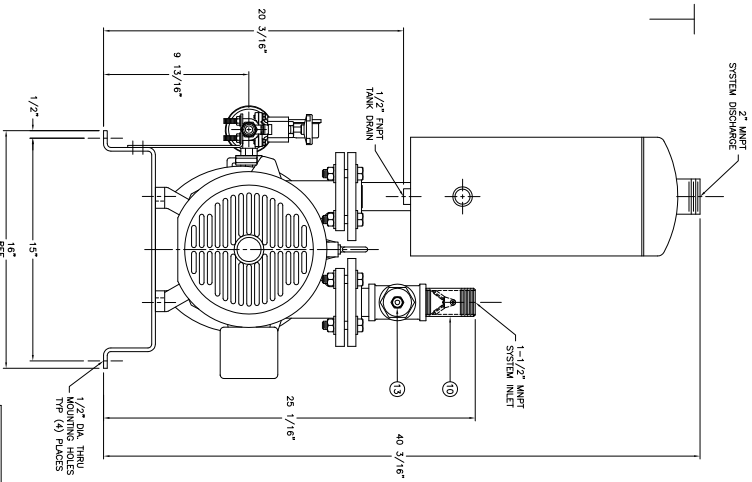
- Delivery: 4 to 8 weeks after receipt of an order, subject to prior sale.
- Terms: Net 30 days, Subject to cancellation charges
- F.O.B. Factory: Yorktown, VA
- Price valid for 45 days

Best Regards,
Radovan Radovic
Mechanical Engineer

Cc: Ed Fischer, Regional Sales Distributor Manager; Travaini Pumps USA, Inc., 603-329-7163



GENERAL ARRANGEMENT DRAWING ONLY



- SYSTEM NOTES:**
- 1) LOCKS AND SECURE VACUUM SYSTEM ON A FLAT LEVEL SURFACE.
 - 2) ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED.
 - 3) ITEM #12 IS 1/2" FNPT PAPER OVERFLOW CONNECTION.

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION	PART NUMBER
1	2	GASKET MANSOLD 1 5/8" ID X 1/16" THK GRUK	178-0402-0001
2	1	MOTOR SHP 4P TEFC 184TC 208-230/460V	231-0050-C001
3	1	GAUGE VACUUM 0-30"HgV 1/4"MNPT BRZ	400-0025-F000
4	1	GAUGE COMPOUND 30.0/0/15 1/4"MNPT BRZ	401-0025-F000
5	1	GAUGE TEMP 20/240°-10/110°C 1/2"MNPT SS	410-0050-F001
6	1	COUPLING DRIVE 6S 1-1/8"	702-0600-B112
7	1	COUPLING DRIVE 6S 28MM CI	702-0601-B028
8	1	COUPLING ELEMENT SIZE 6-JE	752-0600-B001
9	1	VALVE BALL 1/2" FNPT BRZ/BS/PTEE	801-0050-B000
10	1	VALVE CHECK HINGE 1-1/2" MNPT SS/BIUVA	820-0150-B002
11	1	VALVE CHECK SWING 1/2" FNPT BRZ	821-0050-F000
12	1	VALVE GLOBE 1/2" FNPT BRZ	835-0050-A000
13	1	VALVE VACUUM RELIEF 3/8" MNPT BRZ	852-0037-B000
14	1	VALVE SOL 1/2" FNPT IN NC BRZ/BIUVA 120V	855-0050-B000
15	1	SEPARATOR MV/PR 1-1/2" MNPT IN/OUT CS	901-9409-0810
16	1	BRACKET U BOLT 1/2" PIPE	948-9703-1820
17	1	BRACKET PIPE 7-3/4"x2-1/2"x5/8" 16GA CS	948-9711-2440
18	1	BASEPLATE WATERSEALED 48" X 16" X 3-1/2" CS	950-9403-3110
19	1	MONO-BLOCK ASSY TR940 213T	AMB-1984-213T
20	1	VACUUM PUMP LIQUID RING 1 SLICE MECH SEAL	TR940-110/RK

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TOLERANCES

DECIMAL ± .0025
 FRACTIONAL ± 1/16"
 ANGULAR ± 0° 30' 00"
 UNLESS OTHERWISE SPECIFIED IN DRAWING



REV	DESCRIPTION	DATE	APPR
1	REVISIONS		

PART NO. SAKLX1107FBXX2	DESCRIPTION LIQUID RING VACUUM SYSTEM WATERSEALED NO RECOVERY SHP
DWG BR: CJK BR: JATE	DWG NO. 1112201-D
BC: RR 1/18/12	REV
APPROVED BR: SCALE: 1 = 4	TR940V-TNR