



RefTec

INTERNATIONAL SYSTEMS LLC

EVAC Tank Mount™ Commercial

High Pressure Electromechanical Commercial
Refrigerant Recovery System Mounted on ASME Tank



OPERATION MANUAL

Electromechanical Version 3.0

******ATTENTION******

*****WARNING*****

**IF OIL LEVEL IS SEEN
IN SIGHT GLASS
OF DORIN
COMPRESSOR – OIL
LEVEL IS LOW –PLEASE
ADD OIL !!!!!!!!**

**THANK YOU
REFTEC**

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Specifications

Electrical Power Requirements

Recovery Main Components & Controls:

115VAC, 50/60 Hz, 1 Phase, 20 Amperes MIN CKT 15.0 AMP, MAX FUSE 20 AMPS.

Models W&A-240-1-E: Compressor 220/240VAC, 50/60 Hz, 1 Phase MIN CKT 20.0 AMP, MAX FUSE 30 AMPS.

Models W&A 230-3-E: Compressor 230VAC, 50/60 Hz, 3 Phase MIN CKT 10.0 AMP, MAX FUSE 20 AMPS.

Models W&A-460-3-E: Compressor 460VAC, 50/60 Hz, 3 Phase MIN CKT 10.0 AMP, MAX FUSE 15 AMPS.

Models W&A-575-3-E: Compressor 575VAC, 50/60 Hz, 3 Phase MIN CKT 10.0 AMP, MAX FUSE 15 AMPS.

Dimensions (Approximate)

CRH-A/W-1000 ASME 192" L x 48" W x 76" H

CRH-A/W-850 ASME 166.5" L x 48" W x 76" H

CRH-A/W-500 ASME 119" L x 45" W x 73" H

CRH-A/W-250 ASME 94" L x 40" W x 68" H

Weight

CRH-A/W-1000 ASME 3300-lbs (3700-lbs shipping)

CRH-A/W-850 ASME 2950-lbs. (3400-lbs. shipping)

CRH-A/W-500 ASME 2450-lbs. (2950-lbs. shipping)

CRH-A/W-250 ASME 2225-lbs. (2725-lbs. shipping)

Furnished with Unit

- 2 - 48 cubic inch drier core
- 1 - 80% Tank Float Cable
- 1 - 10 ft. 3/4" hose with isolation valves
- 2 - 20 ft. 3/4" hoses with isolation valves
- 1 - 50' power cable
- 2 - 1/2 to 5/8 adapters
- 2 - 5/8 to 3/4 adapters

REV DATE (01/05/09)

Notice

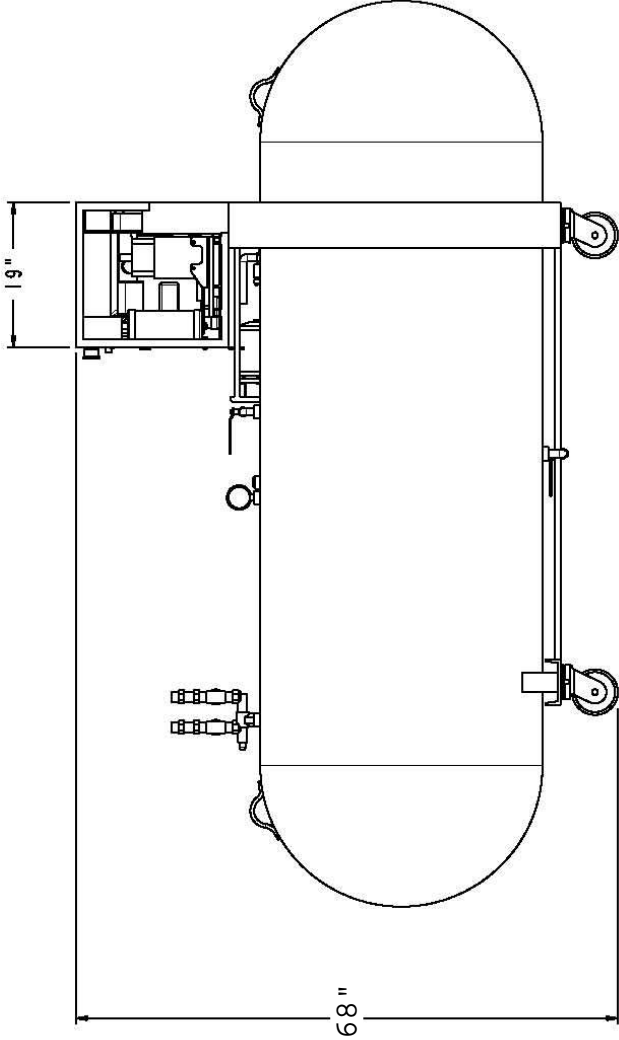
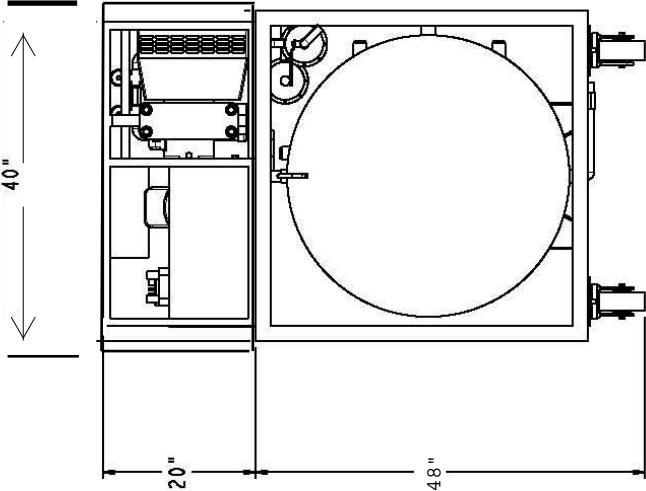
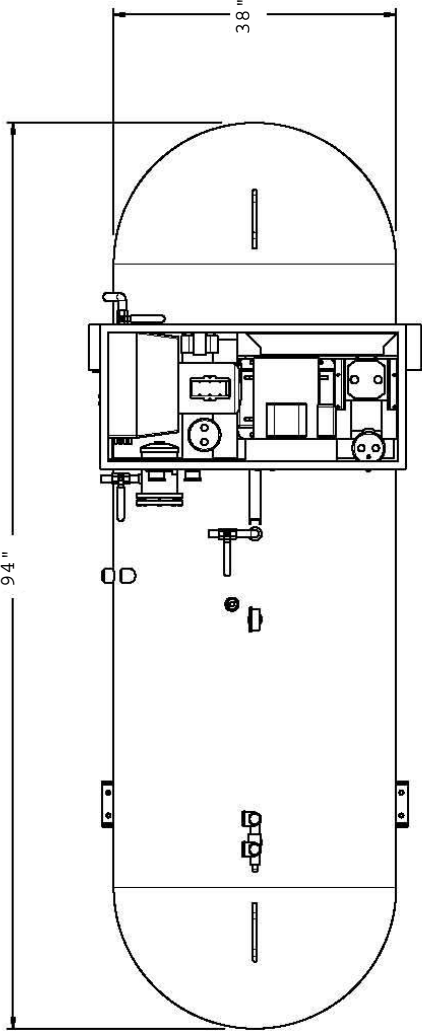
RefTec International, Inc. urges that all HVAC servicers working on RefTec equipment or any manufacturer's products, make every effort to eliminate, if possible, or vigorously reduce the emission of CFC, HCFC, and HFC refrigerants to the atmosphere resulting from installation, operation, routine maintenance, or major service of this equipment. Always act in a responsible manner to conserve refrigerants for continued use even when acceptable alternatives are available. Conservation and emission reduction can be accomplished by following recommended service and safety procedures.

WARNING!!

To avoid injury or death due to inhalation of, or skin exposure to refrigerant, closely follow all safety procedures described in the Material Safety Data Sheet for the refrigerant and to all labels on refrigerant containers. Certain procedures common to refrigeration system service may expose personnel to liquid or vaporous refrigerant.

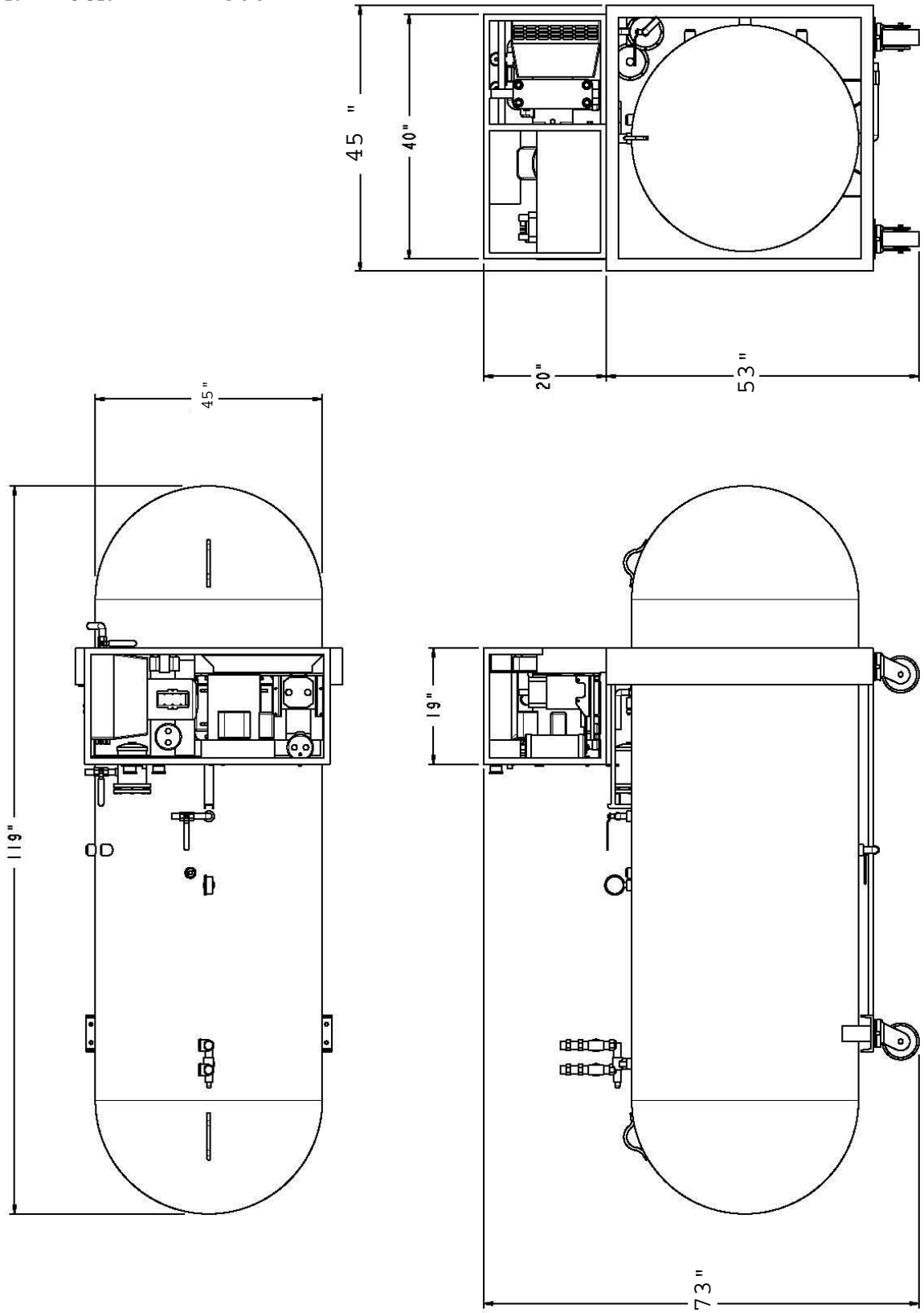
Specifications (Continued) EVAC Tank

EVAC TANK MOUNT ASME 250



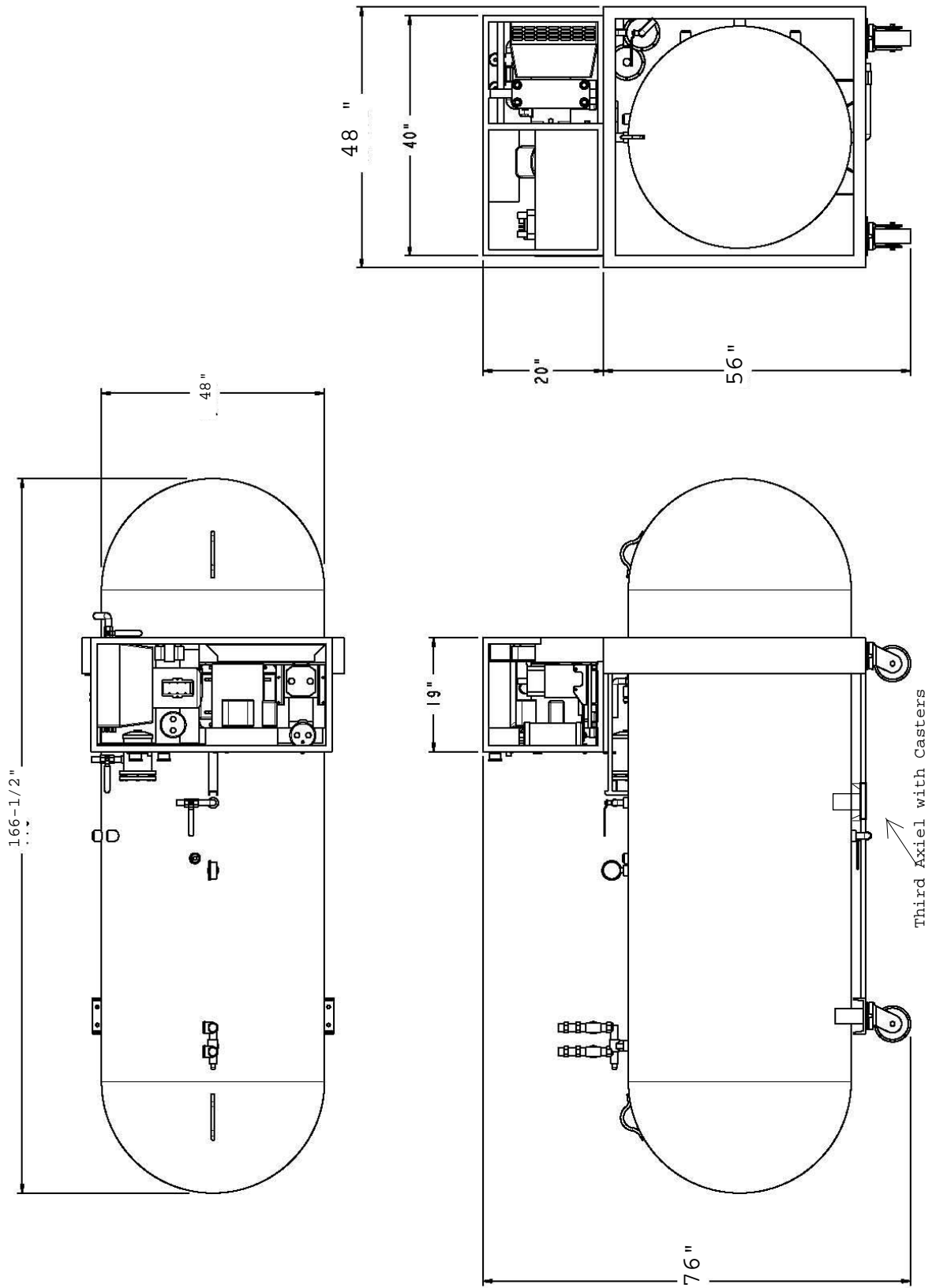
Specifications (Continued) EVAC Tank

EVAC TANK MOUNT ASME 500



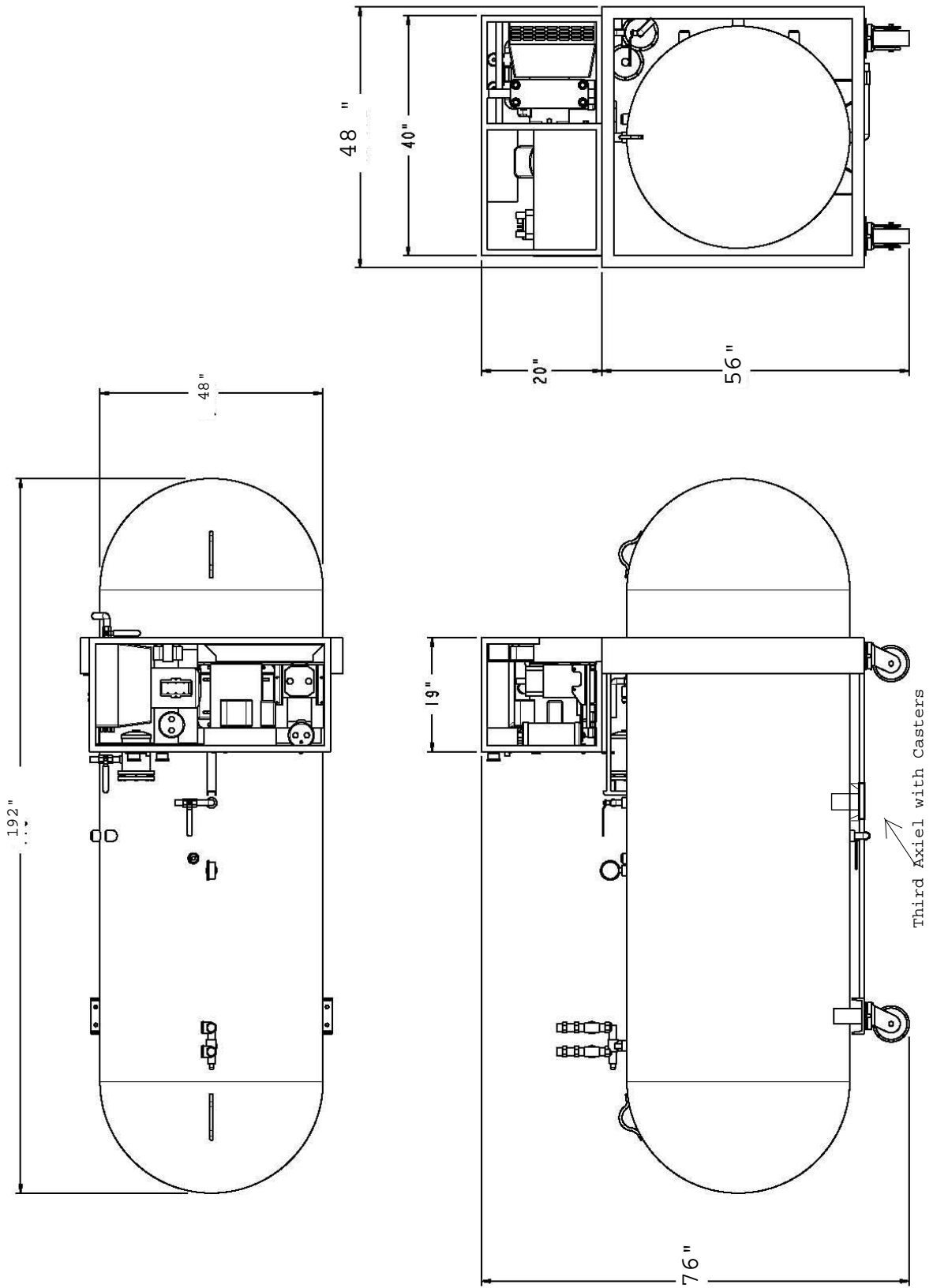
Specifications (Continued) EVAC Tank

EVAC TANK MOUNT ASME 850



Specifications (Continued) EVAC Tank

EVAC TANK MOUNT ASME 1000



Product Description

RefTec's EVAC recovery system provides efficient and safe recovery of most High pressure refrigerants.

The unit consists of a 3-hp open drive compressor; high capacity 1200 cfm air cooled condenser, system pressure gauge, tank pressure gauge, a valving system consisting of one manually operated 3-way valve, oil return valve and one 2-way evacuation valve. Unit connections are 3/4" male flare with isolation valves. After hoses are connected and evacuated, user simply configures hoses for liquid push/pull mode, opens all lines at chiller and recovery tank, and turns EVAC on. EVAC starts recovery by letting refrigerant migrate from the chiller to the recovery tank. It then draws vapor off the recovery tank, lowering tank vapor pressure, heats vapor and increases pressure via compression, and injects it back into the chiller condenser, thus creating a pressure differential for a push/pull liquid transfer.

Two onboard gauges display chiller pressure and recovery tank pressure. When liquid has finished transferring and sight glass on liquid line indicates liquid refrigerant has been transferred, user simply reconfigures hoses to vapor recovery mode, allowing EVAC to pull vapor from chiller evaporator being recovered. EVAC compressor begins recovering vapor which is first cleansed by a 48 cu inch filter drier. Discharged hot compressed refrigerant passes through an oil separator where the oil is extracted and returned to the compressor. Refrigerant is then condensed by the air-cooled condenser and sent to the recovery tank.

Transfer stops when an internal pressure switch indicates that the chiller reaches a 15" Hg vacuum. If pressure should again rise above 0 PSIG, the EVAC will restart to pull refrigerant from chiller until a 15" Hg vacuum is restored.

Safe Operations and Tips

To ensure your safety as well as others, before attempting to recover a centrifugal chiller, proper and thorough preparation must take place:

Make sure you have a recovery tank with a minimum 3/4" male flare vapor port and a minimum 3/4" male flare liquid port, or larger ports if possible. This tank or series of tanks must be able to hold the entire refrigerant charge at 80% full and also must be pressure rated for the specific refrigerant being recovered.

Reminder: Refrigerant full weight is 80% of water capacity weight determined as follows: Maximum allowable gross weight = 80% of water capacity weight + tank tare weight.

In addition, a suitable scale should be used to weigh the refrigerant charge to prevent overfilling tanks in case EVAC needs to be shut down. If a scale is not available, the tanks can be equipped at time of purchase with a float switch that will deactivate EVAC's control circuit. All EVAC units come with safety float connection and bypass switch.

- Finally, the recovery tank or tanks must be pulled into a 15" Hg vacuum before recovery commences. Failure to follow these above stated procedures will decrease the likelihood of EVAC performing at its highest possible effectiveness.

Peak Performance

To get the highest performance from your EVAC unit, we recommend that you:

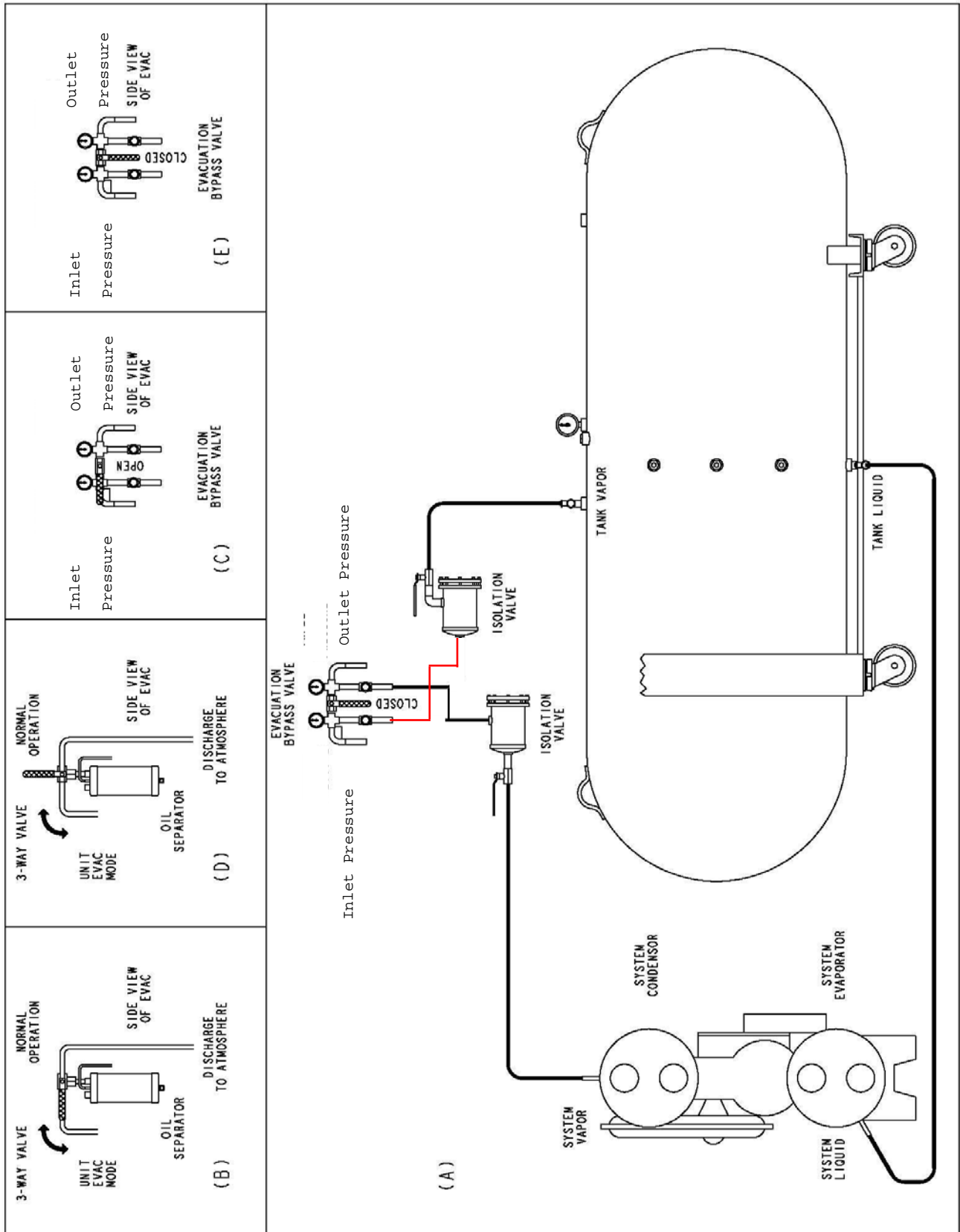
Connect to 3/4" evaporator and 3/4" condenser ports on the centrifugal chiller and to recovery tanks with 3/4" ports whenever possible.

Procedures for Evacuating Hoses and EVAC

Note: Close oil return valve between oil separator and compressor before evacuating hoses and EVAC.

1. Turn the centrifugal chiller off; make sure that the chiller cannot restart.
2. Connect the 50-ft power cord to a proper voltage and required amperage as rated on equipment label. Use a breaker or fused disconnect and plug it into the EVAC Control Box. Plug the control voltage to a 120 Volt, 15 Amp, 1 phase power source.
3. Connect the three high pressure refrigerant hoses, as shown in (Figure 1) on page 7. At this time, connect safety float cable from EVAC to recovery tank or use a suitable scale. If a scale is to be used instead of float safety cutout, the 80% full bypass switch will need to be set to the "On" position for EVAC to run.
4. Open isolation valves on EVAC Recovery unit (Figure 1) (A) on page 7. and hose isolation valves
5. Turn 3-way valve located on side of EVAC to **UNIT EVAC MODE**, as shown in (Figure 1) (B) on page 7.
6. Turn 2-way **EVACUATION BYPASS VALVE** located on side of EVAC to **OPEN POSITION**, as shown in (Figure 1) (C) on page 7.
7. Turn EVAC power switch on, EVAC will start evacuating recovery tank vapor side hose and system vapor side hose. EVAC will pull hoses into a 15" vacuum, and then automatically shut down. After EVAC shuts down, turn power off and proceed to next step.
8. Return 3-way valve on side of unit to **NORMAL OPERATION** (Figure 1) (D) and turn the 2-way **EVACUATION BYPASS VALVE** located on side of EVAC to **CLOSED POSITION**, as shown in (Figure 1) (E) on page 7. Open oil return valve between oil separator and compressor. Now proceed to **Liquid Push/Pull** method on page 8.

Evacuating Hoses (Figure 1)



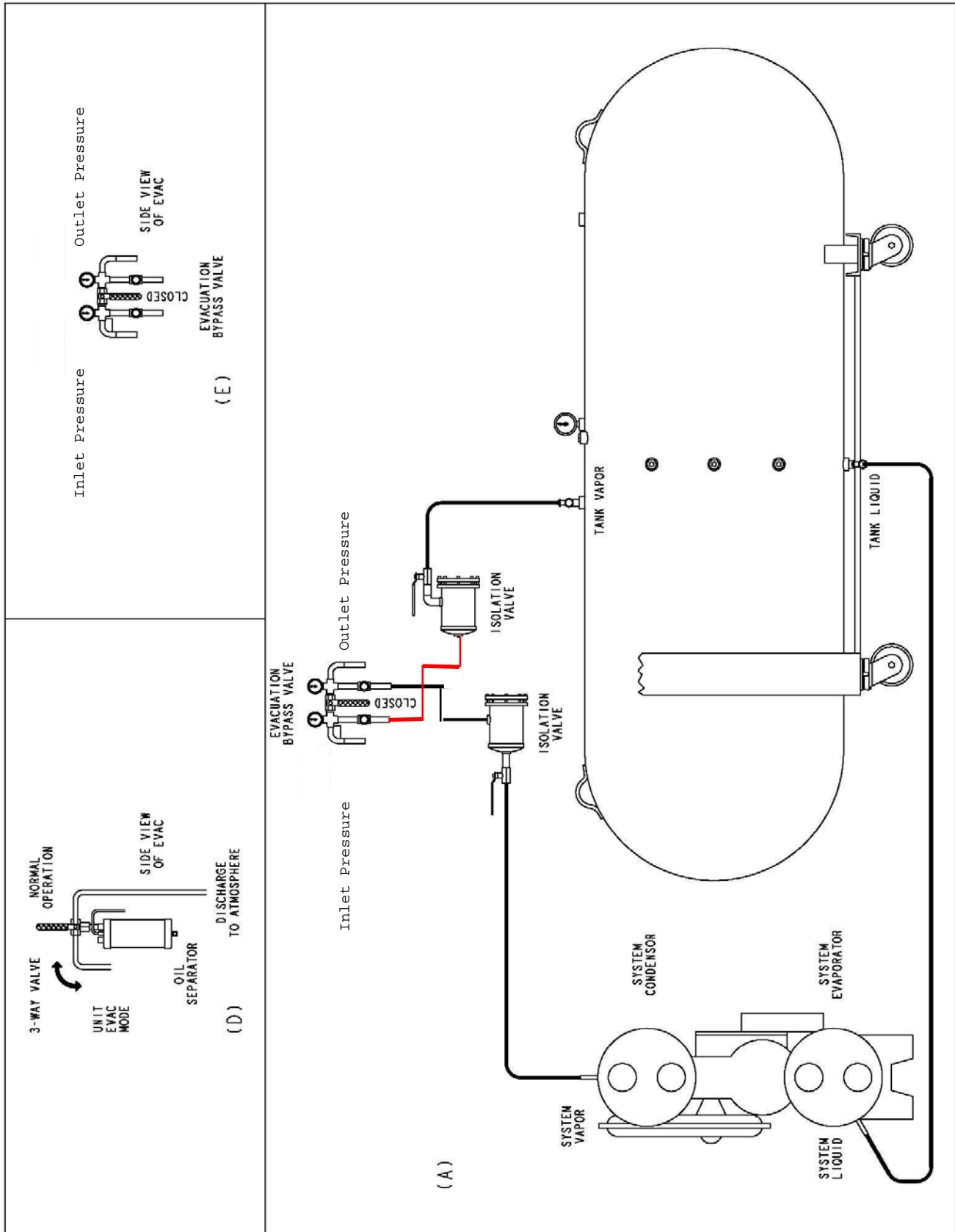
Procedures for Liquid Push/Pull Mode

WARNING!

Before attempting to operate this unit, make absolutely sure that the 3-way valve on side of unit (Figure 2) (D) page 9 and the 2-way bypass valve on side of unit (Figure 2) (E) page 9 are set to their **NORMAL OPERATION AND CLOSED POSITIONS**, respectively. Also open oil return valve between oil separator and compressor.

1. Turn the centrifugal chiller off; make sure that the chiller cannot restart.
2. Connect the 50-ft power cord to a proper voltage and required amperage as rated on equipment label. Use a breaker or fused disconnect and plug it into the EVAC Control Box. Plug the control voltage to a 120 Volt, 15 Amp, 1 phase power source.
3. Verify that all hoses are connected as shown (Figure 2) on page 9 and that they have been evacuated as previously described in **Procedures for Evacuating Hoses and EVAC** on page 6.
4. Open vapor & liquid access valves on chiller being recovered.
5. Open isolation valves on EVAC recovery unit and hose isolation valves (Figure 2) (A) on page 9
6. Open vapor & liquid isolation valves on recovery tank.
7. Turn EVAC power switch on, EVAC will automatically start drawing vapor off the recovery tank and forcing compressed refrigerant back into the condenser of the chiller. Liquid push/pull is now in process.
8. Continue to monitor liquid sight glass on liquid line between chiller evaporator and recovery tank. Once all of the liquid has been completely removed, close isolation valves on recovery tank and turn EVAC power switch off.
9. Close vapor & liquid access valves on chiller being recovered and recovery unit also hose isolation valves. Then proceed to Vapor Recovery Mode method on page 10.

Liquid Push/Pull Mode (Figure 2)



Procedures for Vapor Recovery Mode

WARNING!

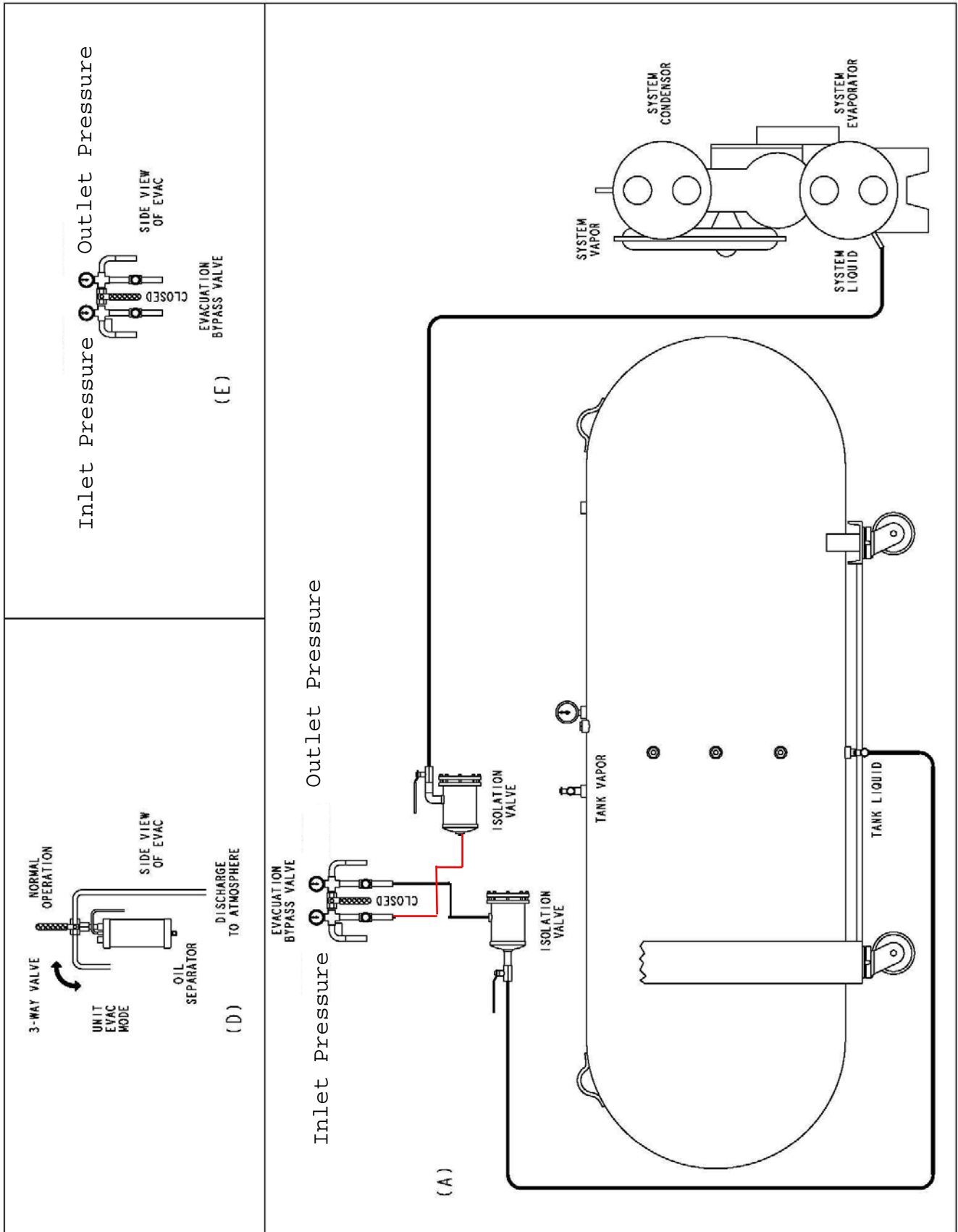
Before attempting to operate this unit, make absolutely sure that the 3-way valve on side of unit (Figure 3) (D) page 11 and the 2-way bypass valve on side of unit (Figure 3) (E) page 11 are set to their **NORMAL OPERATION AND CLOSED POSITIONS**, respectively. Also open oil return valve between oil separator and compressor.

WARNING!

It is absolutely imperative that all of the liquid has been removed before switching into the vapor recovery mode. Failure to do so may result in liquid slugging to the compressor and causing major damage to the compressor.

1. Turn the centrifugal chiller off; make sure that the chiller cannot restart.
2. Connect the 50-ft power cord to a proper voltage and required amperage as rated on equipment label. Use a breaker or fused disconnect and plug it into the EVAC Control Box. Plug the control voltage to a 120 Volt, 15 Amp, 1 phase power source.
3. Verify that all hoses are connected as shown (Figure 3) on page 11 and that they have been evacuated as previously described in ***Procedures for Evacuating Hoses and EVAC*** on page 6.
4. Open evaporator access valve on chiller being recovered.
5. Open isolation valves on EVAC recovery unit and hose isolation valves (Figure 3) (A) on page 11.
6. Open liquid side isolation valve on recovery tank.
7. Turn EVAC power switch on, EVAC will automatically start recovering all of the remaining vapor refrigerant in the chiller and pull the entire system into a 15" Hg vacuum. **To help ensure that EVAC pulls chiller into a 15" Hg vacuum as quickly and efficiently as possible, monitor EVAC's system pressure gauge and oil in compressor. When gauge reads below a 5" Hg vacuum and if vapor recovery seems to be abnormally slow and you are sure that there is sufficient oil in the compressor, user may close compressor oil return valve to speed up the process. If compressor begins to lose oil, open oil return valve occasionally to help lubricate the compressor.**
8. Once chiller has been completely recovered to a 15" Hg vacuum, EVAC will shut down and "Recovery Complete" red light will illuminate. Should pressure in chiller again rise above 0 PSIG, EVAC will restart and pull chiller back into a 15" Hg vacuum.
9. When recovery is finished, turn off power switch, close isolation valve on chiller and recovery tank as well as isolation valves on EVAC recovery unit. Close isolation valves on hoses and disconnect.

Vapor Recovery Mode (Figure 3)



There may still be a small, residual amount of refrigerant in EVAC this amount must be removed if you want to change to a different type of refrigerant. An explanation of how to remove this residual amount of refrigerant is explained in next section.

Note: Driers and compressor fluid are available from RefTec. Please call 1-800-214-4883.

Note: After recovery is complete and all refrigerant has been removed from hoses, EVAC may still have a very small amount of residual refrigerant in the unit. To remove this refrigerant, connect an evacuated recovery tank to both the compressor suction and discharge service 1/4" access valves on top of compressor. Allow remaining refrigerant to be pulled into tank. This procedure needs to be performed whenever a different type of refrigerant is going to be recovered. In addition, the filter core and oil will need to be changed whenever changing types of refrigerant.

Changing Replaceable Core

Make sure you replace disposable filter core after each recovery job. Simply remove used filter core assembly and replace. Failure to use new cores on each and every recovery may result in damage to the open drive compressor.

Remove the inlet filter drier unit cover by removing the cover bolts, remove old element, inspect and clean where necessary. Install new filter drier element and the cover gasket. The liquid outlet filter drier may contain a small amount of refrigerant and should be recovered before removing cover. To recover this refrigerant connect an evacuated recovery tank to the 1/4 inch access fitting on the cover of the drier shell and allow the refrigerant to be pulled into the recovery tank. Replace the filter drier tank cover and torque the cover bolts to 14-to-16 ft-lbs.

Changing Compressor Fluid

The compressor's charge of oil should be regularly replaced with an identical fluid and, at a minimum, after any of the following events:

1. After a maximum of 10 hours of run time.
2. When changing recovery jobs that involve different refrigerants.
3. After recovering a system with a burnt out compressor.

Procedures to remove and change the oil in the compressor and the oil separator:

WARNING!

When changing oil, it is highly recommended that the same type of oil is being used with the refrigerant being recovered be used in the EVAC compressor. This will help ensure that cross-contamination does not occur.

- a. Make sure EVAC unit has no refrigerant in its internal parts.
- b. Connect a manifold set to dry nitrogen and to the suction and discharge service 1/4" access valves located on the top of the EVAC compressor.
- c. Connect another 1/4" hose to the access fitting on the bottom of the EVAC oil separator and the other end to a suitable disposable oil container.
- d. Gradually allow dry nitrogen to go into the discharge port on the EVAC compressor until all oil has

been forced out of the oil separator. **Note: 10 to 15 psi will be more than adequate.**

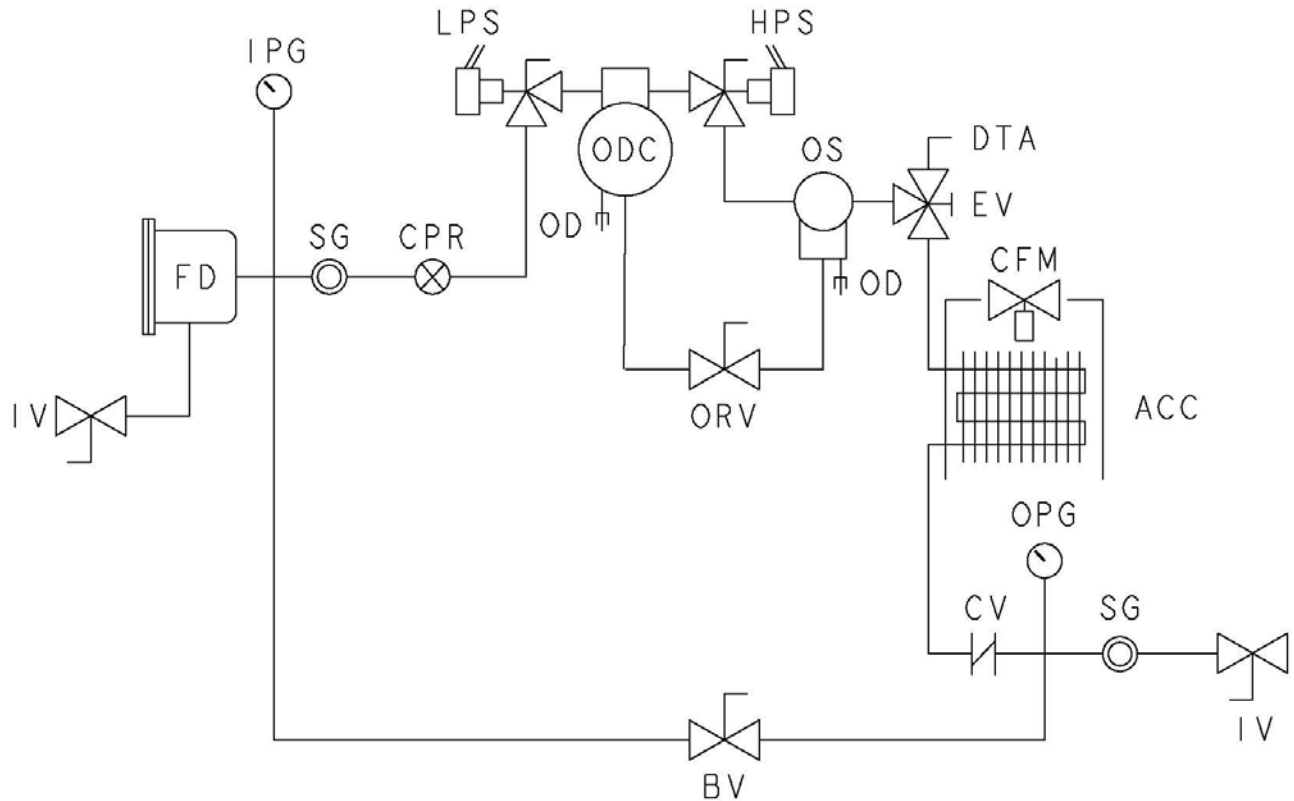
- e. Connect another 1/4" hose to the access fitting on the bottom of the EVAC compressor and the other end to a suitable disposable oil container.
- f. Gradually allow dry nitrogen to go into the suction port on the EVAC unit until all oil has been forced out of the compressor.
- g. To add new oil to the EVAC compressor, connect a vacuum pump to the 1/4" access port on the suction side of the compressor. Pull down into a minimum 15" vacuum or use a suitable oil pump.
- h. Connect the other hose to the 1/4" access port on the bottom of the compressor and into the new oil container. Note: fill compressor with exactly 34 oz. of oil.
- i. After compressor has been filled, connect the other hose to the 1/4" access port on the bottom of the oil separator and into the new oil container. Note: fill oil separator with exactly 16 oz. of oil.
- j. Once this procedure is finished, remove all hoses and pull entire EVAC into a 15" vacuum. Dispose of old oil properly.

WARNING!

Failure to follow above procedures for recharging oil in compressor with the exact amount of oil may result in major damage to the compressor.

EVAC Tank Electromechanical

Process and Identification Schematic

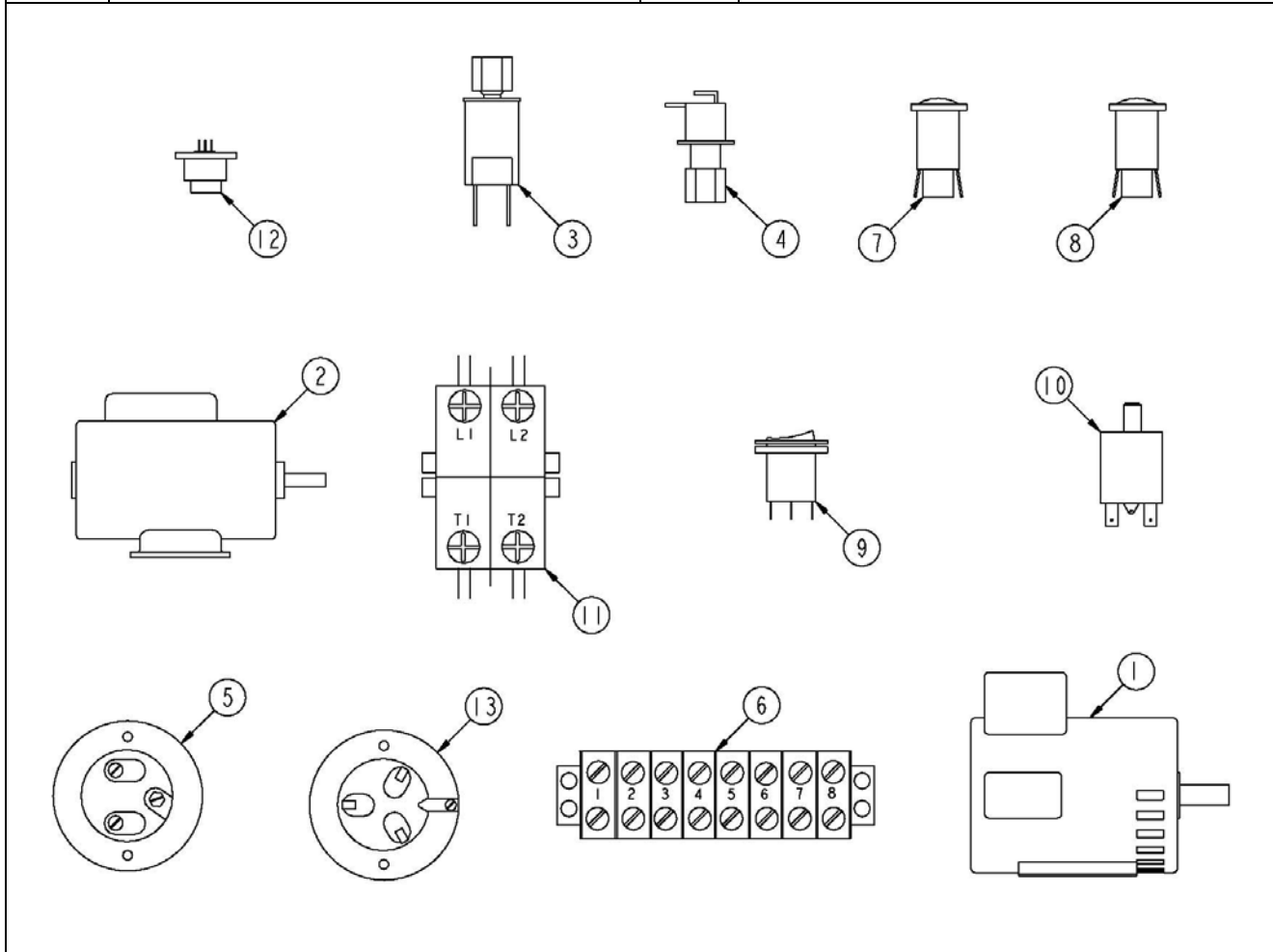


ITEM	MANUFACTURER DESCRIPTION
CPR	Crankcase Pressure Regulator
OPG	Outlet Pressure Gauge
IPG	Inlet Pressure Gauge
BV	Evacuation Bypass Valve
ORV	Oil Return Valve
ODC	Open Drive Compressor
OS	Oil Separator
EV	Evacuation Valve
CFM	Condenser Fan Motor
ACC	Air Cooled Condenser
IV	Isolation Valve
LPS	Low Pressure Switch
HPS	High Pressure Switch
DTA	Discharge to Atmosphere
OD	Oil Drain
FD	Filter Drier
SG	Sight Glass
CV	Check Valve

EVAC Electromechanical CRH-500

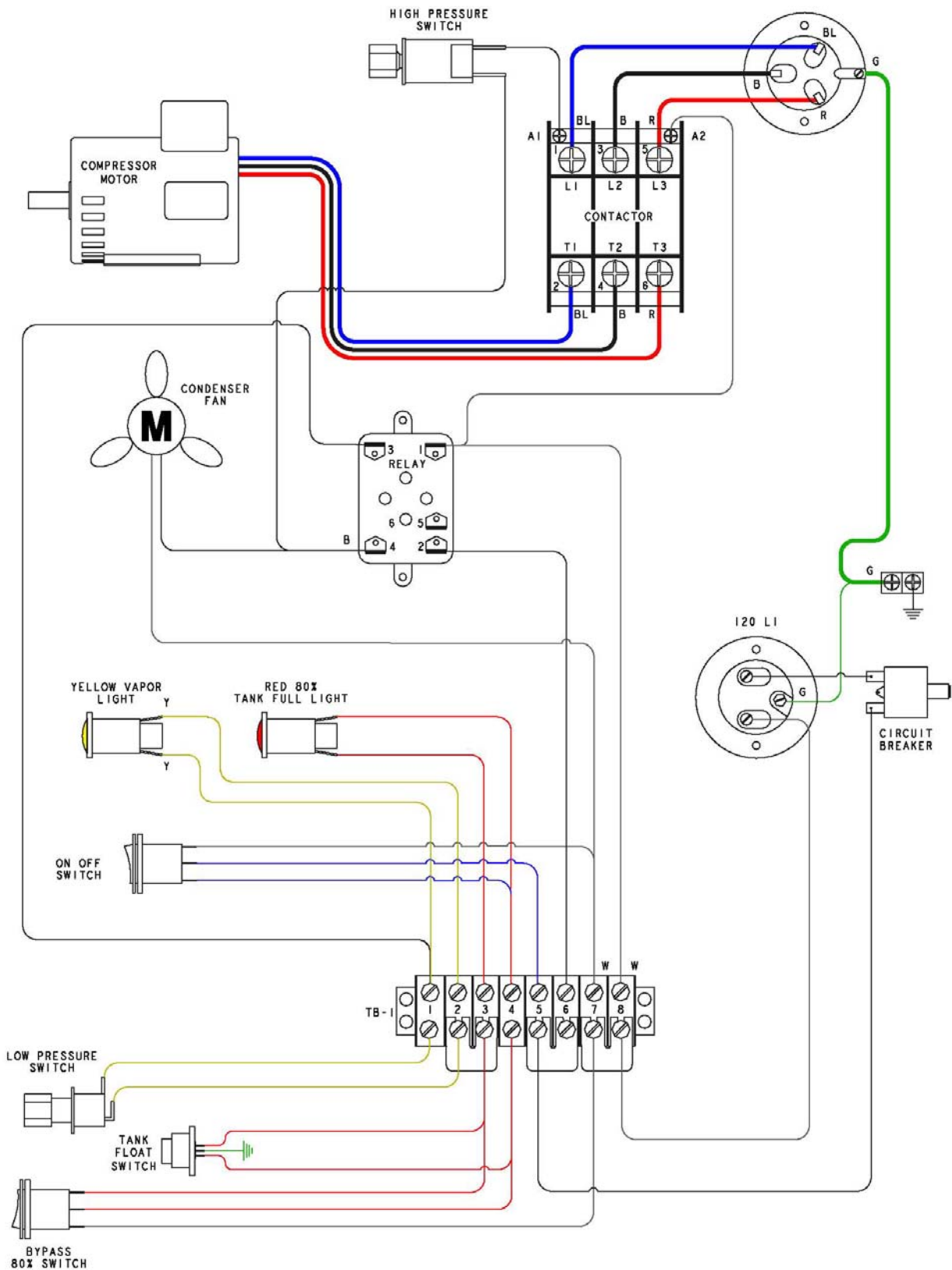
Electrical Parts Breakdown

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	<u>Model CRH-A-230-3-E, CRH-A-460-3-E:</u> Compressor Motor - 3 HP, 230/460 VAC, 50/60 Hz, 3 Phase, 1725 RPM	7	Amber Indicating Lamp - 120 VAC
	<u>Model CRH-A-575-3-E:</u> Compressor Motor - 3 HP, 575 VAC, 50/60 Hz, 3 Phase, 1725 RPM	8	Red Indicating Lamp - 120 VAC
2	Condenser Fan Motor - 115/230 VAC 50/60 1/4 HP	9	(2) Switches - 120 VAC
3	High Pressure Switch – 350 PSIG	10	Circuit Breaker - 20Amp, 250 VAC, 28 VDC
4	Low Pressure Switch – 15" Hg	11	Contactor- 115 VAC Coil 50/60Hz 40A, FL 600 VAC
5	Male Inlet - 15A, 125V, 2 P, 3 Wire GRD	12	Tank Safety Float Connector
6	Terminal Block	13	<u>Model CRH-A-230-3-E, CRH-A-460-3-E:</u> Male Inlet – 50A, 480V, 1 Phase or 3 Phase, 4 wire <u>Model CRH-A-575-3-E:</u> Male Inlet – 50A, 600V, 3 Phase, 4 wire



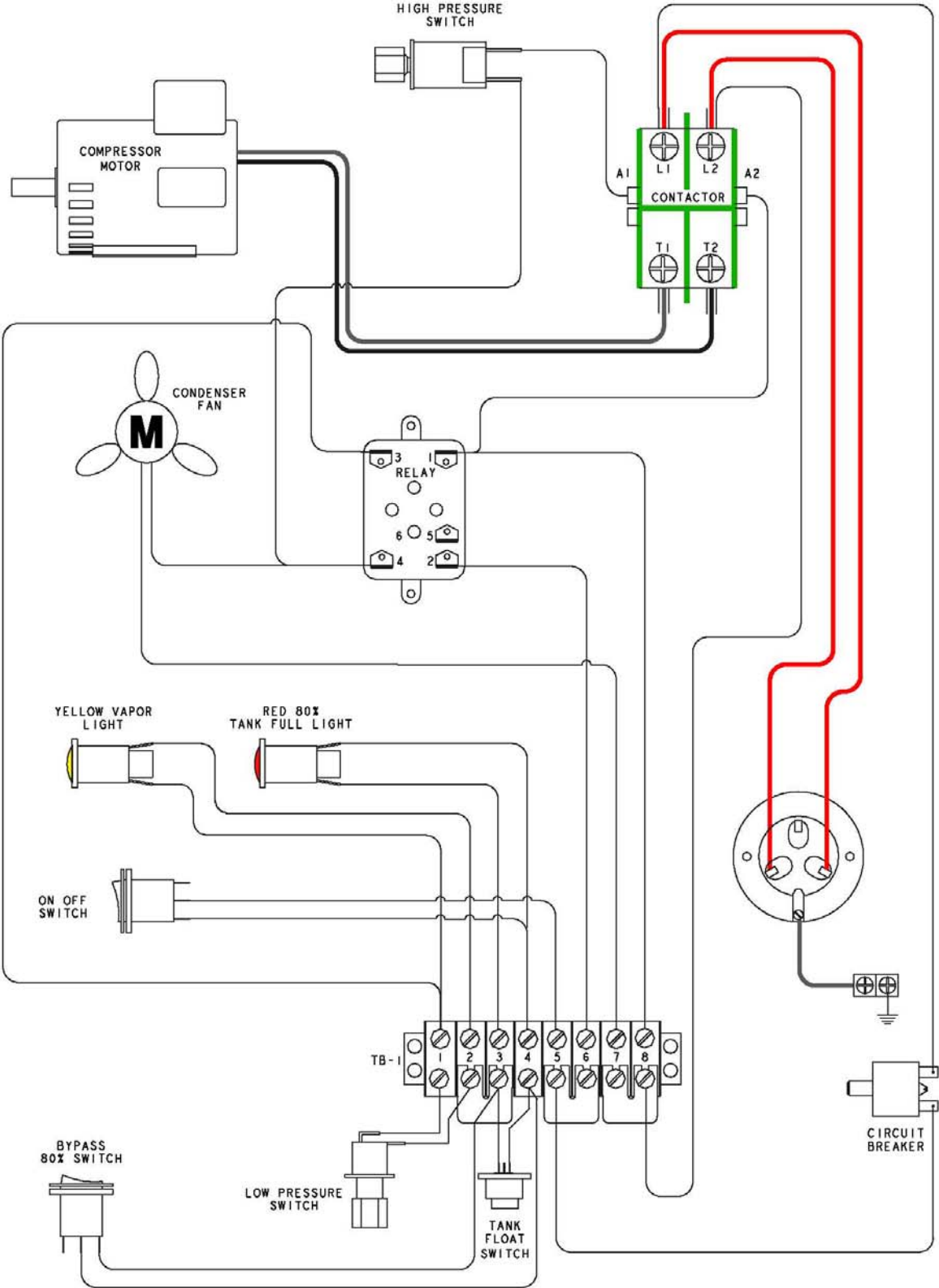
EVAC Tank Electromechanical

Electrical Block Wiring Diagram Voltage 230V-3p, 460V-3p & 575V-3p



EVAC Tank Electromechanical

Electrical Block Wiring Diagram Voltage 240V-1p



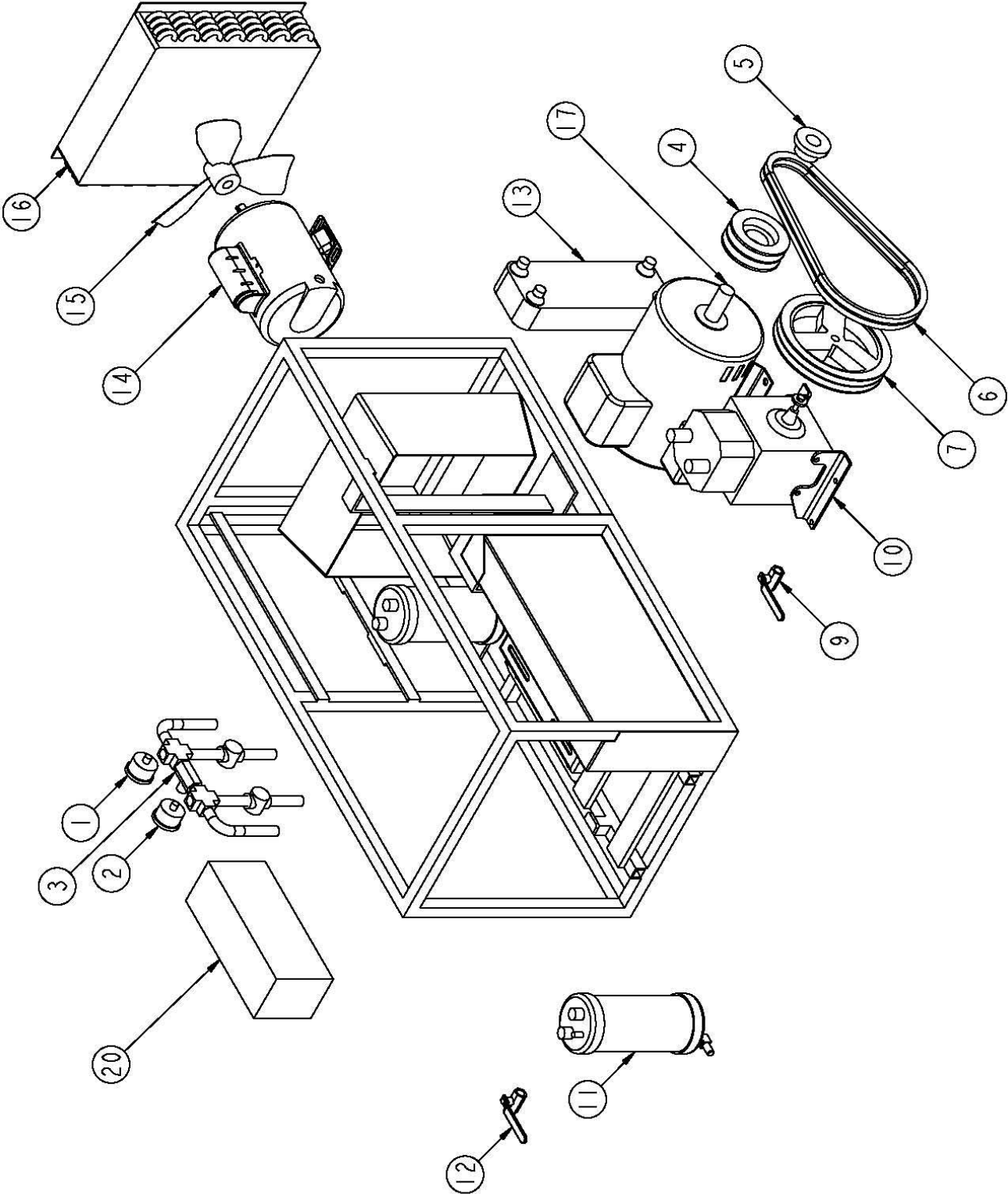
EVAC Electromechanical Data – Tank Mount - All Models

Replacement Parts List

<i>Reference Number</i>	<i>RefTec Part Numbers</i>	<i>Manufacturer Description</i>	<i>QTY</i>
1	RGA300	System Pressure Gauge	1
2	RGA600	Tank Pressure Gauge	1
3	RV-004	Evacuation Bypass Valve	1
4	HBU042	Mtr Sheave for 1ph- 3ph HPY295	1
5	HBU905	Pulley Bushing	1
6	HBT139/136	3 Phase -139 1 Phase 136	2
7	HPY085	Compressor Pulley	1
8	RV-304	3 Way Hand Valve	3
9	RVM012	Oil Bypass Valve	1
10	RCP999A	Compressor	1
11	ROS005	Vapor Compressor Oil Separator	1
12	RVA304	Discharge Evacuation Valve	1
13	ROS007	Suction Accumulator	1
14	EMO112	Fan Motor	1
15	HFB125	Fan Blade	1
16	RCC014	Condenser Coil	1
17	EMO234	Compressor Drive Motor 230VAC 1 Phase	1
17	EMO233	Compressor Drive Motor 230/460VAC 3 Phase	1
17	EMO575	3HP 1725RPM 575VAC 3 Phase	1
18	RVX006	Hand Ball Valves for Tank & System	2
19	XSW015	Low Pressure Switch	1
20	EBX125	Electrical Control Box	1
21	HWHASMEB	6" Swivel Caster (4per 250-500 & 6per 850-1000)	4
Not Shown	EMI400	50Amp 480V Receptacle	1
Not Shown	EMI452	50Amp 230V Locking Connector	1
Not Shown	EMI459	50Amp 600V Flanged Inlet	1
Not Shown	EMI200	50Amp 230V Male Inlet	1
Not Shown	EMI401	50Amp 480V Male Inlet	1
Not Shown	EMI460	50Amp 600V Locking Connector	1
Not Shown	EMI115	Male Inlet 115V	1
Not Shown	RHX200	2 Ton Heat Exchanger Optional	1
Not Shown	RST005	Y Strainer	1

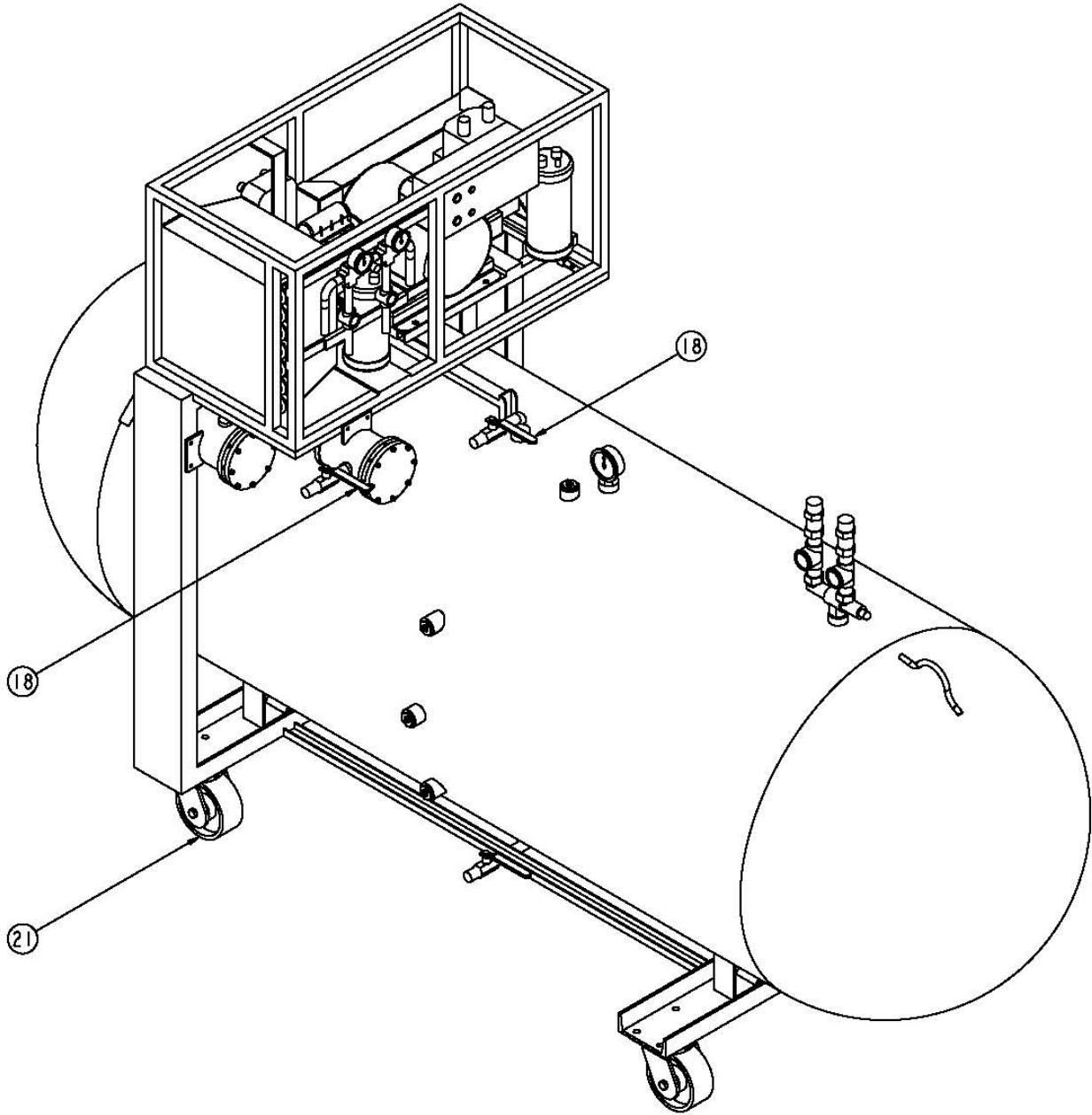
EVAC Electromechanical Data

Primary Component Diagram



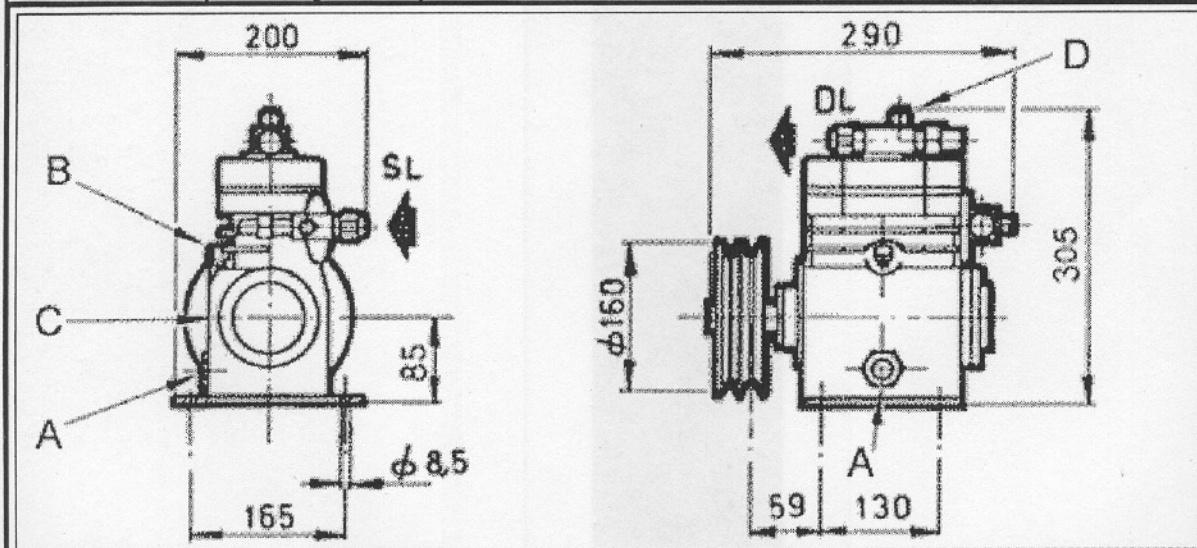
EVAC Electromechanical Data

Primary Component Diagram (Continued)



	M/COMPRESSORE M/COMPRESSORS M/COMPRESSEURS MOTORKOMPRESS	2GVS
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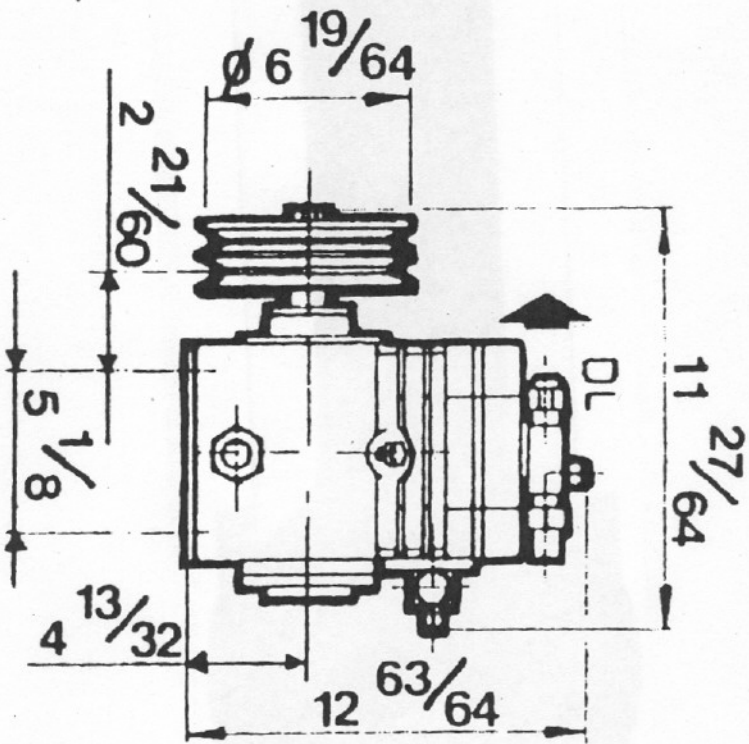
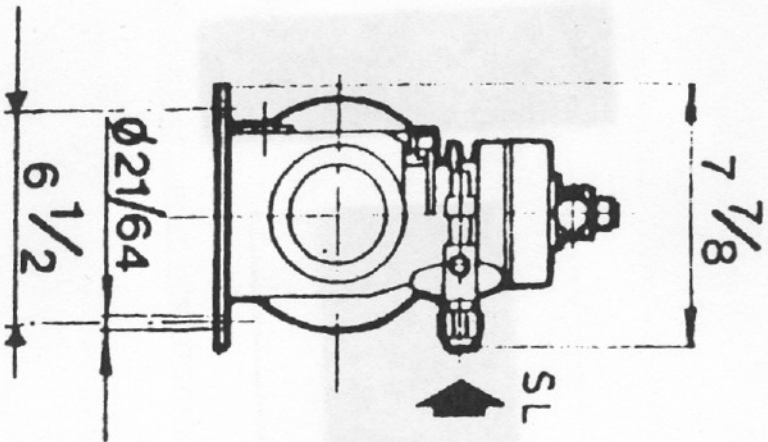
Model 2GVS		Displacement 170 cm ³ N° cylinders 2	Rotation looking from driving end Orario
Swept volume 1450 RPM 13,01 mc/h 1750 RPM 15,7 mc/h		Bore 60 Stroke 30 Oil charge 1 Kg.	Suction connection 3/4 Discharge connection 5/8 Net weight with flywheel 22 Kg
Max operating pressure BP 20 bar AP 25 bar		Sound power dBA ISO9614-1gr.2 Condit. 0 Refrig. 0	Operating speed range 500 RPM min. 1450 RPM max.
Driving motor power range 1-5,5 HP		Flywheel diameter External 157 mm Primit. 150 mm	Driving belts Nr 2 Type A
Type of lubrication A sbattimento		Type of oil with refrig. HCFC (CFC) Standard Suniso 3GS	Type of oil with refrig. HFC Opzionale POE 32
Std painting RAL5008	Gros weight 24 Kg.	Packing dimensions LxPxH 380x270x380 mm	Packing volume 0,039 m ³



A Spia Olio	Oil Sight	Voyant d'huile	Oelschauglas
B Tappo carica Olio	Oil charge plug	Bouchon huile	Oelfuellschraube
C Presa Bassa Pres.	Low pressure tap	Prise basse pression	Anschluss Niederdruck
D Presa Alta Press.	High pressure tap	Prise haute pression	Anschluss Hochdruck
DL Rubinetto Compressione	Discharge service valve	Vanne de refoulement	Druckabsperrventil
SL Rubinetto Aspirazione	Suction service valve	Vanne aspiration	Saugabsperrventil

Available accessories	
Description	Supply
CH=Crankcase Heater	Option
BF=Body cooling fan	Option
PDD=Double pressure switch	Option
PE=Electromagnetic flywheel	Option
OS=Oil separator	Option
LS=Liquid separator	Option

2GVVS

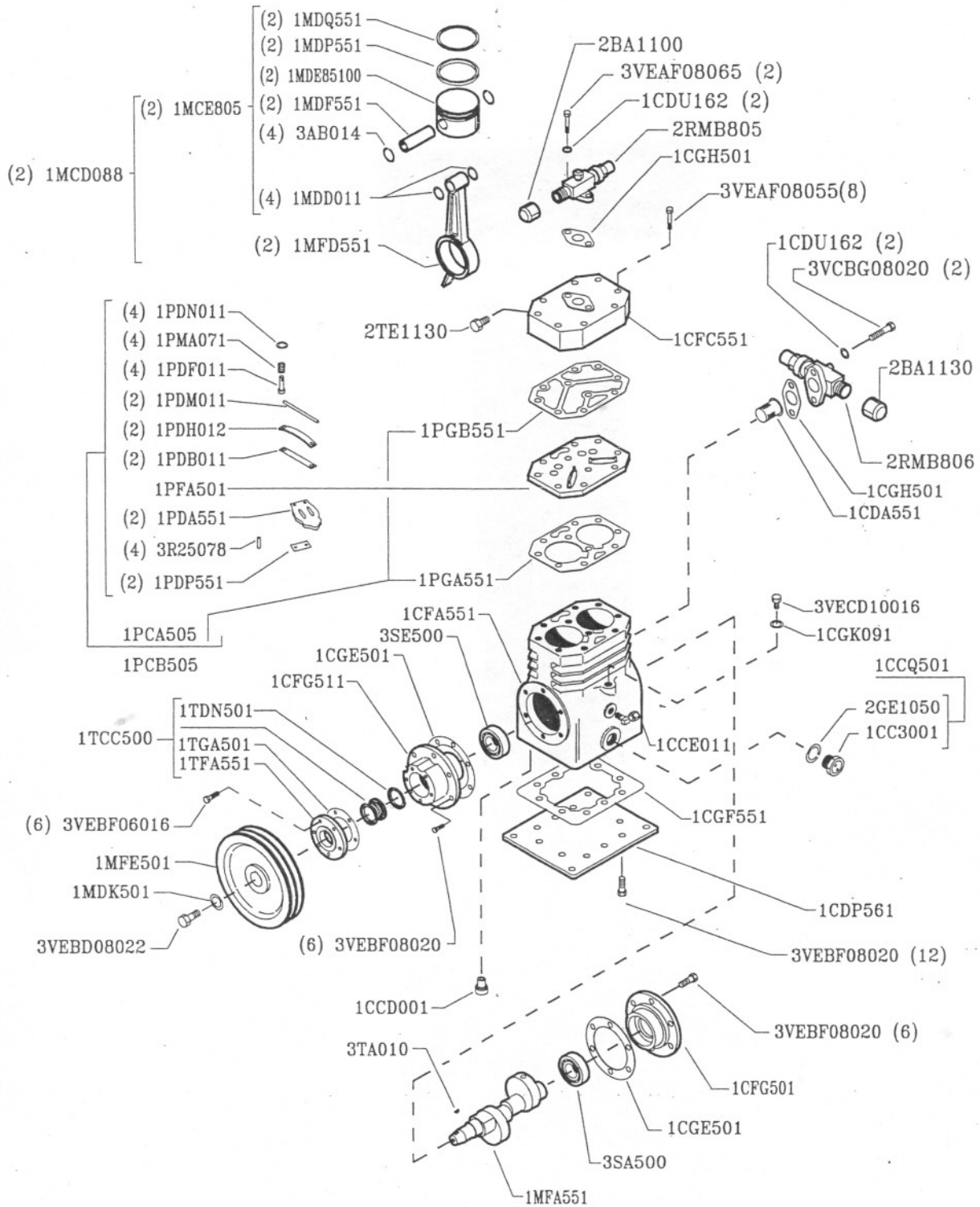


COMPRESSOR 2GVS

Part Number	Description	COMP	Print Position			
1CC3001	War. Nut Ring	2GVS	55			
1CCE011	Tornout	2GVS	17			
1CDA551	Suction Filter	2GVS	22			
1CDP561	Crank. Bott.	2GVS	15			
1CFA551	Crankcase	2GVS	18			
1CFC551	Air Head	2GVS	26			
1CFG501	Flange	2GVS	12			
1CFG511	Main Hub	2GVS	50			
1CGE501	Gasket	2GVS	10			
1CGE501	Gasket	2GVS	51			
1CGF551	Gasket	2GVS	16			
1CGH501	Gasket	2GVS	21			
1CGH501	Gasket	2GVS	30			
1CGK091	Washer	2GVS	32			
1MDE85100	Piston	2GVS	3			
1MDF551	Piston Pin	2GVS	5			
1MDK501	Washer	2GVS	43			
1MDO501	Washer	2GVS	2			
1MDP551	Piston Ring	2GVS	4			
1MDQ551	Piston Ring	2GVS	4			
1MFA551	Shaft	2GVS	9			
1MFD551	Connector Rod	2GVS	1			
1MFE501	Flywheel	2GVS	44			
1PDA511	Suction Valve	2GVS	40			
1PDB011	Discharge Valve	2GVS	37			
1PDF011	Comp. Plug	2GVS	38			
1PDH012	Compr. Bridge	2GVS	36			
1PDM001	Locking Rod	2GVS	33			
1PDN011	Washer	2GVS	34			
1PDP551	Plate	2GVS	41			
1PFA501	Valve Plate	2GVS	24			
1PGA551	Gasket	2GVS	23			
1PGB511	Gasket	2GVS	25			
1PMA071	Spring	2GVS	35			
1TDN501	Washer	2GVS	48			

COMPRESSOR 2GVS

Part Number	Description	COMP	Print Position			
1TFA551	Flange	2GVS	46			
1TGA501	Gasket	2GVS	47			
2BA1100	Pipe Union	2GVS	29			
2BA1130	Pipe Union	2GVS	20			
2GE1050	Gasket	2GVS	56			
2RMB805	Disc. Ser. Valve	2GVS	29			
2RMB806	Suction Valve	2GVS	20			
2TE1020	Tornout	2GVS	52			
3AB014	Circlip	2GVS	6			
3R25078	Peg	2GVS	39			
3SA500	Bearing	2GVS	11			
3SB500	Bearing	2GVS	7			
3TA010	Key	2GVS	8			
3VCBG05065	Screw	2GVS	28			
3VCBG08020	Screw	2GVS	19			
3VEAF08055	Screw	2GVS	27			
3VEBD08022	Screw	2GVS	42			
3VEBF06016	Screw	2GVS	45			
3VEBF08020	Screw	2GVS	13			
3VEBF08020	Screw	2GVS	14			
3VEBF08020	Screw	2GVS	49			
3VECD10016	Screw	2GVS	31			



PAINT
3MVA10

OIL
3MRA0101

Elaborato

Verificato

Approvato

WARNING!

To avoid injury or death due to inhalation of, or skin exposure to refrigerant, closely follow all safety procedures described in the Material Safety Data Sheet for the refrigerant and to all labels on refrigerant containers. Certain procedures common to refrigeration system service may expose personnel to liquid or vaporous refrigerant.

Troubleshooting Procedures

If functional difficulties are experienced, refer to the following troubleshooting chart for assistance.

Troubleshooting Guide

The following guide is provided to assist in analyzing problems that could occur.

Symptom: Describes what is happening

Cause: Suggests possible source

Solution: Describes what must be done

<i>Symptom</i>	<i>Cause</i>	<i>Solution</i>
Pressure differential between system and recovery tank becomes too high - greater than 15 psig.	Restrictions in recovery line	Remove restriction in liquid recovery lines or tank. Tank needs to have minimum 3/4" ID valves.
Slow liquid transfer.	Restriction in flow	Replace restrictive fittings and hoses with appropriate size to expedite transfer.
EVAC running high head pressure back to recovery tank.	Restriction in hoses going to tank.	Replace with appropriately sized hoses and fittings. Run water over tank or add secondary water cooled condenser on liquid return line going to recovery tank. (RefTec has available secondary water cooled and air cooled condensers.)
	Capacity of recovery tank is too small or tank is over-filled.	Replace with appropriately sized tanks.
	High concentration of non-condensibles	Remove non-condensibles.
EVAC compressor won't restart.	Condenser fan not running.	Check fan motor and relay.
	Compressor motor thermal overload open.	Let unit cool down.

Continues on next page

<i>Symptom</i>	<i>Cause</i>	<i>Solution</i>
<p>EVAC slugging with liquid during liquid push/pull</p>	<p>Recovery hose incorrectly connected, this may cause liquid to be injected into compressor</p> <p>Improper valves on recovery tank allowing liquid to be injected into compressor</p>	<p>Verify that the system vapor and liquid lines are properly connected and that the vapor and liquid lines on recovery tank are connected correctly.</p> <p>Verify that the liquid and vapor valves on the recovery tank are separate and that the recovery tank is no more than 80% full.</p>

Manufacturers Limited Warranty

Limited Warranty: RefTec warrants that the equipment will, under normal and anticipated use, be free from defects in refrigerant related parts for a period of one (1) year from and after the date of shipment, and be free from defects in electrical related parts for a period of ninety (90) days from and after the date of shipment, but in all cases excluding consumables and other matters as hereinafter provided. Labor is NOT covered and shall be the sole cost and responsibility of the Purchaser. The obligation of RefTec under this limited warranty is limited to the supplying of parts (excluding consumables) as hereinabove specifically provided. Parts shall be new or nearly new.

RefTec shall be liable to replace the applicable parts only if (i) RefTec is properly notified by Purchaser upon discovery of the alleged defects, (ii) defective parts are returned to RefTec upon authorization with all transportation charges prepaid by Purchaser, (iii) RefTec's examination of the parts discloses to its satisfaction that the defects were not caused by the Purchaser or its agents and (iv) the parts are otherwise covered by RefTec's limited warranty.

Purchaser shall be responsible to select the means of transportation and bear the cost of inbound and outbound freight expense associated with any replacement parts, and all risk of loss attendant thereto.

Notwithstanding anything contained in this warranty to the contrary, (i) this limited warranty shall become null and void upon the use of any improper chemicals or in the event any modifications or improper service or installation is performed on the equipment, (ii) this limited warranty does not apply to consumable materials such as, but not limited to, indicator lamps, fuses, all fluids, filters, coatings, etc., and (iii) this limited warranty is applicable only to Purchaser, and no subsequent purchasers of the equipment from Purchaser shall be entitled to any warranty whatsoever from RefTec, express or implied.

THIS WARRANTY CONSTITUTES THE SOLE AND EXCLUSIVE WARRANTY OF REFTEC WITH RESPECT TO THE EQUIPMENT, THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED, AND REFTEC SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING (WITHOUT LIMITATION), ANY AND ALL WARRANTIES AS TO THE SUITABILITY OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF THE EQUIPMENT FURNISHED HEREUNDER.

THE EXCLUSIVE REMEDY OF PURCHASER AGAINST REFTEC FOR ANY BREACH OF THE FOREGOING LIMITED WARRANTY SHALL BE TO SEEK REPLACEMENT OF THE AFFECTED PARTS. IN NO EVENT WILL REFTEC'S LIABILITY IN CONNECTION WITH THE EQUIPMENT WHICH IS FOUND TO BE DEFECTIVE EXCEED THE AMOUNTS PAID BY PURCHASER TO REFTEC HEREUNDER FOR SUCH EQUIPMENT WHICH IS SPECIFICALLY FOUND TO BE DEFECTIVE. THESE LIMITATIONS APPLY TO ALL CAUSES OF ACTION IN THE AGGREGATE, BOTH AT LAW AND IN EQUITY, AND INCLUDING WITHOUT LIMITATION, BREACH OF CONTRACT, BREACH OF WARRANTY, REFTEC'S NEGLIGENCE, INFRINGEMENT, STRICT LIABILITY, MISREPRESENTATION AND OTHER TORTS AND CONTRACTUAL CLAIMS. EXCEPT FOR THE EXCLUSIVE REMEDY PROVIDED ABOVE FOR REFTEC'S BREACH OF THIS LIMITED WARRANTY, PURCHASER, FOR ITSELF AND ITS SUCCESSORS AND ASSIGNS, HEREBY WAIVES AND RELEASES REFTEC FROM ANY AND ALL OTHER CLAIMS OR CAUSES OF ACTION THEY HAVE AGAINST REFTEC ON ACCOUNT OF OR ASSOCIATED WITH THE EQUIPMENT PURCHASED HEREUNDER OR FOR REFTEC'S BREACH OF THIS LIMITED WARRANTY. IN NO EVENT SHALL REFTEC BE LIABLE FOR ANY INDIRECT, SPECIAL, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, SUCH AS, BUT NOT LIMITED TO, LOSS OF ANTICIPATED PROFITS, LOST SAVINGS, LOST REVENUES, FINES, OR OTHER ECONOMIC LOSS IN CONNECTION WITH OR ARISING OUT OF THE EXISTENCE, FURNISHING, FUNCTIONING OR USE OF ANY ITEM OF EQUIPMENT PROVIDED UNDER THIS AGREEMENT, EVEN IF REFTEC HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES AND/OR SUCH DAMAGES ARE REASONABLE AND/OR FORESEEABLE. FURTHER, PURCHASER FOR ITSELF AND ITS SUCCESSORS AND ASSIGNS, WAIVES AND RELEASES ANY RIGHTS THEY MAY HAVE TO BRING AN ACTION ARISING OR RESULTING FROM THIS AGREEMENT, REGARDLESS OF ITS FORM, MORE THAN FIFTEEN (15) MONTHS AFTER SHIPMENT OF THE AFFECTED EQUIPMENT BY REFTEC TO PURCHASER.

The provisions of this warranty shall supersede any contrary provisions contained in this agreement, any document supplied by RefTec to Purchaser or by Purchaser to RefTec, or any other agreement, written or oral, between Purchaser and RefTec, notwithstanding the fact that the provisions contained in this warranty directly conflict with other terms or provisions of this agreement or such other documents, or that such other documents or agreements were provided, delivered, made or executed subsequent to this agreement unless such agreements are in writing, specifically refer to this agreement, specifically provide that they are amending this and are signed by the President of RefTec.