Pro-Set® TRS500E SERIES

Oilless Refrigerant Recovery System

OWNER'S MANUAL (English)

Français, Español, Deutsch and latest updates: www.cpsproducts.be

Series: TRS500E

TO BE OPERATED BY QUALIFIED PERSONNEL ONLY

CE

Ignition proof design that meets UL1963
Supplement SB test methods of UL/ANSI 12.12.1

Efficient Everywhere!

The **TRS500E** offers dual 110-240V operation with zero 50Hz degradation, ensuring consistent operation across frequencies. The Brushless Direct Current (BLDC) motor, with innovative wobble piston design, ensures maximum efficiency.

BOX CONTENTS

- **TRS500E Refrigerant Recovery Unit**
- **3m Locking Power Cord**
- **Operational Manual**

TABLE OF CONTENTS

Introduction 2
Key Features 3
General Safety Instructions 4-6
Specifications 7
Unit Layout 8
Direct Vapor or Liquid Recovery 9
Push - Pull Liquid Recovery 10
Routine Maintenance 11
Warranty 11

KEY FEATURES

- Powerful ¾ HP BLDC (Brushless DC) Motor driven Oil-less Compressor with Wobble Piston Design with Superior Long Life Seal
- Ignition proof design that meets UL1963 Supplement SB test methods of UL/ANSI 12.12.1
- High Air Flow Fan with a Micro-channel Condenser to keep the unit running cool
- Purge (Self Clearing) system to remove residual refrigerant from unit and prevent cross contamination
- On board suction and discharge gauges
- 0 to 800 psig / 55 bar discharge gauge to handle R,32 and R-410A
- Lightweight, compact, and rugged blow molded case
- Integrated easy to use carrying handle
- Manual Reset High pressure switch set at 38bar (550 psig)
- Easy and secure filter access, no dangling filters to be damaged
- Replaceable or cleanable filter screens
- Maintenance-free oilless compressor
- Dual Voltage switch, 115VAC 50/60Hz or 230VAC 50/60Hz

GENERAL SAFETY INSTRUCTIONS

Please read, follow and understand the contents of this entire manual, with special attention given to Danger, Warning and Caution statements.

FOR USE BY PROFESSIONALLY TRAINED AND CERTIFIED OPERATORS ONLY. MOST STATES, COUNTRIES, ETC., MAY REQUIRE USER TO BE LICENSED. PLEASE CHECK WITH YOUR LOCAL GOVERNMENT AGENCY.

DANGER: The recovery tank used with this contains liquid refrigerant. Overfilling recovery tank may cause a violent rupture resulting in severe injury or even death. **As a minimum, please use a scale to continuously monitor recovery tank weight.**

DANGER: **EXPLOSION RISK!** This unit is not certified as 'explosion proof' for explosive rated environments. It is only to be used in normal environments.

DANGER: **ELECTRICAL SHOCK HAZARD:** Always disconnect power source when servicing this equipment.

WARNING: Do not use equipment in the vicinity of spilled or open containers of gasoline or other flammable substances.

WARNING: All hoses may contain liquid refrigerant under pressure. Contact with refrigerant may cause frostbite or other related injuries. Wear proper personal protective equipment such as safety goggles and gloves. When disconnecting any hose, please use extreme caution.

WARNING: TO REDUCE RISK OF FIRE: Avoid use of an extension cord because extension cord may overheat. If you must use an extension cord, use 10 awg minimum.

WARNING: Avoid breathing refrigerant vapors and lubricant vapor or mist. Breathing high concentration levels may cause heart arrhythmia, loss of consciousness, or even cause suffocation. Exposure may irritate eyes, nose, throat and skin. Please read manufacturer's Material Safety Data Sheet for further safety information on refrigerants and lubricants.

WARNING: Make certain all safety devices are functioning properly before operating equipment.

CAUTION: To avoid cross contamination of refrigerant and potential leakage to the atmosphere, proper hoses and fittings should be used and checked for damage.

CAUTION: To avoid overfilling refrigerant tank, read and follow manufacturer's recommended filling instructions for refrigerant being recovered.

CAUTION: This equipment is intended for use of one refrigerant at a time. Mixing of different refrigerants will cause your recovered supply of refrigerant to become contaminated.

Note: It is very expensive to destroy mixed or damaged refrigerants.

HAZARDOUS LOCATION SAFETY INSTRUCTIONS

The following are additional safety recommendations when servicing HVAC&R equipment in a Hazardous location. These instructions do not replace existing occupational hazardous procedures or other local, state and/or federal agency regulations.

Technicians working on HVAC&R systems should have detailed knowledge and skills in handling refrigerants, personal protective equipment, refrigerant leak prevention, handling of cylinders, leak detection & monitoring, and proper disposal of contaminated refrigerants. Additional knowledge of legislation, regulations, and standards relating to the handling of refrigerants may also be required. Check your local occupational safety codes.

The area of service should be marked as Temporary Hazardous or Flammable Zone. This will be a 3 meter (10 feet) perimeter around the HVAC&R equipment being serviced. No smoking signs or other hazardous zone signs should be posted. Local supervisor should be notified of the hazardous zone's existence.

The following are recommended practices when servicing equipment in a hazardous zone:

- A flammable gas detector should be used to monitor the air in the Temporary Flammable Zone.
- A dry powder or CO2 fire extinguisher must be available at the service location.
- An ignition proof ventilation fan should be used to provide a minimum of 5 air changeovers per hour.
- Ensure the HVAC&R equipment has been disconnected from electrical service.
- All potential ignition sources within the Temporary Flammable Zone must be disabled.
- When connecting service equipment such as vacuum pumps, scales, recovery units, etc… to a power source, the connection must be made outside the Temporary Hazardous Zone perimeter.
- A grounding strap must be used between the recovery unit's metal **INLET** or **OUTLET** port and recovery tank's unpainted metal fitting. The grounding strap is used to dissipate any static electricity build up that can occur, especially during recovery liquid.
- Once the recovery process of the refrigerant is complete, the HVAC&R system should be purged with 100% Nitrogen. Do not use air.

DANGER - EXPLOSION RISK: Do not mix any type of refrigerant with air. All precautions must be taken to eliminate the mixing of air with refrigerants, including monitoring the recover cylinder of air or oxygen content.

REFRIGERANT STORAGE CYLINDER SAFETY

Check with your federal and/or state regulations on the proper vessel to store refrigerant. In the **USA DOT CFR 40** is required when filling and transporting refrigerant storage vessels.

This unit is design to be used with 400 PSIG rated storage vessels. In the USA, this is denoted by a **DOT** rating of **4ABA400** or **4BW400.**

When recovering or filling a refrigerant storage vessel, never fill beyond 80% of its water capacity (WC). Filling a tank at 70F to 90% and then putting it in a hot service van will cause the liquid to expand until it becomes 100% full. The hydrostatic force of the refrigerant could rupture the tank causing rapid venting or explosion. See illustration in Diagram 1 below.

To calculate the maximum weight of a storage tank you will need to get two ratings from the tank. One is WC (water capacity) and the other is TW (empty tank weight). The maximum tank weight (MTW) is calculated as follows:

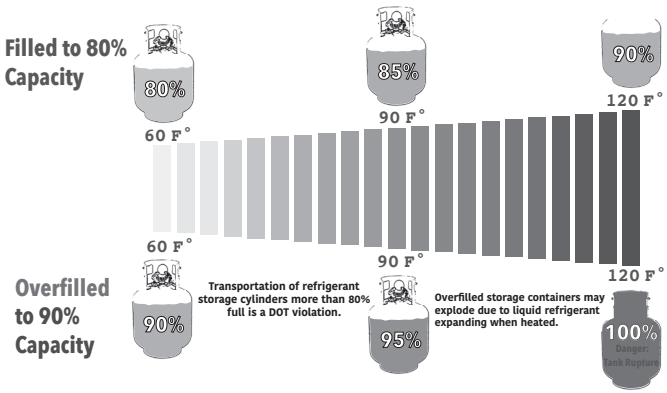
MTW=.8 x WC + TW

Turn on the scale and tare to Zero. Place storage tank on scale. Read the weight. Compare that to the MTW calculated above. If the scale weight is below MTW, which is the amount of storage capacity you have in the tank. If the scale weight is above MTW, you have a tank that is overfilled.

If an overfill condition does exist on a storage tank, place in a cool area and transfer some of the refrigerant into another storage tank until the weight is below MTW.

Always use a calibrated scale to monitor the total weight of the tank when recovering or filling refrigerant into a storage tank. Devices such as tank overfill floats should stop the recovery unit, but do not stop the flow of refrigerant to the storage tank.

If the scale or an overfill device does detect tank full condition, the recovery unit should be turned off and the storage tank valves closed.



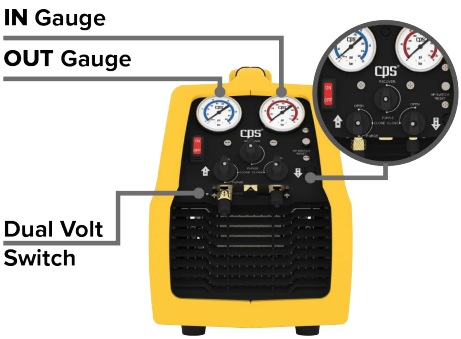
SPECIFICATIONS

MODEL		TRS500E
REFRIGERANTS	**AHRI740 Class III*** (120 - 169 PSIG @ 105F Liquid Saturation)	R12, R134a, R401C, R406A, R500
	AHRI740 Class VI* (170 - 269 PSIG @ 105F Liquid Saturation)	R22, R401A/B, R402B,R407C/D/E/F, R408A, R409A, R411A/B, R412A, R502, R509A
	AHRI740 Class V* (270 - 355 PSIG @ 105F Liquid Saturation)	R402A, R404A, R407A/B, R410A/B, R507A
Power Supply		115/230 VAC 50/60Hz
Motor Power		3/4 HP
Motor Type		Variable Speed Brushless DC, 1800-2300 RPM
Maximum Current		8.0 AMPS
Compressor Type		1 Cylinder Oil-less Reciprocating, Air Cooled
High Pressure Cutout		38 bar
Operating Temperature Range		0C to 50C
Dimensions		35cm x 22cm x 30cm
Weight		10.0 kg.

*** See CPS website for updated refrigerant list**

ARHI740-2016 Performance Data certified by UL				
Refrigerant	**Direct Vapor**	**Direct Liquid**	**Push - Pull Liquid**	**High Temp. Vapor Rate**
R410a	.30 lb/min	3.87 lb/min	12.22 lb/min	
	(0.14 kg/min)	(1.76 kg/min)	(5.54 kg/min)	
R22	.37 lb/min	3.72 lb/min	10.65 lb/min	0.366 lb/min
	(0.17 kg/min)	(1.69 kg/min)	(4.83 kg/min)	(0.17 kg/min)
R134a	.32 lb/min	2.63 lb/min	8.83 lb/min	
	(0.15 kg/min)	(1.19 kg/min)	(4.01kg/min)	

TRS500E SERIES UNIT LAYOUT

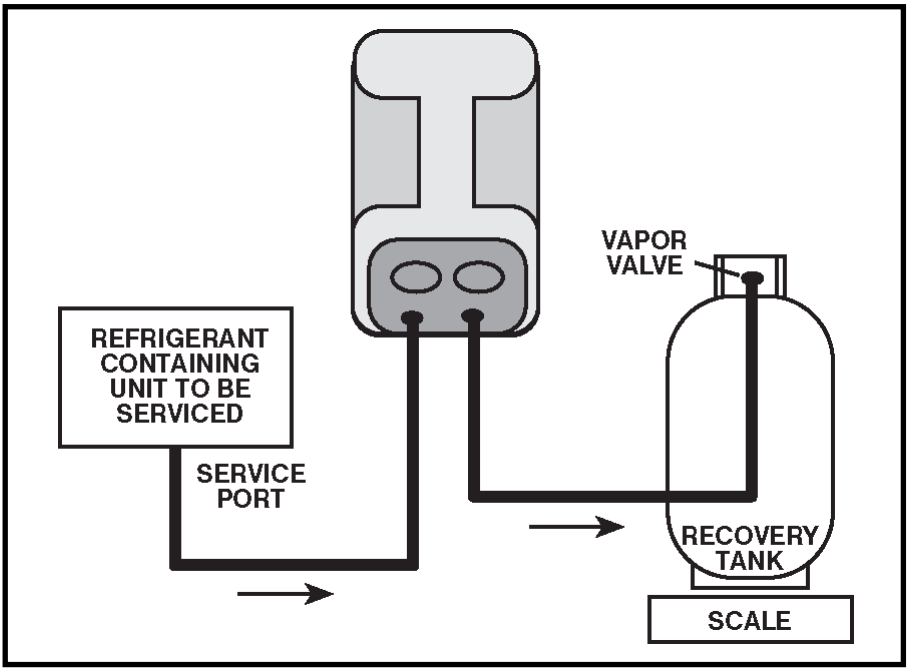


MANIFOLD VALVES AND POSITIONS FOR OPERATION

The unit is designed with a manifold containing 3 ball valves for Recovery, Liquid Push-Pull, and Purge (Self-Clearing or Pump Down) operations. The following table shows the proper position for each ball valve vs. the Operation.

OPERATION	IN Valve Position	OUT Valve Position	RECOVER/PURGE Valve Position
RECOVERY	OPEN	OPEN	RECOVER
PURGE	PURGE	OPEN	PURGE
LIQUID PUSH-PULL	OPEN	OPEN	PURGE
OFF	CLOSE	CLOSE	RECOVER

DIRECT VAPOR OR LIQUID RECOVERY

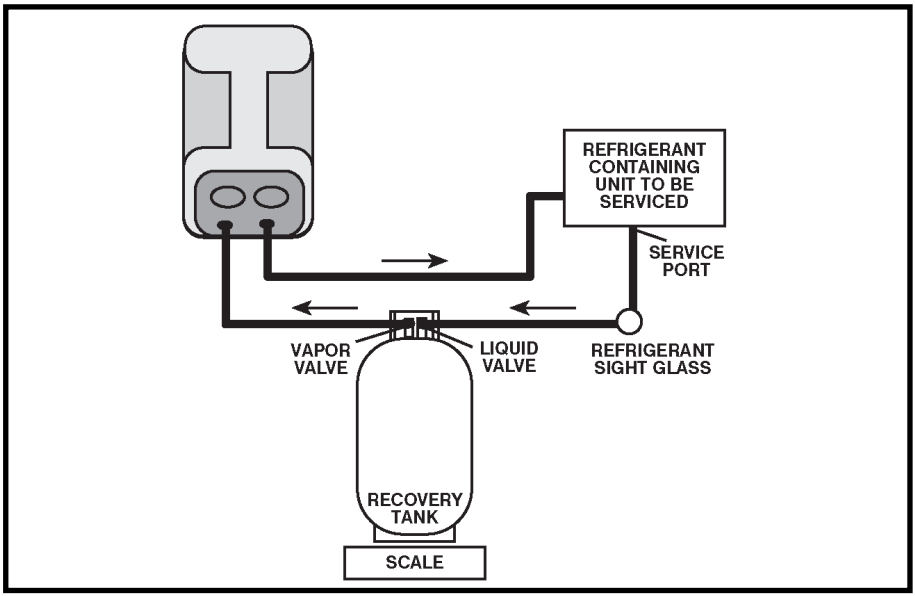


1. Clean **IN FILTER** regularly.
2. Connect **RECOVERY MACHINE** per diagram.
   Note: The recovery tank must be rated for 38 bar.
3. Open **VAPOR VALVE** on **RECOVERY TANK.**
4. Open **OUT LET VALVE** on **RECOVERY MACHINE.**
5. Turn **CENTER VALVE** to **RECOVER** position.
6. Press **POWER SWITCH** to **ON** position.
7. When **RECOVERY MACHINE STARTS,** open **IN** valve on **RECOVERY MACHINE** to start refrigerant flow.

Note: If liquid refrigerant is present, compressor will emit a hammering sound. Use IN valve to regulate incoming refrigerant until hammering stops. IN gauge will read regulated pressure to compressor.

8. Monitor **IN** gauge until it falls below required vacuum level. Then turn **IN** valve to **PURGE** position.
9. Rotate center valve to **PURGE** position. Monitor IN gauge and scale. When **IN** gauge reads a vacuum, turn **RECOVERY MACHINE OFF.**
10. **RECOVERY** and **PURGE** are complete.

PUSH-PULL LIQUID RECOVERY



1. Connect the unit as shown in **diagramm above.**
   Note: The recovery tank must be rated for 38 bar.
2. Open both valves on Recovery Tank.
3. Open **OUT** valve on the Recovery unit.
4. Rotate the center valve to the **PURGE** position.
5. Push the Main Power Switch **"ON".**
6. Once unit has started, turn the IN valve to the **OPEN** position to start refrigerant flow.
7. Monitor the optional in-line sight glass for liquid refrigerant movement.
8. Once liquid refrigerant is no longer present, close **IN** valve. When the **IN** gauge falls into vacuum, proceed to Direct Vapor Recovery Operation.

ROUTINE MAINTENANCE

Filter Maintenance: The TRS500 Series is equipped with a 100-mesh screen filter. This filter should be checked periodically. A partially clogged filter will slow recovery rate.

Check filter as follows:

1. Use your fingers or pliers to loosen suction port as shown in **(Figure 4).**
2. Once loose, remove the suction port-filteras shown in **(Figure 5) .**
3. Either clean the current filter or replace with new filter(Item NO. CRXF10)
4. Inspect o-ring. Re-lubricate with compressor oil or equivalent.
5. Place filter back into suction port fitting.
6. Hand tighten assembly back onto unit. Do not over tighten, damage to O-ring may occur.
7. Check connection for leaks.

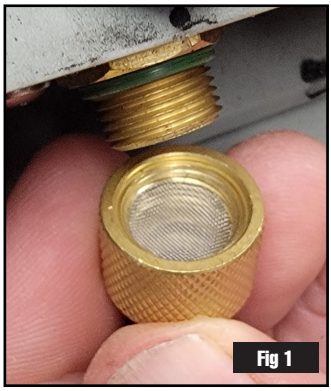


Fig 1

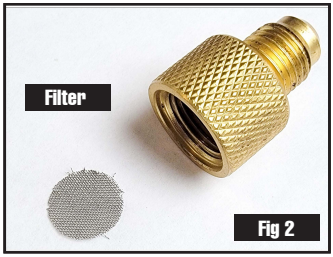


Fig 2

WARRANTY

CPS Products, Inc. guarantees that all products are free of manufacturing and material defects to the original owner for one year from the date of purchase. If the equipment should fail during the guarantee period it will be repaired or replaced (at our option) at no charge. This guarantee does not apply to equipment that has been altered, misused or solely in need of field service maintenance. All repaired equipment will carry an independent 90 day warranty. This repair policy does not include equipment that is determined to be beyond economical repair. **WARRANTY DISCLAIMER:** Use this device to recover only HVAC/R refrigerants from sealed HVAC/R systems. **WARRANTY VOIDED IF USED FOR ANY OTHER PURPOSE.**

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