





Sensible Solutions For Refrigerant Recovery™

## Model 3600R-410A

Instruction 790140
Operation & Maintenance

Rev. F - April 2002

### **ARI CERTIFIED**

**WARNING:** Inhalation of high concentrations of refrigerant vapors is harmful and may cause heart irregularities, unconsciousness, or death. Deliberate inhalation of refrigerants is extremely dangerous and death can occur without warning. Vapors reduce oxygen available for breathing and are heavier than air. Decomposition products are hazardous. Liquid contact may cause frostbite. All refrigerant containers, equipment, and hoses are under pressure.

**CAUTION:** BEFORE OPERATING THIS UNIT, PLEASE READ THIS MANUAL IN ITS ENTIRETY. IT IS IMPORTANT THAT YOU HAVE A THOROUGH UNDERSTANDING OF THE PROCEDURES OUTLINED IN THIS MANUAL. FAILURE TO FOLLOW THESE PROCEDURES COULD VOID ALL MANUFACTURER WARRANTIES.

BEFORE HANDLING REFRIGERANTS, READ MATERIAL SAFETY DATA SHEET FROM REFRIGERANT MANUFACTURER.

| Model 3600-R410A |             | Portable Commercial Oilless Recovery System            |
|------------------|-------------|--------------------------------------------------------|
| Refrigerants     |             | R12, R-22, R-134a, R-500, R-502, R-410AHP/MP<br>Blends |
| Power Source     |             | 120V AC 60 Hz                                          |
| Wattage/Ampe     | eres        | 800 W / 8.0 A max                                      |
| Compressor       |             | 1/2 HP High Performance Oilless                        |
| High Pressure    | Shutoff     | 550 psi                                                |
| Dimensions       |             | Height 12.0"                                           |
|                  |             | Width 13"                                              |
|                  |             | Depth 7.5"                                             |
|                  |             | Weight 35 Lbs.                                         |
|                  | ARI 740 C   | Certified                                              |
|                  | Vapor Rates | Vacuum Rating                                          |
| R-12             | .35 Lbs/Min | 13 Inch Hg.                                            |
| R-22             | .35 Lbs/Min | 13 Inch Hg.                                            |
| R-134a           | 35 Lbs/Min  | 13 Inch Hg.                                            |
| R-500            | .35 Lbs/Min | 13 Inch Hg.                                            |
| R-502            | .35 Lbs/Min | 13 Inch Hg.                                            |

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Congratulations on your purchase of the Fluoromizer Model 3600-R410A high performance oilless recovery system. <u>Bacharach Test Systems has worked hard</u> to make the Model 3600-R410A the highest performing, most portable and easiest to use recovery system on the market. We are committed to your complete satisfaction!

Please note that Bacharach Test Systems requires that a filter be used on the inlet hose coming from the system being serviced in order to protect the compressor from particulate. A standard filter or filter dryer is suggested. The compressor warranty will be voided if it is determined that a filter was not used during the operation of this equipment.

WARNING: You must use a DOT recovery cylinder approved for use with R-410A refrigerant. This recovery system is equipped with a high-pressure shutoff switch set to turn the unit off at 550 psi. Using any other cylinder may cause the pressure in the recovery cylinder to exceed the cylinder's pressure rating.

CAUTION: These instructions are for personnel trained and experienced in the handling of refrigerants. Unqualified individuals should not attempt to operate this equipment. Failure to follow proper operating procedures may cause personal injury.

## **FEATURES**

- Designed specifically for the new R-410A blend that has much higher vapor pressures.
- New oilless compressor technology that is QUIETER, FASTER, AND LIGHTER than current products on the market.
- Tolerates liquid during vapor recovery operations with no compressor damage.
- <u>Extremely</u> easy to operate.
- Extra large condensing ensures high recovery rates even on the hottest days.
- Self-purging valve completely purges the condenser and tubing, eliminating cross contamination when switching between refrigerants.
- Solid state LED status display keeps the operator informed of the operational status
  of the Fluoromizer. The following situations are monitored: High Pressure Shutoff,
  Recovery Cylinder Full Shutoff (If option is installed), Automatic Vacuum Shutoff,
  and System Operating.
- Suction and discharge gauges eliminate the need for a manifold gauge set.
- Inlet and outlet ball valves provide full refrigerant flow and positive shutoff.
- Automatic vacuum shutoff at 13" HG vacuum.
- Automatic high-pressure shutoff at 550 psi.
- Rugged heavy-duty steel construction with epoxy powder coating for <u>long life</u>.
- Options include: Deluxe carrying case to protect the 3600-R410A from damage during transport, Automatic 80% tank full shutoff.

Specifications are subject to change without notice.

## GENERAL SAFETY INSTRUCTIONS

#### 1. KNOW YOUR EQUIPMENT

Read and understand the operation manual and labels affixed to the unit. Learn its application and limitations as well as the specific potential hazards of your equipment.

### 2. GROUND ALL EQUIPMENT

This unit is equipped with an approved three pronged grounded power cord and plug. The green wire is the ground wire and should never be connected to a live terminal.

#### 3. Use the Proper Extension Cord

Use the following guide for choosing the proper extension cord:

18 gauge cord- maximum length 10 feet

16 gauge cord- maximum length 25 feet

14 gauge cord- maximum length 50 feet

12 gauge cord- maximum length 100 feet

#### 4. AVOID DANGEROUS ENVIRONMENTS

Do not use this unit in damp or wet locations or expose it to rain. Secure unit when working above floor level. This equipment should be used in a location with mechanical ventilation that provides at least four air changes per hour or the equipment should be located at least 18 inches above the floor. This equipment should not be used in the vicinity of spilled or open containers of flammable materials.

### 5. DISCONNECT UNIT BEFORE SERVICING

Electrical shock hazard may be present when the unit is disassembled.

### 6. AVOID ACCIDENTAL STARTING

Make sure the system switch is in the OFF position before connecting electrical devices.

#### 7. REPAIR DAMAGED PARTS

Do not operate the unit with a defective part. Repair unit to proper operating conditions.

### 8. Use Recommended Accessories

Follow the instructions that accompany all accessories. Improper use of accessories may damage the equipment or create a hazard.

### 9. USE CAUTION WHEN CONNECTING OR DISCONNECTING HOSES

Improper usage may result in refrigerant burns (frostbite). If a significant refrigerant leak occurs, proceed immediately to a well ventilated area.

### 10. Use the proper recovery cylinder rated for use with R-410A

WARNING: You must use the proper DOT approved recovery cylinder with the Model 3600-R410A. This recovery system is equipped with a high-pressure shutoff switch set to turn the unit off at 550 psi. Using any other cylinder may cause the pressure in the recovery cylinder to exceed the cylinder's pressure rating.

## OPERATIONAL SAFETY

WARNING: Inhalation of high concentrations of refrigerant vapors is harmful and may cause heart irregularities, unconsciousness, or death. Deliberate inhalation of refrigerants is extremely dangerous and death may occur without warning. Vapor reduces oxygen available for breathing and is heavier than air. Decomposition products are hazardous. Liquid contact can cause frostbite. All refrigerant containers, equipment and hoses are under high pressure.

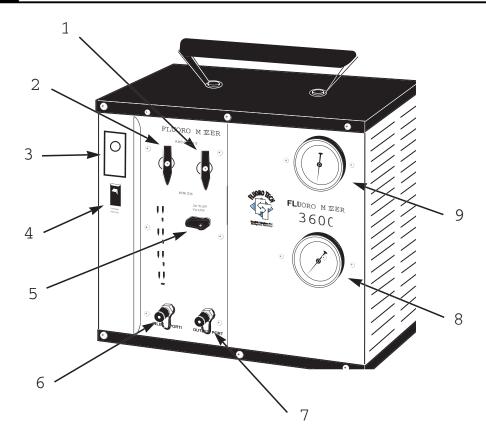
- Avoid breathing high concentrations of vapors.
- Use with sufficient ventilation to keep operator exposure below recommended limits, especially in enclosed and low lying areas.
- Avoid contact of liquid with eyes and prolonged skin exposure.
- Wear safety goggles and protective gloves.
- Do not apply open flame or heat unit above 125°F.
- Do not allow refrigerants to contact open flame. Decomposition will occur.

**FIRST AID**: If high concentrations of refrigerant vapors are inhaled, immediately remove person(s) to fresh air. Keep calm. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a doctor. Do not give epinephrine or similar drugs.

EYE: In case of liquid contact, immediately flush eye with water. See medical attention.

SKIN: Flush with water. Treat for frostbite by gently warming the affected area.

**CAUTION**: All refrigerant hoses, recovery tanks, refrigerant lines, the Fluoromizer unit, and other vessels containing refrigerants should be handled at all times as if under high pressure.



| Purge Ball Valve                                   | This valve determines what function the Model 3600-R410A performs. This valve is UP during recovery operations and DOWN for purging and liquid push-pull operations.                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2. Inlet Port Ball Valve                           | Opens or closes the inlet port. It is pointing UP (open) for all recovery operations and points DOWN for purging operations.                                                                                                                                                                                                                                                                                                                                                                      |
| 3 LED Status Display                               | See the description on the following page.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 4 System Switch                                    | When in the ON position, this switch starts the recovery operation by turning the compressor on.                                                                                                                                                                                                                                                                                                                                                                                                  |
| 5. Outlet Port Ball Valve                          | Opens or closes the outlet port. It points DOWN when it is open and to the left when CLOSED.                                                                                                                                                                                                                                                                                                                                                                                                      |
| 6 Inlet Port                                       | Refrigerant hose connection for incoming refrigerant vapors.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 7 Outlet Port                                      | Refrigerant hose connection for outgoing refrigerant.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 8. Outlet Pressure Gauge                           | Displays the outlet/discharge pressure.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 9. Inlet Pressure Gauge                            | Displays the inlet/suction pressure of the system being evacuated.                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Umbilical Cord - Optional<br>Accessory (Not shown) | This optional accessory connects to the recovery cylinder overfill sensor and automatically shuts the Fluoromizer unit off when the recovery cylinder reaches the 80% liquid fill limit. NOTE: If the Model 3600-R410A is equipped with an 80% shutoff cord, it will not work unless it is not connected to a DOT recovery cylinder with a compatible level float switch. If the recovery cylinder does not have a float switch, a shorting cap must be installed in order to operate the system. |
| Compressor Circuit Breaker (not shown)             | Protects against high amperage. Located on the left side of the machine.                                                                                                                                                                                                                                                                                                                                                                                                                          |

## LED DISPLAY

|                                                                                                                              | LED<br>STATUS | EXPLANATION                                                                                                                       |  |
|------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------|--|
| Normal<br>Operation                                                                                                          | GREEN<br>LED  | Indicates that the power switch is ON and the compressor is running.                                                              |  |
| High Pressure<br>Condition                                                                                                   | RED LED       | Indicates that there is a high pressure condition that must be corrected. The internal high pressure switch activates at 550 psi. |  |
| Tank Full RED LED Indicates that the recovery cylinder is full (if the Automatic 80% Tank Full Shutoff Option is installed). |               |                                                                                                                                   |  |

## HELPFUL HINTS FOR RECOVERING R-410A

R-410A has been designated by the EPA as a "very-high-pressure" refrigerant. Because of its higher vapor pressure, recovering R-410A has some unique challenges. The higher vapor pressure requires more work from the compressor, resulting in higher temperatures and increased wear on moving compressor parts.

In order to reduce the affects of these conditions, Bacharach Test Systems recommends the following:

- Whenever possible, cool your recovery tank with ice or water. This keeps the compressor discharge pressures lower, which will result in faster recovery rates and longer compressor life.
- Avoid recovering large amounts of R-410A at one time. Allow the recovery unit and cylinder to cool before starting the next recovery job.

Following these simple hints will improve both recovery performance and compressor life.

## Vapor Recovery Procedures

#### STEPS:

- 1. Turn off all electrical or mechanical power to the refrigerant device to be evacuated.
- 2. Make proper hose connections: Connect refrigerant hoses to recovery cylinder, Fluoromizer, and A/C system as shown in Figure 1. NOTE: You must use an external filter drier in the suction line in order to meet the conditions of the unit warranty. Caution: If the 80% shutoff cord is not used, a scale must be used to monitor the refrigerant level in the recovery cylinder.

**NOTE:** Although the 3600-R410A was designed to handle liquid slugging, pumping large amounts of liquid over extended periods of time will reduce the life of the compressor. If large amounts of liquid are present, it is recommended that you use the liquid push - pull method of recovery prior to vapor recovery operations. (See Figures 3 & 4).

- 3. Place the inlet and purge ball valves in the "RECOVERY" position and the outlet valve is in the "OPEN" position. Open the DOT recovery tank liquid valve. (See Figure 2).
- 4. Turn the system switch to the "ON" position. The LED status display will be green.
- 5. Regulate the inlet port ball valve when liquid refrigerant is present.

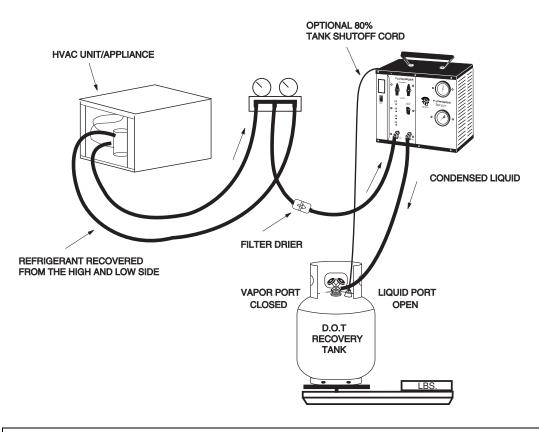
**WARNING**: A "knocking" sound coming from the compressor indicates too much liquid is entering the compressor. The inlet ball valve must be regulated as shown in the shaded region until this knocking sound stops, otherwise compressor damage could occur. Pumping liquid when the compressor is knocking will damage the compressor and will reduce the compressor life <u>and will void the compressor warranty</u>.

6. **Monitor the LED status display**. The unit will shut off automatically when the proper vacuum level is achieved and the status display LED will turn off.

| GREEN   | Indicates that the power switch is ON and the compressor is running.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| LED OFF | Indicates that the unit has shut down because the system being evacuated has reached 13" HG. (the evacuation is complete). Check the suction pressure to verify that the system being evacuated is down to at least 13" HG vacuum. Turn the system switch to the OFF position. Wait 5 minutes. If the inlet pressure rises above 0 psig. Repeat steps 3-6. If the inlet pressure remains below 0 psig, close all valves and disconnect the hose from the A/C system. <b>NOTE:</b> A small amount of inlet pressure may be needed to reset the vacuum switch, this is normal. |  |
| Red LED | Indicates that there is a high-pressure condition that must be corrected. Check for restrictions or a full recovery tank. Correct the problem and turn the system switch OFF to reset the system. Repeat steps 3-6.                                                                                                                                                                                                                                                                                                                                                          |  |
| Red LED | Indicates that the recovery tank is full (if the 80% automatic shutoff option is installed). Change the recovery tank and repeat steps 3-6.                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |

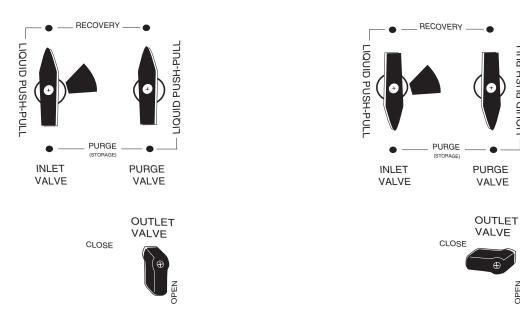
7. Purge the system by positioning the inlet and purge ball valve in the "PURGE" position (both pointing DOWN). This should be done with the unit off. If the valves are turned while the unit is running, the system may shut off either on high-pressure or vacuum. If the Fluoromizer is manually or automatically turned off before the evacuation is complete, repeat steps 3-7. Note: If the circuit breaker trips, wait 5 seconds, reset circuit breaker and go to step 3. If the compressor thermal overload trips, wait 16 to 30 minutes before restarting.

## FIGURE 1



Use only approved DOT recovery cylinders. Follow precautions and warnings listed on the cylinder. If servicing a system with a compressor burn-out, use a high acid type filter drier and do not reuse.

## FIGURE 2



**RECOVERY MODE** 

**STORAGE** 

VALVE

VALVE

# LIQUID PUSH-PULL RECOVERY GENERAL INFORMATION.

## Attention: Before attempting the following liquid push-pull recovery operations, please review this page.

It may not be possible to recover liquid refrigerant from some types of refrigeration equipment.

A scale or liquid sight glass can be used to determine when all the liquid is recovered. The Fluoromizer will not pull a vacuum using the push-pull liquid recovery operation. To finish the recovery operation, you must proceed to vapor recovery operations.

### Guidelines

If any of these conditions are present in the system being evacuated, liquid push-pull operations may not be practical and vapor recovery operations should be performed.

- The equipment contains less than 15 lbs. of refrigerant.
- The equipment is a heat pump or other system with refrigerant flow that would prevent you from isolating the liquid.
- Equipment has an accumulator between the service ports used in the liquid recovery process.
- Liquid refrigerant migration has occurred and the location of the liquid is unknown.
- The refrigerant tubing design on the equipment does not allow for a solid column of liquid refrigerant to be formed.

## **Direct Liquid Recovery Operations**

All compressors are designed to compress gases. Normally compressors are not capable of pumping non-compressible fluids such as liquid refrigerant, however, the 3600-R410A has been designed with a special head and valves that enable it to handle liquid directly. This feature makes the 3600-R410A easier to use by minimizing the need to monitor incoming refrigerant vapors and reduces compressor failures due to liquid slugging.

It is important to remember that the 3600-R410A is a compressor and not a liquid pump. When large amounts of liquid are present, the liquid push-pull method of recovery should be used. <u>Using the 3600-R410A to pump large amounts of liquid refrigerant over a long period of time will reduce the compressor life</u>.

**WARNING**: A "Knocking" sound coming from the compressor indicates too much liquid is entering the compressor. The inlet ball valve must be regulated as shown in the shaded region until this knocking sound stops, otherwise compressor damage could occur. Pumping liquid when the compressor is knocking will damage the compressor and will reduce the compressor life. This will void the compressor warranty.

A sudden slug of liquid into the compressor may cause a sudden spike in pressure and cause the high-pressure safety shutoff switch to shut the compressor off. If this happens, you must clear the liquid from the compressor before you can restart the compressor. To prevent this from happening, always open the inlet valve slowly when starting a recovery job. Opening the inlet valve quickly could allow a slug of liquid to enter the cylinder and cause the high-pressure switch to shut the system down.

## LIQUID RECOVERY PROCEDURES

#### STEPS:

Liquid push-pull operations are performed by using hot compressor gas to push liquid refrigerant out of a system. The purge valve accomplishes this by re-directing the hot compressor gas around the condenser. See the diagram on top of the unit for hose connections.

- Turn off all electrical or mechanical power to the refrigerant device to be evacuated.
- 2. Make proper hose connections. Connect the discharge hose from the outlet port to the low-pressure side of the system you are servicing. Connect a hose between the liquid port (receiver or condenser) on the system being serviced and the liquid valve on the DOT recovery tank. Connect the inlet hose from the DOT recovery tank vapor valve and the unit's inlet port. See Figure 3 for hose connection schematic.

**NOTE:** You must use an external filter drier in the suction line in order to meet the conditions of the unit warranty. **Caution:** If the 80% shutoff cord is not used, a scale must be used to monitor the refrigerant level in the recovery cylinder.

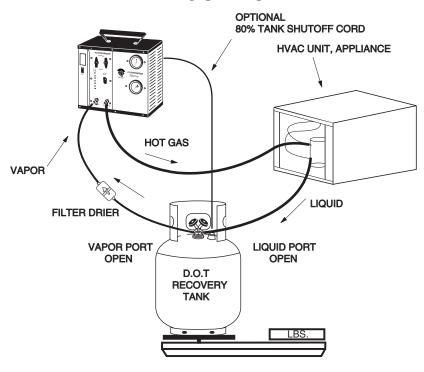
- Place the inlet and purge valves in the "LIQUID PUSH-PULL" position. This will allow hot compressor gas to bypass the condenser. OPEN the liquid and vapor valves on the tank, (See Figure 4)
- 4. Open the outlet ball valve and the DOT recovery tank vapor and liquid valves on the DOT recovery tank.
- 5. **Turn the system switch to the "ON" position**. When all liquid refrigerant is recovered, turn the system switch to the "OFF" position. NOTE: Liquid push-pull operations do not pull a vacuum on a system. You must perform a vapor recovery operation in order to pull the system down to the required vacuum level.

| 6  | Monitor | the I FI | ) etatue | display. |
|----|---------|----------|----------|----------|
| υ. | MOHILOI |          | J Siaius | uispiav. |

| GREED LED<br>SYSTEM ON           | The "SYSTEM ON" indicator should be ON during normal operations.                                                                                                                                                                                                                                                     |  |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| NO LED<br>EVACUATION<br>COMPLETE | Indicates that the unit has shut down because the system being evacuated has reached 13" HG. (the evacuation is complete). During liquid push-pull operations the system will not be pulled into a vacuum. <b>NOTE:</b> A small amount of inlet pressure might be needed to reset the vacuum switch, this is normal. |  |
| RED LED<br>HIGH PRESSURE         | Indicates that there is a high pressure condition that must be corrected. Check for restrictions or a full recovery cylinder. Correct problem and turn system switch to the OFF position. Repeat steps 3-6.                                                                                                          |  |
| RED LED TANK<br>FULL             | Indicates that the recovery cylinder is full (if the 80% Automatic Tank Full Shutoff Option is installed). Change the recovery cylinder and repeat steps 3-6.                                                                                                                                                        |  |

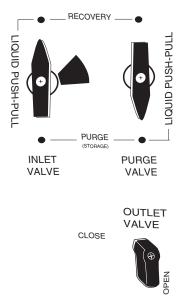
- 7. Turn the system switch to the OFF position when all liquid is recovered. The liquid recovery operation is complete when the scale or optional sight glass indicates no liquid is being transferred to the recovery cylinder. NOTE: The Fluoromizer must be manually shut off during all liquid recovery operations.
- 3. Proceed to vapor recovery operations to complete the recovery operation. If the Fluoromizer is manually or automatically turned off before the liquid recovery is complete, repeat steps 3-8. Note: If the circuit breaker trips, wait 10 seconds, reset circuit breaker and go to step 2. If the compressor thermal overload trips, wait 16 to 30 minutes before restarting.

## FIGURE 3

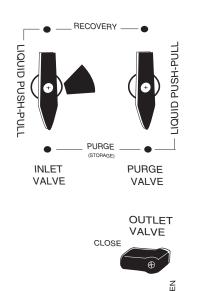


Use only approved DOT recovery cylinders. Follow precautions and warnings listed on the cylinder. If servicing a system with a compressor burn-out, use a high acid type filter drier and do not reuse.

## FIGURE 4







**STORAGE** 

## PUMP DOWN OPERATIONS

The Model 3600-R410A is equipped with a pump-down purge valve that allows the technician to pump down or evacuate the 3600-R410A before proceeding to the next recovery operation. This procedure not only eliminates cross contamination, but also conserves refrigerant. Follow the steps below to ensure your pump down operation is performed correctly.

#### STEPS:

1. After recovery operations are complete and the system switch is in the OFF position:

FIRST - Place the inlet valve in the PURGE position

SECOND - Place the purge valve in the PURGE position

THIRD - Place the outlet valve in the OPEN position as illustrated below.

It is important to turn the valves in this order to ensure the compressor properly equalizes.

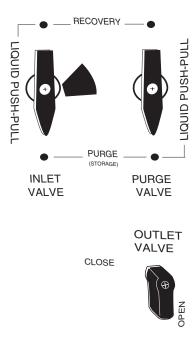
2. Turn the system switch to the "ON" position. The LED status will be green.

**NOTE:** If the compressor fails to start, cycle the <u>purge valve</u> from the RECOVERY to PURGE position to reduce the pressure difference shown on the system's gauges.

- 3. Allow the unit to run until it shuts off automatically. The status display will flash "EVACUATION COMPLETE" indicating that the purge operation is complete.
- 4. Turn the system switch to the OFF position and turn the outlet valve to the "CLOSE" position. Close the inlet and outlet valves on the DOT recovery tank.

During the pump down operation, the 3600-R410A's compressor pulls the entire system and discharge hose into a vacuum and discharges the gas directly out of the discharge port leaving no more than 1/4 ounce of refrigerant left in the system.

CAUTION!: Never turn the purge valve when the unit is operating! Severe damage may occur.



## DOT RECOVERY CYLINDER SAFETY

An optional 80% recovery cylinder shutoff cord is available with the Model 3600-R410A. If equipped, this cord connects to the recovery cylinder float switch and will automatically shut the Model 3600-R410A off when the recovery cylinder becomes 80% full.

When the Model 3600-R410A is equipped with the 80% shutoff cord, Bacharach Test Systems recommends that you use this cord for added safety. If the Model 3600-R410A is not equipped with an 80% shutoff cord, or, if you are using a recovery cylinder that does not have a float switch, then you must use a scale and the guidelines below to prevent overfilling of the cylinder. Note: The Shorting CAP MUST BE USED IN ORDER TO OPERATE THE MODEL 3600-R410A WITHOUT THE 80% SHUTOFF CORD ATTACHED TO THE RECOVERY CYLINDER.

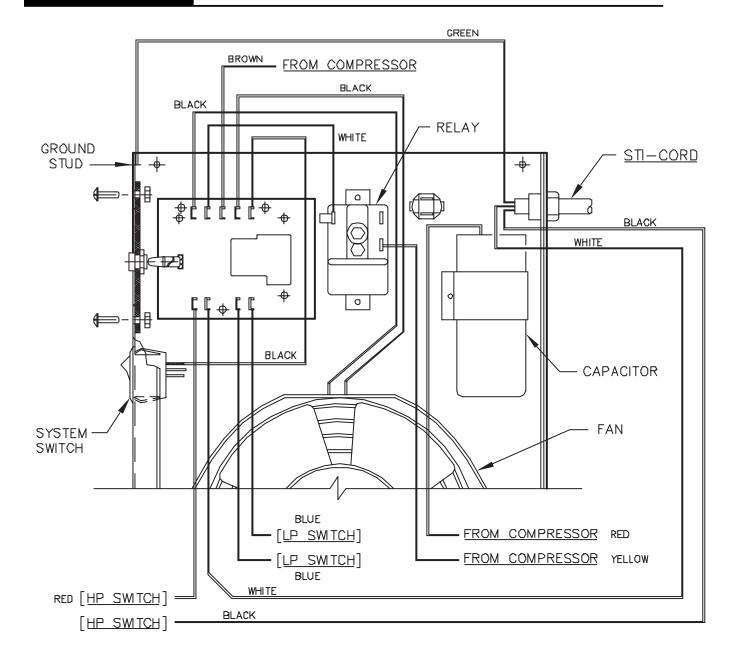
Bacharach Test Systems uses and recommends the Air Conditioning & Refrigeration Institute's (ARI) guideline K for the safe filling and handling of used refrigerant. This Publication is available from ARI.

WARNING: You must use a DOT recovery cylinder approved for use with R-410A refrigerant. This recovery system is equipped with a high-pressure shutoff switch set to turn the unit off at 550 psi. Using any other cylinder may cause the pressure in the recovery cylinder to exceed the cylinder's pressure rating.

The following information provides the safe fill weights for used refrigerant based on the size of the container and is in accordance with Guideline K:

| WATER    | NET REFRIGERANT<br>WEIGHT | GROSS CONTAINER<br>WEIGHT (APPROX.) |
|----------|---------------------------|-------------------------------------|
| CAPACITY | WEIGHT                    | WEIGHT (APPROX.)                    |
| 30 lbs   | 24 lbs                    | 38 lbs                              |
| 50 lbs   | 40 lbs                    | 59 lbs                              |
| 95 lbs   | 76 lbs                    | 118 lbs                             |
| 145 lbs  | 98 lbs                    | 153 lbs                             |
| 238 lbs  | 190 lbs                   | 274 lbs                             |

| PROBLEM                                                                   | LED STATUS  | Possible Cause                                                                                                   | Solution                                                                                  |
|---------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| FLUOROMIZER<br>COMPRESSOR<br>WILL NOT START                               | ● Green LED | VACUUM PRESSURE SWITCH HAS<br>BEEN ACTIVATED                                                                     | TURN FLUOROMIZER OFF. APPLY 1-<br>2 PSIG PRESSURE TO INLET PORT<br>TO RESET VACUUM SWITCH |
|                                                                           | ● Red LED   | CHECK FOR RESTRICTIONS IN THE<br>DISCHARGE LINE. ENSURE THAT<br>THE TANK VALVES AND DISCHARGE<br>VALVES ARE OPEN | REMOVE RESTRICTIONS IN THE<br>HIGH SIDE                                                   |
|                                                                           |             | RECOVERY CYLINDER HAS<br>REACHED 450 PSI HIGH PRESSURE<br>LIMIT                                                  | REPLACE WITH EMPTY CYLINDER<br>OR COOL CYLINDER WITH<br>WATER/ICE                         |
|                                                                           | ● Green LED | BAD THERMAL OVERLOAD                                                                                             | CALL BACHARACH TEST SYSTEMS<br>FOR SERVICE                                                |
|                                                                           | • NONE      | CIRCUIT BREAKER IS TRIPPED                                                                                       | RESET CIRCUIT BREAKER                                                                     |
|                                                                           |             | NO POWER TO THE FLUOROMIZER                                                                                      | PLUG THE FLUOROMIZER INTO A<br>110-120 VOLT POWER SOURCE                                  |
| FLUOROMIZER<br>FAN WILL NOT<br>START                                      | ● Green LED | DEFECTIVE FAN REPLACE FAN                                                                                        |                                                                                           |
|                                                                           |             | OBSTRUCTION IN FAN BLADES                                                                                        | REMOVE OBSTRUCTION                                                                        |
|                                                                           | ● NONE      | SYSTEM SWITCH IS OFF                                                                                             | TURN SYSTEM AND FAN SWITCH TO ON POSITION                                                 |
| FLUOROMIZER<br>STARTS BUT<br>STOPS AFTER A<br>FEW MINUTES<br>OF OPERATION | • LED Off   | EVACUATION IS COMPLETE                                                                                           | CHECK INLET PRESSURE, VERIFY<br>VACUUM LEVEL IS AT LEAST 10"HG                            |
|                                                                           |             | IF REFRIGERANT REMAINS IN THE<br>SYSTEM, CHECK FOR<br>RESTRICTIONS IN THE SUCTION<br>LINE                        | ENSURE ALL VALVES ARE OPEN                                                                |
|                                                                           | ● Red LED   | LIQUID VALVE ON DOT CYLINDER<br>CLOSED OR OUTLET BALL VALVE IS<br>NOT OPEN                                       | OPEN THE VALVES                                                                           |
|                                                                           |             | OTHER RESTRICTION(S) IN DISCHARGE HOSE                                                                           | TURN UNIT OFF.<br>REMOVE RESTRICTION                                                      |
|                                                                           | ● Green LED | CIRCUIT BREAKER TRIPPED DUE TO COMPRESSOR STALL                                                                  | REDUCE THE INLET AND/OR<br>OUTLET PRESSURE                                                |
|                                                                           |             | THE UNIT IS TOO HOT. THERMAL<br>OVERLOAD TRIPPED                                                                 | LET THE UNIT COOL DOWN FOR 15<br>MINUTES                                                  |
|                                                                           |             | CIRCUIT BREAKER TRIPPED DUE<br>TO TOO MUCH PRESSURE OR<br>LIQUID IN THE SYSTEM                                   | PURGE THE SYSTEM AND<br>CONTINUE                                                          |



## REPLACEMENT PARTS

| Part # | Component Description                                                                                     | QTY  | Part # | Component Description                     | QTY  |
|--------|-----------------------------------------------------------------------------------------------------------|------|--------|-------------------------------------------|------|
| 020010 | COMPRESSOR RE-BUIILD KIT, INCLUDES:<br>SUCTION & DISCHARGE VALVES, SPRINGS,<br>ONE VALVE PLATE, & O-RINGS | 1.00 | 350380 | SUCTION HOSE, 1/4" FLR X 1/4" FLR. (BLUE) | 1.00 |
| 120010 | POWER CORD SJTO, 18/3, 6FT                                                                                | 1.00 | 350390 | DISCHARGE HOSE, 1/4" FLR X 1/4" FLR (RED) | 1.00 |
| 120080 | GUARD, FAN 5.9"                                                                                           | 1.00 | 410120 | BRACKET, CARRY STRAP                      | 2.00 |
| 130010 | FAN MOTOR, 6" 115VAC                                                                                      | 1.00 | 410210 | BRACKET, MOUNTING GAUGE, 2 1/2"           | 2.00 |
| 130020 | FAN MOTOR, 4.7", 115VAC                                                                                   | 1.00 | 412050 | HANDLE, 2 PART, COMMERCIAL                | 1.00 |
| 140010 | RELAY, 115V/60HZ, MOTOR START                                                                             | 1.00 | 450011 | COMPRESSOR ASSY 120VAC, 50/60HZ L/S       | 1.00 |
| 140310 | SWITCH, PRESSURE, 550 psig                                                                                | 1.00 | 510660 | CAP, PLASTIC W/RETAINER 1/4"SAE           | 2.00 |
| 140050 | CIRCUIT BREAKER, 10 AMP                                                                                   | 1.00 | 540080 | RUBBER ISOLATOR 3/4 X 5/8, ¼-20           | 4.00 |
| 140060 | SWITCH, ROCKER                                                                                            | 1.00 | 540120 | RUBBER FOOT, 5/8 OD X 9/16 H              | 4.00 |
| 140090 | SWITCH, VACUUM, 13" HG                                                                                    | 1.00 | 550030 | STRAP, NYLON, 2"W x 53" LONG              | 1.00 |
| 140110 | CAPACITOR 233-280 MFD 110VAC                                                                              | 1.00 | 550050 | HANDLE, FOAM, BLK, 10"                    | 1.00 |
| 150182 | BOARD, LED CIRCUIT, ¾ x 3 ¼                                                                               | 1.00 | 630010 | GAUGE, HI PRESSURE, R-410A, 2.5           | 1.00 |
| 240030 | VALVE, BALL, 1/8x1/8 FEM, NPT                                                                             | 1.00 | 630020 | GAUGE, LOW PRESSURE, R-410A, 2.5          | 1.00 |
| 240050 | VALVE, CHECK, 1/4"                                                                                        | 1.00 | 700141 | MANUAL FOR 3600-R410A-115                 | 1.00 |
| 240270 | VALVE, 3-WAY, BALL, 1/8" FEM. NPTF DROP                                                                   | 2.00 |        |                                           |      |
| 300031 | CONDENSER ASSY., MODEL 3600                                                                               | 1.00 |        |                                           |      |

| Part # | ACCESSORIES                         |
|--------|-------------------------------------|
| 020081 | AUTOMATIC 80% TANK FULL SHUTOFF KIT |
| 070020 | DELUXE CARRYING CASE                |
| 010011 | QUICK PIERCING TOOL (PATENTED)      |
| 051400 | RECOVERY SCALE, 400 LB              |
| 051100 | RECOVERY SCALE, 100 LB              |

To Order Parts Call: (888)-298-4444

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