



COMMERCIAL PRODUCTS SERVICE MANUAL

## OWNERS MANUALS:

- 105, 925, 935
- 526/552

## INSTALLATION INSTRUCTIONS:

- 106 Roof Mount Condenser
- 400 Series Heaters
- 901 Heaters



# OWNER'S MANUAL

**105, 925, 935**  
**AUXILIARY UNITS**

ProAir, LLC  
28731 County Road 6  
Elkhart, IN 46514  
574-264-5494

Revised January, 2003



105, 925, 935 OWNER'S MANUAL

TABLE OF CONTENTS

Owners Information.....Page 3  
Specifications.....Page 4  
925 Cool Only.....Page 5  
935 Heat/Cool.....Page 6  
105 Condenser.....Page 7  
Unit Placement.....Page 8  
105 Unit Installation.....Page 9  
Electrical Connections.....Page 10  
Wiring Schematic.....Page 11  
925 c/o and 935 h/c Unit Installation.....Page 12  
Maintenance/Troubleshooting.....Page 13  
Warranty.....Page 14  
Refrigerant Charge Amounts.....Page 15



## 105, 925, 935 OWNER'S MANUAL

### Owners Information

Thank you for choosing ProAir, LLC auxiliary unit for your automotive needs. All ProAir systems have been designed and manufactured to provide our customers with superior performance, outstanding durability and service. Each component is chosen from the latest technology and highest quality available.

ProAir, LLC has been a manufacturer and installer of auxiliary heat/cool units to the specialty vehicle market for over 20 years. The emphasis has been on quality and service from the very beginning. ProAir is the leader in innovation, response to customer requirements and customer service.

**CUSTOMER SATISFACTION IS OUR NUMBER ONE PRIORITY!**



## 105, 925, 935 OWNER'S MANUAL

### SPECIFICATIONS

#### 925 COOL ONLY

24,000 BTU / 366 CFM  
16" long x 10.25" wide x 6.75" high  
9 amp current draw @ 13.5 volts

#### 935 HEAT / COOL

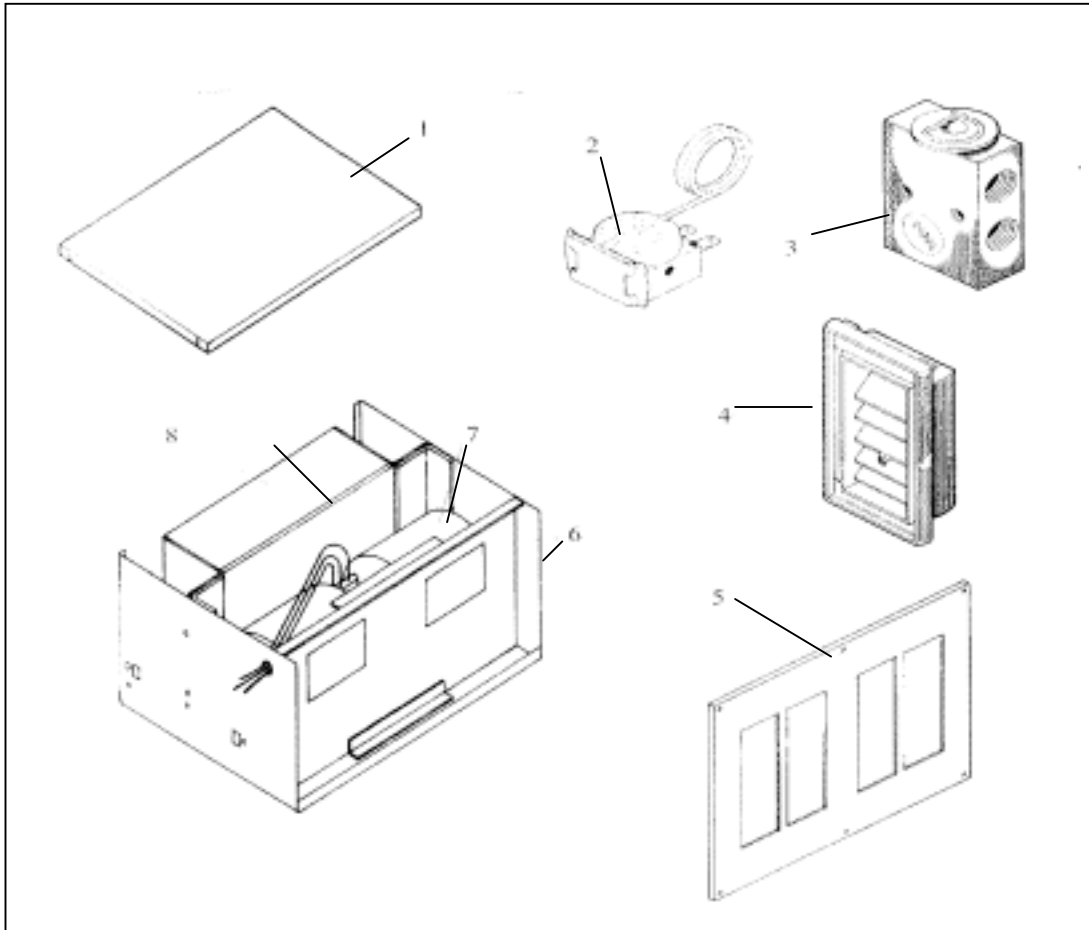
32,000 BTU / 650 CFM Cooling  
35,000 BTU / 650 CFM Heating  
17.5" long x 13.25" wide x 9.25" high  
18 amp current draw @ 13.5 volts

#### 105 CONDENSER

40,000 BTU / 2-11" Axial fans  
Dryer w/sightglass and Hi/Lo Pressure Switch  
Fan Motors 12 volt Weather Proof  
Current Draw=17 amps @ 13.5 volts

# 105, 925, 935 OWNER'S MANUAL

## 925 COOL ONLY

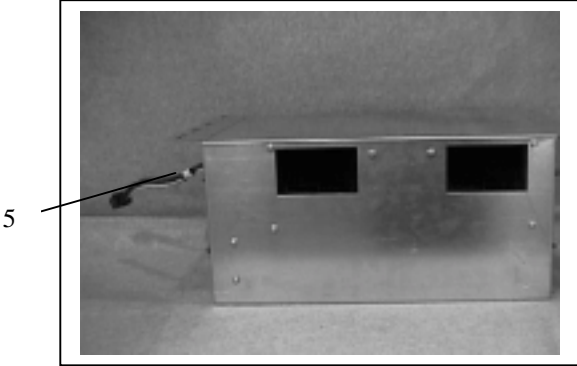


KEY	PART NUMBER	DESCRIPTION
1	06 000 032	Case Top
2	01 000 048	Thermostat, non-adjustable
3	05 000 022	Thermal expansion valve
4	11 000 008	Louver
5	06 000 035	Case front
6	06 000 031	Housing
7	11 000 138	Blower motor assembly
8	03 000 014	Coil

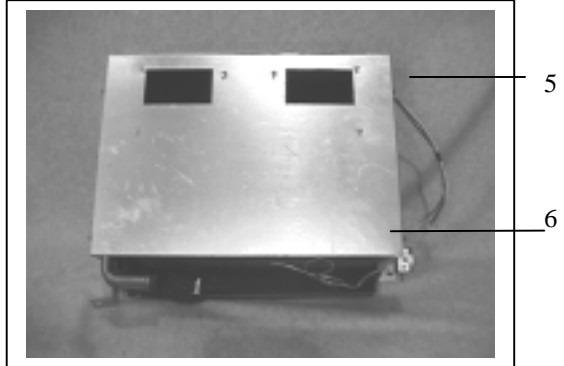


105, 925, 935 OWNER'S MANUAL

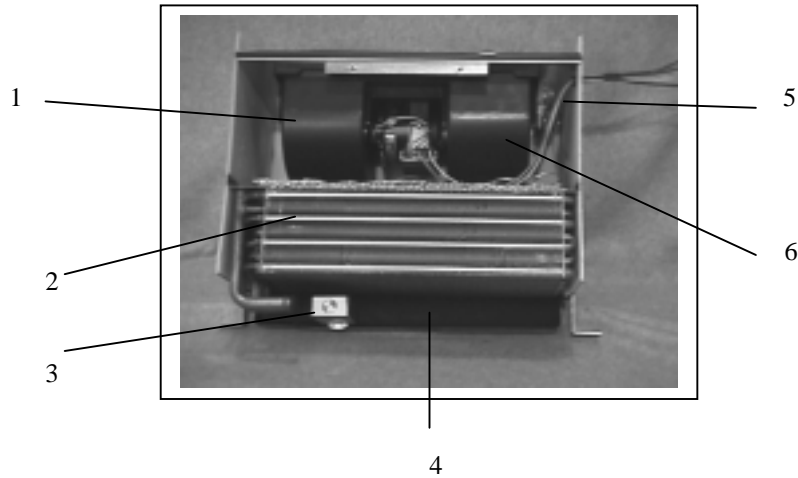
935 HEAT/COOL



P/N 66 000 087 frigiking, 935 h/c roof mt



P/N 66 000 046 Power Pak, 99-935 vert

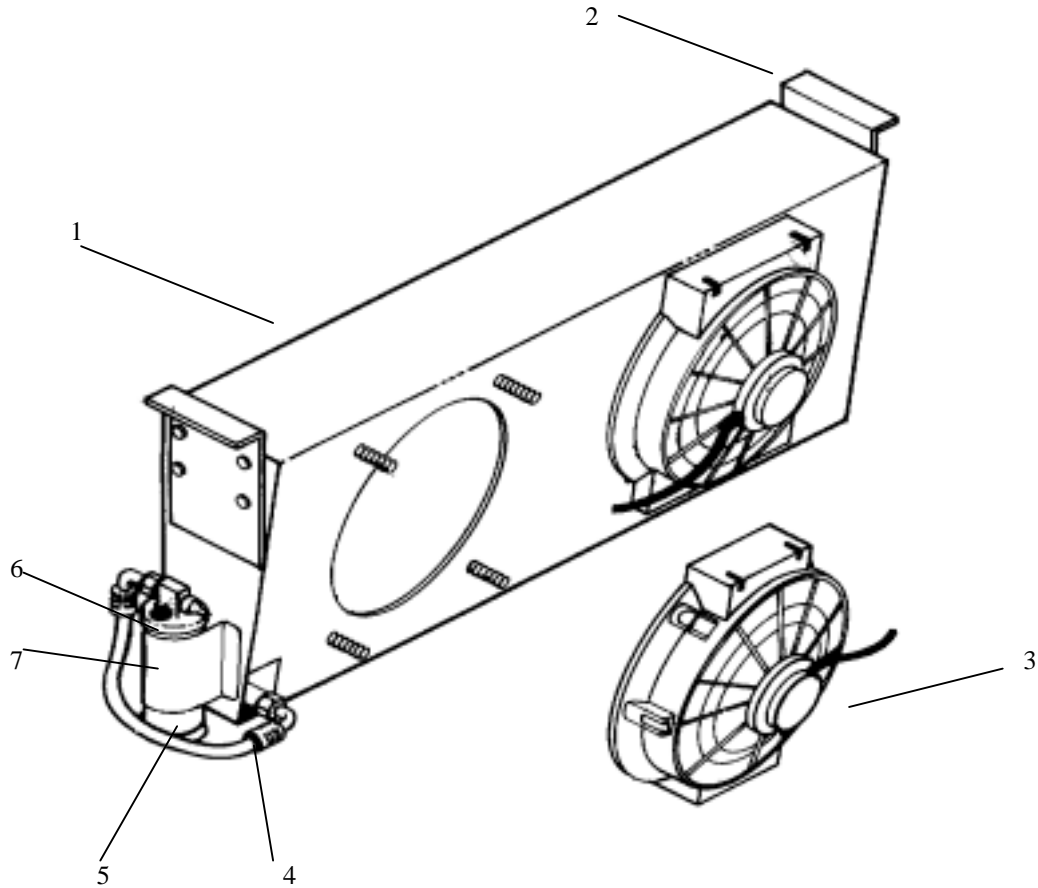


P/N 66 000 004 frigiking, power pak 98-935 h/c

KEY	PART NUMBER	DESCRIPTION
1	68 000 006	Blower Assembly, SPAL double w/seals
2	03 000 045	Coil, Heat/Cool
3	68 000 024	Valve, expansion block R-134a 2 ton
4	07 000 338	Pan, drain roto cast
5	01 000 206	Harness, wire (P/N 66 000 087)
	01 000 073	Harness SPAL Blower motor (P/N 66 000 004)
	01 000 071	Harness, 960 blower (P/N 66 000 046)
6	01 000 048	Thermostat, non adjustable w/12" cap tube

# 105, 925, 935 OWNER'S MANUAL

## 105 CONDENSER

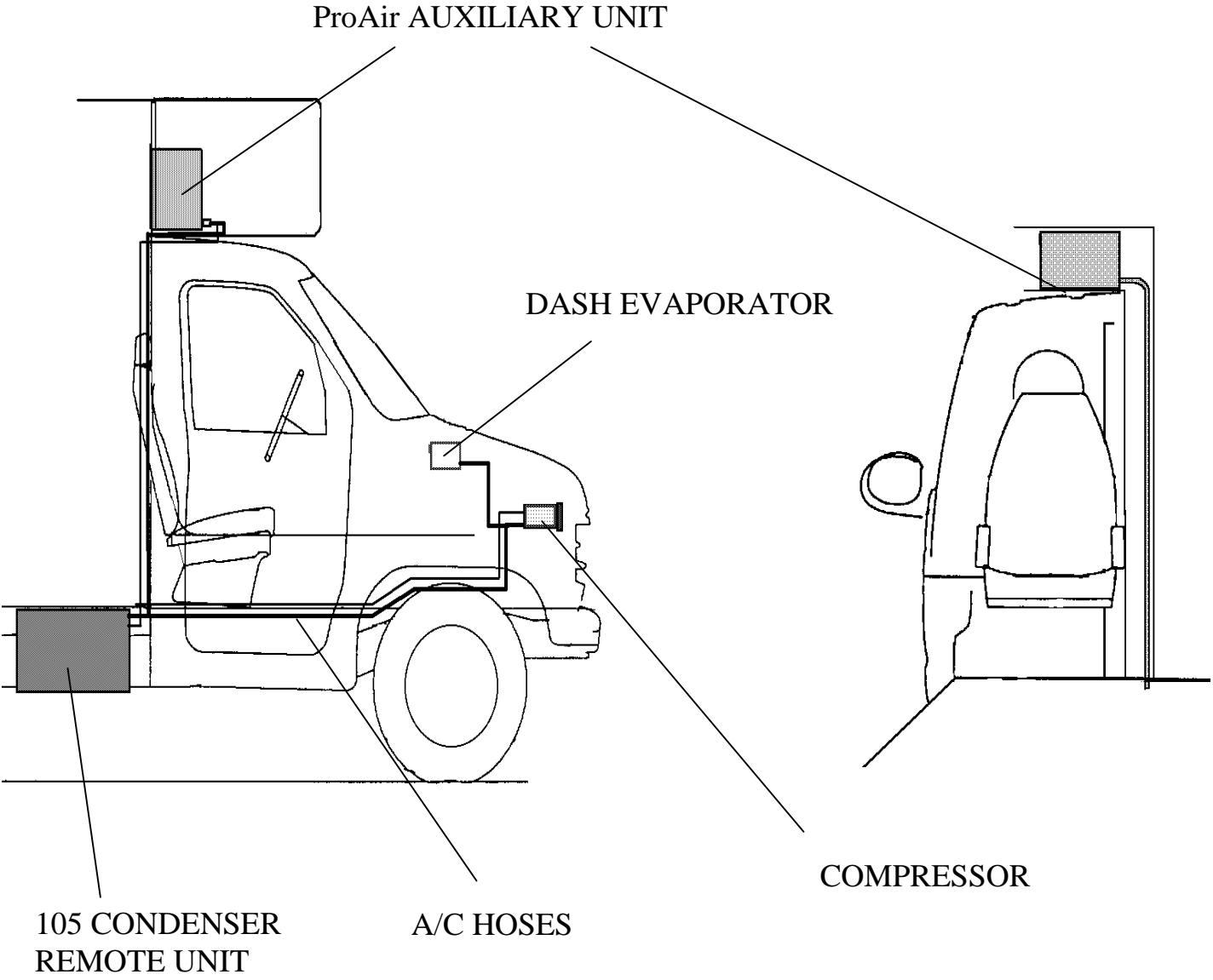


KEY	PART NUMBER	DESCRIPTION
1	03 000 025	Coil, condenser
2	06 000 336	Mounting bracket, stainless steel
3	11 000 147	Fan, 11" puller W/P hi-output
4	60 000 398	Hose assembly
5	05 000 099	Drier bottle
6	01 000 070	Switch, high-low pressure
7	06 000 335	Mounting bracket, dryer bottle, stainless steel





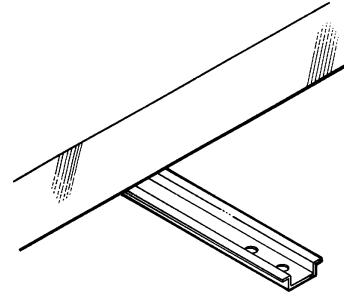
105, 925, 935 OWNER'S MANUAL



## 105, 925, 935 OWNER'S MANUAL

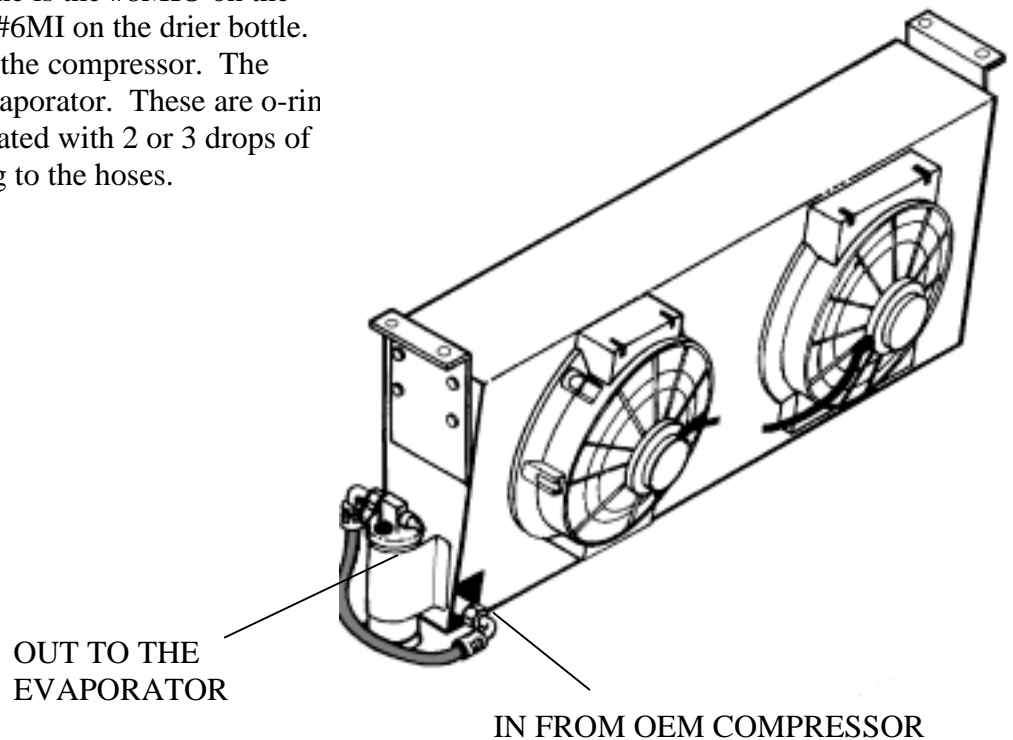
### 105 UNIT INSTALLATION

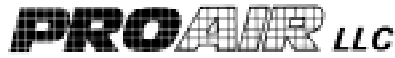
**UNIT ATTACHMENT:** The unit must be attached to the steel framework of the vehicle. The condenser must be bolted to the vehicle frame with a grade 8 bolt, lock washer and nut or a locking nut. The bolt diameter should be a minimum of four bolts per condenser is required.



FRAME/OUTRIGGER. BOLT THE CONDENSER TO THE FRAME/OUTRIGGER WITH A GRADE 5 BOLT, LOCK WASHER AND NUT, (OR LOCKNUT). MINIMUM BOLT DIAMETER IS 5/16".

**REFRIGERANT CONNECTIONS:** The condenser has two connection points, one is the #8MIO on the condenser and the other is a #6MI on the drier bottle. The #8MIO is the inlet from the compressor. The #6MIO is the outlet to the evaporator. These are o-ring fittings, and should be lubricated with 2 or 3 drops of mineral oil before connecting to the hoses.



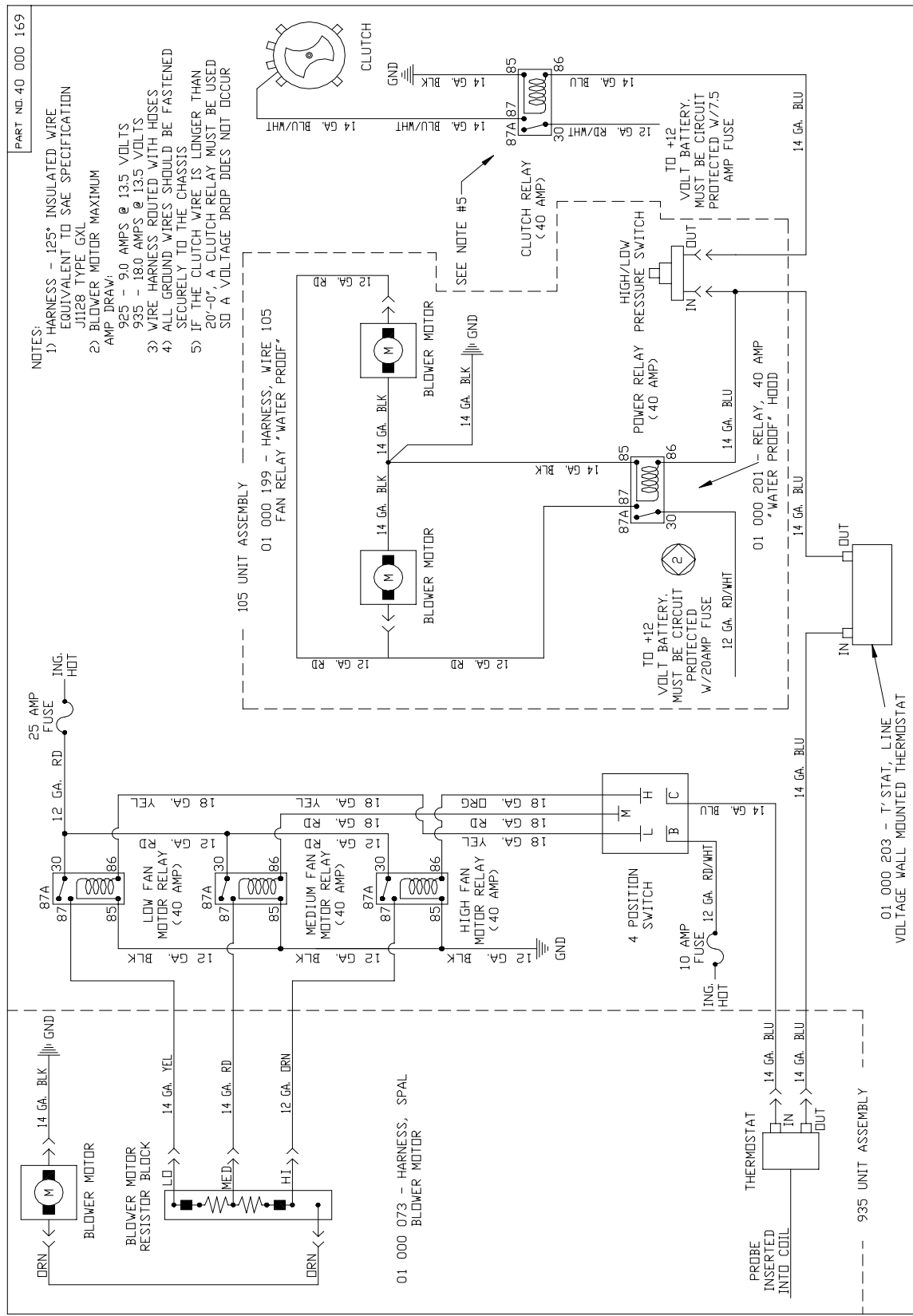


## 105, 925, 935 OWNER'S MANUAL

### **ELECTRICAL CONNECTIONS**

**ELECTRICAL CONNECTIONS:** The red/white 12ga. wire from the relay is a positive 12 volt connection and should be hooked to the positive post on the battery. This circuit must be protected with a 20 amp fuse, or manual reset circuit breaker. The ring terminal with the two black wires, (1-14ga and 1-12 ga.), is the ground wire for the condenser and must be hooked to the vehicle frame with either a bolt and nut or a self tapping screw. On the drier bottle there is a pressure switch. This pressure switch has two wires, a blue 14ga wire goes to the thermostat. If required, the 14 ga. blue/white wire goes to the OEM compressor clutch. **NOTE:** If the clutch wire is longer than 20 feet, a clutch relay must be used so a voltage drop does not occur. All additional wiring must be rated for the voltage and system application so failure does not occur. Refer to Commercial Guidelines. See wiring diagram on next page.

## 105, 925, 935 OWNER'S MANUAL



PART NO. 40 000 169

REV. 2

TITLE: WIRE SCHEMATIC HOT WEATHER

PROAIR, LLC

28731 C.R. 6 ELKHART, IN 46514

USAGE: 935 & 105

SHEET 1 OF 1

SIGNATURES		DATE
DRAWN	K. F. S.	2/21/02
CHECKED	C. W. M.	10/21/02
APPROVED	J. M. E.	10/21/02

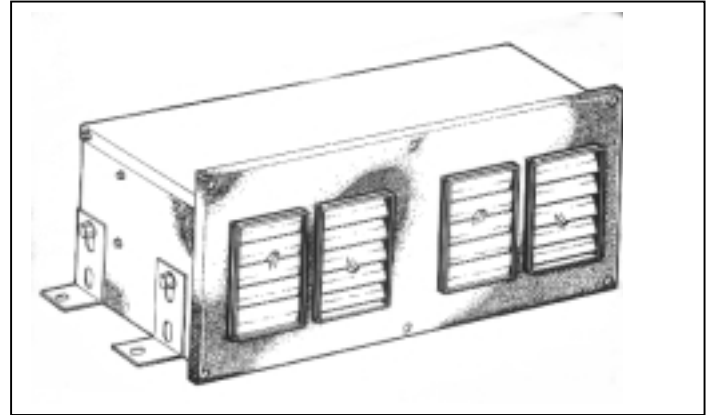
REV.	DESCRIPTION
1	CHG COND CIRCUIT PROTECTION AMP RATING FROM 10/21/02
2	X-2E PRODU TISSUE
1	X-2E REVISION

PRO AIR, LLC CLAIMS PROPRIETARY RIGHTS IN THE MATERIAL DISCLOSED HEREIN. NEITHER THIS DRAWING NOR ANY PRODUCTION THEREOF MAY BE USED TO MANUFACTURE ANYTHING SHOWN HEREON WITHOUT PERMISSION IN WRITING FROM PRO AIR, LLC TO USER SPECIFICALLY REFERRING TO THIS DRAWING.

## 105, 925, 935 OWNER'S MANUAL

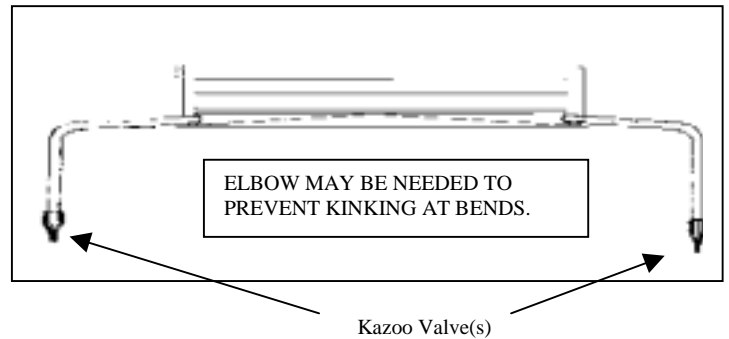
### 925 COOL/ONLY and 935 HEAT/COOL

**UNIT MOUNTING:** The 925 and 935 case is supplied with integral mounting legs. These are to be screwed or bolted to the vehicle structure. The case must be mounted with the front ½" higher than the rear, (for proper drainage). The air intake must be a minimum of 60 square inches of free area. The opening used to mount the unit must be large enough to also remove the unit, (7x16x1/4" for the 925 and 9 ½ x 19 ¼" for the 935). After the unit is mounted to the vehicle structure and properly positioned, torque the bolts in the case mounting brackets to 20 ft/lb.

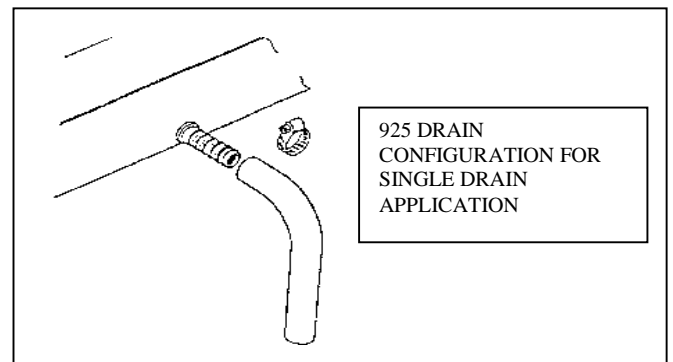


#### 935 DRAIN CONFIGURATION

**DRAIN HOSE:** Drain hose(s) must be secured to the nipples with worm gear type clamps. Torque these clamps to 30 in/lb maximum. Drain hose(s) must be routed in a manner to provide a constant downward slope of ¼" per foot. Use elbows as needed to prevent kinks in the hose. The kazoo valve provided in the kit must be installed on the end of the drain line. This will prohibit dirt, etc. from entering the evaporator.



**HOSE INSTALLATION:** Install the proper size o-rings on the fittings, lubricate with 2 or 3 drops of mineral oil, and connect the refrigerant hose to the unit. Tighten the liquid line to 12 ft/lb. and suction line to 20 ft/lb. Connect the heater hoses to the unit and secure with worm gear hose clamps tightened to 90 in/lb. When routing the hoses to appropriate area, support them with a linstake every 12" to 18". The minimum bend radius when routing the hoses is 4". Hoses must be protected from tub thru and all hot surfaces. Refer to Commercial Guidelines.



**NOTE:** HOT WATER FLOW MUST BE OFF WHEN THE AIR CONDITIONER IS ON.



## 105, 925, 935 OWNER'S MANUAL

### PREVENTIVE MAINTENANCE

In order to keep your air conditioning system operating at peak performance, a routine maintenance schedule must be followed.

- **Annually:** The system should be checked and serviced at a qualified service center.

### TROUBLESHOOTING

- Familiarize yourself with your system's components, wiring, plumbing and controls.
- Check that the appropriate switch(s) for the mode you are trying to select, is in the "on" position.
- Refer to the following Troubleshooting Charts:

PROBLEM	CAUSE	SOLUTION
<b>System not blowing, or fan not blowing.</b>	Blown fuse.	Replace fuse, check wires for short.
	<i>If OK check for...</i>	
	No voltage to switch.	Check electrical supply and wires.
	<i>If OK check for...</i>	
	No voltage to motor.	Check wires for loose connection.
	<i>If OK check for...</i>	
	Improper ground.	Tighten or reground motor.
	<i>If OK...</i>	Replace motor.
<b>System not cooling/ Compressor not on.</b>	Refrigerant level low.	Find and fix leak, add refrigerant.
	<i>If OK check for...</i>	
	Clutch not engaging.	Check voltage to clutch.
	<i>If OK check for...</i>	
	Hot water flow into evaporator.	Refer to heating system troubleshooting.
	<i>If OK check for...</i>	
	Blockage in system.	Replace defective parts. Contact ProAir Service Rep.
<b>System not heating.</b>	No water flow to heater.	Check for kinks in hoses.
	Water valves not opening.	Check vacuum actuator or cable.
	Vacuum actuator not operating.	Check vacuum lines and replace.



## 105, 925, 935 OWNER'S MANUAL

# ProAir 1-Year/12,000-Mile Limited Warranty

1. ProAir warrants every heating and cooling unit produced by ProAir and used in a commercial or specialty vehicle to be free from defects in material and workmanship under normal use for a period of twelve (12) months or twelve thousand (12,000) miles, whichever comes first.
2. If a repair or adjustment under the warranty is required, the product should be taken to an authorized ProAir service center or, if possible, taken to the original installer. The owner's registration certificate should be presented.
3. **The repairing service center must contact ProAir by calling 574 264 5494 or 800 338 8544, asking for the customer service department and describing the type of warranty repair needed. If warranty parts are needed, ProAir reserves the right to replace them. No warranty claims will be paid without the return of defective parts to ProAir.**
4. If the ProAir service center is too far away, the customer may find a repairing facility nearby and contact ProAir. We will attempt to allow the repair facility authorization to address the concern.
5. This warranty does not cover any product which has been subject to misuse, neglect, alteration, accident, improper installation, or improper maintenance, or which has been repaired outside of an authorized ProAir service center in any way so as to affect adversely its performance or reliability. This warranty does not cover material or labor used in normal maintenance services or the replacement of service items. Normal wear of service items shall not be considered defects under this warranty. This warranty does not cover customer lost time, vehicle towing, vehicle rental, or lodging.
6. This warranty does not include consequential damages, and ProAir shall not be responsible for any such damages. ProAir does not make and does not authorize any person to make for it any warranty other than the foregoing warranty. Such other warranties, if any as may be imposed or implied by law, are limited in duration to the duration of this written warranty.
7. Some states do not allow limitations on how long an implied warranty lasts, nor do they allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply. This warranty gives specific legal rights, and other rights which vary from state to state.
8. This warranty does not cover loss of refrigerant unless the loss is a direct result of a defect covered by this warranty.



## 105, 925, 935 OWNER'S MANUAL

### REFRIGERANT CHARGE AMOUNTS

925 W/1/4' OF HOSES (A/C - 1/2", 5/16")	12oz R-134A	3oz. OIL
935 W/14' OF HOSES (A/C - 1/2", 5/16")	16oz R-134A	4oz. OIL

105/106 CONDENSER ADDED TO SYSTEM (A/C 13/32", 5/16") ADD 16oz R-134a AND 3OZ OF OIL TO 925/935 AMOUNTS.

**NOTE:** FOR EACH ADDITIONAL 10' OF LIQUID LINE ADD 3oz OF R134a and .75 OIL. LIQUID LINES LONGER THAN 25' YOU MUST CONSULT THE FACTORY FOR CHARGE AMOUNTS. DIFFERENT SIZE (DIAMETER) HOSES, CONSULT FACTORY FOR CHARGE AMOUNTS.

**CAUTION:** USE ONLY THE EXACT OIL SPECIFIED BY THE COMPRESSOR MANUFACTURER. USE OF OILS OTHER THAN THOSE SPECIFIED WILL VOID THE WARRANTY!





# OWNER'S MANUAL

**526/552**  
**COOL ONLY and HEAT /COOL**

ProAir, LLC  
28731 County Road 6  
Elkhart, IN 46514  
574-264-5494

Revised January, 2003



**526/552 OWNER'S MANUAL**

**TABLE OF CONTENTS**

Unit Installation.....Page 3

Water Line Connections.....Page 4

Electrical Connections.....Page 5

Wiring Schematic.....Page 6

Troubleshooting.....Page 7

Warranty.....Page 8

## 526/552 OWNER'S MANUAL

**UNIT INSTALLATION:** The cargo box unit has two mounting brackets. These brackets are located one on each side of the unit. The cargo box unit must be attached to steel beams or supports with at least on 5/16" grade 8 bolt at each mounting bracket. Use lock washers and nuts or lock nuts on each bolt.



Install the proper size o-rings on the fittings, lubricate with 2 or 3 drops of mineral oil, and connect the refrigerant hoses to the unit. Tighten the liquid line to 12ft/lb and the suction line to 20ft/lb. Connect the heater hoses to the secure with worm gear hose clamps tightened to 30 in/lb.

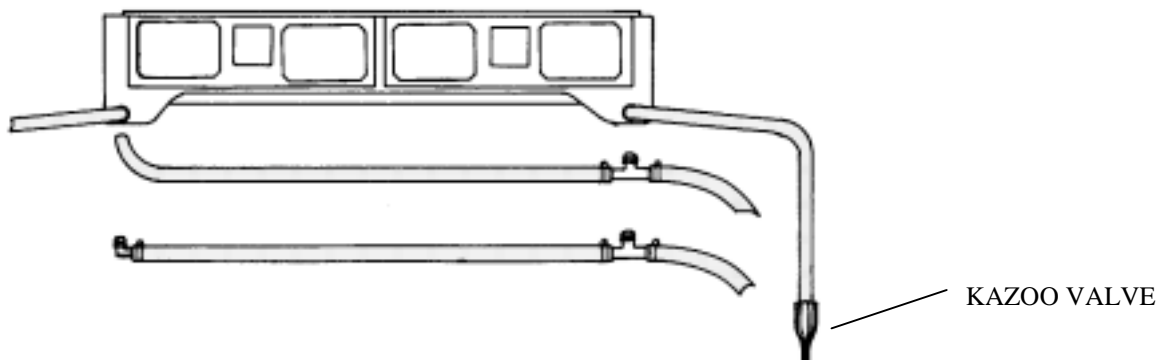
When routing the hoses to the appropriate area, support them with a linstake every 12" to 18". The minimum bend radius when routing the hoses is 4". Hoses must be protected from rub thru and all hot surfaces.

The drain hose must be clamped at all connection points with the clamps provided. They should be torqued to 15 in/lb. The drain hose must be routed at a constant downward slope of at least 1/4" per foot. Be sure and use the elbows and tees provided.

The provided Kazoo valve must be installed on the end of the drain line. This will prohibit dirt, etc. from entering the evaporator.



GRADE 8, BOLT NUT AND WASHER.  
(A LOCKNUT MAY BE USED IN LIEU OF A LOCKWASHER/NUT COMBINATION.)



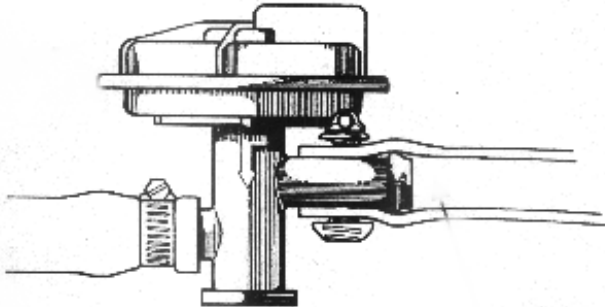
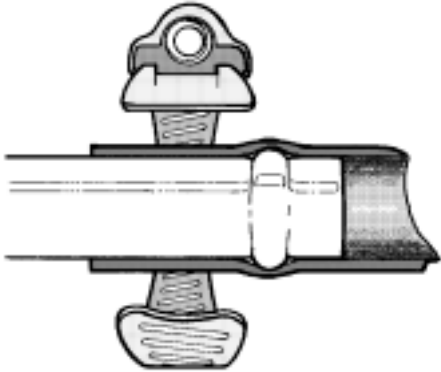
USE THE DRAIN CONFIGURATION BEST SUITED TO YOUR APPLICATION.  
USE TEES AND ELBOWS AS REQUIRED.

**526/552 OWNER'S MANUAL**

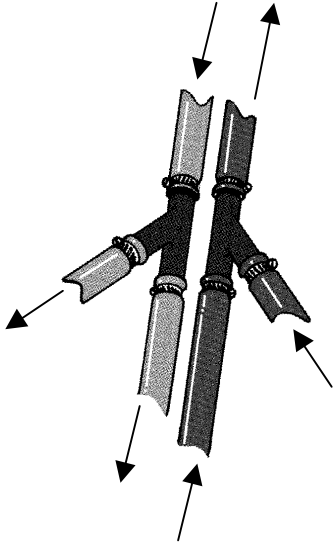
**WATER LINE CONNECTIONS:**

A water valve either manual, vacuum or electrically operated, must be used to control the water flow when the air conditioner has been turned on.

PROPER CLAMP INSTALLATION



TO WATER VALVE



**NOTE: HOT WATER FLOW MUST BE TURNED OFF WHEN THE A/C IS TURNED ON FOR MAXIMUM COOLING.**

## 526/552 OWNER'S MANUAL

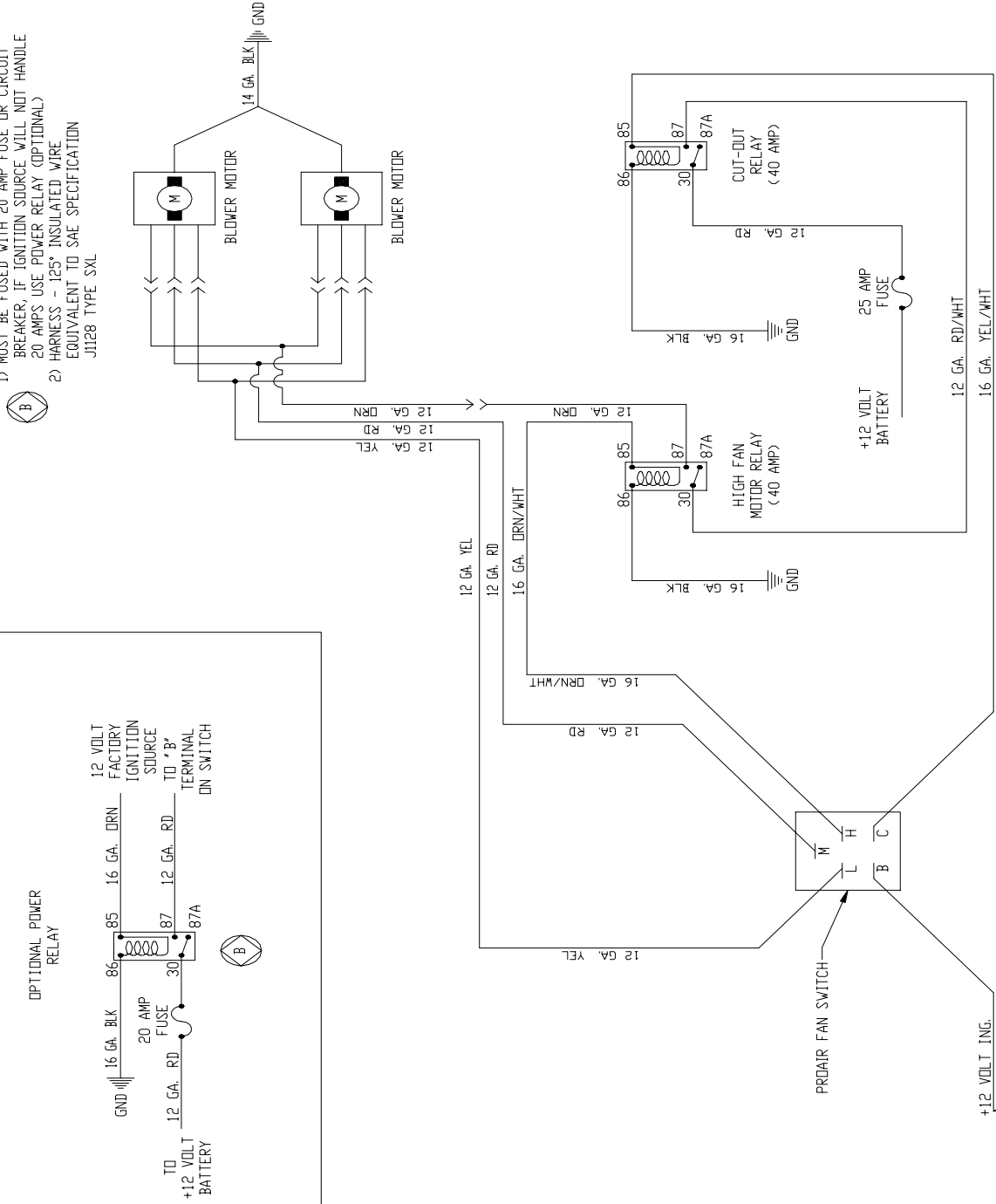
**ELECTRICAL CONNECTIONS:** The electrical hook-up consists of two main harnesses. The first two three pin flat connectors. These connectors hook to the mating plugs on the power pak. The remaining black wire gets hooked to the two black wires from the blower motors. This harness can then be routed along with the hoses to the engine compartment, and then thru the firewall to the dash area. The relay harness gets mounted under the hood by the battery. The long section with the orange yellow/white and orange/white wires get routed thru the firewall to the switch area along with the main harness. The yellow wire in the main harness gets hooked to the switch. The red wire in the main harness gets hooked to the M terminal on the switch. The orange wire in the main harness gets hooked to the orange wire in the relay harness. The orange/white wire from the relay harness gets hooked to the H terminal on the switch. The yellow/white wire from the relay harness gets hooked to the C terminal on the switch.

The black wire from the relay harness gets hooked to a good chassis ground. The red wire from the relay harness with the ring terminal gets hooked to the positive post on the battery. The remaining B terminal on the switch gets hooked to an ignition source. This wire must be protected with a 15 amp protection device, i.e. fuse, circuit breaker, etc. This source must be able to handle a fifteen amp load. If you're unsure, consult the factory! REFER TO SCHEMATIC ON THE NEXT PAGE.

# 526/552 OWNER'S MANUAL

PART NO. 40 000 104

- NOTE:**
- 1) MUST BE FUSED WITH 20 AMP FUSE OR CIRCUIT BREAKER, IF IGNITION SOURCE WILL NOT HANDLE 20 AMPS USE POWER RELAY (OPTIONAL)
  - 2) HARNESS - 125" INSULATED WIRE EQUIVALENT TO SAE SPECIFICATION J1128 TYPE SXL



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SIGNATURES		DATE
DRAWN	K. F. S.	5/11/99
CHEKED	C. W. M.	10/24/02
RELEASED FOR USAGE	KFS	1/7/00
REVISION	BY	DATE
	APPROVED	J. M. E.
		10/24/02

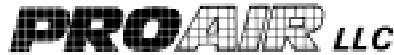
TITLE:	WIRE SCHEMATIC
PART NO.	40 000 104
SCALE:	1"=1'-0" SIZE A
SHEET	1 OF 1
USAGE:	CARGO BDX 526 / 552

## 526/552 OWNER'S MANUAL

### TROUBLESHOOTING

- Familiarize yourself with your system's components, wiring, plumbing and controls.
- Check that the appropriate switch(s) for the mode you are trying to select, is in the "on" position.
- Refer to the following Troubleshooting Charts:

PROBLEM	CAUSE	SOLUTION
<b>System not blowing, or fan not blowing.</b>	Blown fuse.	Replace fuse, check wires for short.
	<i>If OK check for...</i>	
	No voltage to switch.	Check electrical supply and wires.
	<i>If OK check for...</i>	
	No voltage to motor.	Check wires for loose connection.
	<i>If OK check for...</i>	
<b>System not cooling/ Compressor not on.</b>	Improper ground.	Tighten or reground motor.
	<i>If OK...</i>	Replace motor.
	Refrigerant level low.	Find and fix leak, add refrigerant.
	<i>If OK check for...</i>	
	Clutch not engaging.	Check voltage to clutch.
<b>System not heating.</b>	<i>If OK check for...</i>	
	Hot water flow into evaporator.	Refer to heating system troubleshooting.
	<i>If OK check for...</i>	
	Blockage in system.	Replace defective parts. Contact ProAir Service Rep.
<b>System not heating.</b>	No water flow to heater.	Check for kinks in hoses.
	Water valves not opening.	Check vacuum actuator or cable.
	Vacuum actuator not operating.	Check vacuum lines and replace.



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4. If the ProAir service center is too far away, the customer may find a repairing facility nearby and contact ProAir. We will attempt to allow the repair facility authorization to address the concern.
5. This warranty does not cover any product which has been subject to misuse, neglect, alteration, accident, improper installation, or improper maintenance, or which has been repaired outside of an authorized ProAir service center in any way so as to affect adversely its performance or reliability. This warranty does not cover material or labor used in normal maintenance services or the replacement of service items. Normal wear of service items shall not be considered defects under this warranty. This warranty does not cover customer lost time, vehicle towing, vehicle rental, or lodging.
6. This warranty does not include consequential damages, and ProAir shall not be responsible for any such damages. ProAir does not make and does not authorize any person to make for it any warranty other than the foregoing warranty. Such other warranties, if any as may be imposed or implied by law, are limited in duration to the duration of this written warranty.
7. Some states do not allow limitations on how long an implied warranty lasts, nor do they allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply. This warranty gives specific legal rights, and other rights which vary from state to state.
8. This warranty does not cover loss of refrigerant unless the loss is a direct result of a defect covered by this warranty.