

S168-268-002

**ARIDYNE™ 2000  
MEDICAL AIR COMPRESSOR**

**OPERATION AND SERVICE  
MANUAL**



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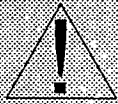
**SECTION I  
OPERATION INSTRUCTIONS**

**1.0 PRECAUTIONS:**

1.1 **WARNING:** Warnings are provided to alert the user to situations that may cause personnel injury.

1.2 **CAUTION:** Cautions are provided to alert the user to situations that may cause equipment damage.

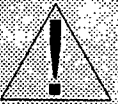
**CAUTION:** You should install a transparent water trap at the inlet of your blenders, respirators, etc. to protect them from moisture in case the drying system of your compressed air source (portable compressor or piped) fails. Check and empty the water trap during each patient visit. If your equipment did not come with a trap, call your local dealer for information on AHP's F-100 Condensation Trap.



**WARNING:** Electric shock hazard, DO NOT remove panel. Refer servicing to qualified service personnel.



**WARNING:** Possible explosion hazard if used in presence of flammable anesthetics.



**WARNING:** Never try to put oxygen into the compressor. The electrical components are not approved for oxygen use.

**CAUTION:** The compressor is of the oil-less type and DO NOT lubricate any of the parts with oil, grease, or petroleum products.

**CAUTION:** Do not operate the compressor if the performance/pressure gauge is in the warning areas (See Controls and Other Features).

**CAUTION:** Do not substitute parts without permission from Allied Healthcare Products, Inc. Service. Such substitutions can cause premature product failure and may void the warranty.

**CAUTION:** Saline solutions can cause the valve plates inside the air pump to corrode. This lowers the compressor's operating pressure and performance. Whenever applicable, isolate the air compressor from environments in which saline solutions are used.

SECTION I  
OPERATION INSTRUCTIONS

**CAUTION:** Operating the unit in areas above 32°C may shorten service life. Higher temperatures may cause the pump to shut down.

**2.0 GENERAL INFORMATION:**

2.1 The ARIDYNE™ 2000 is a castered, medical air compressor. It features a special noise-proof lining that makes operation whisper quiet. It also features the ARIDYNE™ drying system that ensures cool, condensation-free air. Its quality design permits 24-hour-a-day operation day after day.

Electromagnetic interference can be reduced by keeping sensitive equipment at least one yard (one meter) away from the air compressor while running and plugging into a different electrical circuit.

**SECTION I**  
**OPERATION INSTRUCTIONS**

**3.0 SPECIFICATIONS:**

3.1 **Output:** 56 lpm (2.3 cfm) at 345 ± 35 kPa (50 ± 5 psig) at 2.8°C (5°F) Dew point depression.

3.2 **Electrical Requirements:**

AC 115 Volts 60 Hz (12 Amps Maximum)

3.3 **Classification:**

Protection Class I

Type B according to IEC 601-1

Equipment of Group II, according to MED GV

3.4 **Operation:**

Continuous

3.5 **Operating Conditions:**

3.5.1 Temperature: 10°C to 32°C (50°F to 90°F)

3.5.2 Humidity: 35% to 75% RH (non condensing)

3.5.3 Shock Loading: Less than 10 G's

3.6 **Shipping Conditions:**

3.6.1 Temperature: -40°C to 60°C (-40°F to 140°F)

3.6.2 Humidity: 30% to 75% RH (non condensing)

3.6.3 Shock and Vibration Loading: Less than 10 G's

3.7 **Storage Conditions:**

3.7.1 Temperature: -29°C to 49°C (-20°F to 120°F)

3.7.2 Humidity: 30% to 75% RH (non condensing)

3.7.3 Shelf Life: 5 Years

3.8 **Dimensions:**

3.8.1 Width: 29 cm (11<sup>1</sup>/<sub>2</sub>" )

3.8.2 Height 87 cm (33<sup>1</sup>/<sub>2</sub>" )

3.8.3 Depth: 40 cm (15<sup>3</sup>/<sub>4</sub>" )

3.9 **Weight:**

41 kg (90 lbs.)

3.10 **Outlets:**

Three (3) Grounded DISS Air outlets with Check Valves

**Allied Healthcare Products, Inc.**








1720 Sublette Avenue

St. Louis, Missouri 63110 U.S.A.

Telephone: (314) 771-2400; Fax: (314) 771-6341

SECTION I  
OPERATION INSTRUCTIONS

4.0 SYMBOLS:

SYMBOL	DESCRIPTION
	"CAUTION", SEE OPERATING INSTRUCTIONS
	"OFF" (ON-OFF SWITCH, ONE SIDE OF LINE SWITCHED)
	"ON" (ON-OFF SWITCH)
	TYPE B EQUIPMENT
	ALTERNATING CURRENT
	PROTECTIVE EARTH (GROUND)
	FUSE
15T	15 AMPS TIME DELAY

**SECTION I  
OPERATION INSTRUCTIONS**

**5.0 SET-UP**

**5.1 Unpacking Instructions:**

- 5.1.1 Unpack unit, saving packing material for future use, in case unit needs to be returned, for any reason.
- 5.1.2 Check unit for any apparent damage. If unit appears to have been damaged in shipping, contact common carrier about damage.

**5.2 Internal Set-up:**

To prevent damage, brackets have been installed to hold the compressor motor still during shipping.



**WARNING:** Electric shock hazard. Do not remove panels. Refer servicing to qualified service personnel.

- 5.2.1 Have qualified service person perform the internal set-up.

**6.0 CONTROLS AND OTHER FEATURES:**

(See Fig. 1)

- 6.1 **Power Switch:** Turns on compressor and alarm circuit.
- 6.2 **Overheated Indicator:** Lights if compressor is overheating and is accompanied by an alarm.
- 6.3 **Low Pressure Indicator:** Lights up if the compressor is operating at low pressure and is accompanied by an alarm.
- 6.4 **Elapsed Time Indicator:** Indicates (in 1/10 hour increments) how long the compressor has been running.
- 6.5 **Performance Gauge:** Indicates how well the compressor is operating.
  - 1. **Green:** (340 kPa and up) Safe operating, dry air.
  - 2. **Yellow:** (310-340 kPa) Moisture warning. Have qualified service person check unit.
  - 3. **Red:** (Below 310 kPa) Do not operate, have qualified service person check unit.

**CAUTION:** Despite how dry the air is coming from the air compressor, water may still appear if ambient conditions cause the air temperature in the tubing to drop by more than 1.66°C (3°F) before it reaches the equipment. If you are getting water, try moving the ARIDYNE™ 2000 closer to the equipment and using shorter tubing.



**SECTION I  
OPERATION INSTRUCTIONS**

6.6 **Outlets:** Equipment is attached here.

6.7 **Inlet Filter:** Located on the left side of the compressor, this filters air entering the unit.

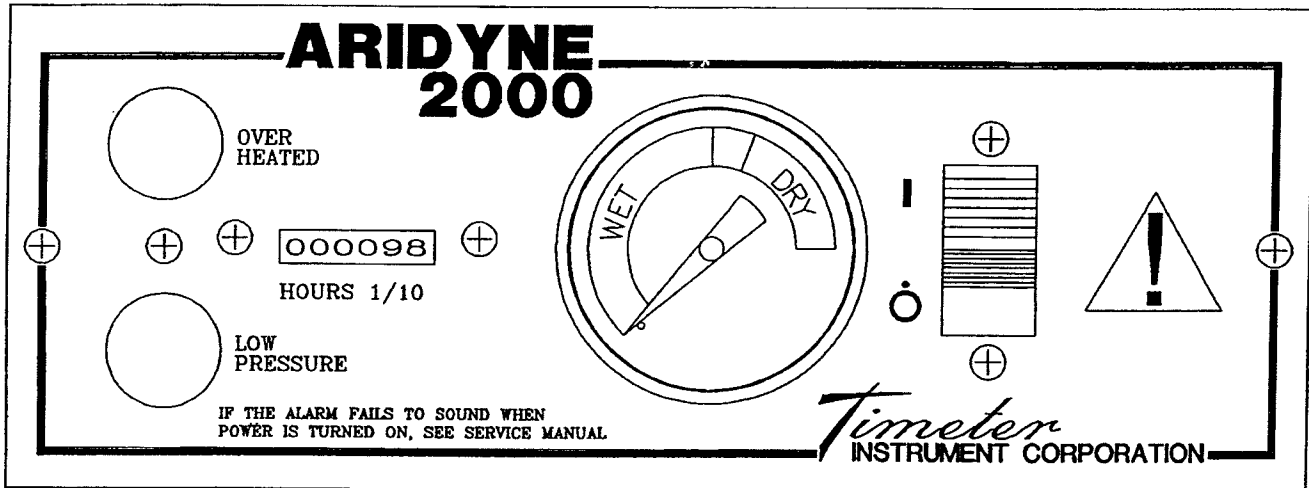


Fig. 1

**7.0 OPERATION:**

**CAUTION:** Position the compressor so the inlet filter is not obstructed. Inadequate air flow can cause overheating.

7.1 Plug the power cord into the appliance inlet.

7.2 Select the proper power outlet and plug in the compressor.

7.3 Turn the compressor on by pushing the power switch to the 'ON' position. The low pressure indicator and alarm should activate for a few seconds. This is to check that they are functioning properly. If they do not activate, have a qualified service person check unit.

7.4 Attach the equipment you wish to use to any or all of the three outlets.

**CAUTION:** Do not use wrenches or excessive force to make connections. This could cause fittings to turn inside the cabinet and damage the tubing.

**SECTION I  
OPERATION INSTRUCTIONS**

**8.0 CLEANING:**

**8.1 Exterior of Unit:**

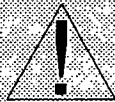
- 8.1.1 Clean the exterior of the unit by wiping the exterior with either a solution of soap and water or a cold disinfectant on a soft cloth.

**CAUTION:** Do not allow liquids to inter the unit, use cleaning solutions sparingly.

**8.2 Weekly:**

- 8.2.1 Remove the inlet filter (mounted in the left side of the compressor) and wash it in warm soapy water.
- 8.2.2 Rinse it well, allow it to dry and reinstall it with the plastic tab out.

**8.3 Quarterly Cleaning and Service:**



**WARNING:** Electric shock hazard. DO NOT remove panel. Refer servicing to qualified service personnel.

- 8.3.1 Have qualified service person perform quarterly cleaning and servicing of unit.

**8.4 Annual Cleaning and Service:**



**WARNING:** Electric shock hazard. DO NOT remove panel. Refer servicing to qualified service personnel.

- 8.4.1 Have qualified service person perform annual cleaning and servicing of unit.

**SECTION I  
OPERATION INSTRUCTIONS**

**9.0 WARRANTY:**

9.1 See your local Allied Healthcare Products, Inc. dealer for warranty information.

**NOTE:** If further technical assistance is required, please contact our service center at the address listed below:

**Allied Healthcare Products, Inc. Service Center**  
1720 Sublette Avenue  
St. Louis, Missouri 63110 U.S.A.

Telephone: (314) 771-2400 Fax: (314) 771-6341

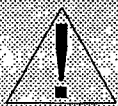
**SECTION II**  
**SERVICE INSTRUCTIONS**

**IMPORTANT NOTE:** Servicing should only be performed by qualified service personnel.

**1.0 SET-UP:**

**1.1 Unpacking Instructions:**

**CAUTION:** To prevent damage, brackets have been installed to hold the compressor motor still during shipping. The following instructions must be performed before operating the compressor.

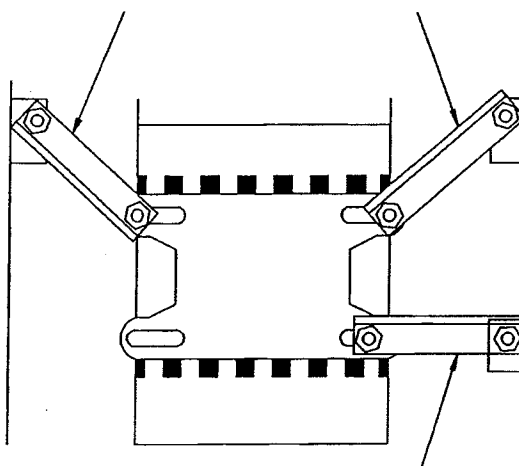


**WARNING:** Electric shock hazard. Always turn off compressor and unplug it before servicing.

1. Remove the right side panel by unscrewing the six (6) 1/4-20 Phillips head screws.
2. Remove the three (3) nuts and bolts holding the flat metal brackets to the formed compressor mounting bracket.
3. Loosen, but don not remove the three (3) 5/16-18 hex nuts securing the flat brackets to the angles on the cabinet walls.
4. Swing the flat brackets up or down, against the cabinet walls.
5. Reattach the three (3) nuts and bolts (from #2 above) to the flat brackets.

**CAUTION:** Reverse these instructions when preparing for shipping.

6. Tighten all hex nuts.
7. Check that the drainage hose is positioned in the foam block in the water tray.
8. Reinstall the side door.



**Fig. 2 Mounting Brackets**

SECTION II  
SERVICE INSTRUCTIONS

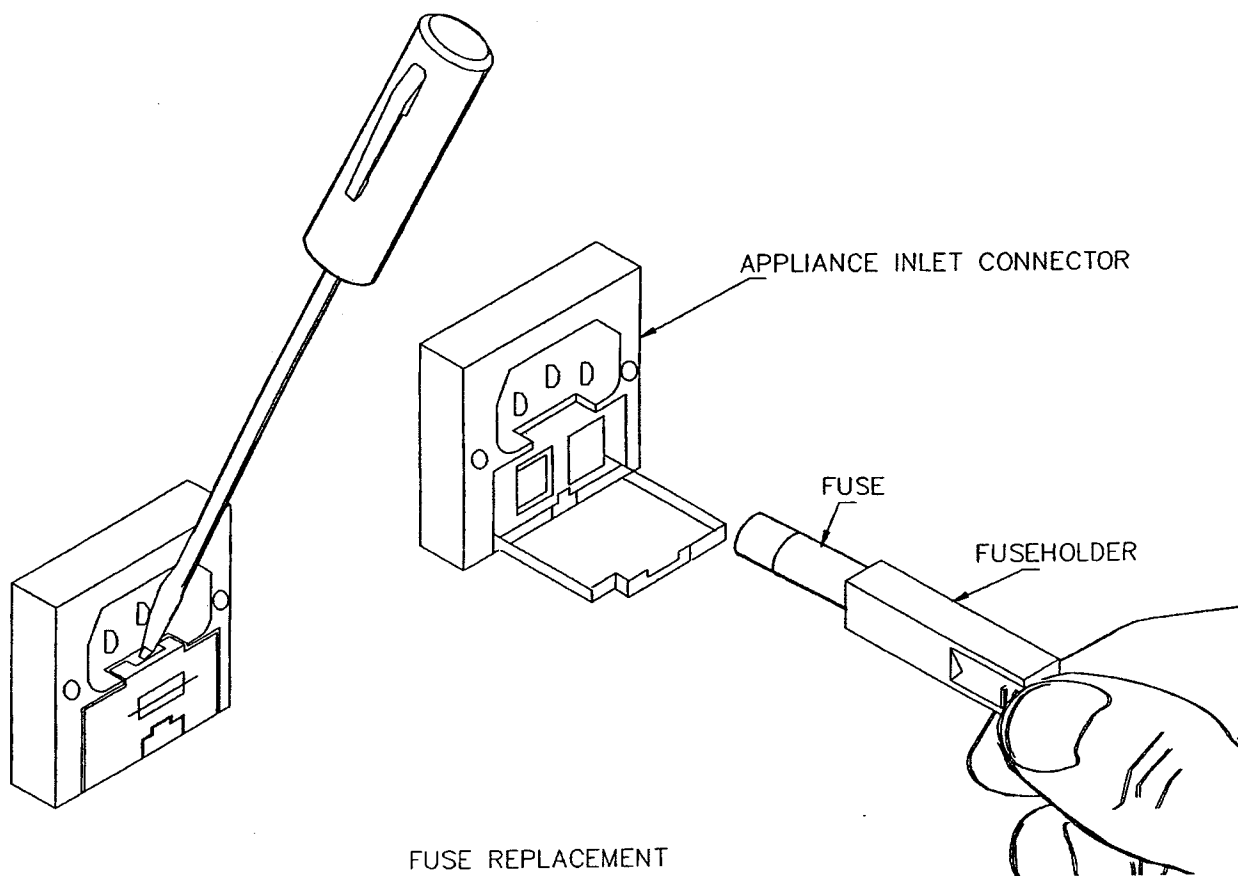


Fig. 3

FUSE REPLACEMENT

**2.0 FUSE REPLACEMENT:**

1. Turn power switch to off.
2. Unplug power cord from appliance inlet.
3. With small screwdriver pop out panel on appliance inlet (See Fig. 3).
4. Squeeze fuse holder and pullout from appliance inlet connector.
5. Pull fuse out of holder and replace with a 15 amp time delay 250 vac, 5X20 mm fuse.
6. Place fuse and fuse holder back into appliance inlet connector.

**WARNING:** To help prevent fire/shock hazard, replace only with a fuse of equal size and rating.

7. Pop cover back into place.
8. Plug power cord into appliance inlet connector.
9. Unit is ready for operation.

**SECTION II  
SERVICE INSTRUCTIONS**

**3.0 ROUTINE MAINTENANCE:**

**WARNING:** Electric shock hazard. Always turn off compressor and unplug it before servicing.

**NOTE:** After performing any maintenance procedure, verify the performance of the unit to the specifications SECTION I - 3.0.

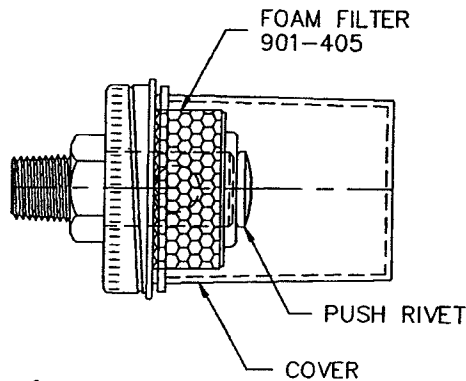
**3.1 Weekly:**

3.1.1 Refer to SECTION I - 8.2.

**3.2 Quarterly:**

Wash/replace the air pump intake filter elements:

1. Unscrew the six (6) screws from the side door and remove.
2. Locate the two (2) filters in the compressor compartment. Unscrew the covers from the mounting bases.
3. Pull the push rivet, removing the foam filter elements. Wash in warm soapy water. Rinse well, allow to dry and reinstall. While the cover is off, wipe it and the inside of the filter with a clean dry cloth.
4. Reassemble by reversing steps 1 through 3.



**Fig. 4**

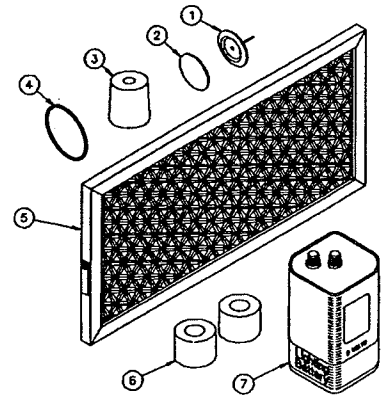
**SECTION II  
SERVICE INSTRUCTIONS**

**3.3 Annual:**

A Preventive Maintenance Kit should be installed.

**3.3.1 Part #Z104. It includes:**

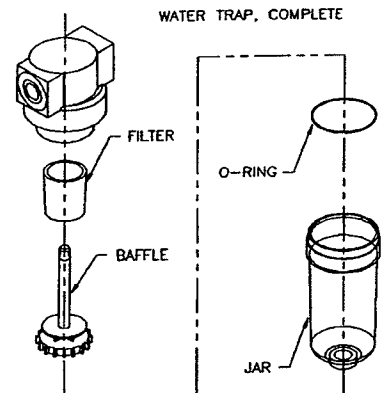
- |                           |          |
|---------------------------|----------|
| 1. Regulator Diaphragm    | #923-402 |
| 2. Relief Valve Diaphragm | #923-401 |
| 3. Water Jar Filter       | #924-401 |
| 4. Water Jar O-ring       | #13530   |
| 5. Inlet Grille Filter    | #901-404 |
| 6. Inlet Filters (2)      | #901-405 |
| 7. 6 Volt Battery         | #326-201 |



**3.3.2 To install the intake filter element:  
See 3.2 Quarterly:**

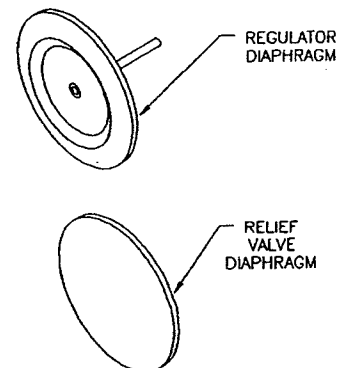
**3.3.3 To install the water trap jar o-ring and water trap filter: Fig. 5**

1. Unscrew the six (6) screws from the side door and remove the door.
2. Pull the tubing off of the bottom of the water jar.
3. Unscrew the bowl and remove.
4. Unscrew the retainer cap and remove the filter.
5. Install the new filter and reinstall the retainer cap.
6. Carefully position the new O-ring on top of the water jar and rethread. It is important to make this seal tight.



**3.3.4 To install the relief valve and regulator diaphragms:**

1. Unscrew the six (6) screws from the side door and remove door.
2. Relief valve has a white locking ring, regulator a red locking ring.
3. Unscrew and remove the bonnet portion of the relief valve.
4. Remove the worn diaphragm, install the replacement and reassemble relief valve.
5. Unscrew the bonnet from the regulator.
6. Remove the worn diaphragm, install the replacement and reassemble regulator.
7. Plug the compressor in, turn it on and allow it to warm up for 30 minutes.



**Fig. 7**

**SECTION II  
SERVICE INSTRUCTIONS**

- 3.3.5 **TO RE-SYNCHRONIZE THE REGULATOR AND THE RELIEF VALVE:**
1. Pull out the lock ring on the regulator and turn the knob clockwise until it is completely closed.
  2. Attach a pressure gauge to the DISS fitting on the relief valve of the compressor.
  3. Pull out the locking ring on the relief valve and turn the knob until the pressure gauge reads 586 kPa  $\pm$  6.9 kPa (85 psi  $\pm$  1 psi).

**CAUTION:** Do not adjust pressure over 586 kPa (85 psi). This can cause damage to the pump.

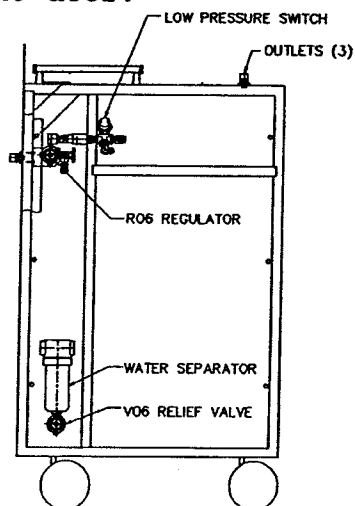
If pressure is set below 85 psi, the efficiency of the drying system will be reduced.

4. Once the relief valve is adjusted properly, push in the locking ring to lock in the new setting.
5. Attach a pressure gauge to the outlet of the compressor. Adjust the regulator until the outlet pressure is approximately 379.2 kPa  $\pm$  6.9 kPa (55 psi  $\pm$  1 psi) at a no flow condition.

**NOTE:** The one way valve in the outlet does not allow air flow to come back into the compressor. If you have to adjust the relief valve down, unscrew the gauge enough to bleed the pressure off, then tighten the pressure gauge and check the pressure. You can save time by adjusting the valve all the way down, bleeding off the pressure and adjusting upwards.

After each adjustment, allow a few seconds for the system to stabilize.

6. Once the regulator is adjusted properly, push in the locking ring to lock in the new setting.
7. Reinstall side door.



**Fig. 8**

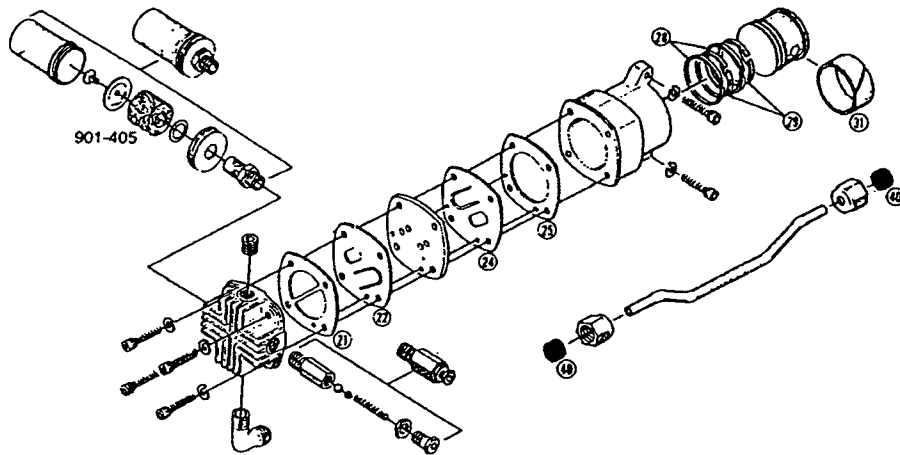


**SECTION II  
SERVICE INSTRUCTIONS**

**3.3.6 BETWEEN 8,000-9,000 HOURS**  
Install an air compressor overhaul kit #12001.

Overhaul Kit item description:

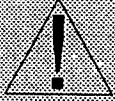
21 Head Gasket	28 Piston Ring
22 Outlet Valve	29 Piston Seal
24 Inlet Valve	31 Rider Ring
25 Cylinder Gasket	40 Manifold Sleeve (2)



**Fig. 9**

**SECTION II  
SERVICE INSTRUCTIONS**

**3.3.7 Removing the compressor from the cabinet:**



**WARNING:** Unplug the power cord before proceeding to remove the compressor from the cabinet.

1. Unscrew the six (6) screws that attach the side door of compressor. Remove the door.
2. Unplug the pump wires at the terminal block.
3. Disconnect the braided hose from the bulkhead fitting.
4. Slide the compressor/fan assembly out of the cabinet.
5. Disconnect the (4) springs from pump at hangers.
6. Overhaul the air pump, using the instructions included with the overhaul kit.

**SECTION II  
SERVICE INSTRUCTIONS**

**4.0 TROUBLE SHOOTING:**

**4.1 SYSTEM PERFORMANCE GAUGE NEEDLE, STICKING OR VIBRATING:**

Remove the six (6) screws that secure the side door. Remove the door and locate the needle valve. Turning the needle valve clockwise will eliminate vibration. Counter clockwise rotation will correct sticking. A proper setting is important in preventing damage to the performance gauge.

**4.2 OVERHEATING:**

1. The inlet filter is clogged and needs to be cleaned.
2. The unit is operating in a hot, unventilated area.
3. The inlet filter is blocked by curtains, bedding, etc.
4. The cooling fan is not working properly.
5. The cabinet air outlet is blocked.

**4.3 NOISE/EXCESSIVE VIBRATION:**

1. The compressor is worn, making a loud clattering noise in the compressor chamber. It should be removed and inspected. SEE 3.3.6, "BETWEEN 8,000-9,000 HOURS".
2. Hose to intake muffler is disconnected from the compressor.

**4.4 WATER PROBLEMS:**

(Water coming out of the air outlets)

1. The compressor has overheated. See **OVERHEATING**.
2. The regulator is out of synchronization. To re-synchronize see **Annual** see 3.3.
3. Check to see if the water jar is full of water. See 3.3.3 of **Annual**, for access to the water jar.

**4.5 HIGH PRESSURE**

1. The regulator is set too high. See 3.3.5 of **Annual**.
2. The regulator diaphragm needs to be cleaned or replaced. See section C of **YEARLY**, page 4.

**4.6 LOW PRESSURE:**

**4.6.1 If the compressor motor is not running:**

1. The power cord is unplugged.
2. The fuse has blown, replace. If the fuse continues to blow, call your dealer or Allied Healthcare Products.
3. The thermal overload protector in the compressor motor has activated. It will automatically reset within 20-30 minutes. If the power switch is left on, the fan will cool the motor faster. Activation of the thermal overload protector is caused by:
  - a. Any of the causes listed in **OVERHEATING**.

**SECTION II  
SERVICE INSTRUCTIONS**

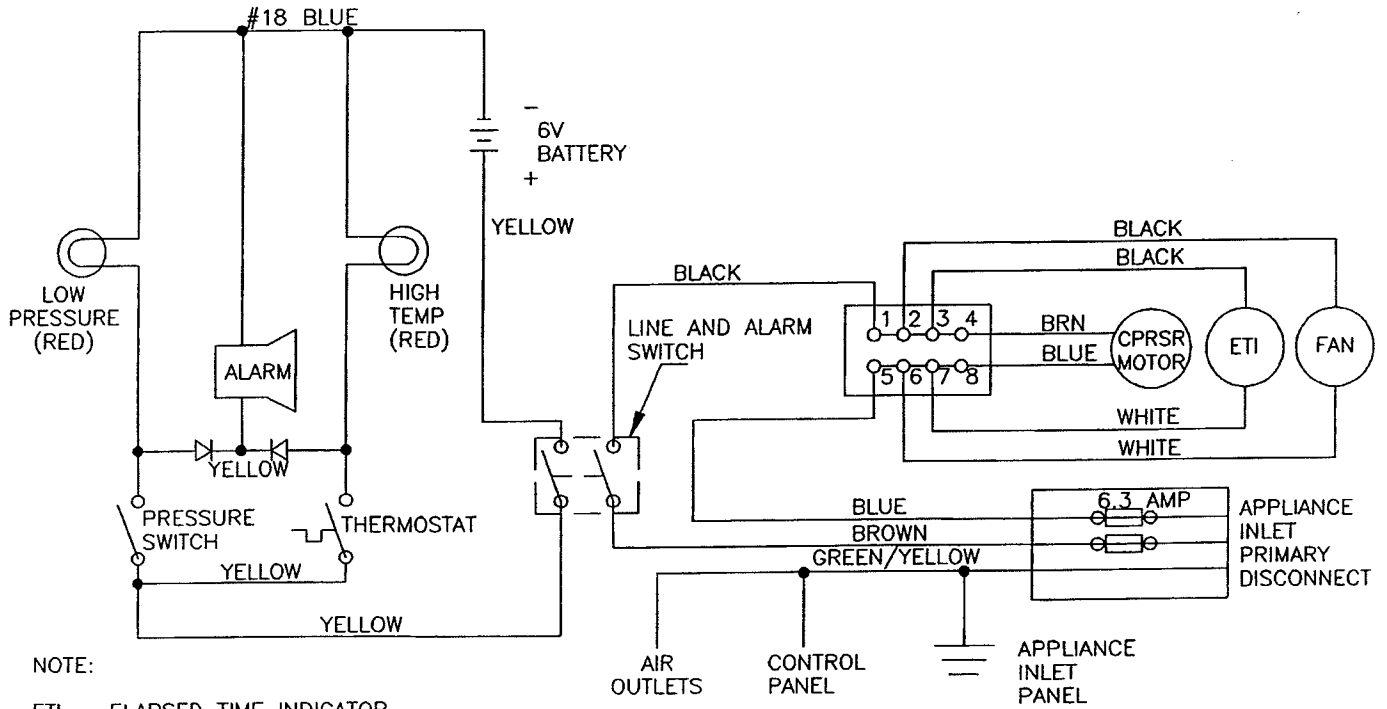
- b. A motor defect is causing it to draw too much power. This will quickly overheat the motor. Current levels should not exceed 6 amps during normal compressor usage.
- 4. The power from the wall outlet has been interrupted.
- 5. Low line voltage at wall outlet. Plug compressor into a separate electrical circuit.

**4.6.2 If the compressor is running:**

- 1. The outlet is leaking.
- 2. The water trap jar is improperly installed.
- 3. The O-ring on the water trap jar is improperly installed or missing.
- 4. An internal brass fitting is leaking.
- 5. The compressor's pop-off valve is defective. Replace the valve or readjust to 758.4 kPa  $\pm$  34.5 kPa (110 psi  $\pm$  5 psi):
  - a. Loosen the lock nut on the pop-off valve with a 1/2" wrench.
  - b. Adjust the end nut with a 7/16" wrench.
  - c. Tighten the lock nut.
- 6. The regulator is set too low. See 3.3.5 of Annual.
- 7. The pressure gauge needle is stuck. See 4.1 of TROUBLE SHOOTING.

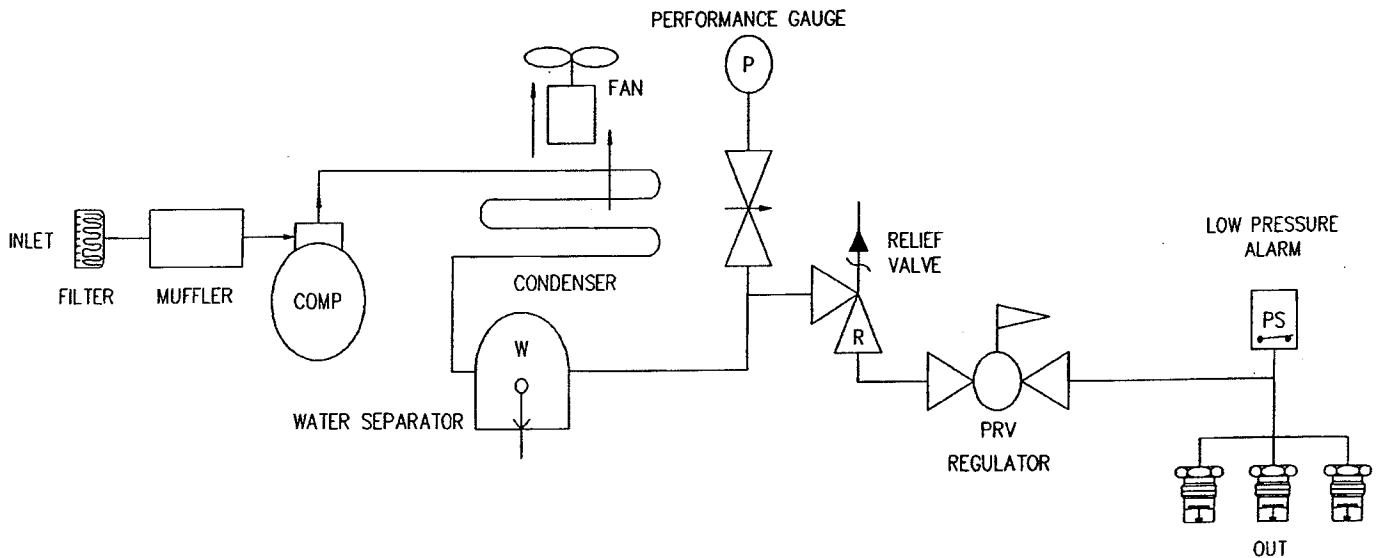
**SECTION II  
SERVICE INSTRUCTIONS**

**5.0 WIRING DIAGRAM**



**Fig. 10**

**6.0 PNEUMATIC DIAGRAM**



**Fig. 11**

**SECTION II  
SERVICE INSTRUCTIONS**

**7.0 REPLACEMENT PARTS LIST**

<b>ITEM</b>	<b>PART #</b>	<b>PART DESCRIPTION</b>	<b>ITEM</b>	<b>PART #</b>	<b>PART DESCRIPTION</b>
1	626-301	Handle	10	11254	Water tray/foam assembly
2	12149	Blower	11	903-401	5V06 Relief valve
3	326-201	Battery	11a	923-401	Relief valve diaphragm
4	Z75	DISS air outlet w/check valve × 1/8"	12	901-407	Water jar complete
4a	080-109	Bulkhead w/nut and lock washer	12a	13532	Water trap jar w/nut & lock washer
5	918-401	High pressure hose w/fittings	12b	924-401	Water jar filter element
6	990-455	Air pump inlet filter assembly	12c	13530	Water jar O-ring
7	028-118	Air pump complete w/suspension	13	990-434	Pop-off valve
8	611-309	Suspension springs	14	903-402	5R06 Regulator
9	586-501	Thermostat	14a	991-407	Regulator bonnet
			14b	923-402	GR06 Regulator diaphragm
			15	11577	Caster Assy, Back
			16	11578	Caster Assy, Front Locking
			17	911-007	Nylon Tubing, 3/8" O.D.

<b>PART #</b>	<b>PART DESCRIPTION</b>	<b>PART #</b>	<b>PART DESCRIPTION</b>
026-116	Splash shield assembly	974-402	Sealing sleeve 1/4" O.D.
092-102	Overheat/low pressure alarm	Z148	Hospital Grade Plug
12001	Pump overhaul kit	Z104	Preventive maintenance kit
327-201	Overload protector		
344-201	Light bulb	<b>PUMP</b>	
345-201	Light bulb holder and lens	<b>PARTS</b>	
510-502	Power switch	990-402	Flat key
580-501	Pressure switch	990-407	Piston only
613-005	Shipping carton	990-409	Cylinder head
625-301	Cord hook	990-411	Cylinder
648-301	Air deflector chute	990-414	Eccentric
8134*	Elapsed tie indicator	990-425	Wrist pan
8508	Performance gauge	990-426	Valve plate
901-404	Inlet filter, cabinet	990-427	Fan blade
901-405	Foam inlet filter element	990-428	Fan shroud
911-004	Plastic tubing 1/4" O.D.	990-429	Manifold
973-401	Needle valve	990-431	Piston & rod assembly
974-401	Sealing sleeve 3/8" O.D.	990-461	Wrist pin bearing (2/piston)

\*If the elapsed time indicator mounting holes are above and below the display window, adaptor plate #11181 is needed for installation.



**Allied Healthcare Products, Inc.**  
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