

Model # 219-00022

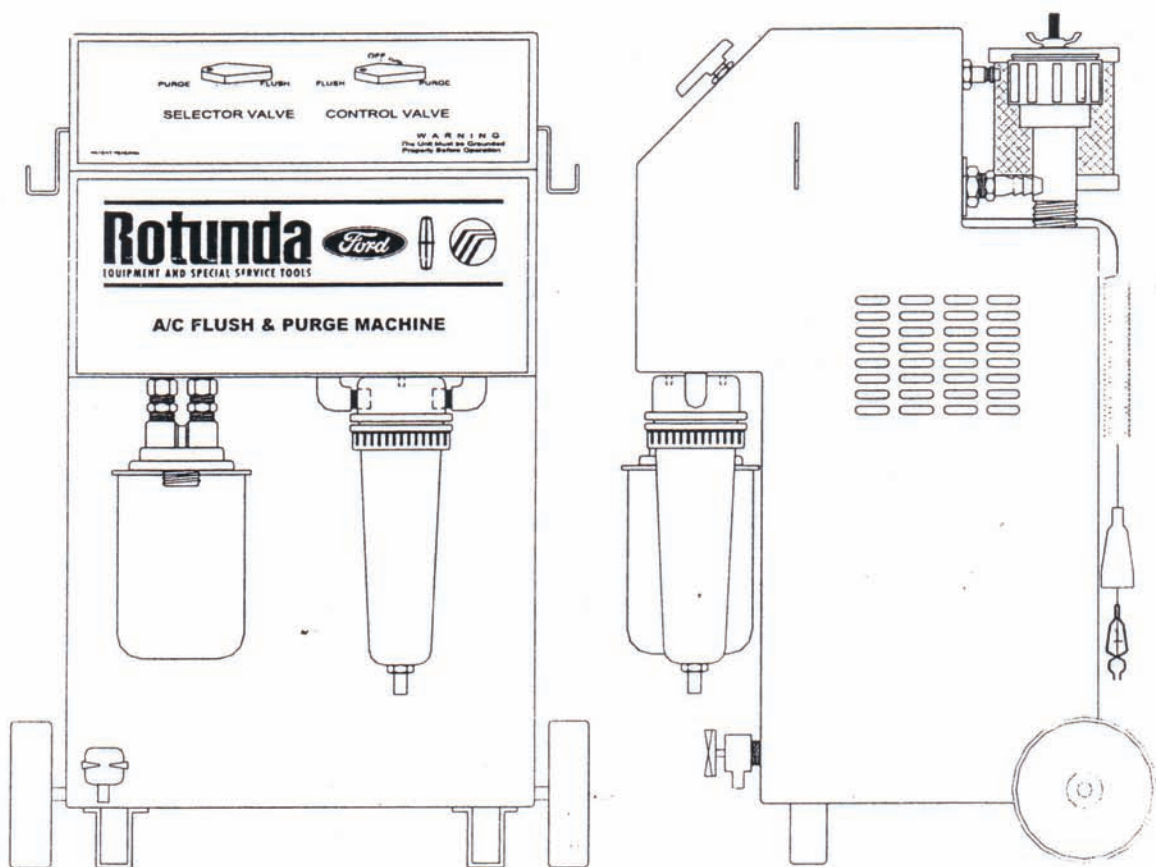
Rotunda

EQUIPMENT AND SPECIAL SERVICE TOOLS



A/C FLUSH & PURGE MACHINE

USER'S MANUAL



Part# 20811
RV. 6.0
(0405991100MW)

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INTRODUCTION

Congratulations on your purchase of the Rotunda *FLUSHWORKS* #219-00022 flush and purge machine!

The Rotunda *FLUSHWORKS* is designed to flush and purge A/C system components such as the condenser and evaporator and clear hoses, leaving them in a clean and dry state ready for service.

The Rotunda *FLUSHWORKS* has been tested and approved by the Ford Motor Company.

Breathe easier: your Rotunda *FLUSHWORKS* incorporates a patent-pending odor-reduction chamber that significantly reduces solvent odors associated with other other flush/purge machines.

Your Rotunda *FLUSHWORKS* machine has been designed for easy in-shop serviceability. All components are readily accessible by removing the front or rear panels.

Your Rotunda *FLUSHWORKS* machine is engineered to provide your shop with many years of reliable service and with minimal required maintenance.

Before using your Rotunda *FLUSHWORKS* machine, read this manual thoroughly. Observe the SAFETY & WARNING messages, CAUTIONs and NOTEs.

Your Rotunda *FLUSHWORKS* machine #219-00022 comes with the following items:

1. Rotunda *FLUSHWORKS* machine.
2. Handle with four screws (the screws are pre mounted on the back of the machine).
3. Extension drain hose.
4. This user's manual.

Also included with the Rotunda *FLUSHWORKS* machine # 219-00023:

1. 44 piece Component Fitting Kit, Rotunda # 219-00024.
2. Replacement Air Filter Pack, Rotunda# 219-00025.



SAFETY & WARNING MESSAGES

ALWAYS make sure the unit is grounded properly before operation.

ALWAYS drain the flushing solvent before transporting the unit out of your location.

ALWAYS operate the unit in a well ventilated area.

ALWAYS wear gloves and protective eyewear.

KEEP the unit away from open flames and sparks.

USE ONLY approved flushing solvent. The use of other solvents may damage A/C system, be dangerous to the operator, and could void the warranty (see the shop manual).

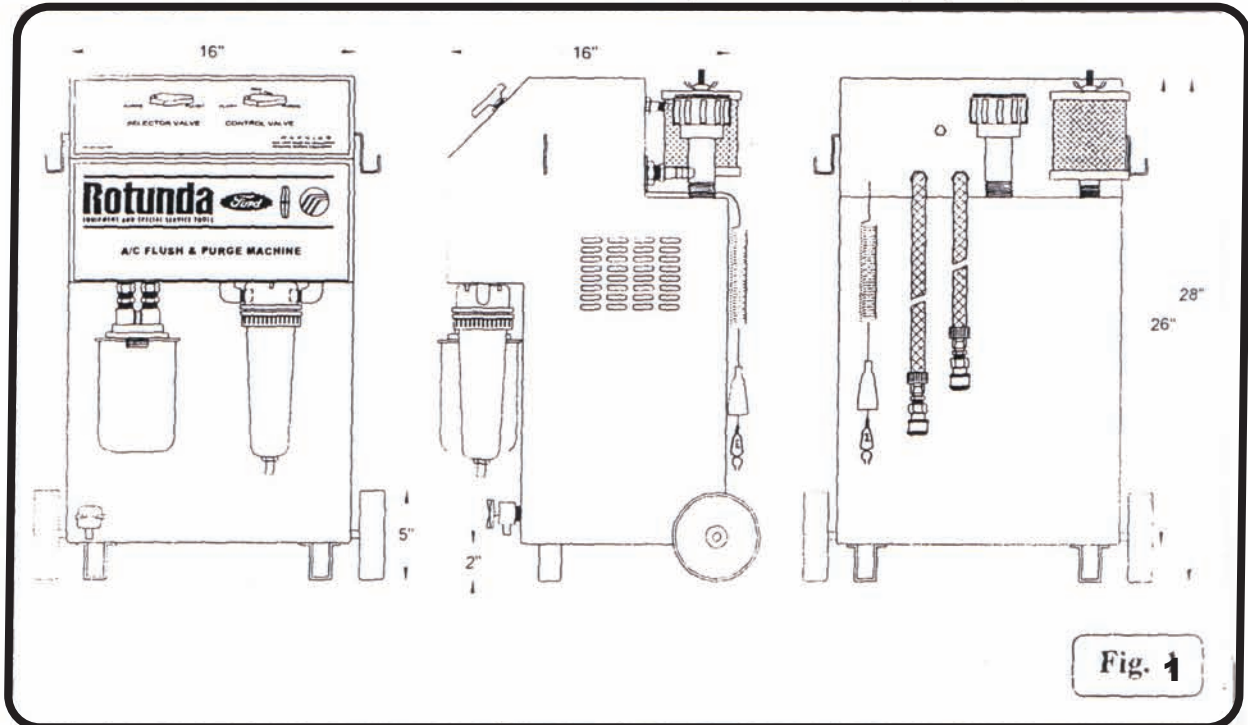


Do Not Allow The Solvent To Come Into Contact With Painted Surfaces!

(In the event of contact, immediately wash the surface with a mild soap and water.)

UNIT DESCRIPTION

Your ROTUNDA FLUSHWORKS #219-00022 is powered entirely by shop-air.



The Procedure Consists Of Two Steps:

STEP-1

Circulate the flushing solvent through the component (condenser/evaporator), which removes the old refrigerant, lubricant, dirt, solid particles, and acids from the component.

The Flushworks machine uses a closed loop back flushing method for thoroughly cleaning the component. The high quality pneumatic pump provides a pulsating scrubbing action that helps loosen and dissolve harmful material build-up inside the component. The solvent is continuously being filtered and particulate matter is constantly being removed by the liquid filter.

STEP-2

Purge the system to a clean and dry state by using shop air that has been cleaned and further dried by the Flushworks' machine.

Incoming shop-air is regulated down to 55 psi. The shop-air is then passed through a fan cooled condenser coil which aids in the condensation of moisture in the shop-air. From there, the shop-air is passed through an automatic self-draining coalescing filter which removes over 99% of the shop-air moisture, pneumatic oil, and dirt. The resulting clean dry air is then used to purge the component, leaving it clean and dry.

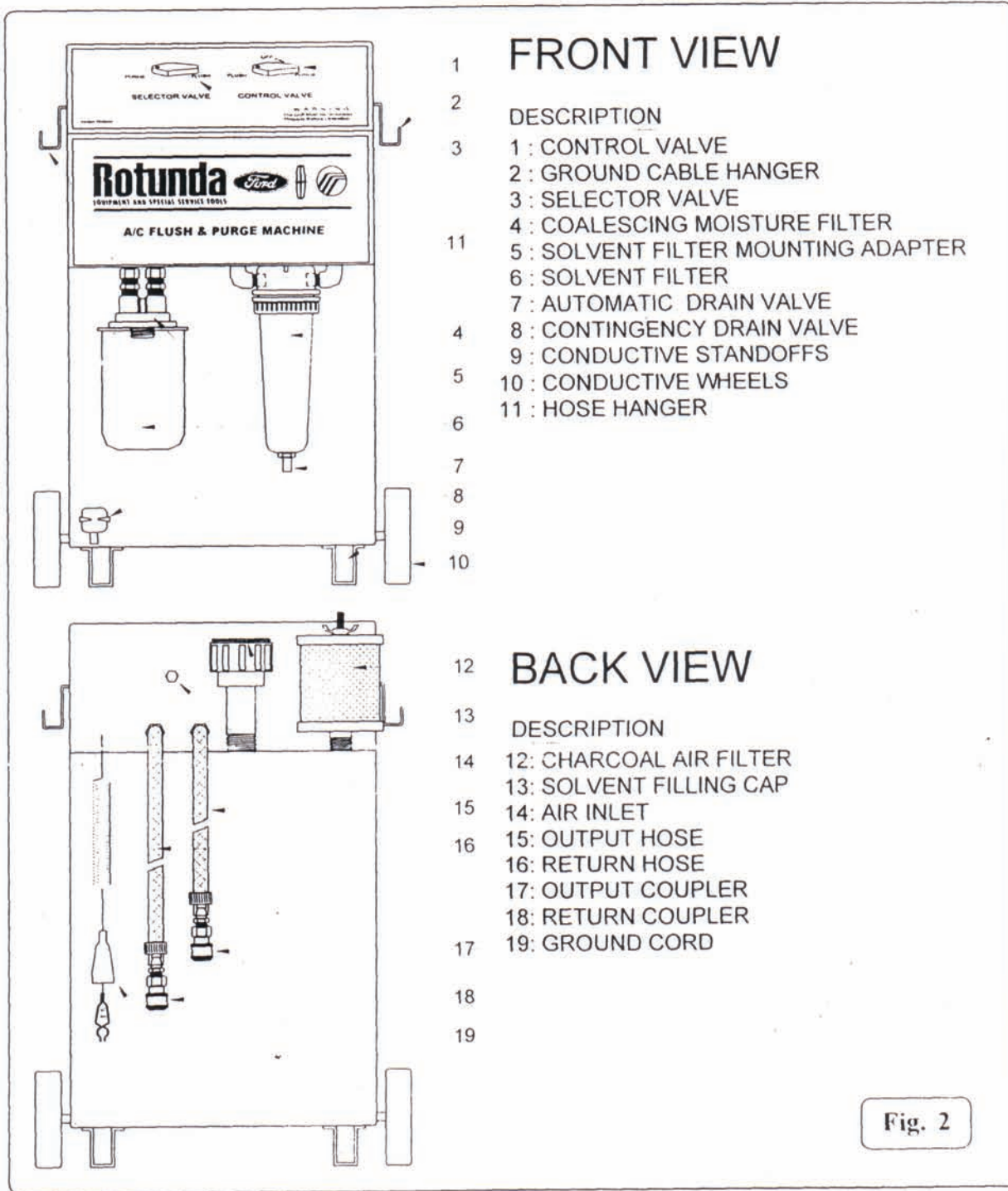


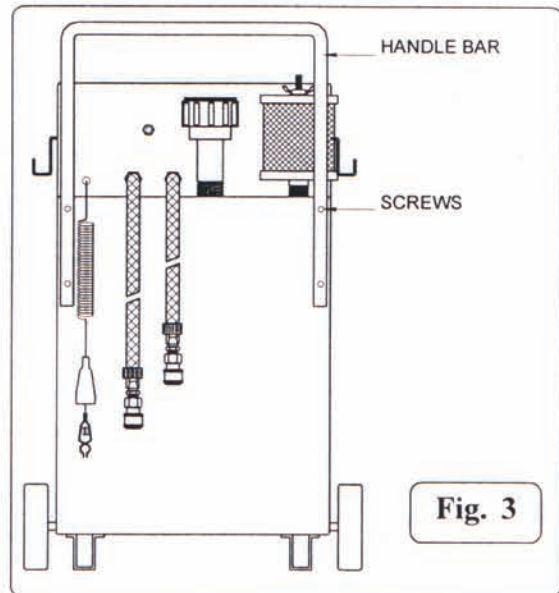
Fig. 2

CAUTION: Use only *approved* flushing solvent. Other flushing solvents may damage the A/C system or unit, or cause harm to the operator.

FLUSHWORKS ASSEMBLY

Please perform the following steps:

1. Carefully unpack the machine from the top of the shipping carton.
2. Remove the four screws from the back of the machine.
3. Install the handle on the back of the machine using the four screws noted in step 2 (Fig. 3).
4. Save the shipping carton.



Operating Warnings



Before operating, ensure that the unit is properly grounded.

Keep the unit away from open flames or sparks.

Make certain that the work area is well ventilated.

Wear gloves and protective eyewear when operating the machine.

Flush and purge only evaporators, condensers, and clear hoses. A/C components such as compressors, receiver dryers, expansion valves and accumulators should *not* be flushed.

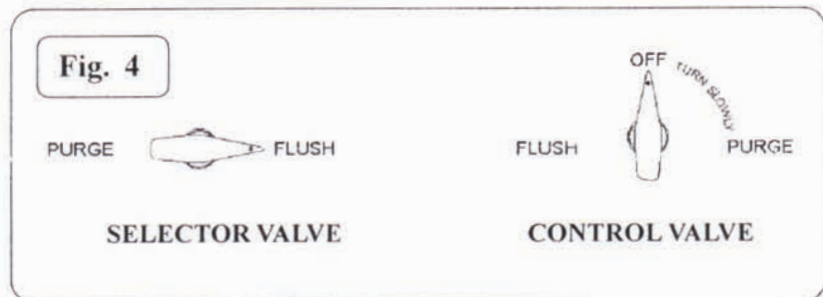
Use only approved flushing solvent. Other flushing solvents may damage the machine and cause harm to the operator.

Note: Grounding may be achieved by securing the ground wire clamp to the negative terminal of the battery or to any good ground location under the hood.

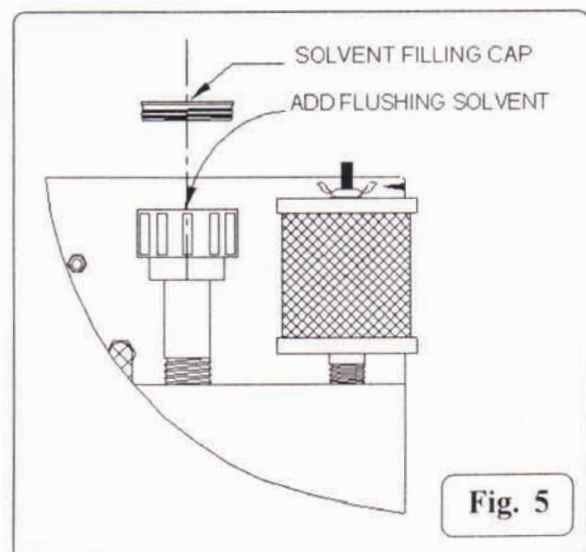
Note: Dry shop-air is required to operate this machine.

FLUSHING PROCEDURE

1. Install Purolator L30001 Filter, or equivalent.
2. Move the machine to the service area and ensure that it is **properly grounded** using the coiled ground cable.
3. Ensure that the contingency drain valve is closed (Fig.2).
4. Turn the CONTROL VALVE to the "OFF" position (Fig 4).



5. Remove the solvent filling cap and fill with 1 gal. (3.6 litres) of Flush Solvent (Fig. 5) Replace the filling cap: Hand tighten only.



6. Select and install proper component fittings on the inlet and outlet ports of the component to be flushed (Fig. 6).

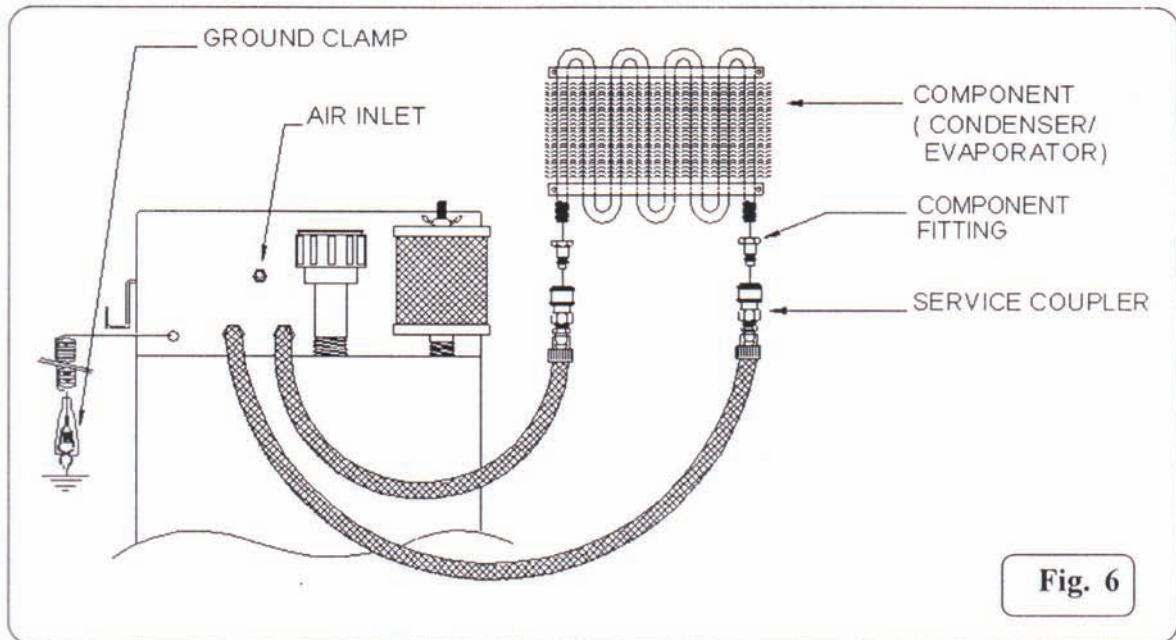


Fig. 6

7. Connect the OUTPUT service coupler to the OUTLET port fitting of the component (Fig. 6).

Connect the RETURN service coupler to the INLET port fitting of the component.

8. Connect the shop-air hose to the air inlet on the back of the machine.

9. Turn the SELECTOR VALVE to the "FLUSH" position (Fig. 7).

10. Turn the CONTROL VALVE to the "FLUSH" position (Fig. 7).

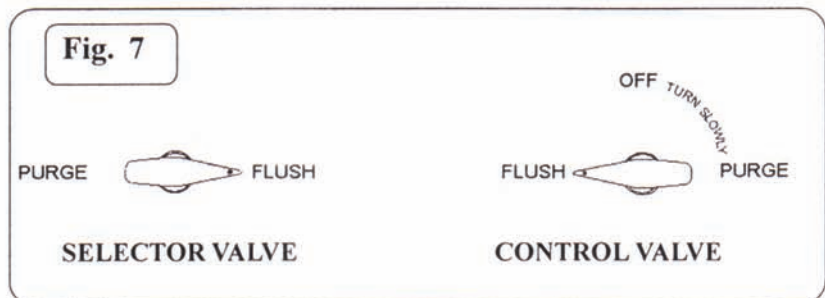


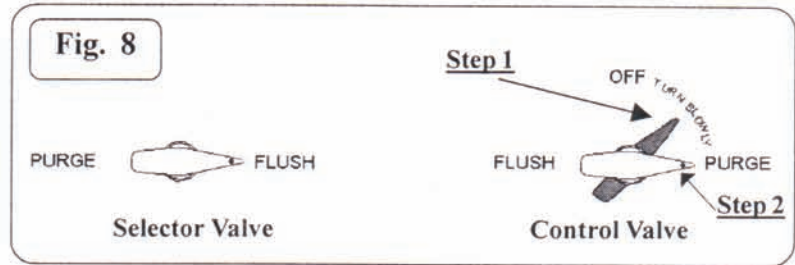
Fig. 7

11. Flush component for at least **15 minutes** to ensure proper cleaning.
12. To end the flushing procedure, turn the CONTROL VALVE to the "OFF" position.

The component is now ready to be purged.

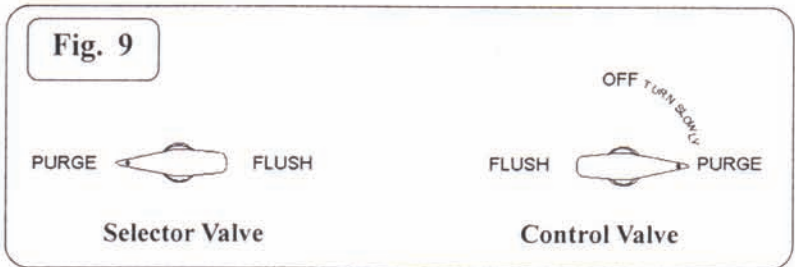
PURGE PROCEDURE

1. Slowly and gradually turn the **CONTROL VALVE** toward the “**TURN SLOWLY**” position and observe the discharge hose (Fig. 8).

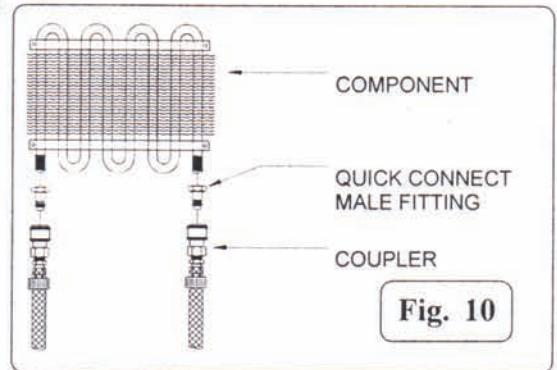


When **all** liquid has been removed from the hoses, proceeds to step 2.

2. Slowly turn the **CONTROL VALVE** to the “**PURGE**” position. Wait one minute (Fig. 8).



3. Turn the **SELECTOR VALVE** to the “**PURGE**” position (Fig. 9).
4. Purge the component for 30 minutes to ensure that it is completely dry.
5. Turn **CONTROL VALVE** to the “**OFF**” position.
6. Disconnect both couplers from the component (Fig 10).
7. Remove the component fittings from the component.



The component is ready to be reconnected into the A/C system.

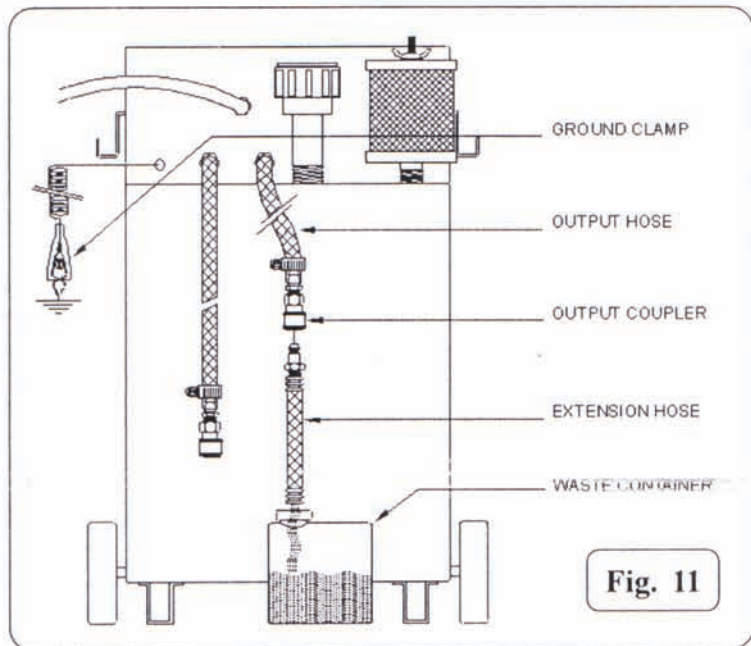
Repeat the flush procedure for the second component.

REMOVING SOLVENT

It is recommended that only one vehicle be flushed with each gallon of solvent. After each vehicle flush and purge operation, it is **highly recommended** to immediately remove the used fluid from the machine!

To pump out the used solvent from the machine:

1. Make sure the **CONTROL VALVE** is turned to the “OFF” position.
2. Attach the drain extension hose to the **OUTPUT** service coupler and place the extension hose into a waste container (Fig. 11).



3. Turn the **SELECTOR VALVE** to the “PURGE” position (Fig. 12).



4. Turn the **CONTROL VALVE** to the “FLUSH” position (Fig. 12).

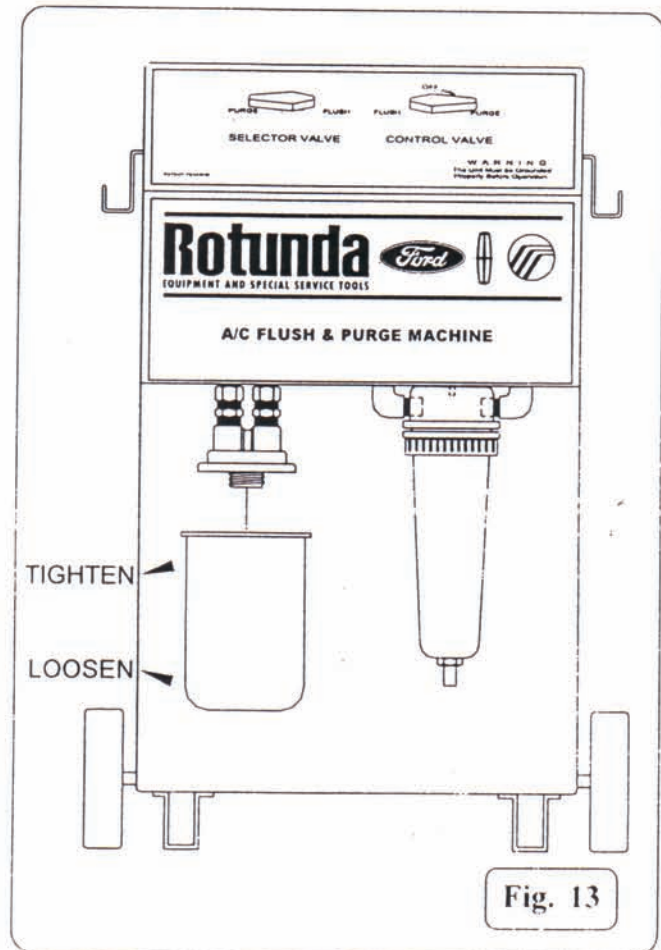
5. Once the flushing solvent is drained **completely** from the tank, proceed to step 6.
6. Turn the **CONTROL VALVE** to the “OFF” position.
7. Remove the liquid filter.

LIQUID FILTER REPLACEMENT

Note: The liquid filter should be replaced with each solvent change.

Replace the liquid filter with: MOTORCRAFT FL1A.

1. Turn the liquid filter counter-clockwise, and remove it (Fig. 13).
2. Install the new liquid filter (turn clockwise). Hand tighten only.



CHARCOAL AIR FILTER REPLACEMENT

The charcoal air filter element should be replaced after approximately 25 vehicles have been flushed and purged. In some cases the element may need to be replaced sooner if a stronger than usual odor is emitted from the machine during the purging cycle.

1. Turn the wing nut on the filter element counter-clockwise and remove the retaining plate.
2. Remove the old element and replace it with a new one.
3. Replace the retaining plate and wing nut. Hand tighten only.

COALESCING FILTER REPLACEMENT

The coalescing filter should be replaced after approximately 100 vehicles (condensers and evaporator components) have been flushed and purged. In some cases, the element may need to be replaced sooner if the incoming shop-air contains high amounts of debris. A clogged filter element will restrict airflow in the purging cycle and should be replaced promptly.

1. Remove the filter bowl ring by hand, turning counter-clockwise.
2. Remove the filter element by turning the bottom portion of the element counter-clockwise.
3. Replace the filter element. Hand tighten only.
4. Replace the filter bowl ring. Hand tighten only.

(PARTS REFERENCED ON PAGE 16)

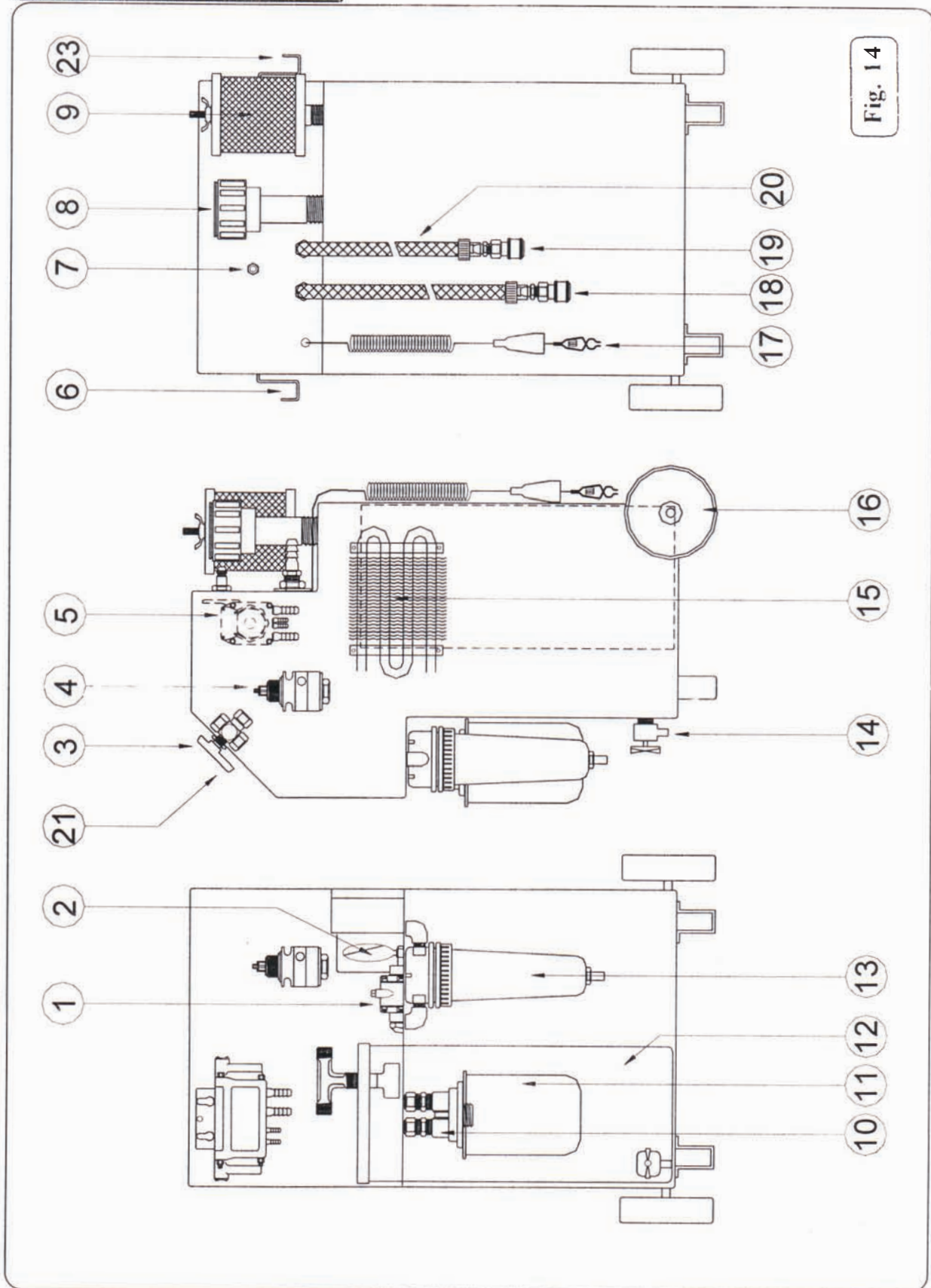


Fig. 14

(PARTS REFERENCED ON PAGE 16)

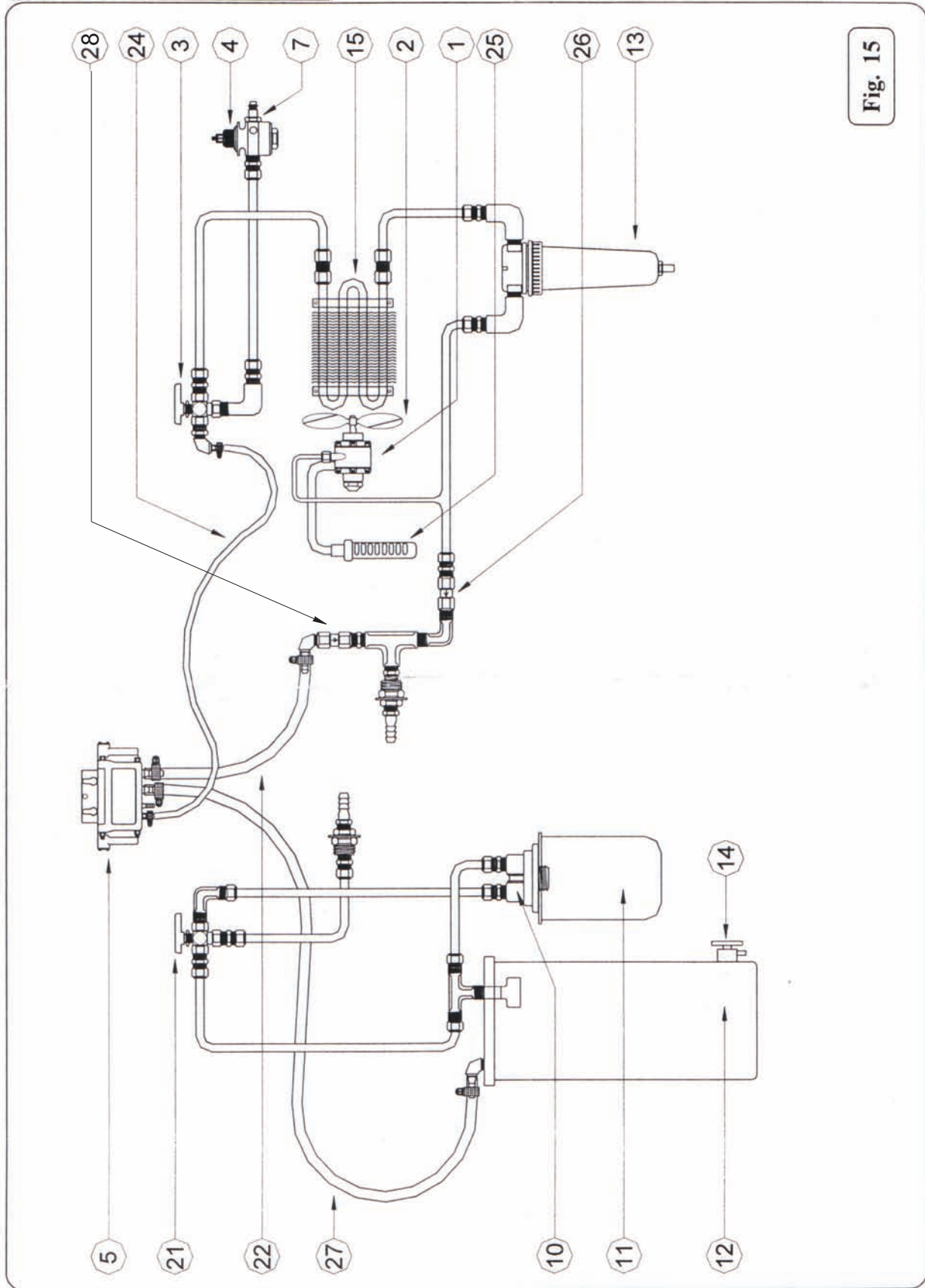


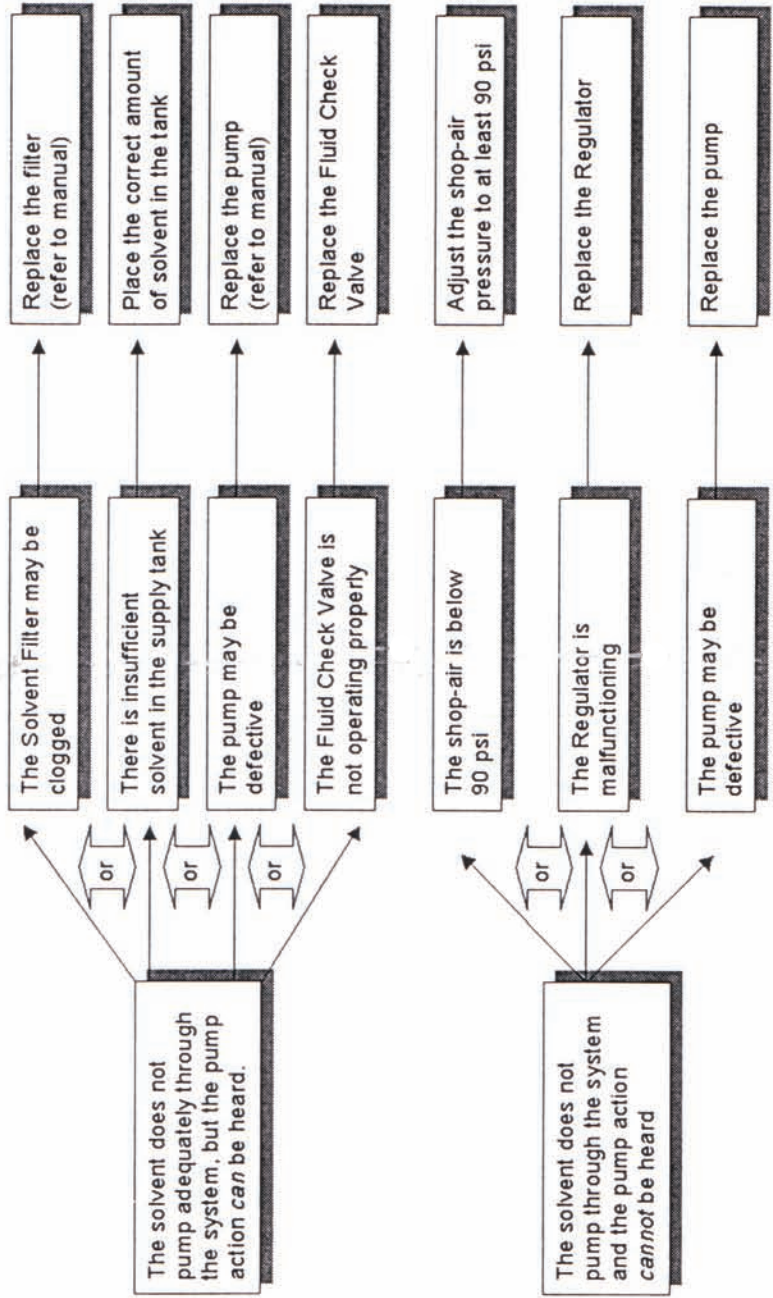
Fig. 15

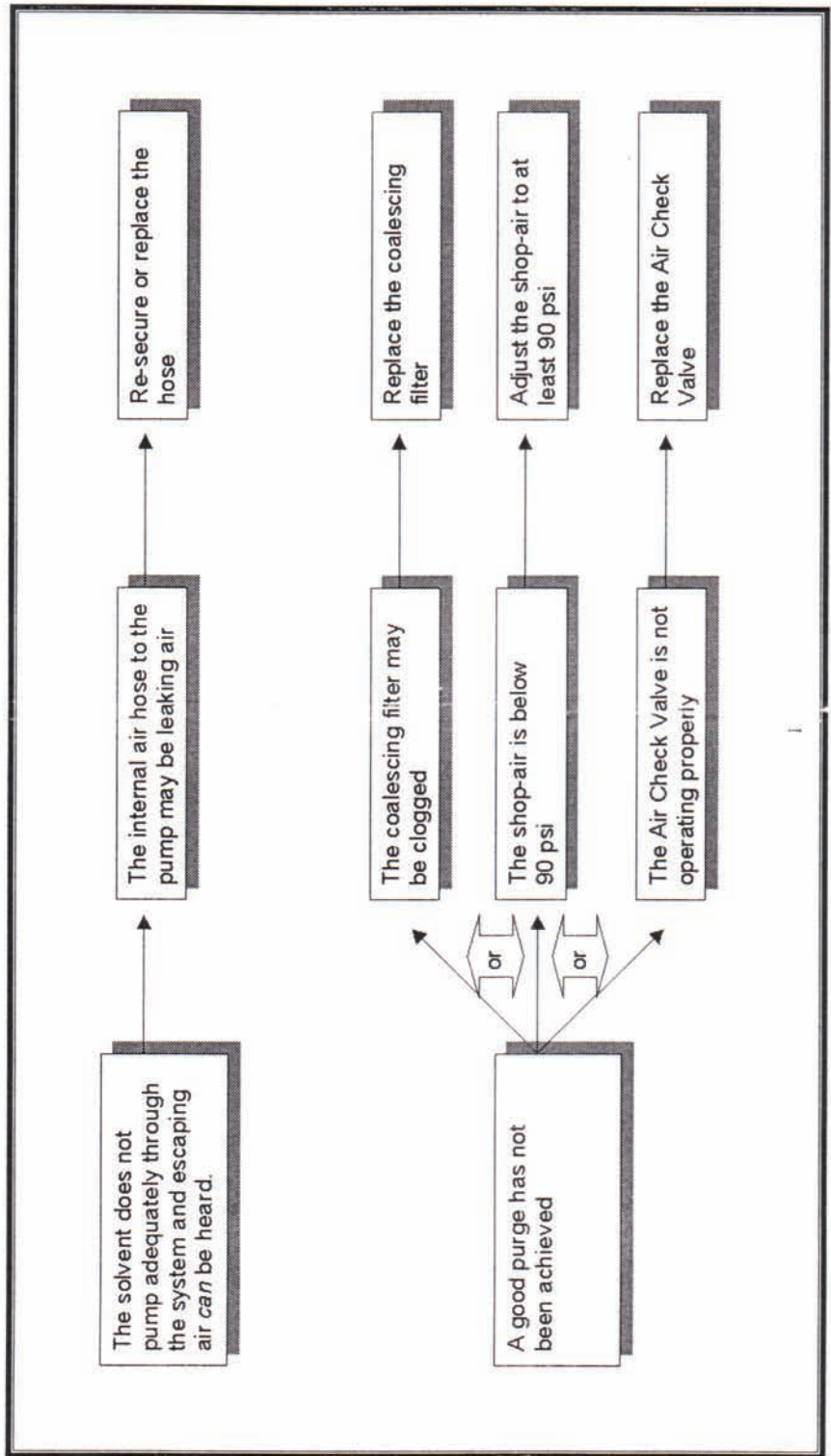
PARTS DETAILS

The following are the part numbers of the unit components (Fig. 14 and Fig. 15).

Item	Description	Part #
1	<u>Air Motor</u> with Muffler (see Item 25)	20716
2	Fan Blade	20723
3	3-Way Control Valve	20721
4	Pressure Regulator	20725
5	Air Pump	20715
6	Ground Cable Hanger	20744
7	Shop-air Inlet	20745
8	Solvent Filling Cap	20770
9	Charcoal Air Filter	20718
10	Solvent Filter Mount	20720
11	Solvent Filter	20786
12	Solvent Tank	25084
13	Coalescing Air Filter	20719
14	Drain Valve	20760
15	Condenser	20717
16	Conductive Wheel	20740
17	Ground Cord	20785
18	RETURN Service Coupler	20733
19	OUTPUT Service Coupler	20733
20	Service Hose (2 Required)	20781
21	2-Way Selector Valve	20721
22	Air Pump Outlet/Inlet Hose	20752
23	Service Hose Hanger	20762
24	Air Pump Power Hose	20753
25	Air Motor with <u>Muffler</u> (see Item 1)	20716
26	Air Check Valve	20860
27	Air Pump Inlet Hose	20752
28	Fluid Check Valve	20860

Troubleshooting Guide





LIMITED WARRANTY

Your Flushworks machine is warranted to be free from defects on parts and labor for a period of one (1) year from the date of purchase.

The following restrictions apply:

The warranty applies only to the original purchase.

The warranty applies only to the product's usage as fully described in the user's manual.

Should the unit need to be shipped for warranty service, transport charges will be paid one-way only.

The warranted product will be repaired or replaced at the option of the manufacturer.

Warranty service claims are subject to factory inspection.

CLIPLIGHT Manufacturing Co. is not liable for any incidental or consequential damage or loss.

This limited warranty does not apply:

To service hoses and couplers.

If the product is damaged through misuse or mishandling.

If the product is misused, tampered, or modified.

If the product has been modified or repaired by an unauthorized party.

If non approved solvent flush is used.

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