

# CENTRAL CLEANING SYSTEM INSTALLATION INSTRUCTIONS



 **AIRVAC**<sup>™</sup>  
*P u r e l y P o w e r f u l*

## — IMPORTANT SAFETY INSTRUCTIONS —

When using an electrical appliance, basic precautions should always be followed, including the following:

### READ ALL INSTRUCTIONS CAREFULLY BEFORE USING THIS APPLIANCE

**WARNING** - To reduce the risk of fire, electrical shock or injury:

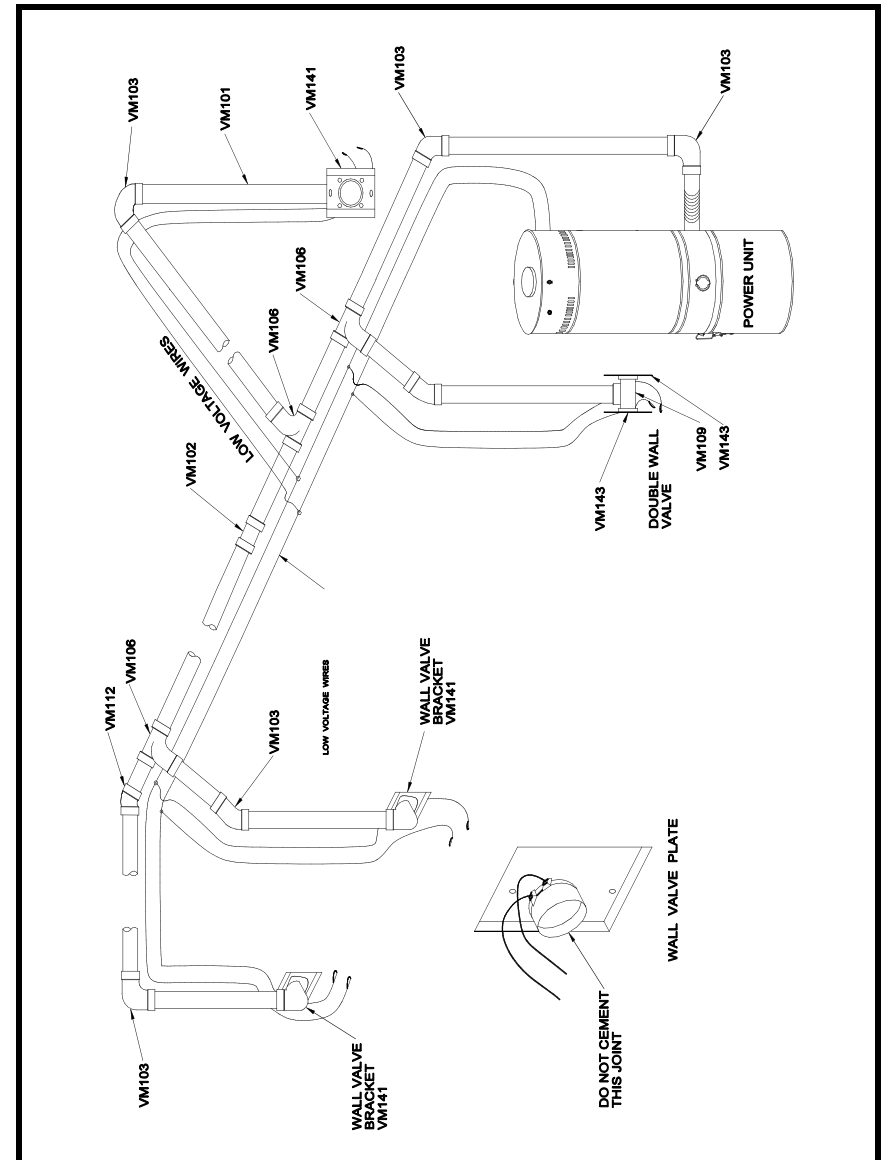
1. Electric shock could occur if system is operated on wet surfaces.
2. Do not allow to be used as a toy. Close attention is necessary when used by children.
3. Use only as described in this manual. Use only manufacturer's recommended attachments.
4. Do not put any object into openings. Do not use with any opening blocked; keep free of dust, lint, hair, and anything that may reduce air flow.
5. Keep hair, loose clothing, fingers, and all parts of body away from openings and moving parts.
6. Do not pick up anything that is burning or smoking, such as cigarettes, matches, or hot ashes.
7. Do not use without dust bag and/or filters in place.
8. Turn off all controls before unplugging.
9. Use extra care when cleaning stairs.
10. Do not use to pick up flammable or combustible liquids such as gasoline or use in areas where they may be present.
11. Always turn off this appliance before connecting motorized nozzle or brush.
12. Connect to properly grounded outlet only.
13. A current-carrying hose contains electrical wires. Do not use the hose if it is damaged, cut, or punctured. Avoid picking up sharp objects with the hose.

## TYPICAL VACUUM SYSTEM INSTALLATION

### GROUNDING INSTRUCTIONS

This appliance must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electrical current to reduce the risk of electrical shock. This appliance is equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

**DANGER** - Improper connection of the equipment-grounding conductor can result in risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the appliance - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.



## POWER UNIT INSTALLATION

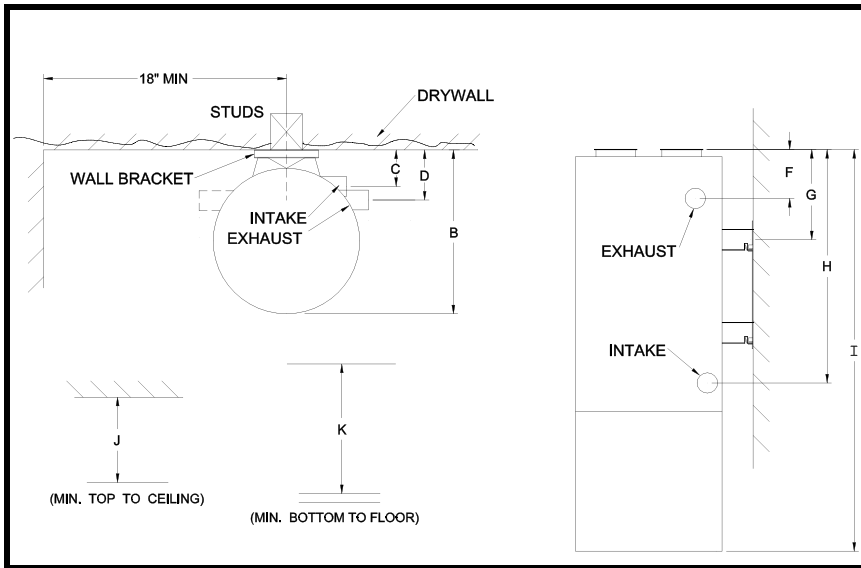


ILLUSTRATION ABOVE SHOWS A TYPICAL AIR VAC UNIT

Model	Exhaust Side	A	B	C	D	F	G	H	I	J
AV2500	R	14	16	2.8	4	8	23	24	38	18
AV3500	R	14	16	2.8	4	8	23	24	38	18
AV4500	R	14	16	2.8	4	8	23	24	38	18
AV5500	R	14	16	2.8	4	8	23	24	38	18
FX2000	L	14	16	8.9	4	7	4	28	30	18
FX3000	L	14	16	8.9	4	7	4	28	30	18
FX900	L	14	16	8.9	4	7	4	28	30	18
ZX5800	L	14	16	8.9	4	7	4	28	31	18
ZX6000	L	14	16	8.9	4	7	4	28	31	18
ZX7000	L	14	16	8.9	4	7	4	28	31	18
ZX8000	L	14	16	8.9	4	7	4	28	31	18

**Note:** Dimensions above are in inches

## POWER UNIT INSTALLATION

### 1.0 POWER UNIT LOCATION AND CONNECTION

The Vacuum System Power Unit is normally placed in the garage (best location), utility room, or basement. Attic locations should be avoided (A) if canister is difficult for the user to service, (B) where temperature exceeds 140 degrees. The Power Unit should be located out of traffic while still accessible for emptying of dirt canister.

### 2.0 POWER UNIT MOUNTING

For the AV series vacuum the top of the power unit must be a minimum of 18" from the ceiling and 18" from the corner walls. For the FX/ZX series the bottom of the power unit must be a minimum of 18" from the floor and 18" from the corner walls. This clearance is necessary to allow adequate air flow to cool motors. If exhaust is used, refer to Figure 1.

### Power Unit Installation

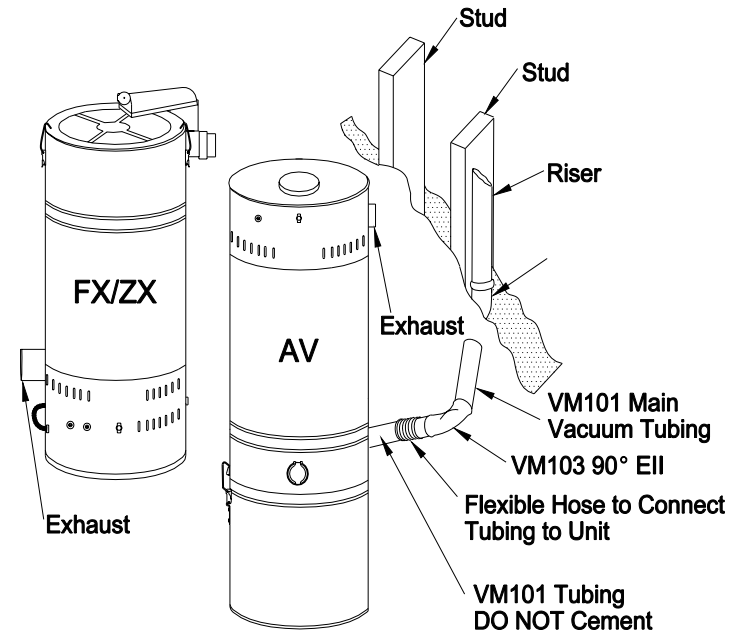


Figure 1

**CAUTION:**

- A) The exhaust tubing must run outside the house, **NOT INTO THE ATTIC.**
- B) **DO NOT** exceed 30 ft. of exhaust tubing, in order to avoid motor failure resulting from excessive back pressure.
- C) **DO NOT** turn the exhaust piping, run within 18" of the power unit.

**NOTE:** After a proper location has been chosen for the power unit refer to Figure 2 for securing the unit mounting bracket to the wall studs. Steel tubing is also available and may be required by local building codes.

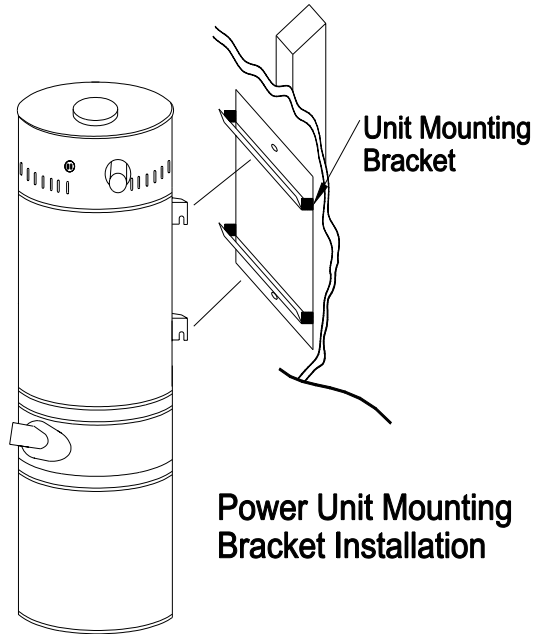
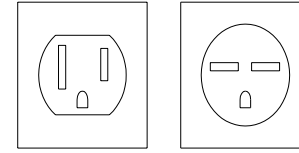


Figure 2

120VAC      240VAC  
 NEMA 5-15R   NEMA 6-15R



Receptacles

Figure 3    Figure 4

**3.0 POWER UNIT ELECTRICAL REQUIREMENTS**

The electrical requirements for the power units and maximum tubing from power unit to farthest valve are as follows:

Model Number	Voltage (Vac)	Current (Amps)	Circuit Breaker	Receptacle See Fig Type	Maximum Tubing
AV2500	120	11	15A	3	150
AV3500	120	12	20A	3	200
AV4500	120	13	20A	3	350
AV5500	240	7	20A	4	500
FX2000	120	11	15A	3	150
FX3000	120	12	20A	3	200
FX900	240	13	20A	4	500
ZX5800	120	11	15A	3	150
ZX6000	120	12	20A	3	200
ZX7000	120	13	20A	3	350
ZX8000	240	7	20A	4	500

**CAUTION:** All circuit breakers must be SEPARATE and DEDICATED as with any other major appliance. The electrical outlets MUST match the plug WITHOUT THE USE OF ADAPTERS.

#### 4.0 WALL INLET VALVES

Locate the first inlet valve at a point the farthest distance (see Figure 6) from the Power Unit. From this location, select additional valve locations that can be reached in all room corners with a 30' hose. Remember walls and furniture can shorten the distance serviced by a valve in some areas, so be sure to locate inlets with furniture and walls in mind.

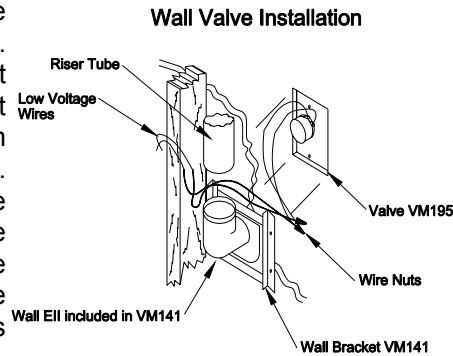


Figure 5

Alternate wall valve bracket configurations are possible.

Nail a valve bracket (see Figure 5) to a wall stud 12" to 15" above the floor, usually the same distance from the floor as electrical wall outlets.

#### Typical Wall Outlet Locations

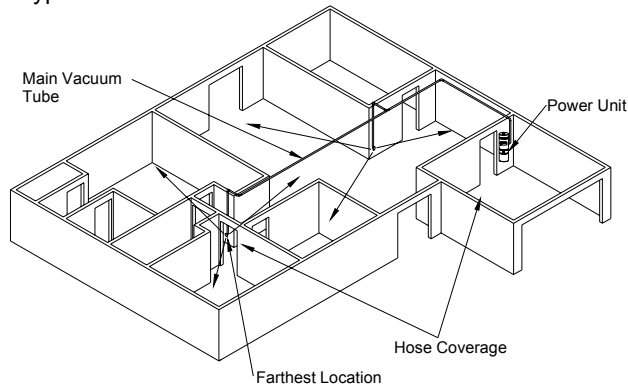


Figure 6

#### 5.0 VACUUM DUCT SYSTEM (Fig. 7)

After the valve brackets are nailed in place, drill a 2 9/16" diameter hole in the header plate directly above the valve bracket. Cement a RISER tube (see Figure 5) from the valve bracket, extending the tube through the hole in the header plate for each valve.

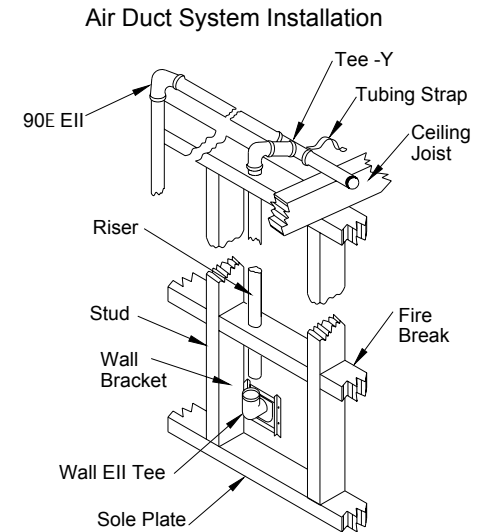


Figure 7

Starting from the farthest inlet valve (Figure 6), lay tubing (cut-to-length) on top of ceiling joist and work toward the Power Unit. All Tee's and Tee-Y's must curve in the direction of air flow. Connect all risers from inlet valves to the main duct line using only Tee-Y's (Part VM106) or sweep EII's (Part VM103). Cement all duct connections at the time of installation. There cannot be any air leaks in the duct systems. **TEST** of vacuum integrity with wall inlet valves installed is highly recommended. Vacuum leaks will affect system performance.

**Note:** The use of nail guards (VM118) are highly recommended.

#### 6.0 ELECTRICAL WIRING (LOW VOLTAGE)

Low voltage #18 gauge, 2-conductor cable connects all inlet valves to the Power Unit. Hose insertion in the wall valve inlet activates Power Unit automatically; removing the hose stops the power Unit. Low voltage cable follows the same route as the vacuum duct system. Secure the wiring to the horizontal main line ducts with tape or VM450 quick clips, but **DO NOT** tape the cable to the risers. Secure the loose cable end at each wall bracket, allowing 6" for the wall valve connection and 18" at the Power Unit connection.

**NOTE:** Two 1/4" spade lugs are required to make this installation.

**CAUTION:** All wiring installation must conform to local electrical codes. Wiring in the ground (soil) must be in conduit. All wiring installation must have a good, solid mechanical connection. Protect all connections and/or splices against short circuits using wire nuts or electrical tape.

## 7.0 TRIM OUT (INLET VALVES)

**Do Not Cement** inlet valves to the wall valve bracket. Valves require replacement on occasion and if cemented to the duct system, they cannot be removed or replaced.

## 8.0 VACUUM TUBING INSTALLATION EXISTING for CONSTRUCTION

### 8.1 Overhead Installation (Figure 8)

Two people are normally required to perform overhead installations. Power Unit installation requirements are the same as in new construction. Wall inlet valves should be limited to interior walls. Exterior walls contain insulation and are not accessible from inside the roof to drill holes for the vacuum duct. After marking each wall valve location, check inside the roof area to see if a hole can be drilled in the header tape for the tubing. Before drilling, check for electrical wiring. If there are no obstructions, drill a hole in the header plate. It is possible that you will hit a fire block about halfway down the wall. If this is the case, you must use an extension drill and drill through the fire block. Make sure your drill is straight up and down or you will come through the side of the wall.

After holes are drilled, lower tubing from inside the roof to the wall valve. Seldom is the roof high enough to use a single length of tubing. As the tube is dropped down the wall to the valve location, several short lengths of tubing should be cemented together with a coupling (Part VM102).

At the valve location, drill a 1" diameter hole in the wall. Using a flashlight from the attic, check for hole alignment. Then cut a rectangular hole 2 1/2" horizontal and 3 1/2" vertically from the center of the 1" diameter hole. This hole will allow an adapter (Part VM107) to make contact with tubing inside the wall.

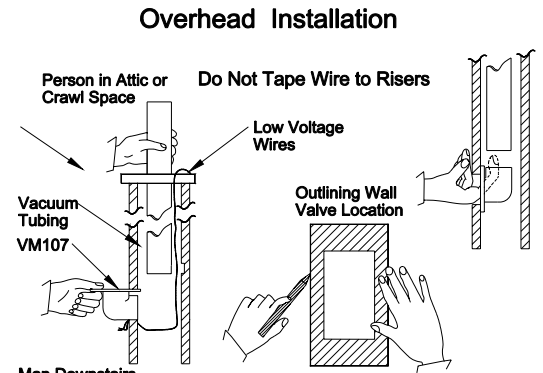


Figure 8

**CEMENT THE ADAPTER TO THE TUBING.** Secure the adapter to the mounting bracket (Part VM142) with screws. After the mounting bracket is attached to the adapter, the completed assembly inside the wall is ready for the inlet valve (Part VM195). **DO NOT CEMENT THE INLET VALVE.** Tighten the valve against the wall with screws to the mounting bracket.

### 8.2 Under The Floor Installation (Figure 9)

In homes with a pier and beam foundation or basement, either the overhead or an under the floor installation can be made. Sometimes under the floor installation is easier in an existing home, especially if the roof has a low pitch and clearances in the attic adds to the installation problem. Under the floor installation also eliminates the risk of fire blocks in the wall. Shorter risers are also utilized, eliminating the longer tube drop from the attic. Vacuum tubing should be secured to floor joist with perforated nailing strips or tube straps.

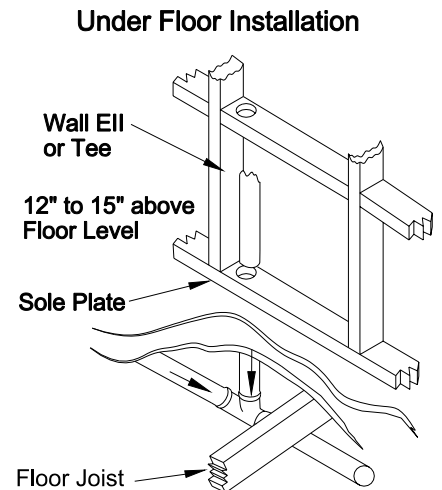


Figure 9

## 9.0 ALTERNATE INSTALLATION

An effective technique highly suitable for many types of construction with adequate working room inside the roof is to make drops to the wall inlet valves through the ceiling, passing the tube "through the wall" for the inlet valve on the opposite side. If this method is used, the drop from the inside of the roof is made in the corners of closets, utility rooms, etc. where tubing is not visible or objectionable. On occasion ~~this might be the only alternative to placing an inlet valve in a desired location.~~

## TROUBLESHOOTING

### IF THE MOTOR FAILS TO OPERATE

1. Push breaker reset button on power units.
2. Check panel circuit breaker that connects the central unit.

### AFTER CHANGING OF THE BAG FOR THE ZX MODEL SERIES

After the bag has been changed and the light is still blinking, to "reset" the circuit, push down on the rocker switch below the light and release.

### SHOULD YOU LOSE VACUUM POWER

1. Check that all wall valves are closed.
2. Check that all gaskets on wall valves are sealed.
3. Check to see if dirt canister or bag needs emptying.
4. Check for obstructions in the hose, tools, or vacuum lines.
5. Check for any ruptures or breaks in the vacuum duct system.

If you are unable to resolve the operational problems, please contact M&S Systems technical support at (800) 366-9422.

## VACUUM SYSTEM SPARE PARTS

Spares may be purchased for field repairs of vacuum power units.

### FX Models

Part Number & Description	FX900	FX3000	FX2000
440003 Switch, On/Off	X	X	X
510967 Latch	X	X	X
561558-2 Hanger Bracket	X	X	X
563274 Circuit Breaker, 15AMP		X	X
730274-2 PCB, Electric Control Board		X	X
780382-2 Assembly, Motor			X
780405-2 Assembly, Motor	X		
780468-2 Assembly, Motor		X	
780478 Module, Assy Transformer	X		
785001 Filter, Grey Flocked 10x10	X		
785001-2 Filter, Grey Flocked 2.75x2.75		X	X
785395-1 Assembly, Bag	X	X	X
785453-2 Lid/Manifold Assembly	X	X	X
787064-4 Lid		X	X
787066-2 Twin Lid	X		

### AV Models

Part Number & Description	AV2500	AV3500	AV4500	AV5500
101859 Gasket, Dust Receptacle	X	X	X	X
112996-3 Bag, Cloth, Filter	X	X	X	X
440003 Switch, On/Off	X	X	X	X
510967 Latch	X	X	X	X
561558-2 Hanger Bracket	X	X	X	X
561609 Assembly, Dirt Cannister	X	X	X	X
563273 Circuit Breaker, 10AMP				X
563274 Circuit Breaker, 15AMP	X	X		
563275 Circuit Breaker, 18AMP			X	
730274-1 PCB, Electric Control Board, 240V				X
730274-2 PCB, Electric Control Board, 120V	X	X	X	

Part Number & Description	AV2500	AV3500	AV4500	AV5500
780382-2 Assembly, Motor	X			
780468-2 Assembly, Motor		X		
780469-2 Assembly, Motor			X	
780485 Assembly, Motor				X
785001-2 Filter, Grey Flocked 3.5x3.5	X	X	X	X
787064-4 Lid	X	X	X	X

**VACUUM SYSTEM SPARE PARTS CONT.**

**ZX Models**

Part Number # & Description	ZX5800	ZX6000	ZX7000	ZX8000
440003 Switch, On/Off	X	X	X	X
460064 Switch, Reset Off/MOM	X	X	X	X
510967 Latch	X	X	X	X
561558-2 Hanger Bracket	X	X	X	X
730275-1 PCB Electronic Control Board, 240V				X
730275-2 PCB Electronic Control Board, 120V	X	X	X	
780382-2 Assembly, Motor	X			
780468-2 Assembly, Motor		X		
780469-2 Assembly, Motor			X	
780485 Assembly, Motor				X
785001-2 Filter, Grey Flocked 3.5x3.5	X	X	X	X
785395-1 Assembly, Bag	X	X	X	X
785453-2 Lid/Manifold Assembly	X	X	X	X
787476 Lid	X	X	X	X



**M&S Systems Limited (2 or 10) Year  
No-Fault Limited Warranty**

**M&S SYSTEMS Limited 2-Year No-Fault Product Warranty**

M&S SYSTEMS warrants for 2 years all products to be free of defects (M&S SYSTEMS honors the 10-Year No-Fault warranty for AirVac Gold power units. See section below). The warranty period begins from either (1) the date of "first user" purchase of this product or (2) the first close of escrow date on a residence in which this new product was originally installed. This warranty extends to the original user of the product and to each subsequent owner of the product during the term of this warranty. M&S SYSTEMS will repair or replace, at its option, parts and materials at no charge. Parts supplied under this warranty may be new or rebuilt at the option of M&S SYSTEMS.

If, during the limited warranty period, it appears as though this product contains a defect which is covered by this limited warranty, call our toll free service number before dismantling the product (1-800-877-6631). Remember to attain a Return Authorization Number (RAN) before returning any product to M&S SYSTEMS. Send this product freight pre-paid and insured to our service center for warranty repair. You will be advised on shipping instructions when you call the toll free service number. M&S SYSTEMS will return the repaired product freight pre-paid within the U.S.A. The installing dealer or distributor may assist you, at your choice and expense, with returning product for repair. Please include a brief description of the problem and a dated proof-of-purchase receipt with any product that is returned for warranty repair. ANY PRODUCT RETURNED WITHOUT A RETURN AUTHORIZATION NUMBER WILL BE REFUSED.

THIS LIMITED WARRANTY IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, AND OF ANY OTHER OBLIGATIONS OR LIABILITY ON THE SELLER'S PART. THIS LIMITED WARRANTY DOES NOT COVER DAMAGE CAUSED BY IMPROPER INSTALLATION, THE VIOLATION OF APPLICABLE BUILDING OR ELECTRICAL CODES, OR THE USE OF NON-M&S/NON-AIRVAC WIRE, CABLE OR WALL HOUSINGS. THIS LIMITED WARRANTY APPLIES ONLY TO PRODUCTS INSTALLED IN A PRIVATE RESIDENCE.

UNDER NO CIRCUMSTANCES SHALL THE SELLER BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL OR SPECIAL DAMAGES ARISING IN CONNECTION WITH USE, OR INABILITY TO USE THIS PRODUCT. IN NO EVENT SHALL SELLER'S LIABILITY, FOR BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, OR STRICT LIABILITY, EXCEED THE COST OF THE PRODUCT COVERED HEREBY. NO PERSON IS AUTHORIZED TO ASSUME FOR US ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF THIS PRODUCT.

Some states do not allow the exclusion or limitation of consequential, incidental or special damages, so the above limitation or exclusion may not apply to you. This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

**M&S SYSTEMS Limited 10-Year No-Fault Product Warranty for AirVac Gold Power Units**

M&S SYSTEMS honors the 10-Year No-Fault Warranty applied to the AirVac Gold power unit as of January 1, 2000. This warranty is identical to the M&S SYSTEMS 2-Year No-Fault Warranty, with the exception that this warranty covers the AirVac Gold power unit for 10 years instead of 2. The M&S SYSTEMS 10-Year No-Fault Warranty, applies ONLY to the AirVac Gold power unit, and no other M&S SYSTEMS, M&S or AirVac product.

