

# **SUPERHONE**

Installation \* Operation \* Maintenance \* Replacement Parts

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# Table of Contents

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Page	1	Introduction
Page	2	Installation
Pages	3-6	Operation
Page	7	Gun Assembly
Page	8	Maintenance
Page	9	Window Installation
Page	10	Dust Bag Assembly
Page	11	Trouble Shooting
Page	12	Unit Drawing: Style II Cabinet
Page	13	Unit Drawing: Style III Cabinet
Page	14	Unit Drawing: Dust Collector
Pages	15 - 16	Replacement Parts List

## Introduction

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I.C.M., Inc. manufactures two different styles of abrasive blasting cabinets. Each style has a definite purpose.

- **STYLE II:**

The Style II machine is designed to operate with larger sized abrasives where fast cleaning of parts is desired. This model is equipped with a particle separator that removes dust and foreign material from the abrasive and returns the reusable abrasive to the storage hopper.

The Style II machine will accommodate the following Sizes and types of blast media:

Glass Beads	#0 - #6
Aluminum Oxide	24 Mesh - 150 Mesh
Garnet	24 Mesh - 150 Mesh
Steel Grit	24 Grit - 150 Grit
Plastic Media	All Sizes

- **STYLE III:**

The Style III machine is designed to operate with all sizes of abrasive (from 36 grit to 400 grit). This model can be used to clean textured surfaces and in many cases remove burrs. Textured surfaces are often desired for either cosmetic appearance or to prepare the surface for coatings or adhesives.

The principal feature of the Style III machine is the abrasive recovery system. This consists of a cyclone cleaning system and abrasive storage hopper. The cyclone will remove particles 30 microns and larger.

The Style III machine will accommodate the following sizes and types of blast media:

Glass Beads	#0 - # 13
Aluminum Oxide	50 Mesh - 400 Mesh
Garnet	50 Mesh - 400 Mesh
Steel Grit	50 Grit - 400 Grit
Plastic Media	All Sizes

## Installation

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- 1.0 Locate the blast cleaning machine as close to the air compressor as possible. The standard blast gun air jet provided with this machine is 1/4" diameter. Therefore sizing the incoming pipe to allow proper compressed air flow is important.
- 1.1 As a guide:
  - Never use less than 1/2" diameter schedule 40 pipe or air hose. Each 90° is equal to 10 ft. of straight pipe.
  - The line loss for every 100 ft. of 1/2" diameter schedule 40 pipe or air hose is 10% of the applied pressure from the compressor.
  - The line loss for every 100 ft. of 3/4" diameter or larger schedule 40 pipe or air hose is 5% of the applied pressure from the compressor.
  - As a general rule, if the compressor is more than 20 ft. from the machine, use 3/4" standard pipe. If more than 40 ft. from unit, use 1" standard pipe.
- 1.2 **IMPORTANT:**
  - BE SURE COMPRESSED AIR SUPPLY IS NOT WET OR OILY. Wet or oily air mixing with the abrasive will prevent the abrasive from freely flowing and can contaminate the dust collector bags thus destroying air flow through the dust bags.
  - TO PREVENT PROBLEMS, INSTALL A RELIABLE AIR FILTER WATER TRAP ON THE AIR INLET PIPE TO THE BLAST MACHINE.
  - LOCATE MACHINE WHERE THERE IS ALLOWABLE CLEARANCE FOR SIDE DOOR OPENING AND DUST COLLECTOR PANEL OPENING. ALLOW SUFFICIENT ROOM FOR REMOVING DUST DRAWER FROM DUST COLLECTOR.
  - CHECK TO INSURE THAT STRONG DIRECT LIGHT DOES NOT STRIKE VIEW WINDOW. The reflected light can impair visibility in the cabinet.
  - BE SURE ADEQUATE ROOM IS ALLOWED FOR MOVING PARTS TO BE PROCESSED TO AND FROM THE MACHINE.
  - THE MACHINE REQUIRES 115V, SINGLE PHASE AND 230/460V, 3 PHASE SERVICE.
  - DUE TO SHIPPING LIMITATIONS, THE BLOWER MOTOR AND IMPELLER ARE NOT INSTALLED. It will be necessary to attach the blower motor and impeller to the blower housing.
  - THE ELECTRICAL HOOK-UP SHOULD BE MADE BY A LICENSED ELECTRICIAN AND COMPLY WITH ALL ELECTRICAL CODES. Be sure to check the wiring diagram on motor plate for voltage and wire size.
  - BE SURE TO CHECK BLOWER IMPELLER ROTATION. The impeller should rotate toward the blower exhaust opening. CHECK ARROW ON HOUSING FOR ROTATION BEFORE START-UP.
  - THE DUST COLLECTOR FOR THE STYLE II AND STYLE III BLAST MACHINES ARE ENVELOPE TYPE. Clean bags per instructions.

## Operation

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### 2.0 START-UP:

- 2.1 Turn light switch and blower switch 'ON'.
- 2.2 Select the abrasive to be used.           **IMPORTANT: BE SURE ABRASIVE IS DRY!**
- 2.3 Open cabinet door and slowly pour 25 lbs. of abrasive for Style III and 50 lbs. of abrasive for Style II into cabinet hopper.
- 2.4 **NOTE:**

In the Style II machine, the abrasive will remain in the main hopper of the cabinet.

In the Style III machine, the abrasive will be drawn from the main hopper through the ducting to the abrasive storage hopper. The maximum abrasive charge for the Style III machine is 25 lbs. Overcharging will cause abrasive carry over into dust collector.

### 3.0 SETTING AIR PRESSURE:

- 3.0 Set the air regulator to desired pressure. There is no set rule as to the amount " of air pressure to use. When processing precision parts, start with a very low pressure (20 P.S.I.). Blast the part and inspect. If desired results are not achieved, increase air pressure and try again.

#### MAXIMUM AIR PRESSURE FOR VARIOUS ABRASIVES

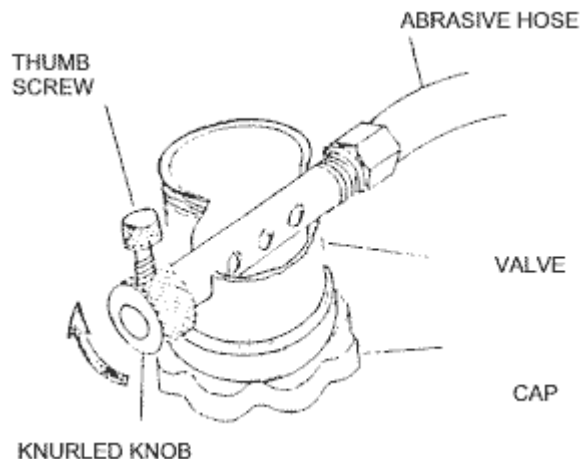
Glass Beads	70 P.S.I.
Garnet	100 P.S.I.
Aluminum Oxide	100 P.S.I.
Steel Grit	100 P.S.I.
Plastic Media	70 P.S.I.

- 3.1 To turn on the air solenoid valve, press the red elbow button located on the left gauntlet flange. Bump the button once for "ON". At the end of the cycle, bump the button for "OFF".
- 3.2 **DO NOT TURN ABRASIVE GUN TOWARD VIEW WINDOW. THE VIEW WINDOW WILL BE DAMAGED!**

Operation (continued)

#### 4.0 FEEDER FITTING:

- 4.1 With the air pressure "ON", check the abrasive flow. Proper abrasive flow is achieved when the abrasive coming out of the nozzle is barely visible to the eye. 100 abrasive particles bombarding a surface will accomplish more than 1,000 abrasive particles during the same time period. Let each abrasive particle do it's task before the next particle impacts.
- 4.2 To control the abrasive flow, adjust the abrasive flow control fitting (the abrasive flow control fitting is also referred to as the feeder fitting). The abrasive flow control fitting is standard on all Superhone machines.
- The abrasive flow control for the Style II is located on the bottom of the main hopper.
  - The abrasive flow control for the Style III is located on the bottom of the storage hopper.
- 4.3 Adjustment of the abrasive flow control fitting or feeder fitting is accomplished in the following manner:
- Turn the valve to the "OFF" position by loosening the thumb screw and rotating the knurled knob until the thumb screw is either straight up or straight down.
  - With the blower "ON" and the compressed air "ON", slowly rotate the knurled knob until abrasive starts moving through the abrasive hose. The clear plastic abrasive hose allows for the viewing of the abrasive flow.
  - Continue opening valve until surging begins at blast gun.
  - Slowly reverse valve until surging ceases, Tighten brass thumb screw thus locking valve.
  - The maximum rotation of the valve from completely "open" to completely "closed" is 90°.
  - A butterfly valve located at the bottom of the feeder fitting allows abrasive to drain into a container for storage disposal.



Operation (continued)

**5.0 CHANGING ABRASIVES:**

- 5.1 To change abrasives on either Style II or Style III, turn blower "OFF".
- 5.2 Place container under feeder fitting and remove abrasive.
- 5.3 Replace cap, turn blower "ON" and recharge with 25 lbs. of abrasive.
- 5.4 NEVER PUT WET OR OILY PARTS IN CABINET FOR PROCESSING!
- 5.5 The moisture and/or oil will cause the abrasive to pack and stop flowing.
- 5.6 The moisture and/or oil will carry over to the dust collector and cause the filter bags to become contaminated and permanently damaged.

**6.0 AVOIDING STATIC ELECTRICITY:**

- 6.1 Keep all metal parts grounded against work grate to avoid discomfort of static electricity.

**7.0 DUST COLLECTOR:**

- 7.1 The dust collector is a very important function of the blasting operation.
- 7.2 The abrasive reclaiming devices recycle the abrasive and the lighter particles are removed from the reusable abrasive and trapped by the dust bags in the dust collector.
- 7.3 The dust collector and blower maintains the visibility in the blast cabinet working area.
- 7.4 The dust collector filters the air being exhausted from the blast cabinet.
- 7.5 Be sure to rap the dust bags after each 8 hours of operation. A handle on the dust collector is provided. Rap bags for 10-15 seconds.
- 7.6 DO NOT ATTEMPT TO RAP DUST BAGS WITH BLOWER "ON"!
- 7.7 Empty dust drawer often, at least after each 40 hours of operation.

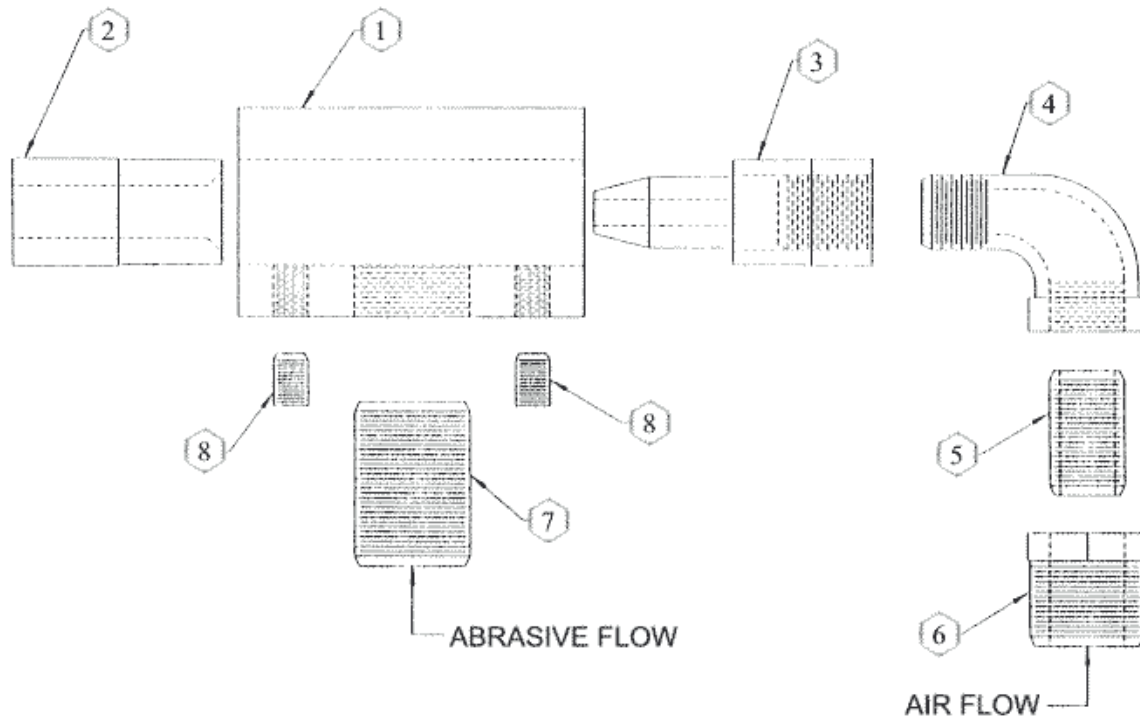
Operation (continued)

**8.0 ABRASIVE GUN ASSEMBLY:**

- 8.1 Check the abrasive gun after each 8 hours of operation. Nozzle wear can be observed without removing the nozzle from the gun body. Loosen thumb screw on gun body to remove air jet.
- 8.2 Rotation of the air jet must occur before the abrasive entering the aluminum gun body has a chance to wear through and into the air jet hole.
- 8.3 If replacement does not occur, the nozzle and gun body will be worn prematurely. This occurs because the air exiting the air jet is deflected 10°-20°.
- 8.4 To keep the air jet operating correctly, loosen set screw and rotate 1/8 turn every 8 hours.
- 8.5 Proper rotation of the air jet can extend the life of the abrasive gun as much as 10 times. The operator should check the abrasive gun every 8 hours of operation and rotate the air jet 1/9 turn. The nozzle should be checked for wear. A worn nozzle will cause erratic cleaning patterns.



## Gun Assembly



ITEM OR FIND NUMBER	QTY. REQ.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION
1	1	5002C-1	ALUMINUM GUN BODY
2	1	5000A	1/4" DIA. STEEL NOZZLE
2	1	5000B	3/8" DIA. STEEL NOZZLE
2	1	5000C	1/2" DIA. STEEL NOZZLE
2	1	5003A	1/4" DIA. CARBIDE NOZZLE
2	1	5003B	3/8" DIA. CARBIDE NOZZLE
2	1	5003C	1/2" DIA. CARBIDE NOZZLE
3	1	5004A	1/8" DIA. AIR JET
3	1	5004B	3/16" DIA. AIR JET
3	1	5004C	1/4" DIA. AIR JET
4	1		1/4" - 90° STREET ELBOW
5	1		1/4" CLOSE NIPPLE
6	1		1/4" X 1/2" HEX BUSHING REDUCER
7	1		1/2" CLOSE NIPPLE
8	2		5/16-18 X 3/8" SET SCREW

## Maintenance

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There are several high wear items in abrasive blasting cabinets. Therefore, proper maintenance of the equipment should be provided.

### WEEKLY:

1. Check abrasive hose and air hose for wear. The abrasive hose is a wear item.
2. Check exhaust air from blower. If air shows dust particles, there could be a leaky dust bag.
3. Check compressed air. If oily or wet, check filter and air line.

### MONTHLY:

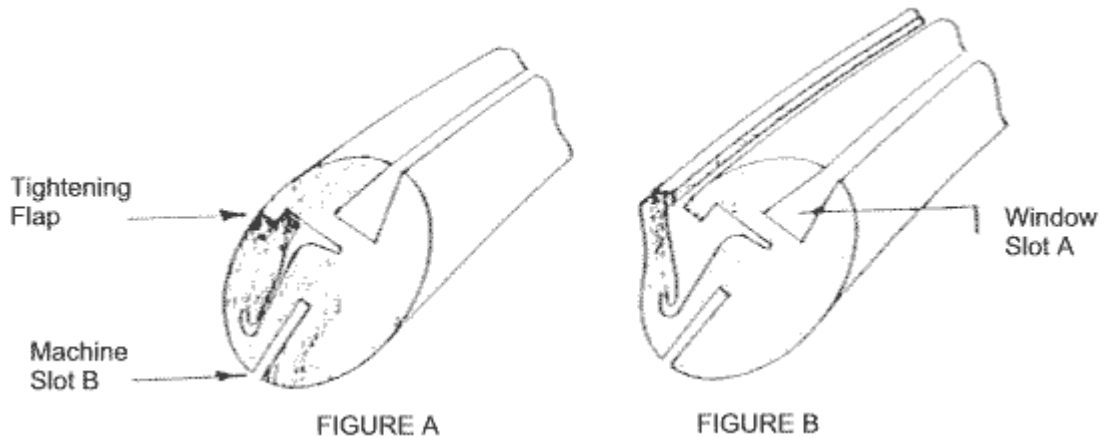
1. Check abrasive flow control or feeder fitting for wear or possible obstruction from large particles of debris. A worn feeder fitting can cause surging of abrasive or no abrasive flow. The holes in the valve and main body meter tube are 7/16" diameter. Trouble occurs when these holes become enlarged. Trouble also occurs when the outside diameter of the valve is reduced and the inside diameter of the main body meter is enlarged due to abrasive movement.
2. Check gloves and gauntlets.
3. Check view window for blast damage (to replace window, see Page 9).
4. Remove foam filters from air intake frames located on roof of cabinet and wash with mild soapy water. Be sure filters are dry before replacing. Moisture remaining in filters may cause the abrasive to pack and not flow.

### ANNUALLY:

1. Open main panel of dust collector and check dust bags. Rub 2 or 3 dust bags with thumb and forefinger and examine dust. If dust does not blow off easily or dust bags feel sticky, the dust bags may be wet or oily. If this condition exists, the dust bags are contaminated and must be replaced (to replace dust bags, see Page 10). There is no known method to clean them.
2. Take a long handle brush and brush each side of dust bag. Do not try to remove all the dust. A "seasoned" dust bag is more efficient than a clean dust bag.

## Window Installation

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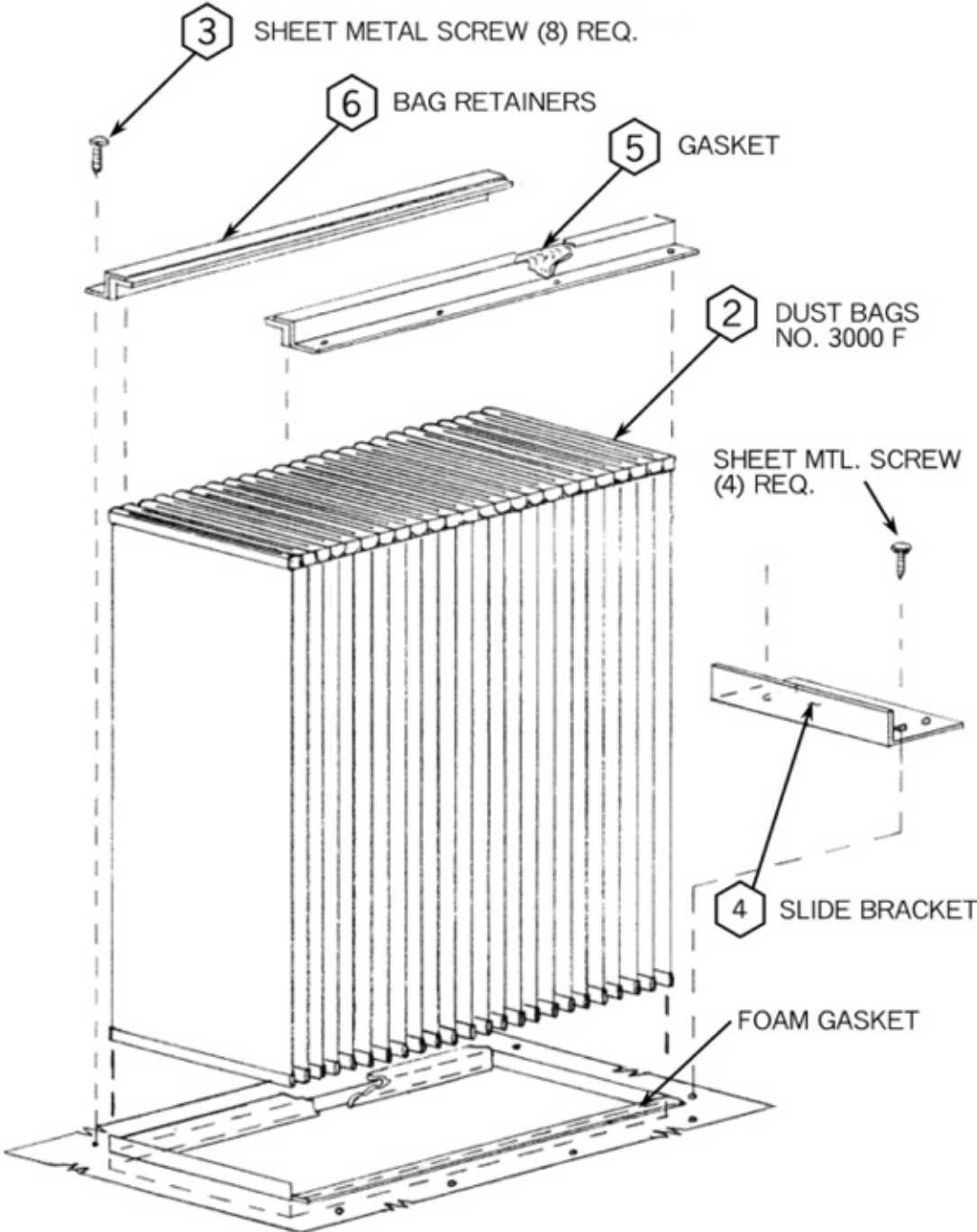
### WINDOW REMOVAL:

1. Remove tightening flap from window molding by inserting fibrous stick into slot and prying back (see Figure B).
2. Place one hand on outside of window and insert other hand into machine glove.
3. Press window out of window molding by pushing window from inside out.

### WINDOW REPLACEMENT:

1. Spray both window slot and tightening flap with silicon spray before inserting new window. If silicon spray is not available, a soapy solution will work well.
2. Slip new window slot in window molding (see Figure B).
3. Tuck tightening flap back into position. This will tighten the window molding holding window into machine (see Figure A).

# Dust Bag Assembly



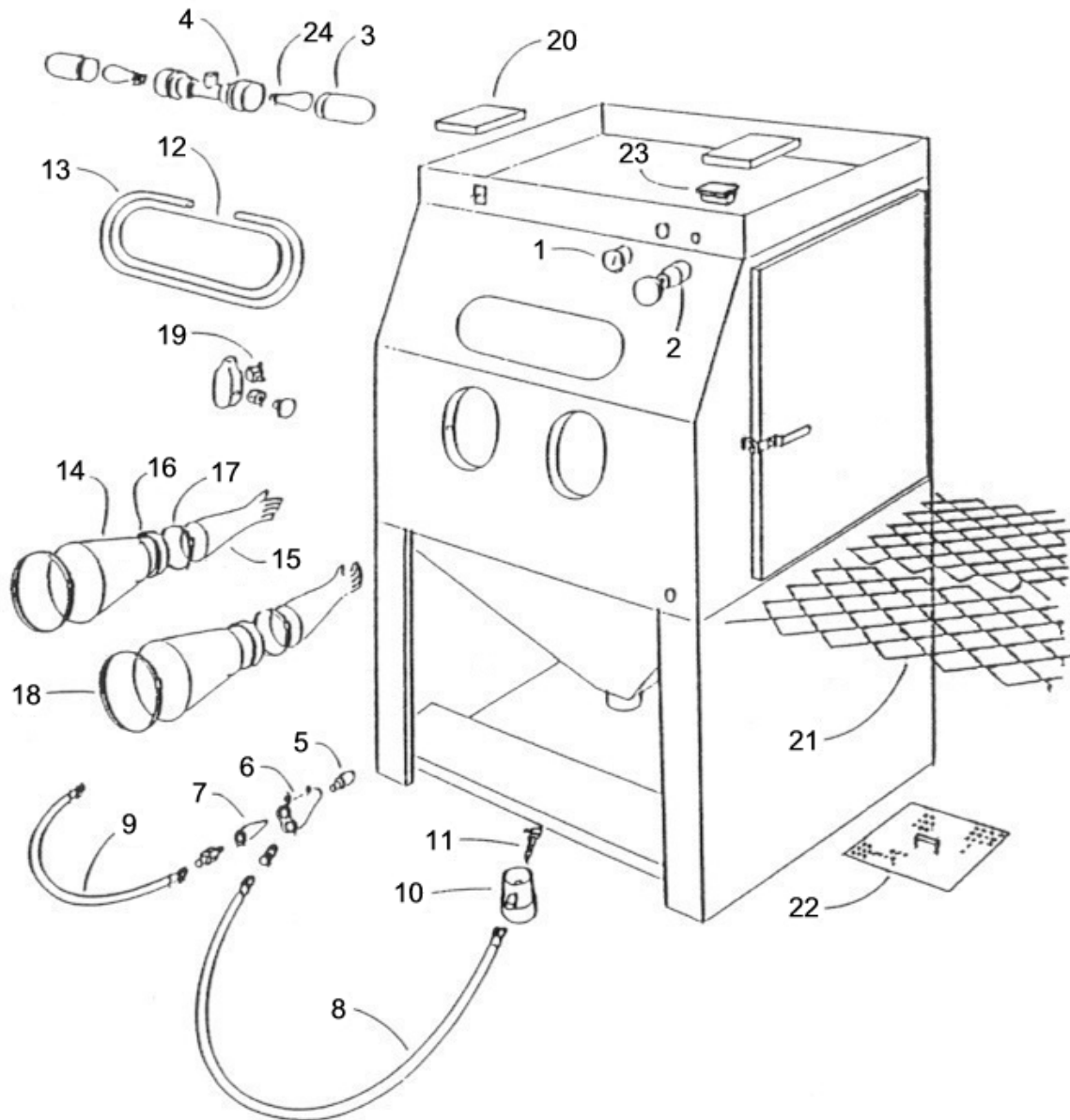
## Trouble Shooting

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- PROBLEM:** Abrasive will not flow.
- REMEDY:** Check for wet or oily abrasive. Take a handful of abrasive and squeeze. If abrasive makes a "ball", abrasive is wet, oily or both. Drain from hopper and recharge.
- PROBLEM:** Abrasive surges.
- REMEDY:** Check feeder fitting for debris. Check and adjust abrasive flow control or feeder fitting. Adjust valve by turning knurled knob. Debris may be hampering abrasive flow. Remove feeder fitting and clean.
- PROBLEM:** No compressed air.
- REMEDY:** Air solenoid valve may be malfunctioning. Tap solenoid gently with screw driver handle.
- PROBLEM:** Too much static electricity.
- REMEDY:** Keep parts on grate or attach copper wire to cabinet.

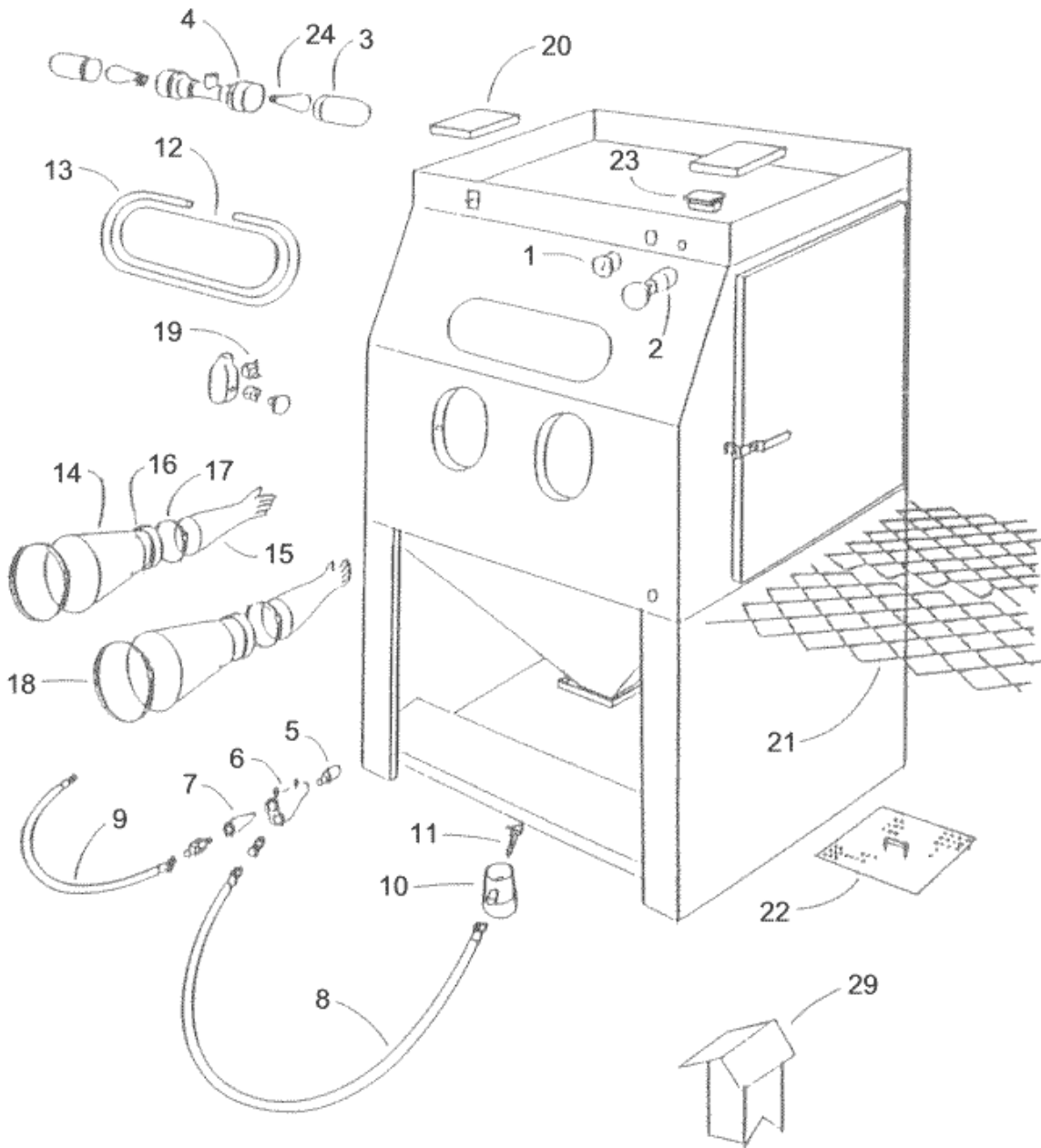
# I.C.M. Model: Superhone 3600/4800 Style II

Unit: Cabinet  
Date: 7/88



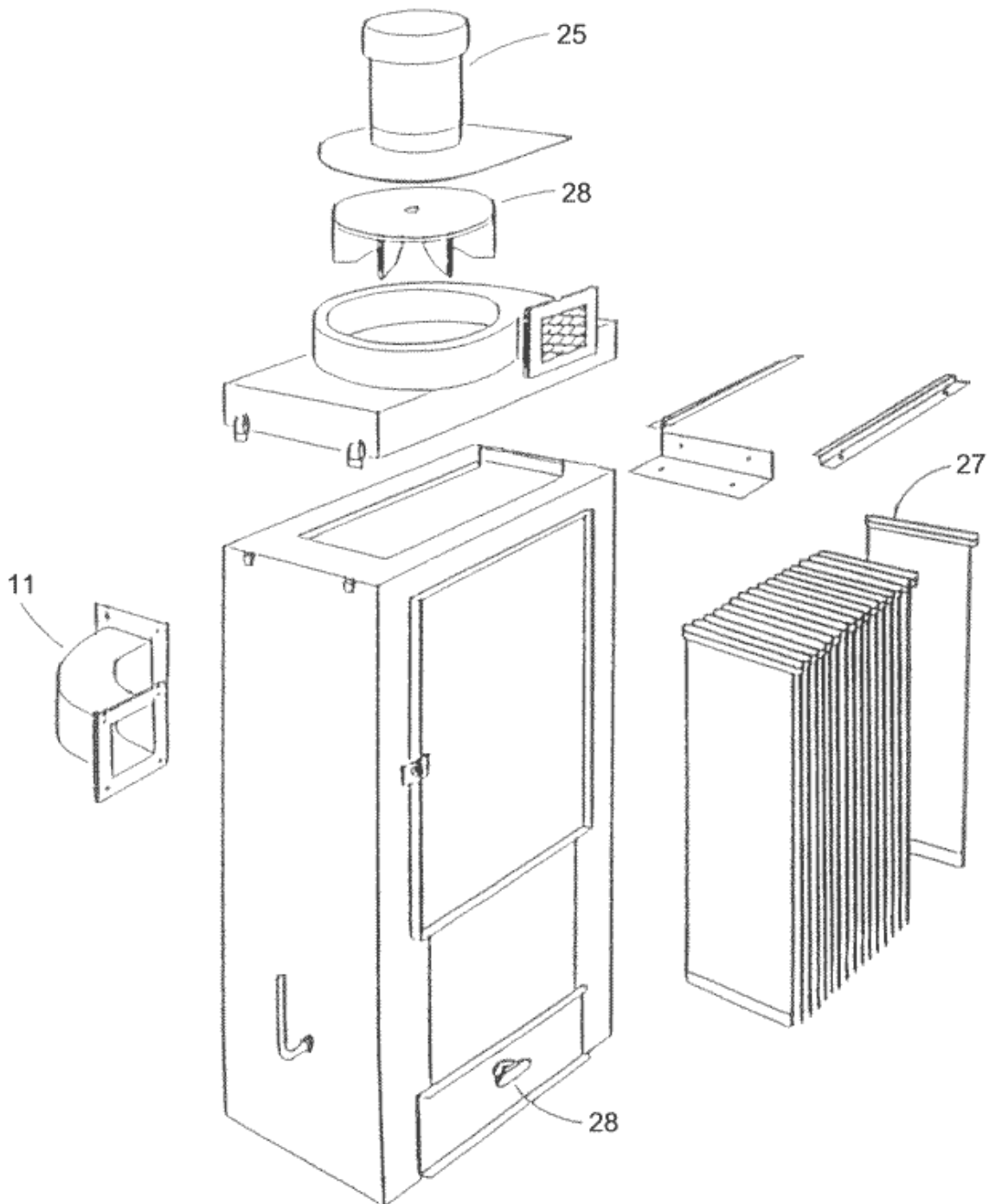
# I.C.M. Model: Superhone 3600/4800 Style III

Unit: Cabinet  
Date: 7/88



# I.C.M. Model: Superhone 3600/4800 Style II & III

Unit: Dust Collector  
Date: 7/88





## Replacement Parts List

Model: Superhone 3600/4800 Style II & III

ITEM NO.	PART NO.	DESCRIPTION
* 1	1000A	2" Air Gauge
* 2	1001B	1/2" Air Regulator
3	2010A-2	Clear Glass Globe
4	4007	Light Fixture
* 5	5003C	1/2" Abrasive Carbide Nozzle
* 6	5002C-1	Aluminum Gun Body
* 7	5004C	1/4" Air Jet
* 8	5005A-72	1/2" x 72" Abrasive Hose w/1 Fitting (Model 3600 Style II)
	5005A-110	1/2" x 110" Abrasive Hose w/1 Fitting (Model 3600 Style III)
	5005A-88	1/2" x 88" Abrasive Hose w/1 Fitting (Model 4800 Style II)
	5005A-135	1/2" x 135" Abrasive Hose w/1 Fitting (Model 4800 Style III)
* 9	5008A-36	1/2" x 36" Air Hose w/2 Fittings (Model 3600 Style II & III)
	5008A-40	1/2" x 40" Air Hose w/2 Fittings (Model 4800 Style II & III)
* 10	5011A	Feeder Fitting
* 11	5011B	Feeder Fitting Insert
12	6000C	23-3/4" x 8-3/16" Window Glass
13	6002A-62	62" Window Molding
14	6003A	Gauntlets
15	6005C	Neoprene Cloth-lined Gloves
16	6006A	Glove Rings
17	6009A	Glove Clamp
18	6009C	Gauntlet Clamp
* 19	2007E	1x692 Button Switch
	2007E-1	Aluminum Bushing
	2007E-2	Red Button Only
	2007E-3	Red Button Arm Switch, Complete
20	6011A	1"x5-1/2" x 8" Foam Filter
21	6008N-1	Work Grate (Model 3600 Style II & III)
	6008P-1	Work Grate (Model 4800 Style II & III)
22	-----	Particle Grate (Model 3600 Style II & III)
	-----	Particle Grate (Model 4800 Style II & III)
* 23	1002C	1/2" Solenoid Valve
24	-----	150 watt Light Bulb
25	2000D	2 HP 3450 RPM Motor
26	3005B	12-1/4" Impeller
27	3000F	11" x 39" Dust Bag (17-each required)
28	-----	Dust Drawer Handle
29	-----	Air Duct (Model 3600 Style III)
	-----	Air Duct (Model 4800 Style III)
30	-----	Hopper Duct (Model 3600 Style III)
	-----	Hopper Duct (Model 4800 Style III)
31	-----	Elbow (Model 3600/4800 Style II)
32	-----	Elbow (Model 3600/4800 Style III)
33	-----	Cyclone Package (Model 3600/4800 Style III)
34	-----	Abrasive Storage Hopper w/Screen

\* Parts that are not used with pressure pot machines. For pressure pot cabinets, refer to pressure pot manual spare parts.

## Replacement Parts List

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Model: Superhone 3600/4800 Style II & III

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ITEM NO.	PART NO.	DESCRIPTION
* 35	1001B-1	Repair Kit for Air Regulator
* 36	1004A	1/2" Filter & Water Trap
* 37	5012A-3	1/2" Abrasive Carbide Gun, Complete
38	-----	28" Turntable w/Dolly (2-each)

\*Parts that are not used with pressure pot machines. For pressure pot cabinets, refer to pressure pot manual for spare parts.