

# BLAST-IT-ALL®

LARRY HESS AND ASSOCIATES, INC.

185 PIPER LANE

SALISBURY, NC 28144 USA

800-535-2612

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## WARNING

**DO NOT USE SAND. SAND WILL CAUSE SILICA DUST, WHICH IS THE CAUSE OF SILICOSIS DISEASE, A CONDITION OF MASSIVE FIBROSIS OF THE LUNGS. THIS STATEMENT INDICATES POTENTIAL PERSONNEL HAZARD. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.**

**WEBSITE FOR SILICOSIS:**

***[http://www.osha-slc.gov/SLTC/silica\\_advisor/mainpage.html](http://www.osha-slc.gov/SLTC/silica_advisor/mainpage.html)***

**EQUIPMENT MANUAL**

**MM-552**

**PMS 9400**

**DATE: June 13, 2005**

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## SECTION 1 INTRODUCTION

### 1.1 GENERAL INFORMATION:

This manual provides operation and maintenance instructions for equipment manufactured by LARRY HESS & ASSOCIATES, Airport Industrial Park, Highway 29 South, Salisbury, NC 28145 USA. Please read this manual completely before attempting any erection procedures or operations of any sort.

### 1.2 MAJOR ASSEMBLIES / COMPONENTS:

- 1.2.1 SYSTEM PLATFORM
- 1.2.2 SWEEP-IN RECOVERY SYSTEM
- 1.2.3 RECLAIMER
- 1.2.4 HOPPER
- 1.2.5 PRESSURE TANK
- 1.2.6 DUST COLLECTOR
- 1.2.7 EXHAUST FAN

#### 1.2.1 SYSTEM PLATFORM

#### 1.2.2 RECOVERY SYSTEM:

The Floor Recovery Unit is a low profile recovery unit that has an adjustable air inlet for media flow. Spent blasting media and debris are manually swept into the recovery unit where they are pneumatically conveyed to the reclaim.

#### 1.2.3 RECLAIMER:

The Reclaimer is of the centrifugal cyclone separator type using high velocity air to convey and separate the spent media from the dust and debris of the dry-blasting process. A tuning provision has been provided to allow the balancing of media reclamation and, conversely, the prevention of media carry-over into the dust collector. The provision is a vertically sliding sleeve in the top of the reclaimer housing. Adjustment is by external handle (rod) on top of the reclaimer. A pin through the hole in the rod allows adjustment in one-inch increments. The sliding sleeve can be adjusted in either direction as needed. As the dust collector material matures and coats, the reclaimer may have to be

re-adjusted. As the media is separated from the dust, all good media passes through a screen, which retains large particles from passing into the blast generator.

#### **1.2.4 HOPPER:**

The Hopper is for storage of the blast media. It is a ten (10) cubic feet.

#### **1.2.5 PRESSURE TANK:**

The Blast Tank is for reusing and pressurizing the blast media. It is a six and a half (6.5) cubic foot, single chamber pot. It features automatic operator remote control for one (1) operator.

#### **1.2.6 DUST COLLECTOR:**

The Dust Collector is a cartridge filter type. Air enters and is circulated through cartridge filters, trapping dust and leaving only clean air. A pulse control is used to clean the cartridges, allowing dust to fall into the hopper. Pulse requires 120V, 1 Phase. The power is controlled by motor starter.

#### **1.2.7 EXHAUSTER FAN:**

The Exhauster Fan provides high static air flow for recovery.

**SECTION 2  
INSTALLATION AND PREPARATION FOR USE**

**2.1 SITE REQUIREMENTS:**

Locate components per plan view and component drawing.

NOTE: Refer to the illustrations in this manual to identify and install this equipment.

**\*\*\*UNIT MUST BE LAG BOLTED TO FLOOR IN FINAL LOCATION\*\*\***

**2.2 MAIN SYSTEM FRAME ASSEMBLY AND PLATFORM:**

Place the main frame assembly where the system is to be located.

**2.3 RECLAIMER INSTALLATION:**

Using putty tape as sealant.

Raise the reclaim main body and attach to the top of the HOPPER using 3/8" x 1" self-threading bolts provided.

**2.4 HOPPER INSTALLATION:**

Using putty tape as sealant.

After attaching the reclaimer to the hopper raise the reclaim / hopper assembly and attach to the top of the blast tank using 3/8" x 1" bolts and nuts. Install the purge hose (3/4" hose) from the reclaimer inlet PURGE DUCT to the outlet port on the pressure tank. Install the screen vibrator tube to the fitting on the side of the hopper.

**2.5 BLAST HOSE AND CONTROL INSTALLATION:**

Attach the blast hose to the quick coupling on the media valve.

USING BLACK ELECTRICAL TAPE.

Secure the blast dead-man control (the larger control handle) to the blast hose. Attach the blow-off control handle (the smaller control) to the blast hose. Secure the BI-LINE to the blast hose.

## **2.6 DUST COLLECTOR TOP DUCT INSTALLATION:**

Using putty tape as sealant.

Raise the TOP DUCT and attach to the top of the DUST COLLECTOR using 1 /4 " x 3 /4" self-threading bolts.

## **2.7 EXHAUSTER BLOWER INSTALLATION:**

Attach the short section of 6" diameter flex hose to the flange point of the top duct. Lift the blower to the top of the dust collector and slide the other end of the short section of the 6" flex hose over the blower inlet. Secure the flex hose with the clamps provided. Secure the blower to the top of the dust collector with 3/8" x 1" bolts and lock nuts.

## **2.8 COMPRESSED AIR INLET:**

Attach the (plant) compressed air line to the blast tank air inlet.

## **2.9 FLEX HOSE CONNECTIONS:**

Attach the 6" flex hose to the sweep-in recovery unit and to the reclaim inlet. Secure with clamps.

Attach the 8" flex hose from the dust collector hopper inlet to the reclaim outlet. Secure with clamps.

**SECTION 3  
OPERATION INSTRUCTIONS**

**3.1 SYSTEM OPERATION**

**3.2 REMOTE CONTROL DEAD-MAN SYSTEM:**

The dead-man control operates on 12 volt Electric Circuit. The system is activated when the switch handle is depressed to the blast position. When in this position, the 12 volt, 3-port solenoid is activated. Blasting will then begin. To stop the blast flow, the handle is released.

**3.3 REMOTE CONTROL BLOW-DOWN SYSTEM:**

The operator can grasp the blow down valve (THE SMALLER CONTROL VALVE) and hold while activating the blast dead-man. This will cut off the flow of blast media and allow only compressed air to flow through the blast hose.

**3.4 OPERATING INSTRUCTIONS:**

- A. At the (customer supplied) main control panel press the "start" push-button. The Exhauster Fan should operate.
- B. Be sure the remote control switch handle is raised and is clear of the body before supplying air to the system.
- C. Connect the air supply line to the blast tank.
- D. Adjust air supply regulator as required.
- E. Check for air leaks.
- F. Maintain an adequate supply of air.
- G. To start blast flow, depress the spring loaded remote control switch. The blast flow will commence.

**WARNING**

The bi-line DEAD-MAN remote control switch is designed to function as a dead-man control. Do not wire or tie down the lever to the handle at any time.



- H. To stop air blast flow, release the dead-man remote control handle.
- I. Adjust the media control valve for the desired media flow.
- J. To determine if the reclaimer and dust collector systems are functioning properly, observe the accumulation of material in the dust collector.
- K. If the media is being carried over into the dust collector, raise the sliding sleeve at the top of the reclaimer. "As the filter material matures there will be less carry over to the collector."
- L. During normal usage, aim the nozzle at an angle of approximately 45 degrees to the surface of the work piece. Too steep of an angle will not achieve and better results and can aggravated bounce-back of the media towards the operator as well as lead to premature break-down of the media.

**NOTE: Only abrasives manufactured or processed for blast cleaning should be used with this equipment.**

## **SECTION 4 TROUBLE SHOOTING PROCEDURES**

### **WARNING**

Never attempt to do any maintenance on this system if it is under pressure or has to capability of being pressurized. Turn off al air supply and electrical supply sources before servicing.

#### **4.1 NO ABRASIVE DISCHARGE FROM NOZZLE:**

- A. Make certain that the blast hose is secure.
- B. Shut-off source of compressed air.
- C. Depressurize blast unit.
- D. Inspect the abrasive valve and blast hose for blockage.
- E. Check the supply of abrasives in reclaimer.

#### **4.2 ABRASIVE FLOW IS SPITTING OR IRREGULAR:**

- A. Adjust media control valve.
- B. Excess moisture within the air lines will cause and unsteady stream of abrasive from the nozzle. Check the air dryer on the blast generator.

#### **4.3 NO AIR PRESSURE:**

- A. Check the bi-line (dead-man) switch for leaks. When the handle is lowered to the blasting position with the safety button in, there should be no air escaping from the switch body.

#### **4.4 NO RECOVERY FROM LOW PROFILE SWEEP-IN**

- A. Check for blockage in flex hose.
- B. Check fan rotation.

MM-329  
Specification and Instructions for RPJ Collectors

## 1.0 General Description

The MODEL RPJ COLLECTORS are cartridge filter jet pulse type collectors. These collectors may be supplied as a complete unit or they may be supplied in two sections ready for installation in the users plant. A top opening door is provided for the inspection and/or replacement of the filter cartridges and the air pulsing system components. If the unit is supplied with a hopper it is of the pyramidal type forming the lower part of the collector. An air inlet is located either on the side or top depending on the size of the collector. The dirty air stream passes through the inlet and is deflected away from the cartridges to help prevent premature cartridge wear. As the dirty air enters the collection chamber the velocity reduces due to the expanded area. The heavier particles drop into the Dust Drawer or Hopper. The air separates as it is drawn into the cartridge filter(s). The air goes through the cartridge media for the final separation of the solids (dirt) from the air stream. Solid particles are captured on the filter media as the air stream passes through and into the center section of the cartridge and is exhausted from the collector. Compressed air jets are used periodically to BACK FLUSH (CLEAN) the filter pleats causing the collected particles to fall down into the drawer or hopper.

## 2.0 Design Considerations

2.01 Maximum negative pressure: 12" WG.

2.02 Design operating temperature: 150 F

2.03 Compressed air supply: 80 to 90 PSIG operating pressure with a 100 PSIG being the maximum design.

## 3.0 Installation and arrangement

The user will place the unit on a flat level surface. The self-supporting base and/or structure provided does not require anchor bolts for indoor applications. If the unit is to be located outdoors, the user must provide adequate anchoring consistent with the appropriate building codes. When locating the unit, allow sufficient space to allow filter removal from the top of the unit (usually 3 feet).

## 4.0 Basic Construction

4.01 Basic Unit: The basic unit is fabricated from 12 gauge carbon steel. All seams are continuously welded to form a solid seal. The filter/air pulsing access door(s) are gasketed. The air jet valves are designed especially for this type air pulse application and are operated through the sequence control by manual push buttons or by timed unit depending on the model or the unit.

4.02 *Filter Cartridges:* Each cartridge contains approximately 250 pleats and the number of filter units depends of the unit size. The open end of the cartridge has a lip under which a special composition gasket is mounted. Any cuts, gouges or tears in this gasket will cause premature failure of the filtering unit.

4.03 *Cleaning Control:* The cleaning us actuated by a one of two means. On the manual cleaning units a manual push-button is provided. On the larger units a solid state controller it provided. On some units this control may be shipped loose for installation by the customer.

#### 5.0 *Reverse Pulse Jet Air System*

The compressed air manifold is to be supplied with compressed air at 85 PSIG. The user must provide a pressure regulator to maintain this pressure. The air supply must be clean and free of moisture. Air consumption rates for 85 PSIG are determined as follows in standard cubic feet of compressed air:

*Number of pulse valves (cartridges) x 1.75 SCF*

*Example: 2 cartridges x 1.75 SCF= 3.5 SCF*

*If we clean every 3 minutes the usage is divided by 3 or 1.16 SCFM.*

#### 6.0 *Paint*

*One coat of primer is applied to all interior and exterior surfaces. A finish coat of industrial enamel is applied to the exterior.*

#### 7.0 *Shipment*

*The smaller units without hopper(s) are shipped assembled. The units with hoppers are shipped in two sections. The filters, filters hold-downs, and control box require field installation.*

#### 8.0 *Compressed Air Piping*

*The compressed air piping installed by the user shall be a minimum of 1/2" sch 40. **In addition a pressure regulator must be provided and installed by the user.***

## Pre-Start Check

### 1.0 Pre Start Checklist

*Review all components to assure that they are operational.*

- 1.01 **All Ductwork** - The inlet and exhaust ducting must be inspected to assure it is properly installed and complete.
- 1.02 **Dust Drawer / Hopper Gaskets** - The gasket on the drawer edge must be installed and attached to the drawer. This drawer must be closed and secured before operation.
- 1.03 **Compressed Air Piping** - A pressure regulator must be installed and set for 85 PSI. Make sure the air is clean and dry.
- 1.04 **Wiring** - Motors must be wired and installed with proper overload protection.
- 1.05 **Sequence Control Box** - Provide incoming wiring. Control will be pre-set. The control box is to be field installed.
- 1.06 **Electrical Protection Devices** - Fuses, circuit, breakers, heaters, etc., must be properly sized and installed.
- 1.07 **System Fan** - Make sure the rotation of the fan is correct.

## Operation

### 1.0 Start-Up and Operation

1.01 Turn on compressed air supply.

1.02 Start system: CHECK FAN ROTATION

1.03 Check seals.

### 2.0 Filter Cleaning

2.01 If the unit is equipped with automatic pulse cleaning, the cleaning cycle will be timer and activated when the unit is in operation.

2.02 If the unit is not equipped with a automatic pulse package, the filters are cleaned by manually pushing the clean pulse air valve. This will allow the cartridge to be pulse cleaned. **(PULSE AND RELEASE) THIS NEEDS TO BE OPERATED AT LEAST ONCE EACH HOUR OF OPERATION OR MORE IF A DIRTY CABINET CONDITION EXISTS.**

### 3.0 Dust Drawer / Hopper Emptying

The collector must be shut down before any attempt is made to empty the dust container.

3.01 Shut system down

3.02 Un-latch dust drawer / hopper.

3.03 Remove and empty container in to approved dust receptacle.

3.04 Replace drawer or container and secure.

**NOTE: MAKE SURE GASKET SEAL IS IN PLACE.**

## Maintenance

*Regular maintenance is consistent with satisfactory and efficient operation of any dust collector. Remember to clean and inspect the filter regularly and do not allow the dust container(s) to overfill.*

### 1.0 Weekly

*1.01 Compressed air pressure set at 85 PSI.*

*1.02 Drain all moisture from compressed air lines.*

*1.03 Check and record pressure drop across the filters with customer supplied manometer.*

*1.04 Empty dust container. The container may have to be emptied more frequently depending on use.*

### 2.0 Monthly

*2.01 Inspect dust container gasket(s).*

*2.02 Remove and inspect filter cartridge.*

*2.03 Replace cartridge if evidence of dirt is inside.*

### 3.0 Yearly

*3.01 Check all gaskets and replace if required.*

*3.02 Remove all cartridges and inspect for wear. If evidence of dirt is inside replace filters.*

### 4.0 Filter Removal

*4.01 Open filter access area.*

*4.02 Remove filter hold-down device.*

*4.03 Pull out filters "being careful not to knock off dust into clean air area"*

### 5.0 Filter Cartridge Replacement

*5.01 Brush any dust that may have fallen into the clean air compartment into the dust bin. Remove any bits of the old filter gasket that may have stuck to the filter plate.*

*5.02 Slowly place cartridges in holes.*

*5.03 Replace the hold-down bars and attach with the holding nuts. Maintain even pressure at all points.*

*5.04 Close collector.*

## Troubleshooting

### 1.0 Visibility poor in cabinet

#### 1.01 Pulse Interval Time Too Long:

*Adjust the knob in the sequence control panel to shorter time. (The larger unit the shorter the time required).*

#### 1.02 Filter(s) Wet:

*Make sure there is not moisture in the compressed air lines.*

#### 1.03 Filter(s) Blinded:

A. *Blinded filters can be the result of operating the unit too long without cleaning or the cleaning interval is too long.*

B. *The dust drawer or bin is over full. A full bin will cause severe dust reintrainment, which will overload (blind) the filters. Remove the filters from the unit and clean or replace.*

### 2.0 Control Circuit Fails to Operate:

2.01 *If the diaphragm valve does not operate, this generally indicates a leak in the tubing. If the control tube has a leak the diaphragm valve will remain open and no pressure will build up in the log manifold.*

2.02 *Compressed Air Bleed Down: If a diaphragm valve will not return to the closed position, this indicates either a break in the diaphragm, a leaking control line, or a control pulse solenoid is stuck in the open position.*

2.03 *Check to make sure there is sufficient air pressure flow to the log manifold.*

### 3.0 Puff or Dust Out Exhaust After Each Cleaning:

3.01 *Cleaning too often: Clean less often or increase the interval on the control panel.*

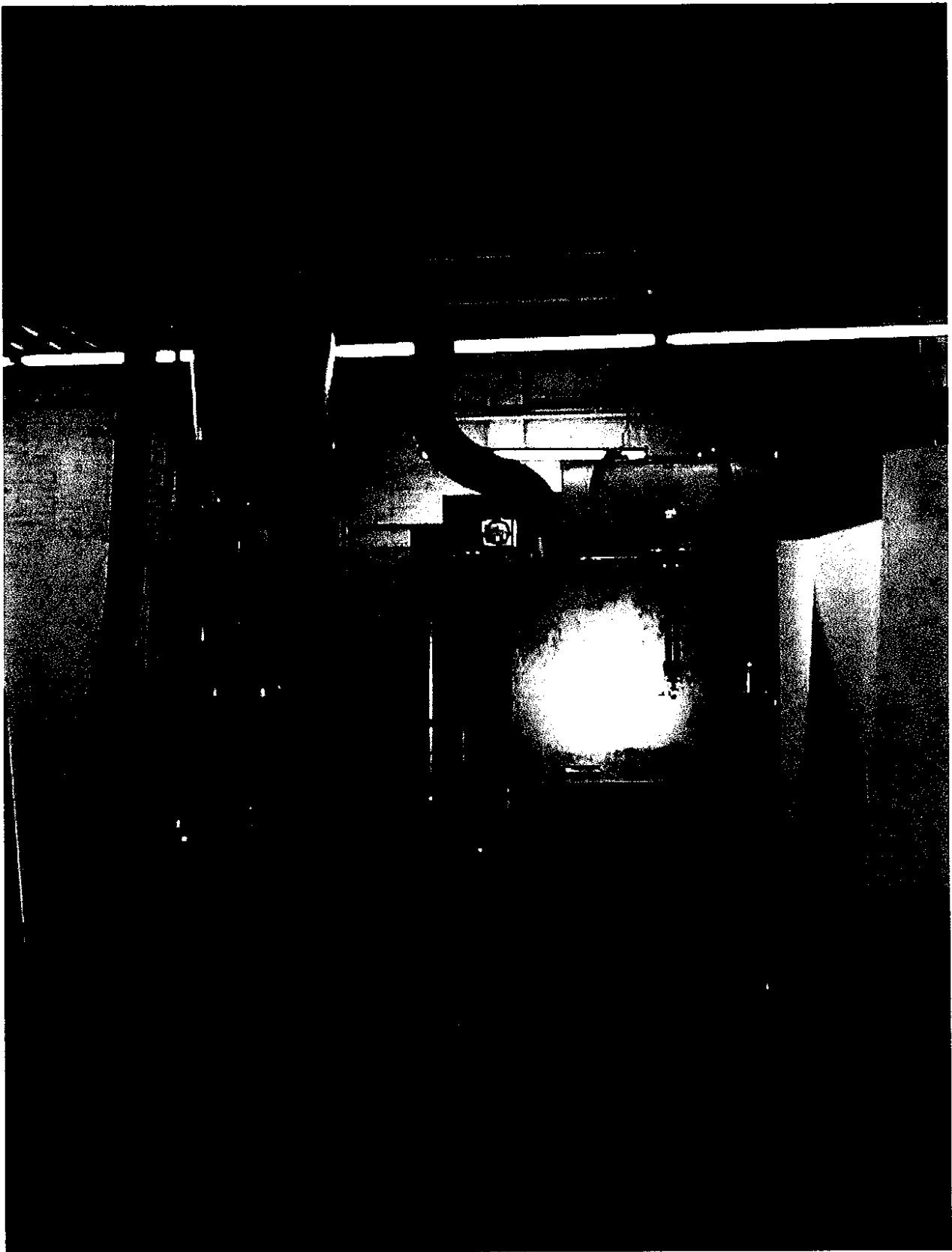
3.02 *Filter Worn: Remove and inspect filters for pin holes, spots, or other locations where dust may be passing through the filter media. Replace filter cartridges if required.*



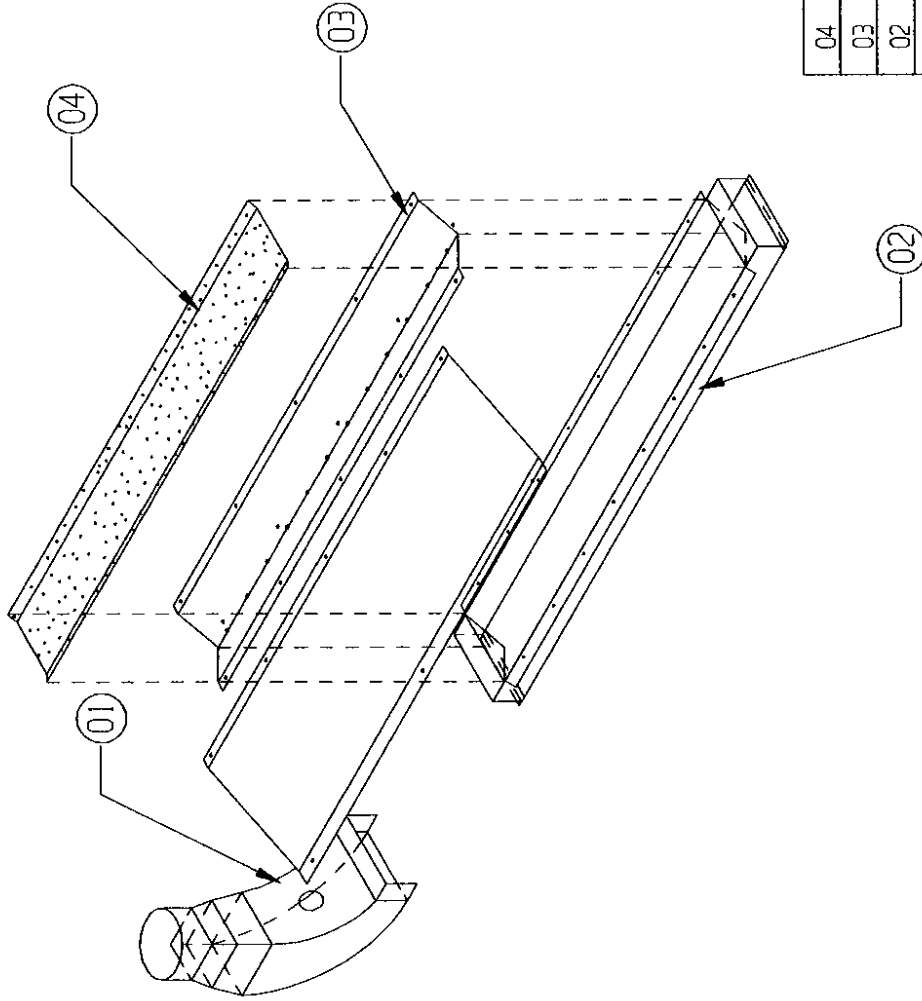
4.0 *Continuous Dust Out Exhaust:*

4.01 *Broken, torn, or punctured filter media. Locate and replace cartridge.*

4.02 *Poor seal between cartridge and collector plate: Look for dust patterns around the filter seals. Re-tighten or replace filter. Do not attempt to repair gasket seal.*



A38129



04	1	PERFORATED PLATE COVER	A38129-4	3/16 x 8 x 48
03	1	FLOOR MEDIA TROUGH	A38121	
02	1	FLOOR TROUGH ASS'Y.	B3562	
01	1	ELBOW W/ ADJ. AIR FLOW	A38096	
ITEM NO.	QTY.	DESCRIPTION	DWG. NO. / MATERIAL	

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SALISBURY, NORTH CAROLINA

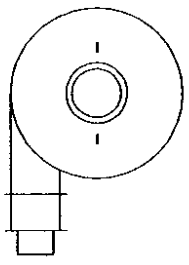
DESCRIPTION:		FLOOR ASS'Y. PMS 9400		MATERIAL:	PER DWG
DRAWN BY:	DEC	DATE:	07/25/03	SCALE:	1/16"=1"
CHK'D BY:		DATE:		JOB NO.:	PMS
				FUNCTIONAL:	
				SETING:	
				WELDING:	
				ASTY.:	B1339
				DRAWING NO.:	A38129

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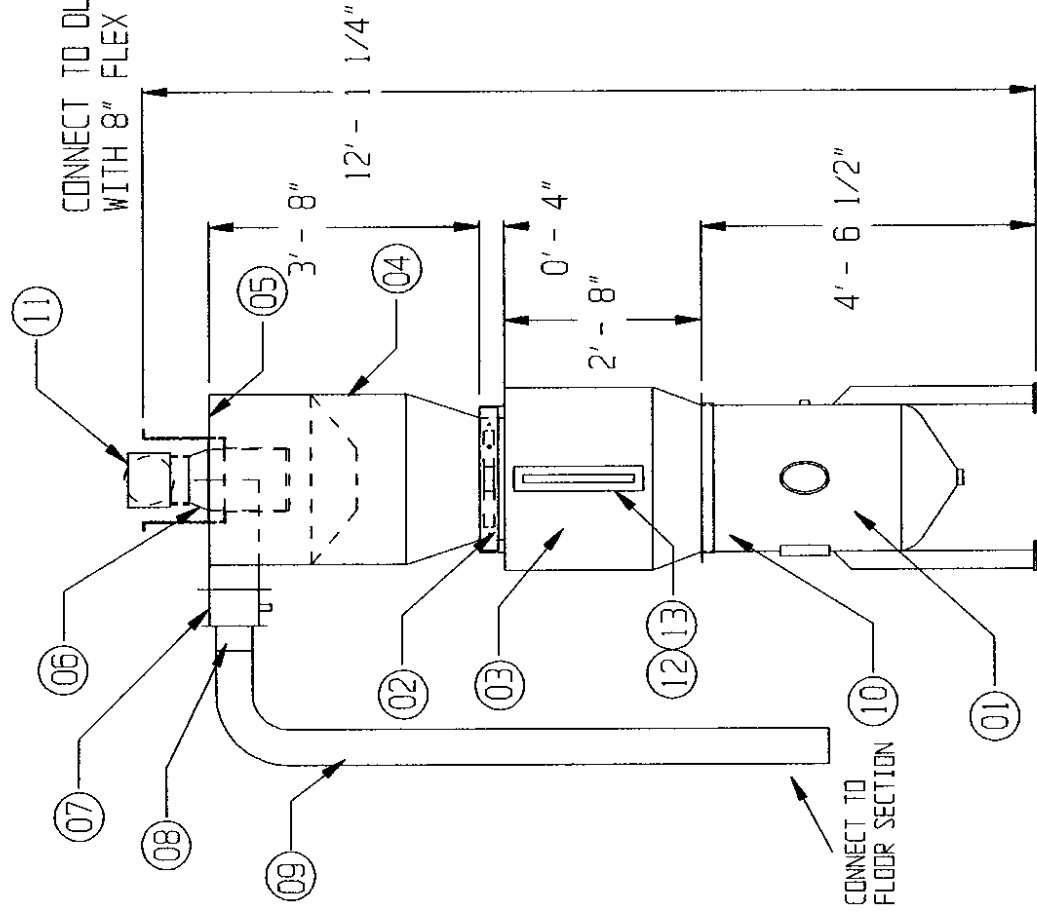
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REV.	DESCRIPTION	BY	DATE
#1	UPDATED	DEC	05/26/05

A30093



CONNECT TO DUST COLLECTOR WITH 8" FLEX HOSE



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REV.	DESCRIPTION	BY	DATE

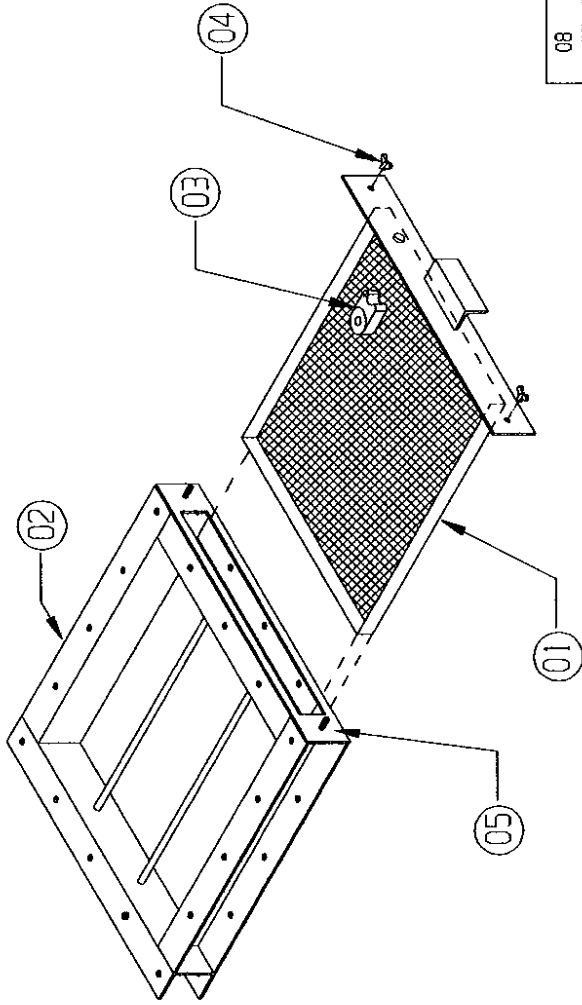
ITEM NO.	QTY.	DESCRIPTION	DWG. NO. / MATERIAL
13	1	SIGHT GLASS 18" LONG	010829
12	1	SIGHT GLASS FLANGE	B2123-3
11	1	SPECIAL OUTLET	B1328
10	1	PRESSURE POT ADAPTOR	A30076
09	*	6" FLEX HOSE	19-096
08	1	INLET ADAPTOR (6")	A12765
07	1	BLOW-DOWN DUCT ASS'Y.	B1342
06	1	TOP OUTLET	A30085
05	1	R28 TOP & SLIDE ASS'Y.	A1300
04	1	RECLAIMER CHAMBER ASS'Y.	A30037 (LESS STAND)
03	1	10 CU. FT. STORAGE HOPPER	B1231
02	1	TRASH SCREEN CHAMBER	A267
01	1	PRESSURE POT (6.5 CU. FT.)	

**LARRY HESS & ASSOCIATES, INC**  
SALISBURY, NORTH CAROLINA

DESCRIPTION: 28" RECLAIMER MECH. ASS'Y.  
MATERIAL: PER DWG

DATE: 06/09/05	SCALE: 1/32"=1"	JOB NO:	DRAWING NO.:
DATE:	FUNCTIONAL:	ASS'Y.:	A30093

A267



08				
07		CUT SHEET		A271
05	3 FT.	1/8" x 3/4" GASKET		24-021
04	2	1/4" WING NUT		30-510
03	1	VIBRATOR (OPTIONAL)		16-919
02	1	TRASH SCREEN HOUSING		A268
01	1	REPLACEMENT DRAWER (1/4" HOLES)		010581-1
01	1	REPLACEMENT DRAWER (3/16" HOLES)		010581
ITEM NO.	QTY.	DESCRIPTION	DWG. NO. / MATERIAL	

LARRY HESS & ASSOCIATES, INC.  
SALISBURY NORTH CAROLINA

DESCRIPTION: TRASH SCREEN ASM.  
010580

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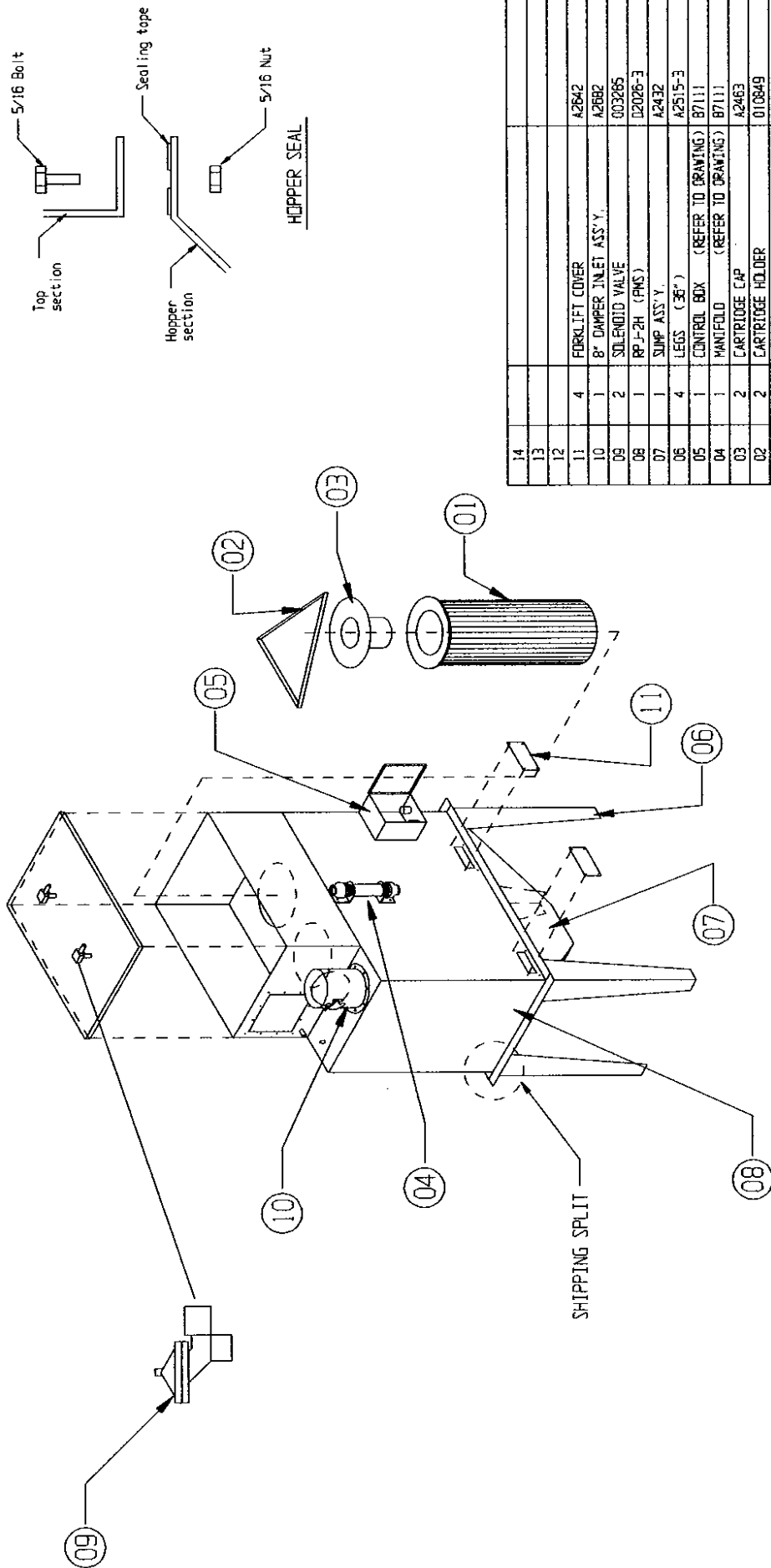
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DATE:	1/19/84	SCALE:	3/32" = 1"	JOB NO.:	STD.
DRAWN BY:	S. K.	DATE:		FRAC'TIONAL:	
CHK'D BY:		DATE:		DECIMAL:	
				ANGLES:	

REV.	DESCRIPTION	BY	DATE
#1	MADE MANUAL DWG.	DEC	5/28/03

DRAWING NO.: A267





\*NOTE: AFTER PLACING THE TOP SECTION OF THE RPJ DUST COLLECTOR ON THE BOTTOM SECTION PLACE FORKLIFT COVERS OVER HOLES. USE PUTTY TAPE BETWEEN ALL BOLT TOGETHER FLANGES.

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DESCRIPTION: (1200 CFM)

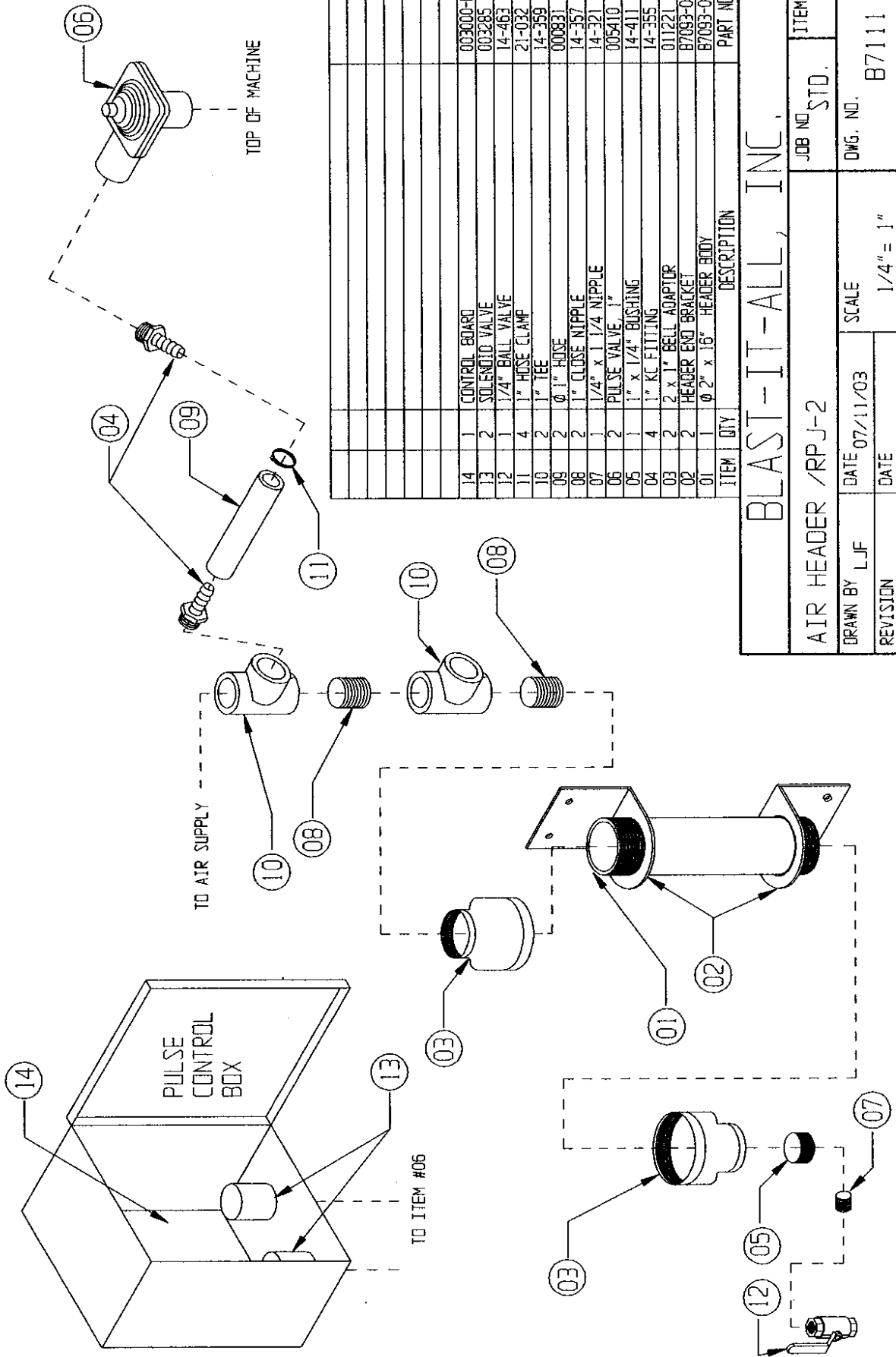
2 CARTRIDGE DUST COLLECTOR

MATERIAL: 14 GA.

DRAWING NO.: M2090

ITEM NO.	QTY.	DESCRIPTION	ENG. NO. / MATERIAL
14			
13			
12			
11	4	FORKLIFT COVER	A2642
10	1	8" DAMPER INLET ASS'Y.	A2682
09	2	SOLENOID VALVE	003285
08	1	RPJ-2H (PMS)	D2026-F
07	1	SUMP ASS'Y.	A2432
06	4	LEGS (36")	A2515-3
05	1	CONTROL BOX (REFER TO DRAWING) B7111	
04	1	MANIFOLD (REFER TO DRAWING) B7111	
03	2	CARTRIDGE CAP	A2463
02	2	CARTRIDGE HOLDER	010849
01	2	CARTRIDGE	006870 / 010899

B7111



ITEM	QTY	DESCRIPTION	PART NO.
14	1	CONTROL BOARD	003000-8
13	2	SOLENOID VALVE	003285
12	1	1/4" BALL VALVE	14-463
11	4	1" HOSE CLAMP	21-032
10	2	1" TEE	14-359
09	2	Ø 1" HOSE	000931
08	2	1" CLOSE NIPPLE	14-357
07	1	1/4" x 1 1/4" NIPPLE	14-321
06	2	PULSE VALVE, 1"	005410
05	1	1" x 1/4" BUSHING	14-411
04	4	1" KC FITTING	14-355
03	2	2 x 1" BELL ADAPTOR	011221
02	2	HEADER END BRACKET	B7083-02
01	1	Ø 2" x 16" HEADER BODY	B7093-01

# BLAST-IT-ALL, INC.

AIR HEADER /RPJ-2

JOB NO. STD. ITEM NO.

DWG. NO. B7111

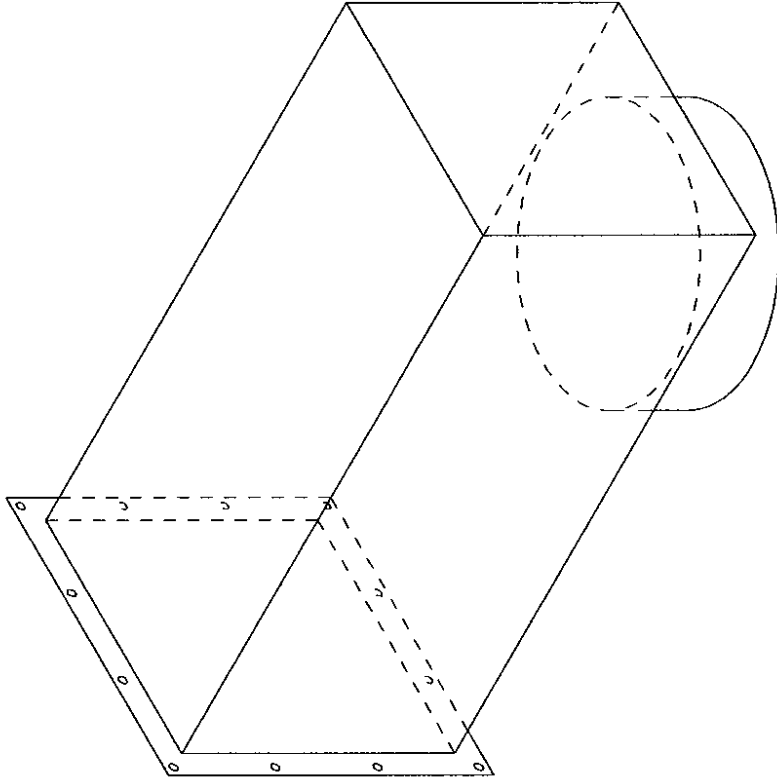
SCALE 1/4" = 1"

DATE 07/11/03

REVISION DATE



B12529



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REV.	DESCRIPTION	BY	DATE

LARRY HESS & ASSOCIATES, INC.  
 SALTSBURY, NORTH CAROLINA

MATERIAL:

VENTILATION DUCT (OC TO BLOWER)

PER DWG

DRAWING NO.:

B12529

DATE:

SCALE:

BY:

CHK'D BY:

DATE:

SCALE:

BY:

CHK'D BY:

DATE:

**Magnehelic® Differential Pressure Gage**



**SPECIFICATIONS**

Dimensions: 4-3/4" dia. X 2-3/16" deep.

Weight: 1 lb. 2 oz.

Finish: Baked dark gray enamel.

Connections: 1/8 N.P.T. high and low pressure taps, duplicated, one pair side and one pair back.

Accuracy: Plus or minus 2% of full scale, at 70°F. (Model 2000-0, 3%; 2000-00, 4%).

Pressure Rating: 15 PSI.

Ambient Temperature Range: 20° to 140°F.

Standard gage accessories include two 1/8" N.P.T. plugs for duplicate pressure taps, two 1/8" pipe thread to rubber tubing adapters, and three flush mounting adapters with screws.

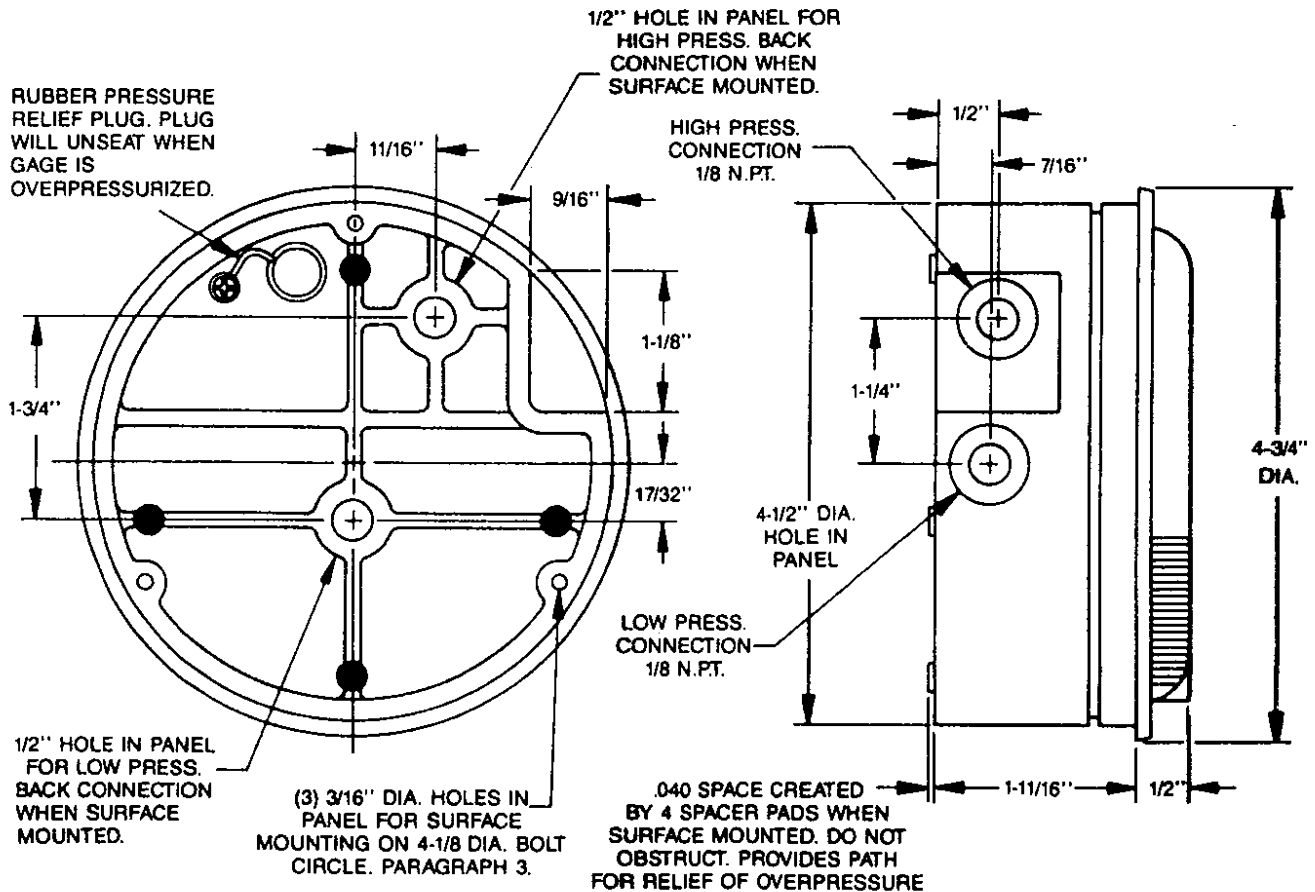


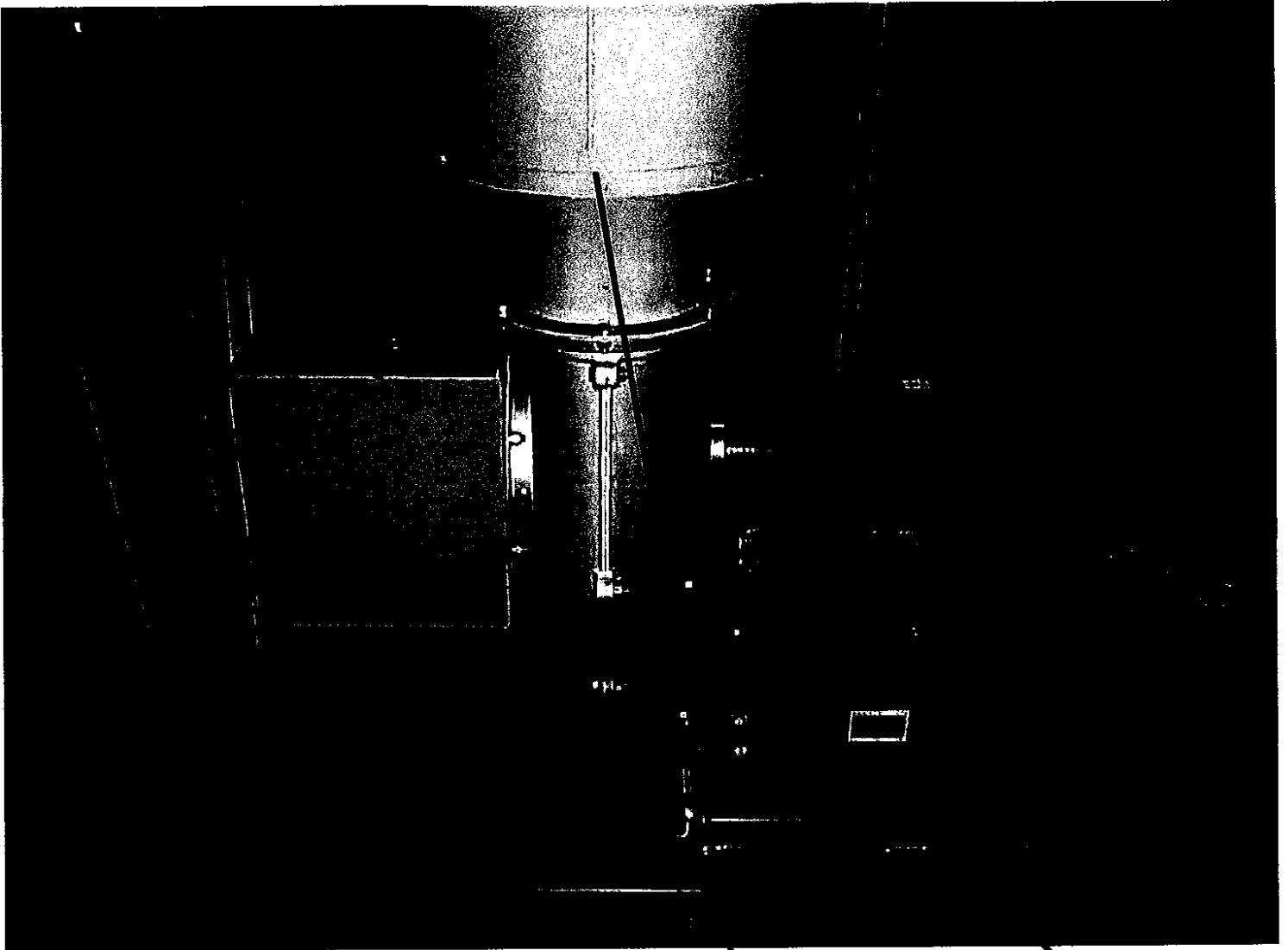
**PART NO. 004457**

**Caution:** For use with air or compatible gases only.

For repeated over-ranging or high cycle rates, contact factory.

**Hydrogen Gas Precautionary Note:** The rectangular rare earth magnet used in the standard gage may not be suitable for use with hydrogen gas since a toxic and explosive gas may form. For hydrogen service, consult the factory for an alternate gage construction.





**BLOWER ADAPTOR BOX**  
PN# A35320

**AF-15 BLOWER**  
PN# 010419

**SOUND ATTENUATOR**  
PN# A35260

## WARRANTY

Larry Hess & Associates, Inc. Warrants to the original purchaser the merchandise sold to be free from defects in material and workmanship under normal use and service for a period of one (1) year. Upon prompt notification by the buyer, to LHA, components that are determined by LHA to be defective will be repaired or replaced at no additional charge, F.O.B. our factory.

Manufacturer shall have the right to inspect prior to replacing all merchandise in question.

This warranty does not apply to parts that are directly involved in the blasting operation. Example: gun, gun parts, viewing window, hose, gloves, etc.

Manufacturer shall not be required to pay any removal or installation charges whatsoever under this warranty.

Manufacturer shall not be liable for prospective profits, special or consequential damages, nor shall any recovery of any kind against manufacturer be greater in amount than the cost of repairs of defects in workmanship.

This warranty does not apply to damage caused by accidents, damage in transit, alterations by unauthorized personnel, abuse or damage by flood, fire, or acts of God, nor by artificially generated electric currents or any other cause whatsoever except defects in material or factory workmanship.

In all cases, defective parts must be returned to Larry Hess & Associates, Inc. before credit is issued.

If genuine BLAST-IT-ALL® replacement parts are not used, the warranty is void.

This warranty is in lieu of all other warranties expressed or implied and releases Larry Hess & Associates, Inc. of all other obligations and liabilities whatsoever. This warranty neither assumes nor authorizes any person to assume any obligation other than those specified by this warranty.

## WARNING

**DO NOT USE SAND. SAND WILL CAUSE SILICA DUST, WHICH IS THE CAUSE OF SILICOSIS DISEASE, A CONDITION OF MASSIVE FIBROSIS OF THE LUNGS. THIS STATEMENT INDICATES POTENTIAL PERSONNEL HAZARD. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY.**

BLAST-IT-ALL®  
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