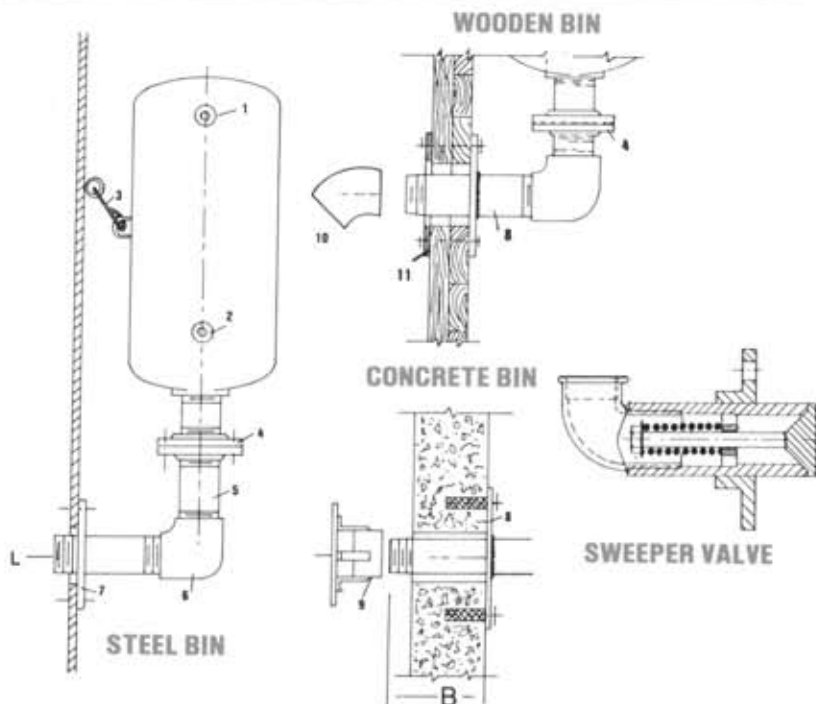


# HOW TO INSTALL & AVAILABLE ACCESSORIES

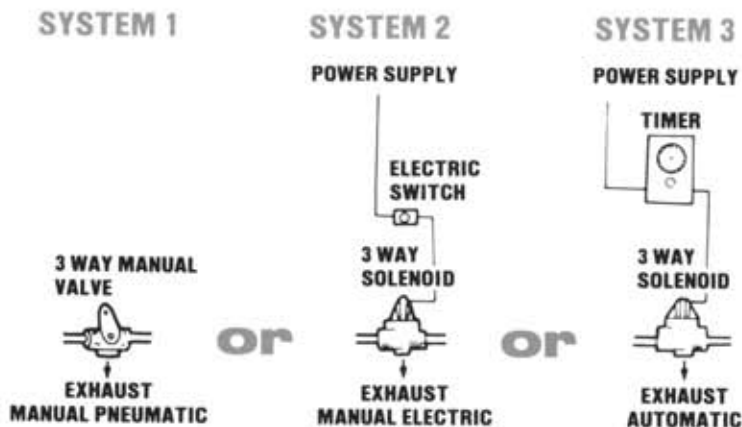


## MOUNTING ACCESSORIES

1. Solenoid valve 3/4" - 3 way
2. Safety release valve (125 PSI)
3. Safety cable or safety strapp
4. Set of flanges for 2 1/2, 4 or 6" NPT
5. Nipple 2 1/2, 4 or 6 NPT
6. Elbow 45° or 90°
7. Mounting flange with nipple for 2 1/2, 4 or 6" NPT.
8. Mounting flange with nipple for concrete silo, give dimensions "B", for 2 1/2, 4 or 6" NPT.
9. Diffuser for 4 or 6" Npt.
10. Elbow 45° or 90°.
11. Back up plate for wooden bin.
12. Sweeper valve for ABS-1, 1 1/2 & 2".

## CONTROLS

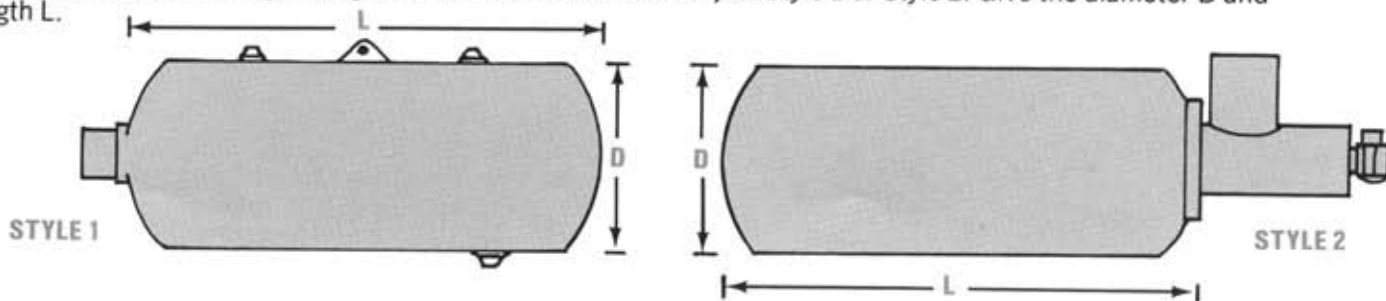
The complete installation is done easily and quickly. Once the trouble area is determined, a hole is cut in the structure one inch larger than the release pipe of the air cannon. The mounting flange is then welded or bolted to the bin side over the hole. The cylinder is attached to the release pipe and the air and operating connections are made. The operation can either be made manually or automatically. The manual incorporates either a simple air release valve or a solenoid with an electric switch. The automatic operation consists of a solenoid valve and timer. Once installed, the cycle time can be changed from once a day or when necessary, to be as fast as the cylinder can be filled with air. Ask for special bulletin #8203.



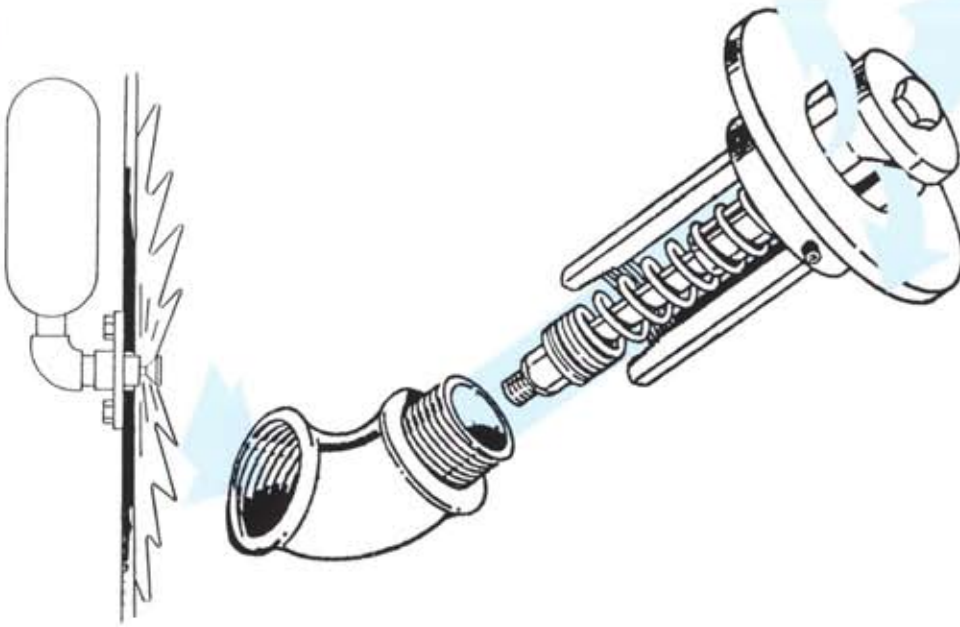
## VIBCO'S DOUBLE PISTON VALVE AVAILABLE FOR MOST AIR CANNONS

Vibco's maintenance free double piston valve fits most competitors' air cannons. They are easily retrofitted into Style 1 and Style 2. For other styles contact our Engineering Department.

HOW TO ORDER: Either give original manufacturer's model or just Style 1 or Style 2. Give the diameter D and length L.



# VIBCO'S AIR SWEEPER SYSTEM



## WHAT IS AN AIRSWEEP?

The air sweep system consists of a spring loaded piston valve that instantaneously upon command, opens and releases compressed air in an up to 8' circle sweeping the bin side. The air blast reduces the friction between the bin material and the bin wall to prevent bridging, ratholing, packing and clinging of material to the walls. After firing, the valve closes and seals off the discharge opening preventing material from entering, making it possible to use the bin for multiple material charges without contamination.

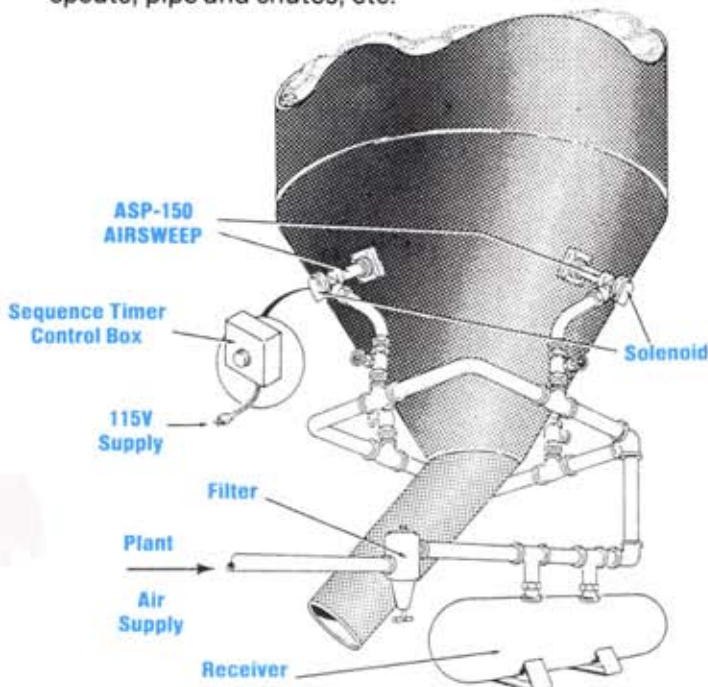
The sweeper valve can operate in temperatures up to 900° and be supplied in carbon or stainless steel. Two systems are available:

### SYSTEM 1

The Sweeper Valve is added to ABS-2, ABS-1½ and ABS-1 blasters to deflect the blast along the side of the bin to break the bond and friction between the material and bin wall. The Sweeper Valve is especially suitable when material bridges close to the discharge due to flow obstructions, such as rotary valves, chutes, or feed pipes, or discharge openings.

### SYSTEM 2

Consists of strategically located air sweep valves, solenoids, air receiver tank and timer. The timer is programmed to pulse blast small amounts of high velocity air along the bin wall reaching up to 8' diameter, dislodging, aerating, and moving the material towards the discharge opening. This system produces more positive results than air pads without clogging and with a higher air velocity and better aeration that also sweeps the side of the bin removing material sticking to the bin side, allowing multiple materials charges without contamination. Two sizes available, ASP-75-3/4 NPT and ASP-150-1-1/2 NPT. Ideal to use on smaller bins made of fiberglass, wood, downspouts, pipe and chutes, etc.



## TECHNICAL DATA — SWEEPER VALVE

Model No.	Discharge Size NPT	Air Pressure PSI	Sweep-Span Feet	Air Usage CF*
ASP-75	3/4	40	2	.3
		60	3	.5
ASP-150	1½	80	6	1.8
		90	8	2.4

\* For System 2. For System 1 see Air Cannon Volume Cu. Ft.

# HOW TO SELECT

There are two methods of selecting Air Cannons for your application.

**METHOD 1.** Select for bin size. As a general rule, if the diameter of the bin is:

- 2 to 4 feet diameter or side, use **ABS-1**.
- 4 to 6 feet diameter or side, use **ABS 1-1/2**.
- 6 to 10 feet diameter, use **ABS-2**.
- 10 to 15 feet use **ABS 4-2**, one for every 13-15 feet of circumference or perimeter.
- 16 to 20 feet use **ABS 4-5**, one for every 20-25 feet of circumference or perimeter.
- 21 to 26 feet use **ABS 4-10**, one for every 25-30 feet of circumference or perimeter.

**NOTE:** If conditions permit, a larger air cannon can be used on a smaller bin than recommended. For example, 15' bin, two model ABS 4-5 can be used and placed 20-25' apart instead of three model ABS 2 placed 13-15' apart.

For materials with densities less than 35 lbs/cu. ft. - use 50% more air cannons than indicated above.

If the size of the material discharge opening is so small that it holds back the free flow of material loosened by the air cannon, the installation of a small vibrator will be required. By placing a vibrator at the bottleneck "flow friction" will be reduced and the desired discharge rate can be maintained.

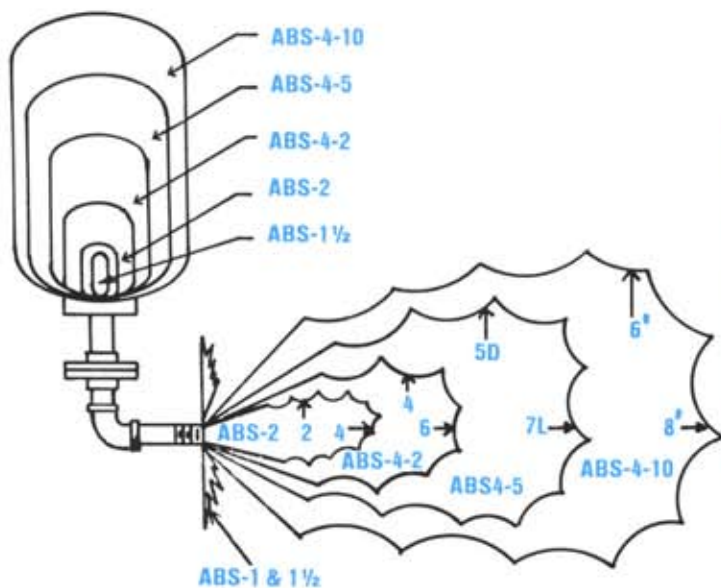
The impact range of the vibrator needs only be 1/4 of the impact normally used when no air cannons are used or one lb. of impact will move 40 lbs. of material collected in the sloping part of the bin.

**Method 2.** Select for material and area of influence.

This method is used for tough materials and odd shaped bins. The rules are very simple. First, determine the area to be blasted (material hang-up area), Second, according to table, determine material group A or B. By following the table, the area of blast influence is determined. Now lay out area of influence in the area to be blasted, Make the area of influence overlap in critical areas.

**Material Type A:** Large chunks, high moisture content; clings to walls; will set up or harden when stored; weight in excess of 65-70 lbs. per cu. ft., or slope angles less than 30° with small discharge openings.

**Material Type B:** Dry, powdery, stringy or spongy, with material weight less than 60 lbs. per cu. ft., slope angles more than 45° and large discharge openings.



Model No.	Material A Blast Span L' x D'	Material B Blast Span L' x D'
<b>ABS-1</b>	2 x 1	2 x 2
<b>ABS-1-1/2</b>	3 x 1	4 x 2
<b>ABS-2</b>	4 x 2	7 x 3
<b>ABS-4-2</b>	6 x 4	9 x 5
<b>ABS-4-5</b>	7 x 5	10 x 6
<b>ABS-4-10</b>	8 x 6	12 x 7

## TECHNICAL DATA — ALL BLASTERS

Model No.	Volume Cu. Ft.	Free Air 80 PSI Cu. Ft.	Length Inches	Diameter Inches	Discharge Size
<b>*ABS-1</b>	.05	.27	18½	4½	3/4 NPT
<b>*ABS-1-1/2</b>	.11	.6	24	5½	1-1/4 NPT
<b>ABS-2</b>	.6	3.26	15	10	2-1/2 NPT
<b>ABS-4-2</b>	1.36	7.40	24	12	4 NPT
<b>ABS-4-5</b>	4.35	23.67	42	16	4 NPT
<b>ABS-4-10</b>	9.33	50.78	44	24	4 NPT

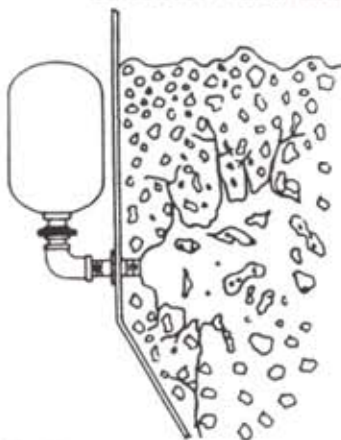
\*Ball Valve Design

# HOW AIR CANNONS\* (BLASTERS) WORK & SOLVE MATERIAL FLOW PROBLEMS

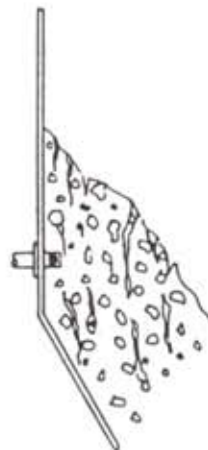
**INTRODUCTION:** Quick release aeration devices and particularly the VIBCO Air Blasters are designed to move material in situations where it is not practical to physically shake the material loose. Large concrete bunkers and piles of material on the ground are impossible to vibrate and cannot be moved by any other methods. Materials like wood chips that are very soft and absorb vibratory energy are not easily moved by the normal method of vibration, these types of material are ideally suited for the quick release blaster. The primary reason for the quick release is that the expansion rate of the air exceeds the capacity of the material to dissipate it, therefore, movement and aeration results. Air blasters may be used singly or in multiples for both aerating or pushing material. When arches form, air blasters are located so that the discharge of air can push away the supporting leg of the arch, allowing the material to collapse and fall. In large hoppers sequential discharge of blasters located in the cone portion ensure that material continues to drop until the entire arch has been removed. Materials that tend to cake or congeal must be aerated and agitated continually.

VIBCO's Air Blaster valve is patented in the U. S. and either patented or patent pending in most other countries.

\* The name Air Cannons has been adapted by the industry as the generic name for air blasters and similar devices.



1/3 of a second--air blast has broken the "leg" of the material "bridge" and the material starts to break loose and crumble



2/3 of a second--the "bridge" is broken, material friction broken and material is moving by gravity towards discharge.



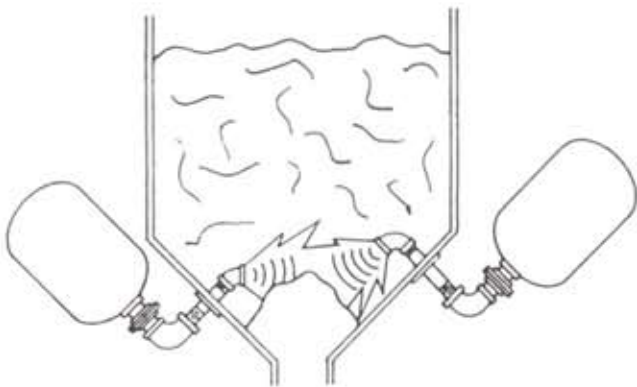
1 second--material blockage broken, free flow achieved.

## TECHNICAL DATA:

	VOLUME CU.FT.	FREE AIR 80 PSI CU.FT.	LENGTH INCHES	DIAMETER INCHES	DISCHARGE SIZE
ABS-1-1/2	.11	.6	24	5-1/2	1-1/4 NPT
ABS-2	.6	3.26	15	10	2-1/2 NPT
ABS-4-2	1.36	7.40	24	12	4 NPT
ABS-4-5	4.35	23.67	42	16	4 NPT
ABS-4-10	9.33	50.78	44	24	4 NPT

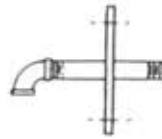
# WHERE TO LOCATE THE AIR BLASTER

## 1. MATERIAL BRIDGING LOW IN STORAGE BIN

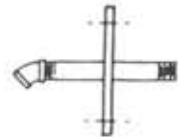


Mount 1 blaster 1/2 way up sloping part, another 3/4 up the side.

### NOZZLE SUGGESTIONS



Use mounting plate with 90° elbow on inside

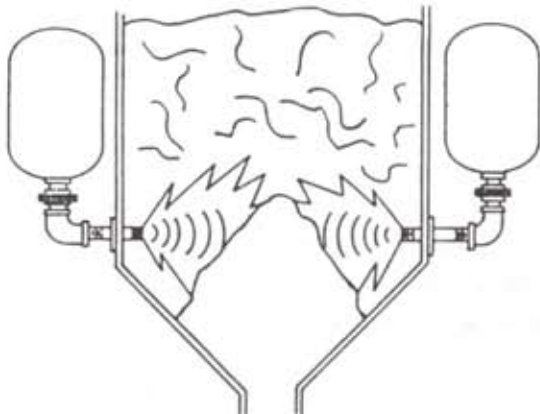


Use mounting plate with 45° elbow on inside



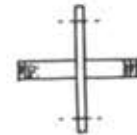
Use 45° mounting plate

## 2. BRIDGING HIGH



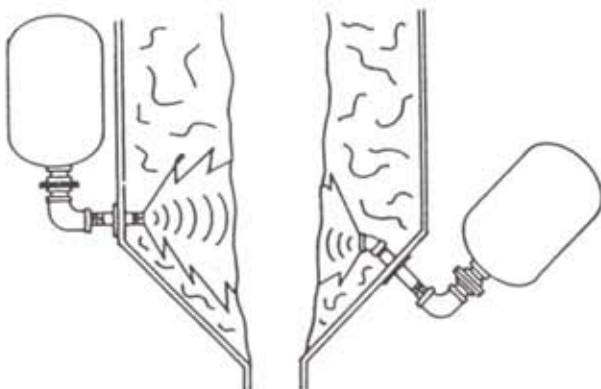
### NOZZLE SUGGESTIONS

Use a straight nozzle



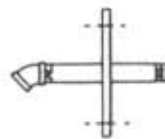
Mount blaster 12" - 18" above sloping part of bin.

## 3. RATHOLING



Mount one blaster 3/4 up sloping part, second blaster on straight part just above sloping part.

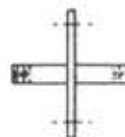
### NOZZLE SUGGESTIONS



Use 45° nozzle

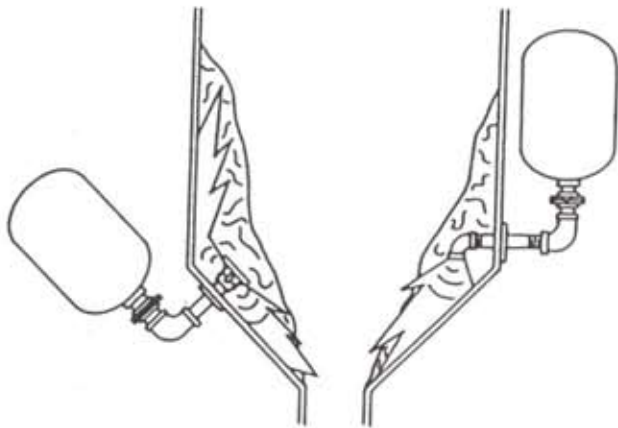


Use 45° mounting plate



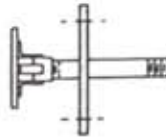
Use straight nozzle for high locations

#### 4. MATERIAL CLINGING TO SIDES

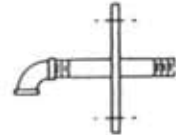


Mount blaster 18 - 24" above slope with 90° elbow. Mount air blaster with diffuser 1/2 to 2/3 up on sloping side.

#### NOZZLE SUGGESTIONS



Diffuser will direct blast up and down in bin sides



Use 90° to sweep the sides

### HOW TO INSTALL THE AIR BLASTER

After the best blaster locations have been determined, cut holes in the bin or hopper side, 1" larger in size than the OD of the blaster's exhaust pipe.

A. If the blaster mount is to be bolted to the bin side, drill holes matching bolt pattern on mount flange. Hole should be tapped for bolt size to be used. Bolts, which must be threaded full length, are threaded into holes from inside bin, mount is placed on bolts and secured with lockwashers and nuts. If it is desirable to make connection weathertight, apply some suitable caulking compound (or use gasket material) around hole in bin side before securing mount.

B. For welded attachment, just center blaster mount on bin side hole and tack weld around mount flange. For weatherproofing use asbestos gasket material between flange and bin side, or weld a continuous weld around flange.

After blaster mount is installed, thread on the 90° elbow with previously attached pipe flange, place the blaster tank with it's matching flange and a gasket, line up holes and bolt joint together.

**BRACING.** To secure air tank in it's position, some kind of bracing should be provided, either a cradle type or a steel cable. This bracing is necessary to hold the tank secure from falling objects, step ladders or high winds, if it is an outside installation.

**CONNECTION TO AIR SUPPLY.** The 1/2" 3-way normally open Mac solenoid valve supplied with the blaster should be installed as follows:

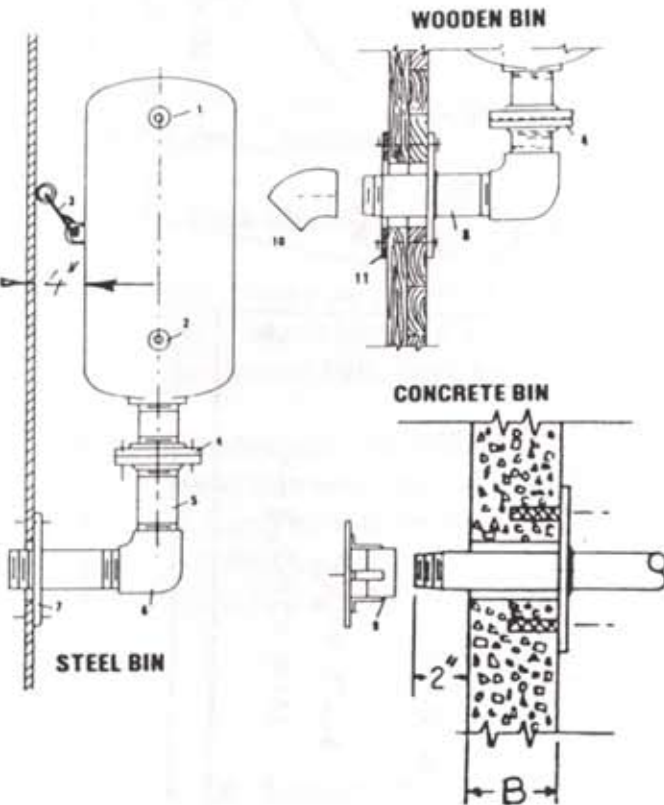
- (1) Port #1 air to solenoid
- (2) Port #2 to blaster
- (3) Port #3 exhaust--do not plug.

**Note:** Make sure function plate indicates "NO" (normally open). If not, remove two screws holding plate, flip plate 180°. Connection to the airline should be by flexible hose. An air pressure of 85 to 90 PSI is usually sufficient, but for applications where exceptionally stubborn materials (frozen coal, for example) are handled, it may be necessary to increase the pressure to the permissible maximum, 125 PSI. In such cases a safety valve present to 125 PSI should be installed on the air tank.

**Note:** Mount an air cleaner before the solenoid to prevent airline rust and scale from entering the blaster valve which may prevent it from functioning properly.

## MOUNTING ACCESSORIES

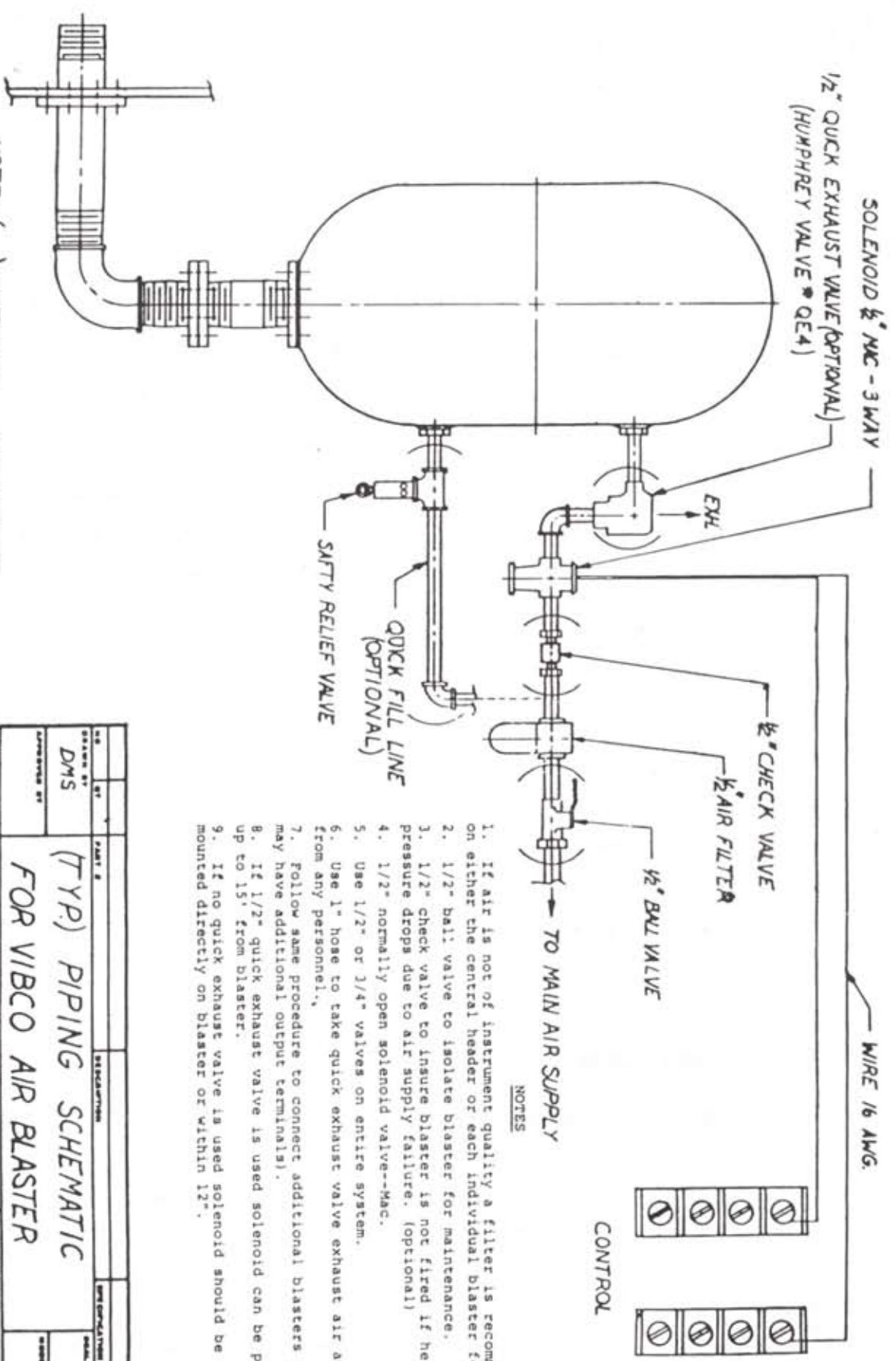
1. Solenoid valve 3/4" 3-way.
2. Safety release valve (125 PSI).
3. Safety cable or safety strap.
4. Set of flanges for 2-1/2, 4 or 6" NPT.
5. Nipple 2-1/2, 4 or 6 NPT.
6. Elbow 45° or 90°.
7. Mounting flange with nipple for 2-1/2, 4 or 6 NPT.
8. Mounting flange with nipple for concrete silo, give dimensions "B", for 2-1/2, 4 or 6 NPT.
9. Diffuser for 2-1/2, 4 or 6" NPT.
10. Elbow 45° or 90°.
11. Back up plate for wooden bin.



## GENERAL INSTALLATION INSTRUCTIONS

1. **STEEL BIN:** Mounting plate can be bolted or welded to bin side. See preceding page for details. **Note:** Always use safety strap to secure blaster.
2. **CONCRETE BIN:** Mounting plate is secured to concrete with expandable concrete bolts. Make sure pipe reaches about 2" inside tank to allow diffuser or elbow to be mounted to it.
3. **WOOD BIN:** Use back up plate on inside bin for blaster mounting plate. Make sure pipe reaches about 2" inside tank to allow diffuser or elbow to be mounted to it.

NOTE: ( ) OPTIONAL EQUIPMENT



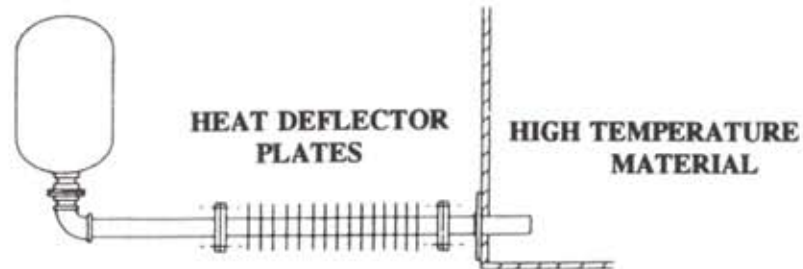
**NOTES**

1. If air is not of instrument quality a filter is recommended on either the central header or each individual blaster feedline.
2. 1/2" ball valve to isolate blaster for maintenance.
3. 1/2" check valve to insure blaster is not fired if header pressure drops due to air supply failure. (optional)
4. 1/2" normally open solenoid valve--Mac.
5. Use 1/2" or 3/4" valves on entire system.
6. Use 1" hose to take quick exhaust valve exhaust air away from any personnel.
7. Follow same procedure to connect additional blasters (timer may have additional output terminals).
8. If 1/2" quick exhaust valve is used solenoid can be placed up to 15' from blaster.
9. If no quick exhaust valve is used solenoid should be mounted directly on blaster or within 12".

DATE	10/15/84	REVISION	
DESIGNED BY	DMS	PART #	
APPROVED BY		DESCRIPTION	(TYP) PIPING SCHEMATIC FOR VIBCO AIR BLASTER
		DATE	84012-B
VIBCO, INC.		7, 0, 001 & 37, 000 BALL BEARING, INSIDE TRAILING BEAM	

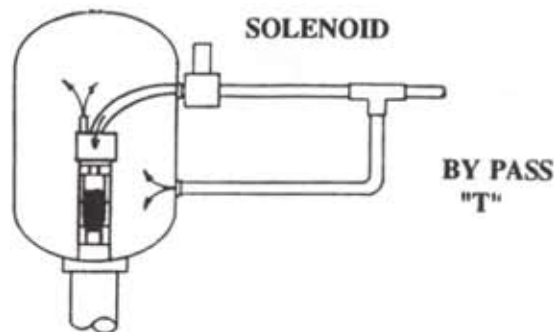


4. **HIGH TEMPERATURE INSTALLATION:** Consult VIBCO for other possible solutions to high temperature installations.



5. **FIRE INHIBITING - CO<sub>2</sub> - NITROGEN:** For coal and other flammable materials. Air blasters can be used with carbon dioxide - (CO<sub>2</sub>), nitrogen or other fire inhibiting gases. VIBCO's double piston valve can also be made with different chemically resistant materials to withstand gases and fumes. Consult VIBCO for details.

6. **QUICK CHARGE OF BLASTER:** Normal way of filling tank is air passing by check valve into tank. For fast repeat blasting, the tank is filled by bypassing the valve.

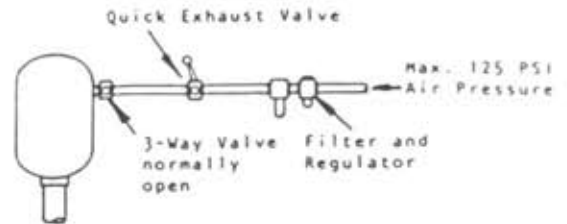


7. **MATERIAL PILES:** Many different approaches are used in applying Air blasters to material piles. Consideration has to be given to material size, it's condition and height of pile; number and size of discharge openings; how the pile is being fed, by conveyor, truck or bulldozer. Contact VIBCO's engineering department for proposals.

# AIR BLASTER OPERATING SYSTEM

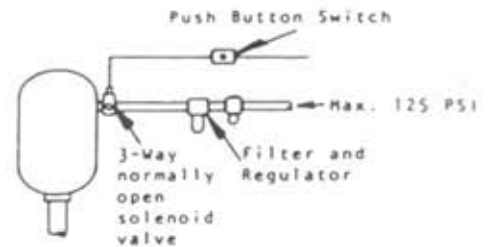
## 1. MANUAL OPERATION:

For one or more unit installation.  
Manually operated when flow is needed.  
No electrical controls needed.



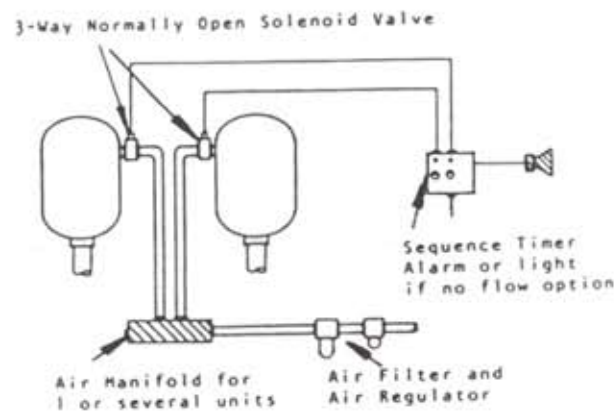
## 2. MANUAL - ELECTRIC OPERATION

The simplest of all systems, ideal for any system where automatic or sequential blasting is not necessary.



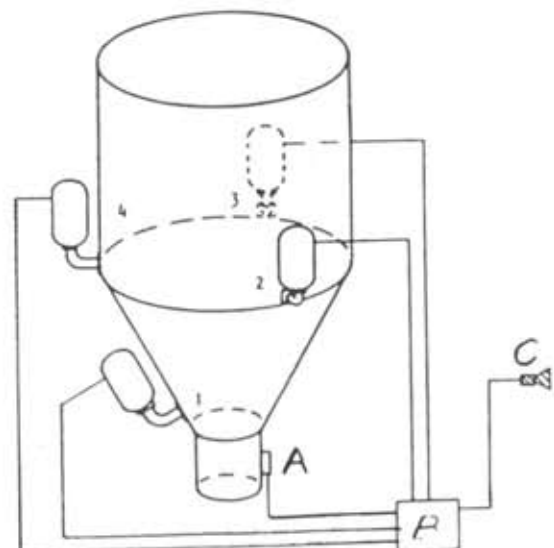
## 3. COMPLETELY AUTOMATED OPERATION

Completely automated systems can be installed with "No Flow" sensors, gate or conveyor interlock switches, sequential timer with adjustable time and blast sequence with manual override. Alarm circuits can also be installed to indicate "No Flow."



## 4. MULTIPLE SYSTEM

- A Optional alarm circuit to indicate "no flow."
- B Blasting sequence and time may be changed and manually overridden.
- C Sensing device indicating "no flow" activates timer starting blaster cycle #1, 2, etc.



## 4-FUNCTION SEQUENCE PROGRAMMER 7929

## 10-FUNCTION SEQUENCE PROGRAMMER 7937

**RELIABLE, COMPACT, LOW COST:** Here's 100% solid state reliability that features integrated circuitry and measures just 6-1/4" x 5-3/8" x 1-1/2". Ask about enclosures such as moisture-proof and explosion-proof.

**PROGRAM UP TO 10 FUNCTIONS (7937):** Up to 10 outputs can be provided on the Sequence Programmer, enabling you to program any sequence of up to 10.

**PROGRAM UP TO 4 FUNCTIONS (7929):** Up to 4 outputs can be provided on the sequence programmer, enabling you to program any sequence of up to 4.

**SELECTING PROPER PROGRAM:** The gold jumper on the component side of the control is for selecting the number of outputs. It is inserted in a small socket. To reduce the number of output positions, remove this jumper by pulling lightly until it retracts from the socket. Reinsert into the proper socket position (each hole closer to the fixed end reduces the output quantity by one) corresponding to the number of outputs desired.

### **SEQUENCE:**

1. No. 1 on, then No. 2 on, and so on to the last selected output, then back to No. 1 and continuing.
2. On times and off times are adjustable.
3. To extend on or off time ranges, add the proper capacitor to Term. A, B, and C. (+) to Term. B for on. (+) to Term. A for off. (-) to Term. C for both.

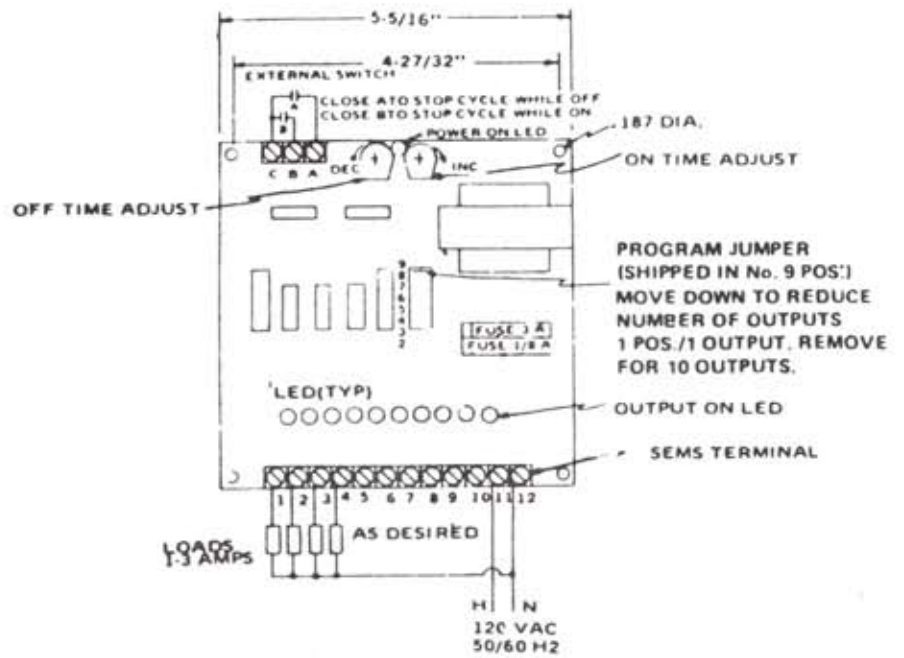
**ADJUSTABLE SIGNAL INTERVALS:** Signals are adjustable from 1/50 seconds to 8 hours. Special modifications for long timing ranges and models with complex sequences are also available. LED (light emitting diode) indication is provided for each of the 4 functions and for power "ON" indication.

**STOP FUNCTION (Pressure Switch Sensing):** The sequence may be stopped at any position, "ON" or "OFF" restarting at that position for set time.

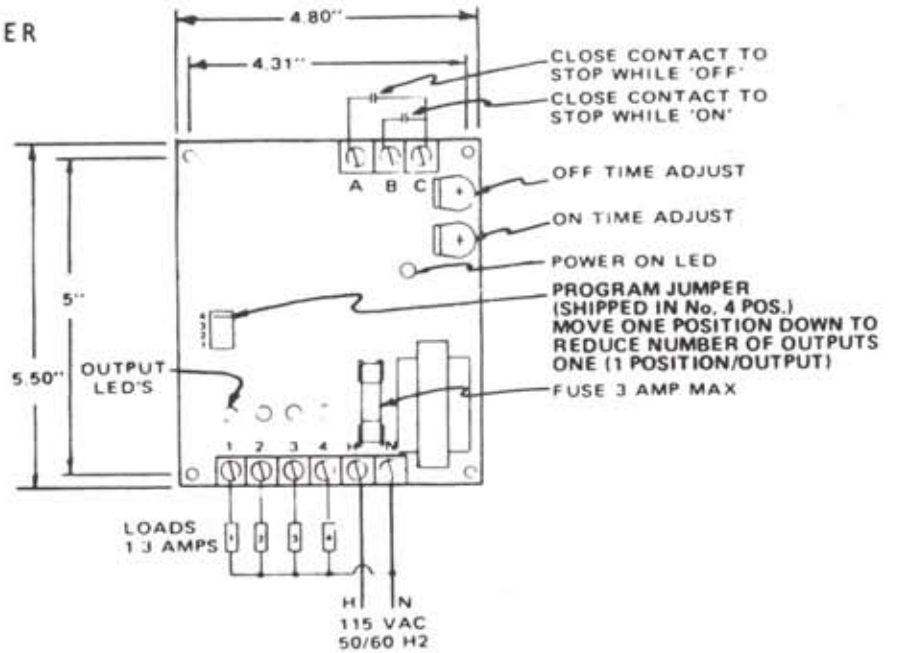
### **INSTALLATION:**

1. Mount the control or enclosure in any convenient location. Direction of the control does not affect it's performance.
2. Connect 115 volt 50/60 cycle supply to terminal H and N. Neutral to N, High to H.
3. Connect one wire of each load to terminal 1 through 4 as required. The remaining wire (common) is to be connected to terminal N.
4. Output rating is 3 amps at 115 VAC, maximum.

# 10-FUNCTION



# 4-FUNCTION SEQUENCE PROGRAMMER



### SEQUENCE:

- 1) No. 1 ON THEN No. 2 AND SO ON TO LAST SELECTED OUTPUT THEN BACK TO No. 1 AND CONTINUING EACH OUTPUT IDENTICAL
- 2) ON TIME AND OFF TIME ARE INDEPENDENTLY ADJUSTABLE
- 3) FOR AVAILABLE TIME RANGES SEE TABLE AT RIGHT

\* #9 is standard

16VDC CAPACITOR SIZE FOR TIME RANGE

SYM	TIME RANGE	REF
1	16 600 Milliseconds	1
2	30 Milliseconds to 1.2 Seconds	2
3	1 6 Seconds	1
4	2 12 Seconds	2 2
5	3 20 Seconds	3 3
6	1 60 Seconds	10
7	2 Seconds to 2 Minutes	22
8	15 Seconds to 10 Minutes	100
9	5 20 Minutes	220
10	1 45 Minutes	470
11	1 Minute 1 5 Hours	250 470
12	1 Minute to 8 Hours	1 M 470

TO ORDER SPECIFY - PART NUMBER - 7937.1 5 NEMA 12  
 SELECT FROM { - ON TIME RANGE  
 - OFF TIME RANGE  
 - ENCLOSURE (If Required) }

NOTE: VARIATIONS OF TIME RANGES MAY BE SPECIFIED AS WELL AS LONGER TIMES, SPECIAL VOLTAGES, OR NUMBER OF OUTPUTS.

TIME RANGE MAY BE INCREASED BY ADDING CAPACITANCE FROM TERMINAL C TO TERM A OR B, C IS NEGATIVE (-) LEAD OF CAPACITOR.

## **TROUBLE SHOOTING**

**PROBLEM: Air is exhausting out through exhaust side of solenoid and blaster does not blast at all or only blasts at low pressure.**

1. Solenoid is too far away from blaster. Solenoid should be close nipped directly to the air tank. See "Connection to Air Supply" Page
2. Too small opening in solenoid. Use a 1/2" Mac solenoid as supplied from factory or 3/4" of other makes (the flow characteristics differ).
3. If solenoid has to be placed away from blaster, a 1" or 1-1/4" solenoid has to be used with a 1" or 1-1/4" pipe or hose from the inlet to blaster to solenoid.

**PROBLEM: Blaster does not fire.**

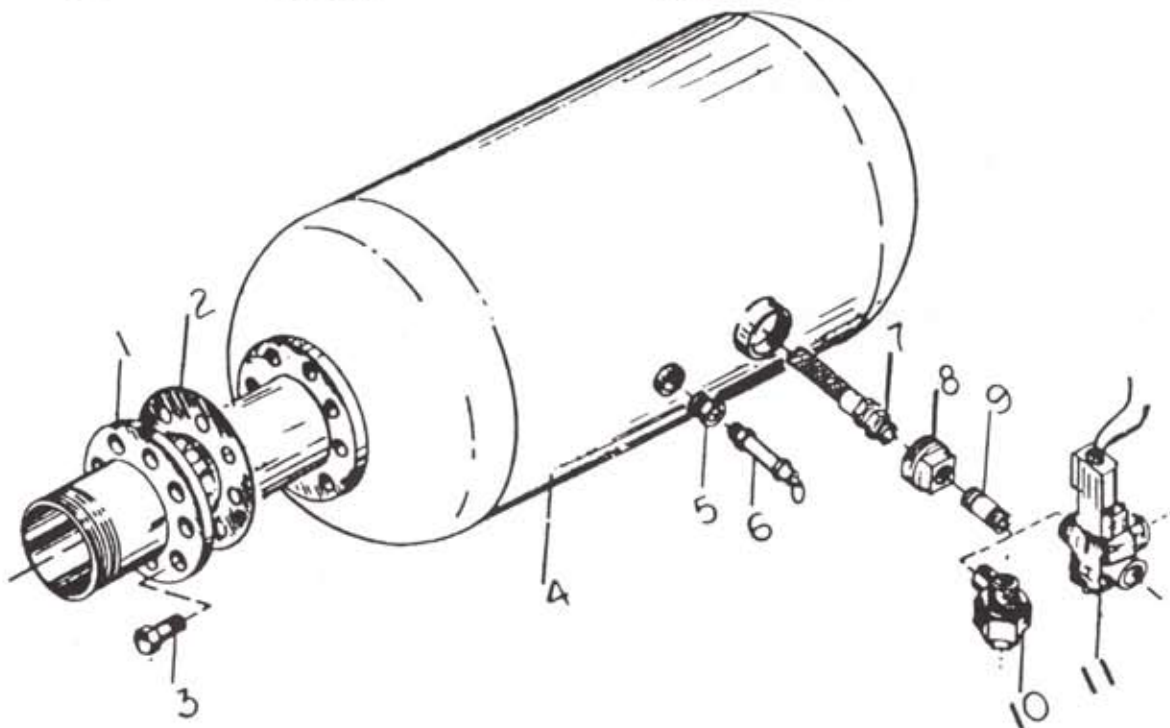
1. Check above.
2. Make sure an airline cleaner is installed. Airline rust and dirt can enter the valve and get wedged between valve and the wall. If repeated filling of tank and discharge does not loosen ball, tank has to be removed and valve removed, disassembled and cleaned.
3. Condensation in airlines and freeze-up. In cold weather when the blaster is outside and the compressor inside, condensation might build up in the airline. It might be necessary to inject airline antifreeze into the airlines to prevent the valve and solenoid from building up ice and freezing up, or use a Tanner antifreeze system (Tanner is located in Souk Rapids, MN).

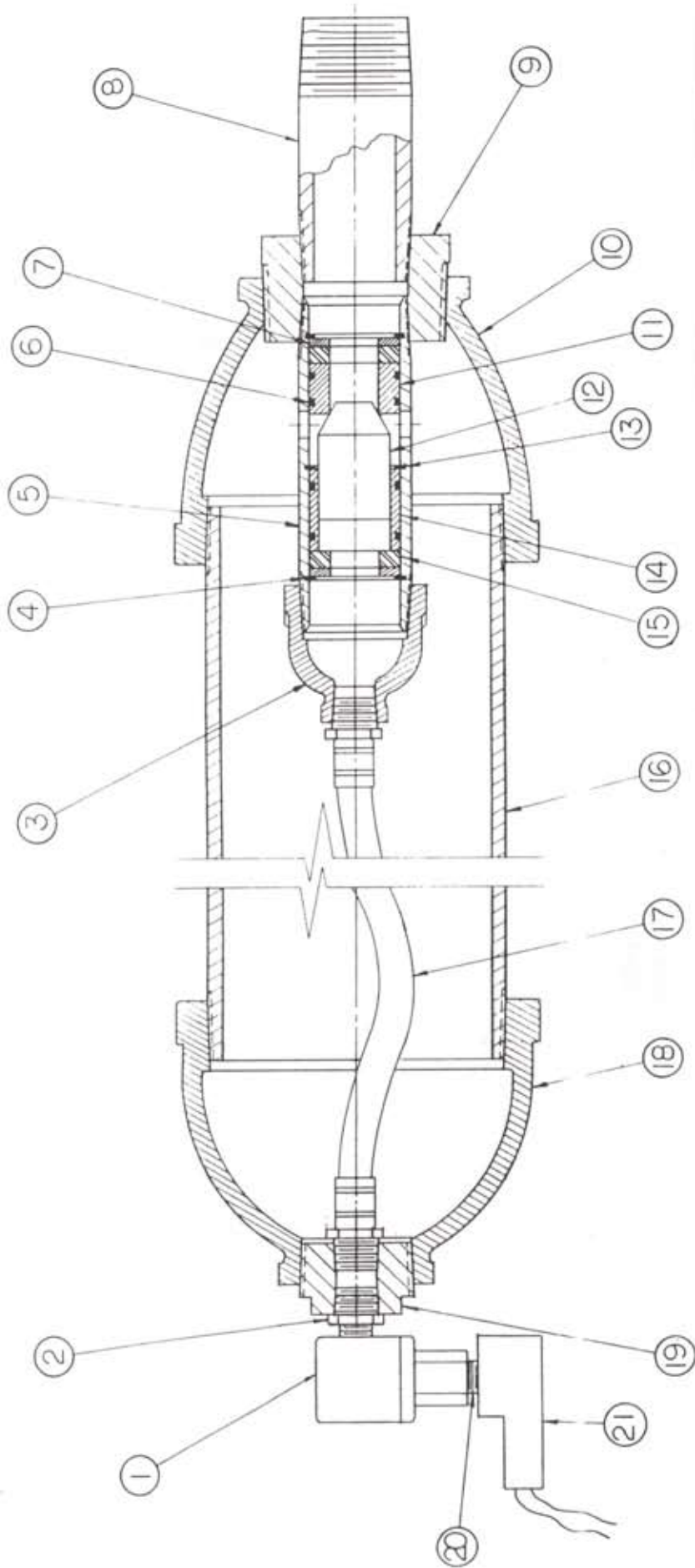
**PROBLEM: Solenoid does not release (operate).**

1. Timer fuse or other parts may be inoperative. Disconnect timer and try to blast without it.
2. Solenoid dry of oil. To operate properly it should be operated with slightly oil-misty air, or hand lubricated periodically.

## GENERAL PARTS BREAKDOWN

NO.	PART NO.	DESCRIPTION
1	--	Valve complete (see next pages for parts)
2	2"-125 4"-125	Gasket 2" tanks Gasket 4" tanks
3	5/8 NL x 2-3/4	HH Machine screw
4	VB06-2 4ABS15-1 4ABS15-2 4ABS15-3	Tank ABS-2 Tank ABS-4-2 Tank ABS-4-5 Tank ABS-4-10
5	4ABS12-2	Release bushing
6	2ABS13	Relief Valve
7	--	Hose assembly (see next pages)
8	2ABS11 4ABS11	Filler bushing ABS-2 Filler bushing ABS-4-2, 4-5, 4-10
9	1/2NPT x 3"	Nipple
10	QE4	Quick exhaust valve
11	2ABS12	Solenoid valve

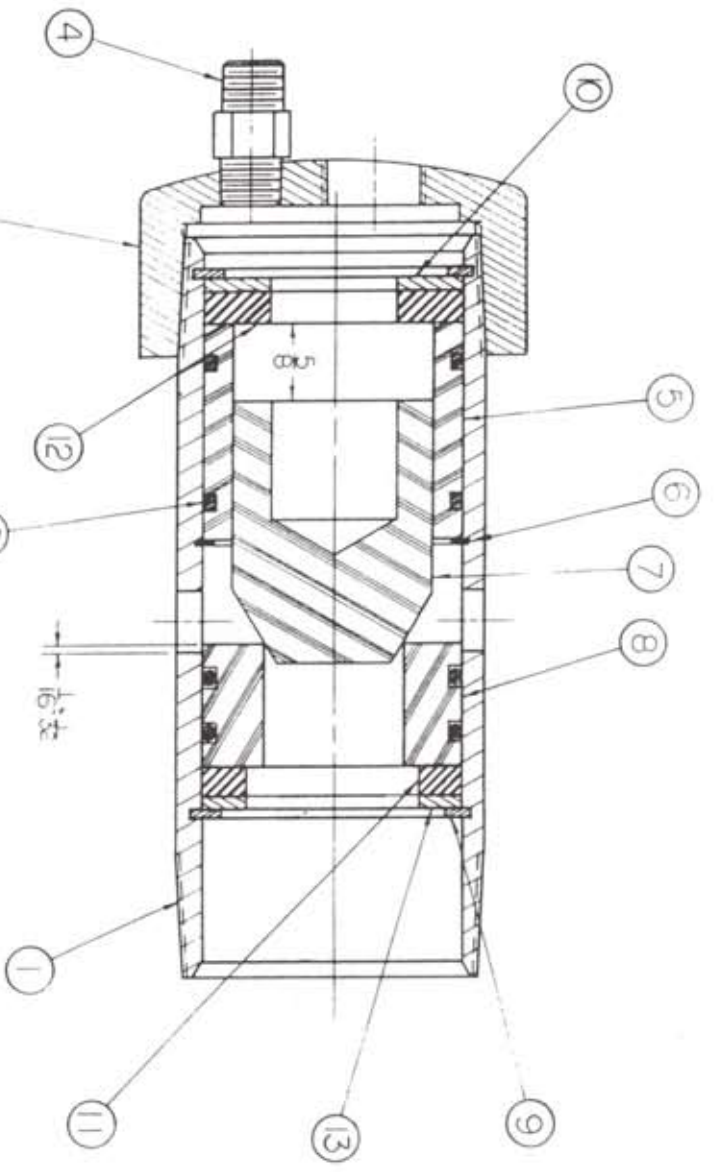




21	1	IABS16	SOLENOID VALVE	3/4
20	2	3/8 NPT	CLOSE NIPPLE	
19	1	1/2 NPT x 1/2 NPT	DBL. TAPPED BUSHING	
18	1	4 NPT x 1 1/2	REDUCER COUPLING	
17	1	1/2 x 16	HOSE	
16	1	4 NPT x 15	PIPE NIPPLE	SCH. 40
15	2	IABS22	SHOCK ABSORBER	
14	1	IABS18	PISTON HOUSING	
13	1	UR-137	SNAP RING	
12	1	IABS20	PISTON	
11	1	IABS17	PISTON SEAT	
10	1	4 NPT x 2 1/2	REDUCER COUPLING	
9	1	2 1/2 NPT x 1 1/4	DBL. TAPPED BUSHING	

8	1	1 1/4 x 4	PIPE NIPPLE	SCH 80
7	2	IABS23	SEAT STOP	
6	4	123	O-RING	
5	1	IABS21	VALVE TUBE	
4	2	5000-137	SNAP RING	
3	1	1/4 NPT x 1/2 NPT	REDUCING COUPLING	
2	1	1/2 NPT x 3/8	REDUCING COUPLING	
1	1	QE3	QUICK EXHAUST	3/8
NO.	BT	PART #	DESCRIPTION	SPECIFICATION
SCALE				SCALE
DRWN BY	BL			DRWL
APPROVED BY				
DATE	8-4-74			
			BEARING NUMBER	IABS01-B
VIBCO, INC. P. O. BOX 6, ITELSON ROAD STONING, BRIDGE PLAND E28W				

1 1/2 AIR BLASTER  
ASSEMBLY

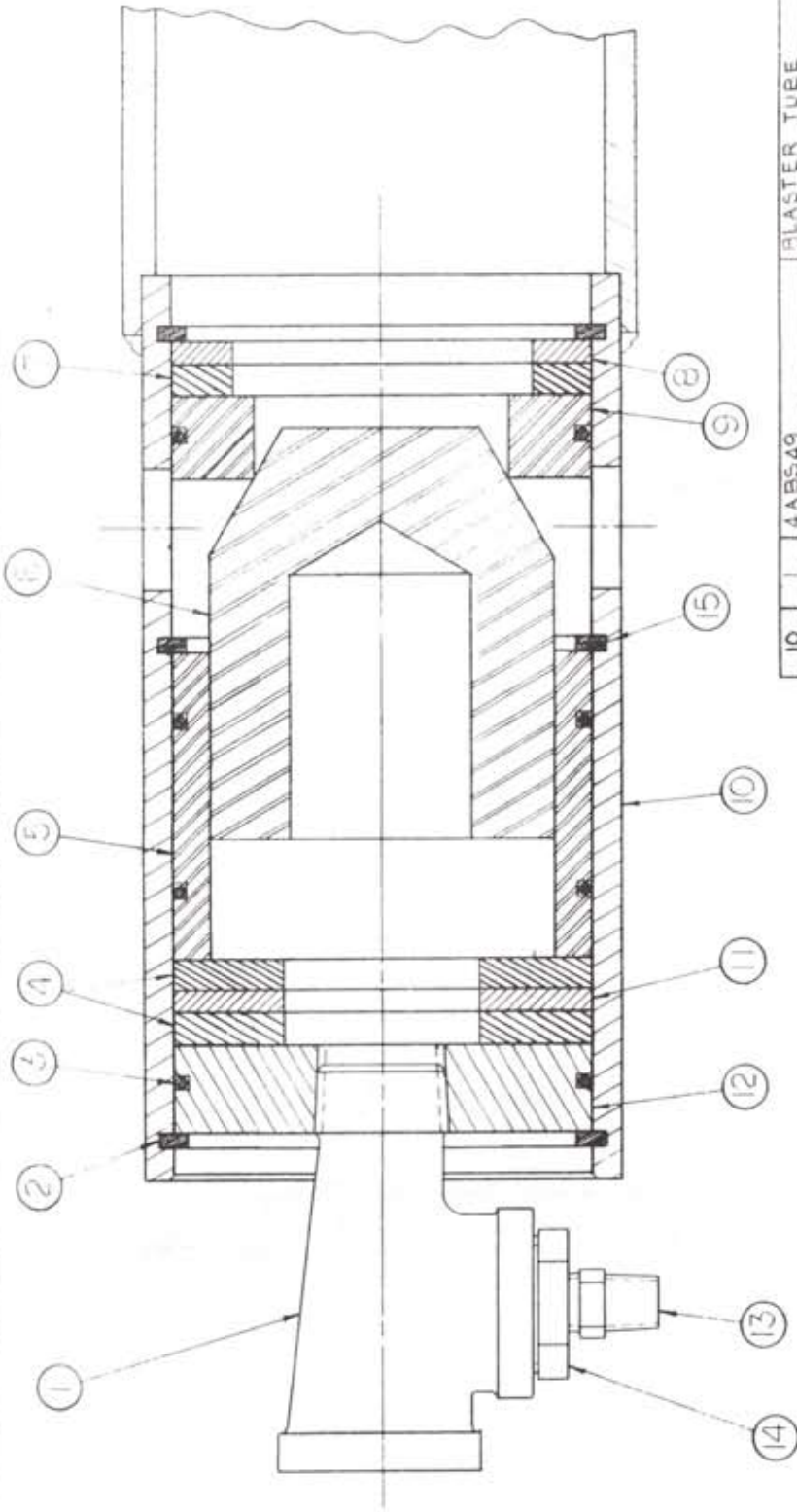


NO	QTY	PART #	DESCRIPTION	PREP/PLANT
13	1	2ABS43	SEAT STOP	
12	2	2ABS22-2	RUBBER WASHER	
11	1	2ABS22-1	RUBBER WASHER	
10	1	2ABS27	SEAT STOP	
9	2	5000-206	RETAINING RING	
8	1	2ABS33	PISTON SEAT	
7	1	2ABS39	PISTON	
6	1	UR200	SNAP RING	
5	1	2ABS40	PISTON HOUSING	
4	1	1ACV5	CHECK VALVE	
3	2	2ABS29	END CAP	
2	4	224	O-RING	
1	1	2ABS41	TUBE	

2" BLASTER VALVE ASSEMBLY  
(SCH 40)

DATE 9-8-92  
 APPROVED BY BL  
 VIBCO, INC.  
 7, 8, 901 E. 174th ST. S.W. ALBUQUERQUE, NEW MEXICO 87105  
 DRAWING NUMBER 2ABS38-B  
 SCALE 1:1  
 MODEL ABS-2

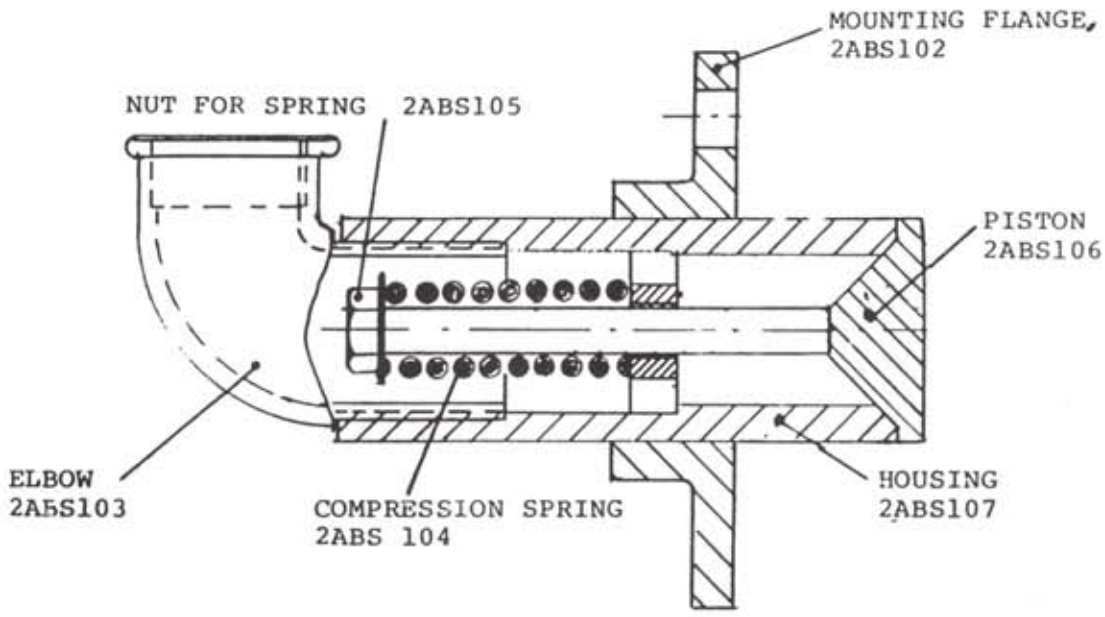




NO.	QTY	PART #	DESCRIPTION
10	1	4ABS49	BLASTER TUBE
9	1	4ABS41	PISTON STOP
8	1	4ABS29	SEAT STOP
7	1	4ABS30	RUBBER WASHER
6	1	4ABS48	PISTON
5	1	4ABS47	PISTON HOUSING
4	2	4ABS46	RUBBER WASHER
3	4	234	O-RING
2	2	5000-350	RETAINING RING
1	1	3/4 ST	STREET TEE

SCALE	1:1
MODEL	
APPROVED BY	BL
DATE	2-26-93
4" NOZZLE ASSEMBLY	
<b>VIBCO, INC.</b>	
P. O. BOX 1, ILLION ILL 60139	
DRAWING NUMBER	4ABS45-B

15	1	RR362	RAMSEY RING
14	1	3/4 NPT x 1/4 NPT	HEX BUSHING
13	1	14CVS	CHECK VALVE
12	1	4ABS50-AX	REAR SLEEVE
11	1	1 1/2 FW	FLAT WASHER
			USE



NO.	QT	PART #	DESCRIPTION	SPECIFICATION	
DRAWN BY		SWEEPER VALVE			SCALE
T.S					MODEL
APPROVED BY					
DATE	VIBCO, INC.		DRAWING NUMBER		
4.1.80	P. O. BOX 8, STILSON ROAD WYOMING, RHODE ISLAND 02898		2ABS101-A		