

# **INSTALLATION & OPERATING INSTRUCTIONS**

**for**

## **680 REMOTE CONTROLS**

## **PNEUMATIC AND ELECTRIC**

**(Bleed-Down Type—with Either 1" or 1¼" Piping)**

# **EMPIRE**

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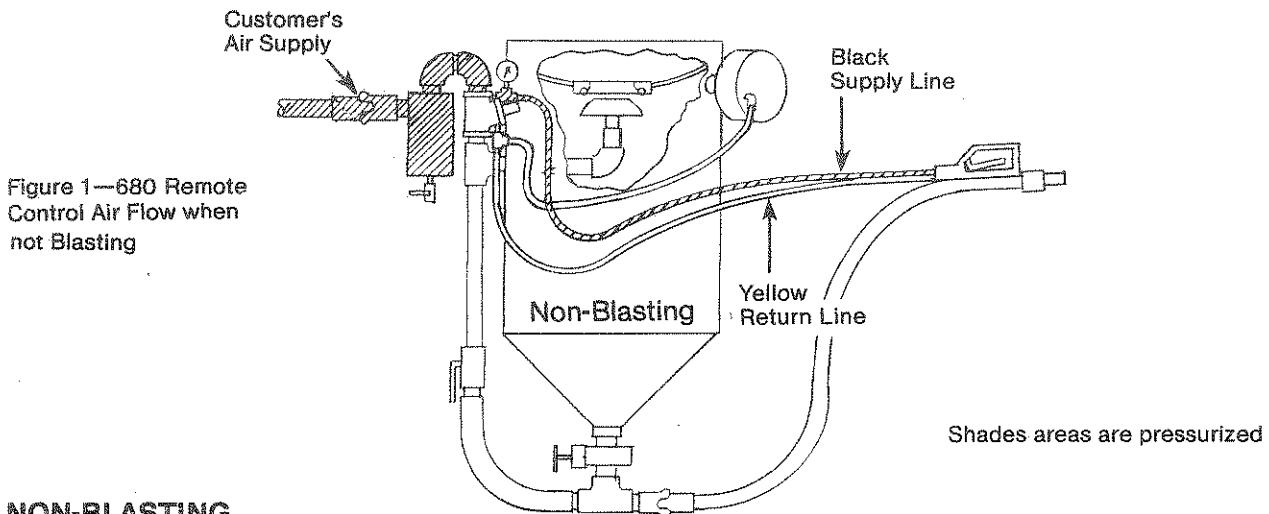
## A. INTRODUCTION

This remote control package has been designed to be installed on most single chamber blasters. The 680 remote control will allow the pot to bleed down when the remote handle is released and will cause the pot to pressurize when the handle is pressed.

Activation of the blaster can be accomplished either pneumatically or electrically depending on the type of control chosen.

Figures 1 and 2 illustrate air flow in the blaster in the non-blasting and blasting modes.

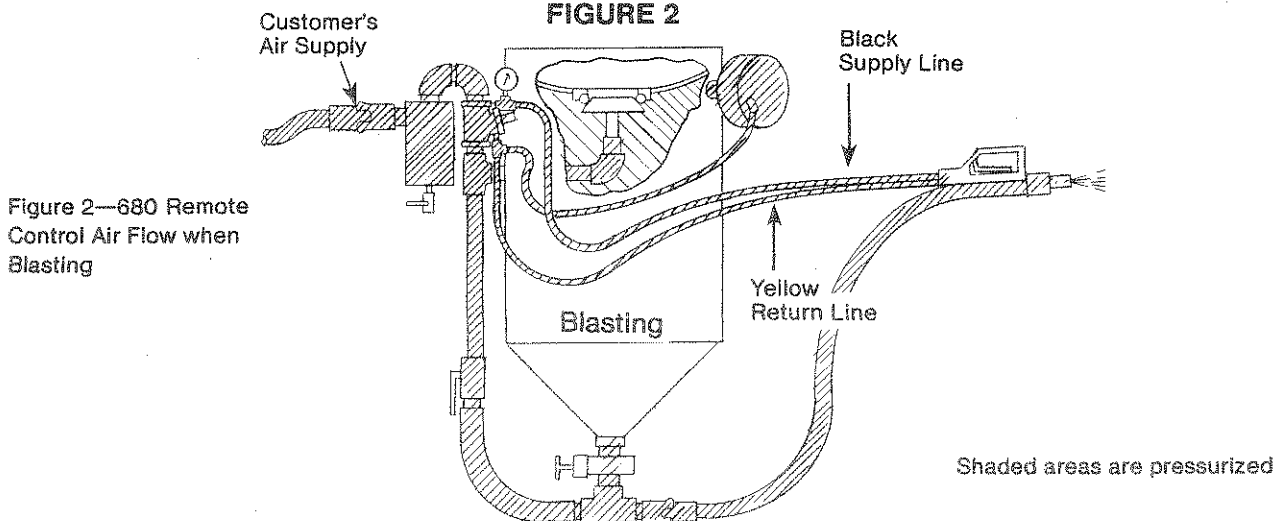
FIGURE 1



### NON-BLASTING

Compressed air flows from the top of the automatic air valve through the 1/8" black line and is stopped at the handle.

FIGURE 2



### BLASTING

When the handle is depressed, air flows back through the 1/4" yellow line to the automatic air valve causing it to open, and to the automatic exhaust valve, causing it to close.

## B. PARTS SUPPLIED BY EMPIRE

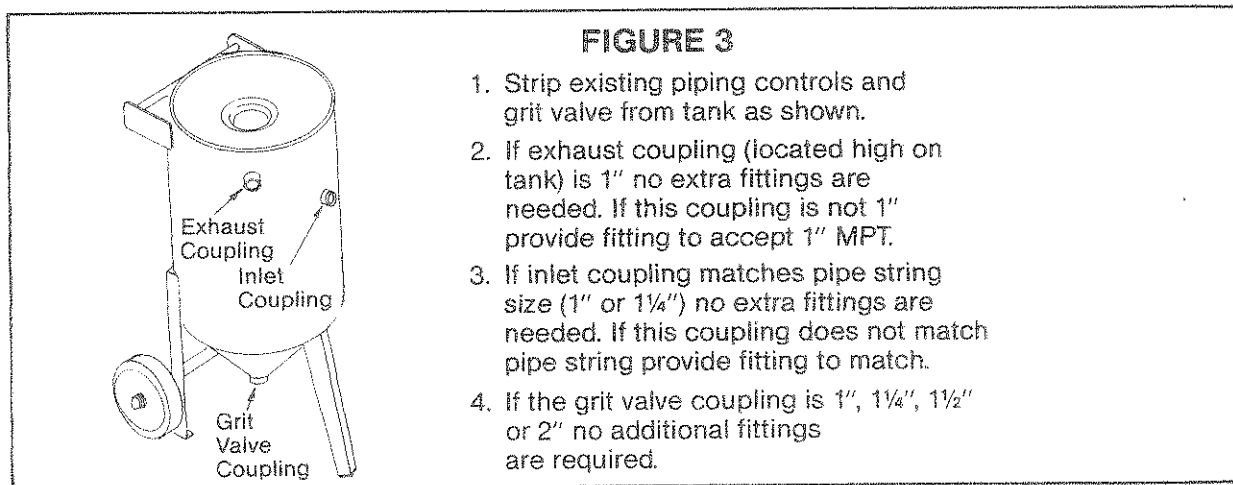
1. Manual Sure-Flo grit valve.
2. 2" x 1 1/4" tee for bottom of grit valve.
3. Hose barb for 2" x 1 1/4" tee.
4. 680-1 or 680-2 pipe string assembly with gauge, automatic air valve, choke valve, hose barb, Dry-Flo manual drain separator with built-in swing check.
5. Choke or air line hose fittings and worm gear clamps, control line hose, fittings and worm gear clamps.
6. Automatic exhaust valve.
7. Outlet bushing kit to allow Sure-Flo grit valve to be adapted to any blaster with 1", 1 1/4", 1 1/2" or 2" outlet coupling.
8. 55' of dual line hose with pneumatic control or 15' battery cord and 55' control cord with electric control handle.

## C. PARTS THAT MAY BE REQUIRED AND NOT SUPPLIED BY EMPIRE

1. Fittings to match exhaust coupling with 1" automatic exhaust valve.
2. Fittings to match inlet coupling with Empire pipe string.
3. Blast hose, couplings and nozzle.

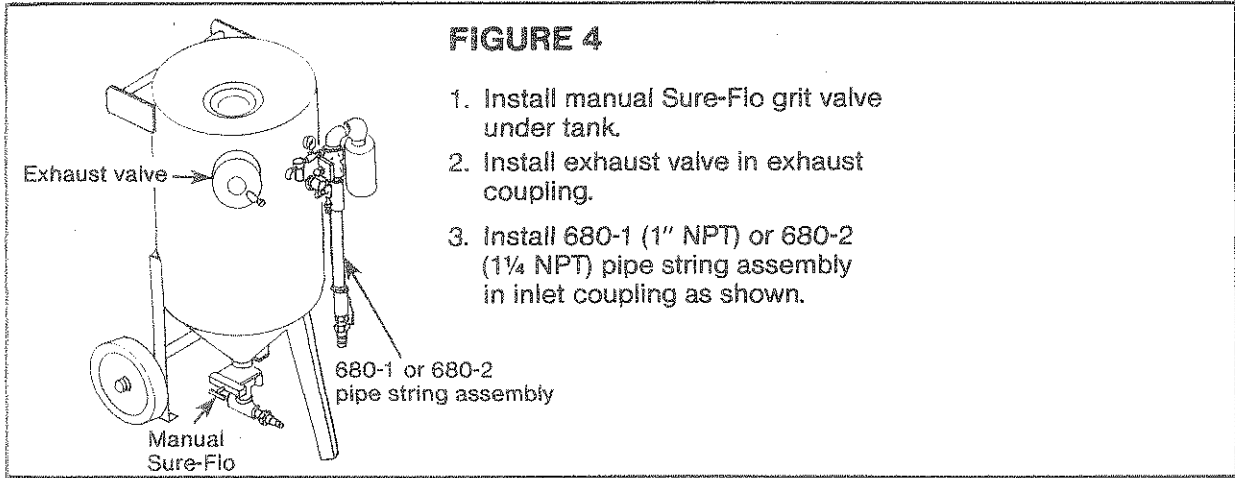
## D. INSTALLATION

Figures 3 through 8 show the installation of a 680 remote control on an Empire blaster.



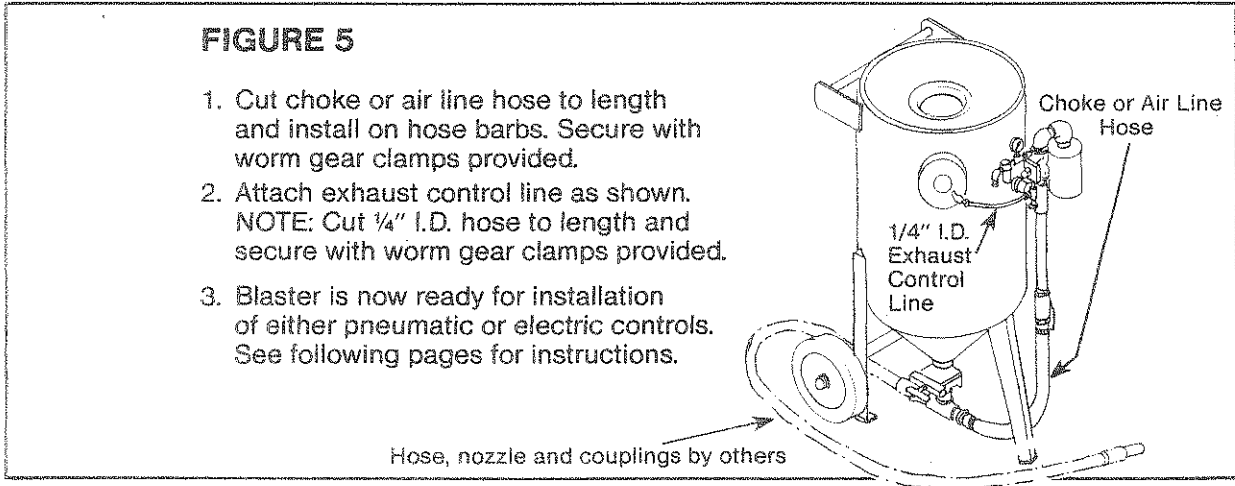
**FIGURE 3**

1. Strip existing piping controls and grit valve from tank as shown.
2. If exhaust coupling (located high on tank) is 1" no extra fittings are needed. If this coupling is not 1" provide fitting to accept 1" MPT.
3. If inlet coupling matches pipe string size (1" or 1 1/4") no extra fittings are needed. If this coupling does not match pipe string provide fitting to match.
4. If the grit valve coupling is 1", 1 1/4", 1 1/2" or 2" no additional fittings are required.



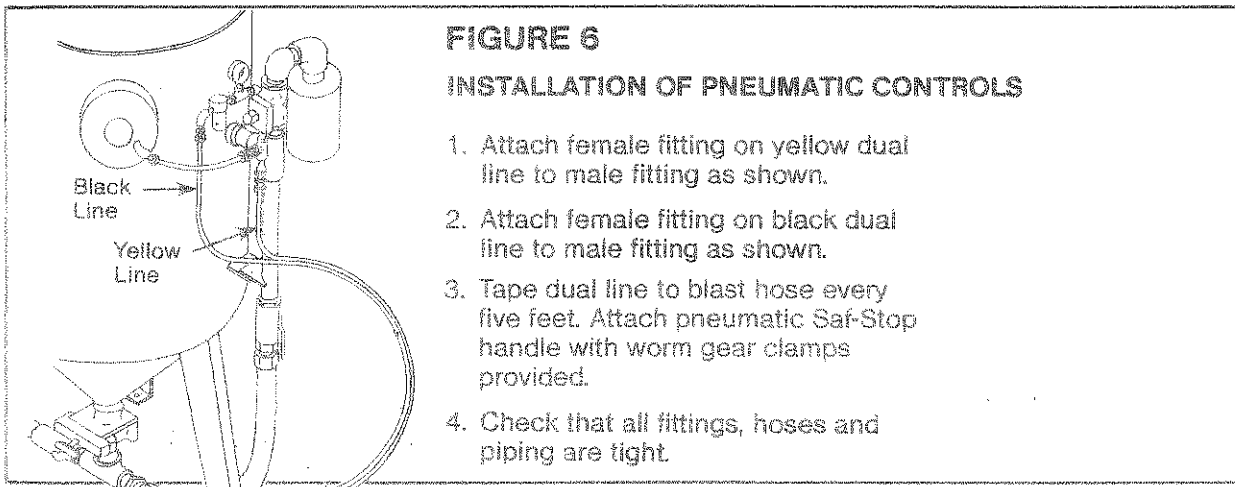
**FIGURE 4**

1. Install manual Sure-Flo grit valve under tank.
2. Install exhaust valve in exhaust coupling.
3. Install 680-1 (1" NPT) or 680-2 (1 1/4" NPT) pipe string assembly in inlet coupling as shown.



**FIGURE 5**

1. Cut choke or air line hose to length and install on hose barbs. Secure with worm gear clamps provided.
2. Attach exhaust control line as shown. NOTE: Cut 1/4" I.D. hose to length and secure with worm gear clamps provided.
3. Blaster is now ready for installation of either pneumatic or electric controls. See following pages for instructions.



**FIGURE 6**

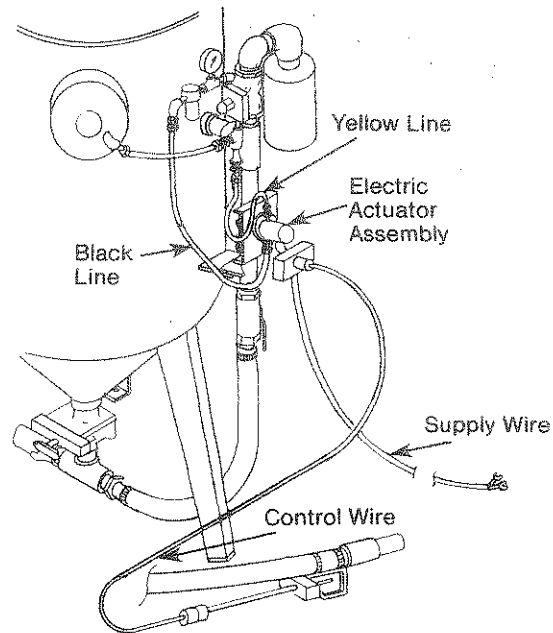
**INSTALLATION OF PNEUMATIC CONTROLS**

1. Attach female fitting on yellow dual line to male fitting as shown.
2. Attach female fitting on black dual line to male fitting as shown.
3. Tape dual line to blast hose every five feet. Attach pneumatic Saf-Stop handle with worm gear clamps provided.
4. Check that all fittings, hoses and piping are tight.

**FIGURE 7**

**INSTALLATION OF ELECTRIC CONTROLS**

1. Using U-clamps provided, attach electric actuator assembly to piping string as shown.
2. Attach female fitting on yellow control line to male fitting as shown.
3. Attach female fitting on black control line as shown.
4. Plug in control wire as shown.
5. Tape control wire to blast hose every 5 feet. Attach electric SAF-STOP handle with worm gear clamps provided.
6. Connect electric supply wires to a power source of the proper voltage. (12 V.D.C. is standard; 24 V.D.C. and 120 V.A.C. are available as options.)
7. Check that all fittings, hoses and piping are tight.



**OPERATION:**

Important: O.S.H.A. regulations require the use of an air-fed hood, air purifier, carbon monoxide detector or filtering device, protective clothing and a remote control system when operating blasting equipment.

1. START-UP
  - a. Make sure the SAF-STOP II control handle is in the up position.
  - b. Connect the blaster to an adequate compressed air supply.
2. BLASTING
  - a. Open the main air valve to the blaster.
  - b. Depress the SAF-STOP II control handle to begin blasting.
  - c. To stop blasting, release the control handle.

Note: Never turn off the compressor before depressurizing the blaster. Condensation can occur overnight. Therefore, empty the blaster of grit at the end of each day.

**IMPORTANT:** The SAF-STOP II control must never be wired to tied down in the blasting position. This could result in serious injury or death.

## F. TROUBLE SHOOTING

1. No air or grit flows out of the nozzle when operator depresses control.

### PNEUMATIC SYSTEM

- a. Depressurize tank and check nozzle for obstruction.
- b. Make sure 1/4 pet cock is open.
- c. Remove the plug in the 1/4" pipe cross under the automatic air valve. When operator's handle is depressed, air valve should escape (A gauge screwed into this opening should show minimum 60 PSI with 90 PSI supply).

If no air escapes (or if pressure is less than 60 PSI) check dual lines and fittings for kinks or leaks. Trace control air through system as follows: Remove black line at handle—air should escape. Reconnect black line and remove yellow line at handle—air should escape when handle is depressed. By tracing air flow in this manner, location of obstruction or leak can be determined.

If control air of adequate pressure is reaching automatic air valve, problem is ruptured diaphragm in this valve.

Note: A small volume of air bleeding from the stem of the automatic air valve will be noticed when valve control line is pressurized. This bleed is a safety feature which shuts down the system if hoses should be accidentally crimped.

### ELECTRIC SYSTEM

Check to see if leads to pilot valve are energized when control handle is depressed.

1. If leads are not energized, check for dead battery, breaks in control cord or faulty control switch.
  2. If leads are energized when control is depressed, pilot valve is faulty.
2. Air but no grit at nozzle when operator depresses control.
    - a. Tank is empty.
    - b. Tee handle on Sure-Flo is closed.
    - c. Check for obstruction at the nozzle or at the tank outlet or in the Sure-Flo valve.
  3. Too much media at nozzle but not enough air.
    - a. Choke valve is closed.
    - b. Tee handle of Sure-Flo open too far.

## G. MAINTENANCE

1. Dual line hose or electrical cord must be in good operating condition and tightly secured to the SAF-STOP II control and automatic air valve.
2. Check to make sure the metering tube in the grit valve is not worn.

**IMPORTANT:** This metering tube has been designed of a specific abrasive resistant material. To insure your warranty and top blasting performance, use only EMPIRE approved replacement parts.

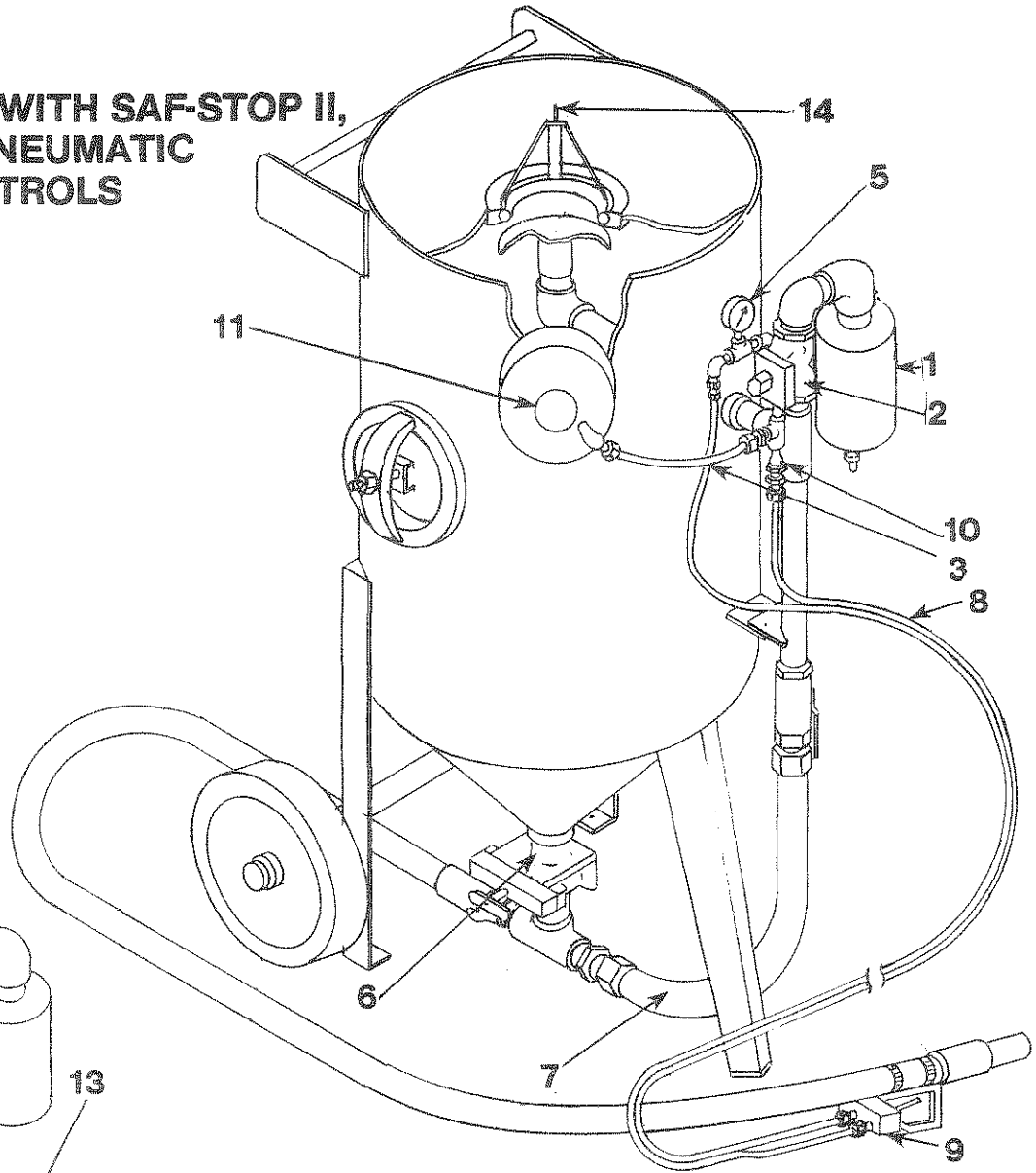
## H. REPLACEMENT PARTS

	Part Number	Description
(1)	290191	DF-1 Manual Drain Separator, 1" NPT
	290192	DF-2 Manual Drain Separator, 1½" NPT
(2)	518052	Air Valve, 1" NPT
	518062	Air Valve, 1½" NPT
(3)	290370	Control Hose, ¼" ID w/fittings (SuperBlast 350)
(3)	290372	Control Hose, ¼" ID w/fittings (SuperBlast 650)
	290374	Control Hose, ¼" ID w/fittings (SuperBlast 1050)
(4)	504552	Air Filter Assembly
(5)	550242	Air Gauge, ¼" NPT
(6)	290383	Manual Sure-Flo Grit Valve
(7)	290318	Flexible Hose w/fittings (SuperBlast 350)
	290319	Flexible Hose w/fittings (SuperBlast 650)
	290333	Flexible Hose w/fittings (SuperBlast 1050)
(8)	521962	Dual Hose w/fittings (30')
	521882	Dual Hose w/fittings (50')
	521892	Dual Hose w/fittings (55')
(9)	290164	77 Saf-Stop II
(10)	520642	Air Valve, ¼" NPT
(11)	290181	MG 72 Exhaust Valve
(12)	290354	Electric Saf-Stop II Handle Assembly
(13)	517092	Electric Actuator (12V)
(14)	290367	E-Z Fill Bag/Breaker Screener

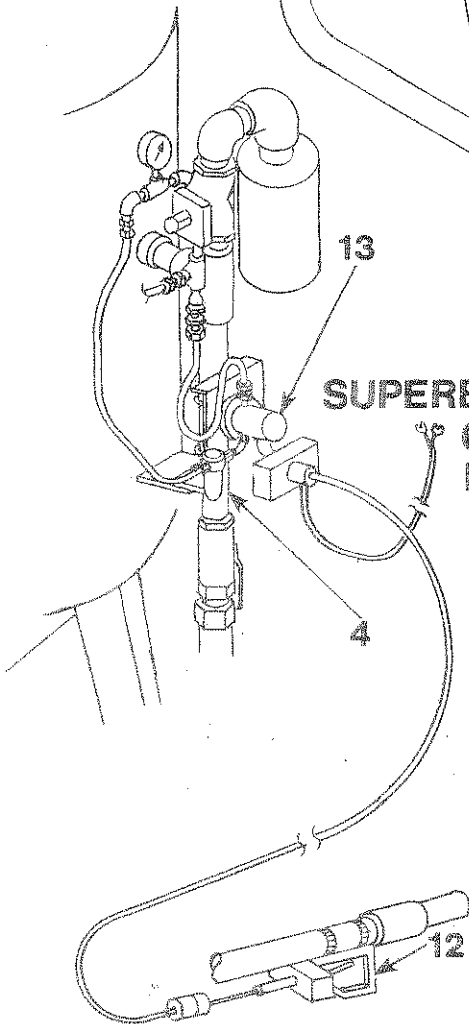
For more details, refer to "SuperBlast Operating Manual for Single Chamber Blasters"



**SUPERBLAST WITH SAF-STOP II,  
680 SERIES PNEUMATIC  
REMOTE CONTROLS  
INSTALLED**



**SUPERBLAST WITH SAF-STOP II,  
680 SERIES ELECTRIC  
REMOTE CONTROLS INSTALLED**



## REPLACEMENT PARTS CONTINUED . . . Manual Sure-Flo

Part Number	Description
290383	Manual Sure-Flo Valve Assembly
290344	Manual Sure-Flo Valve Assembly w/Anti-Corrosion Coating
(1) 753632	Pinch Roller (Each)
(2) 552222	Bolt, 7/16"-14 x 1-1/4"
(3) 753692	Valve Body
(4) 753372	Manual Body Adapter
(5) 290384	Handle Assembly
290211	Handle Assembly (For Manual Sure-Flo Valves manufactured prior to 5/1/84)
(6) 552672	Jam Nut, 1/2"-13
(7) 523592	Metering Tube
(8) 753292	Regulator Flange
290188	Conversion Kit—Changes Manual Sure-Flo to Automatic & consists of: diaphragm & spring assembly, diaphragm cover, plunger, spring enclosure & handle assembly.

Manual Sure-Flo Grit Valve

