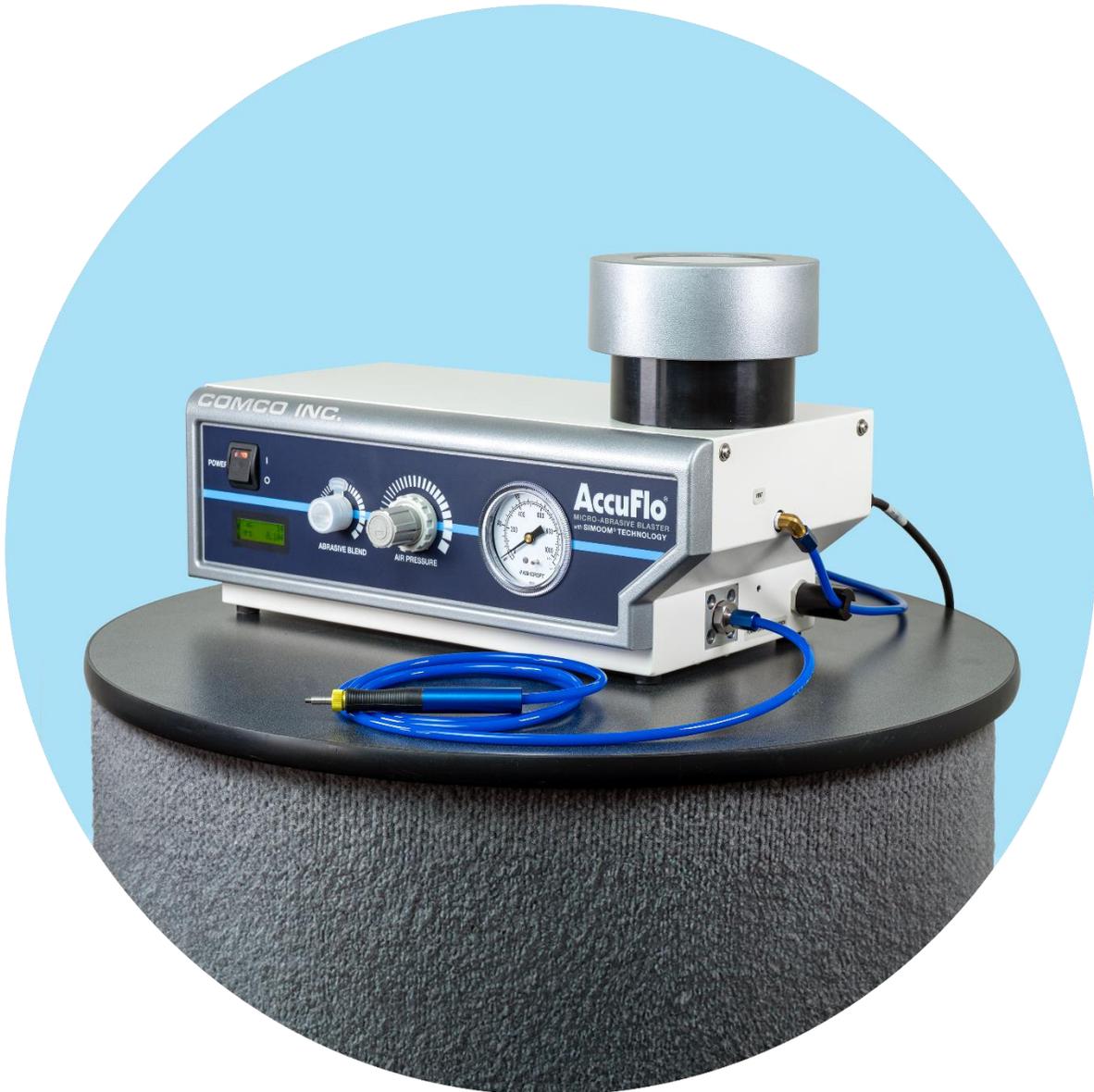


# AccuFlo®

MICRO-ABRASIVE BLASTER

## AF10-E Equipment Manual



**COMCO**

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## AccuFlo® AF10-E Specifications

Model	AccuFlo® AF10-E Standard Tank	AccuFlo® AF10-ET Tall Tank
Shipping Weight	30 lb. (13.6 kg)	30 lb. (13.6 kg)
Height	10.5 in. (26.7 cm)	15.0 in. (38.1 cm)
Width	17.5 in (44.5 cm)	17.5 in. (44.5 cm)
Depth	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)
Air Pressure	10 – 125 psi (0.7 – 8.6 bar)	10 – 125 psi (0.7 – 8.6 bar)
Powder Capacity	1 liter	2 liters
Nozzle Sizes	Round .015-.060 in. Ø (.38 mm – 1.5 mm) Other shapes & sizes available.	

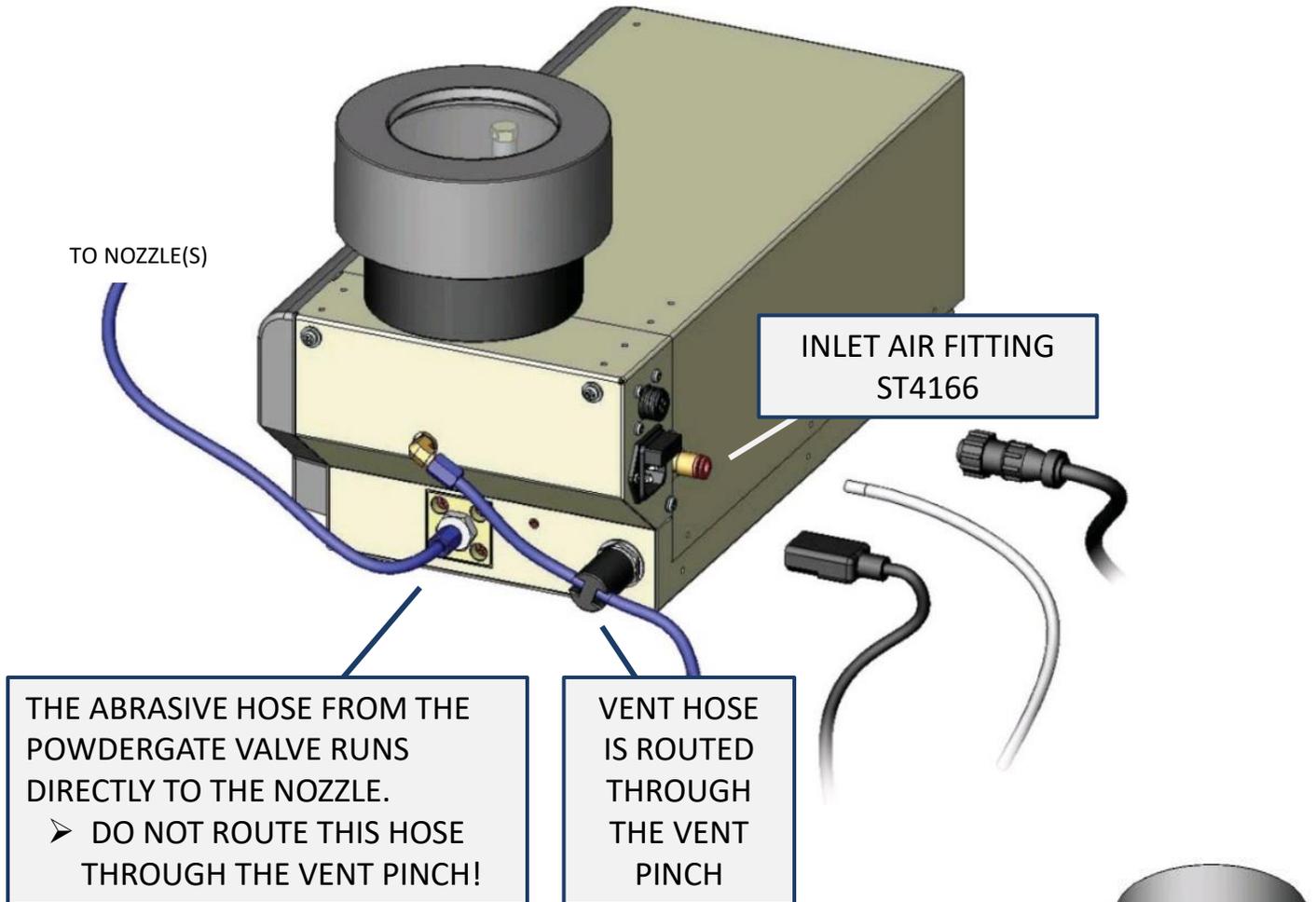
## Facility Requirements

Inlet Air Pressure	70 – 145 psi (4.8 – 10 bar)
Air Volume	Depending on nozzle size and air pressure, consumption is typically 0.2 – 4.6 SCFM (94 – 2170 cm <sup>3</sup> /sec)
Air Supply Quality	Dried to -25° F dew point (200 ppm of moisture) and oil content filtered to <10 ppm
Power Requirements	115V 60Hz, 40W 230V 50Hz, 40W



# Make Connections

1. Place the ComfortGrip® handpiece inside the work chamber.
2. Place the open end of the vent hose into the back of the workstation or into the dust collector hose.
3. Connect the power cord and the blast control cable.
4. Connect the air supply to the “Air In” fitting (using ¼" tubing provided in the accessory kit).



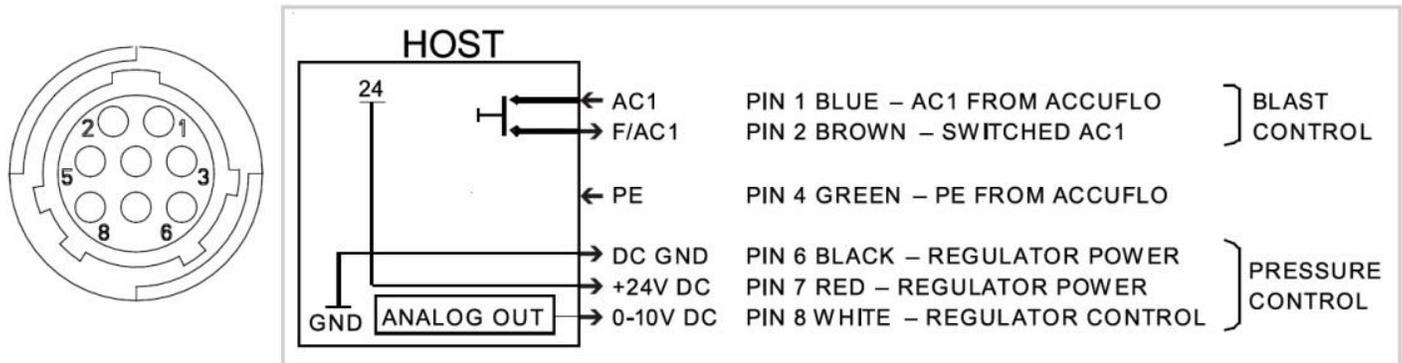
## Add Abrasive

1. Remove the tank cover.
2. Fill the tank with powder. Do not fill above the top of bypass tube.
3. Replace the tank cover and secure (only ¾ turn required).

**Always maintain a 10 psi buffer between the AccuFlo pressure setting and your compressor. This protects against abrasive flowing backwards through the machine.**



# AF10-E Control Connector

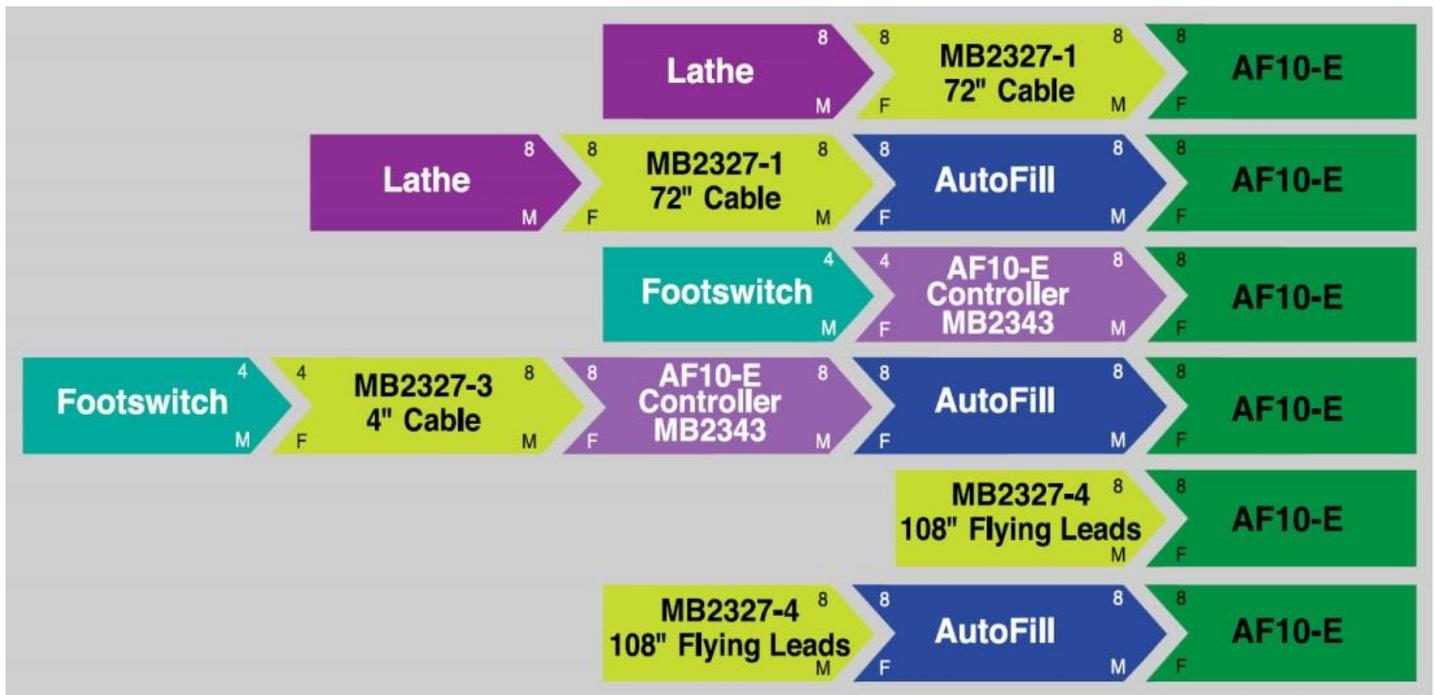


**Blast Control:** Pin 1 provides 115VAC power from the AccuFlo. The host must provide a switch to put this voltage back in to Pin 2, which will cause the blaster to blast. When Pin 2 is left floating, the blaster will not blast. 200mA of current is typical.

**PE:** Pin 4 provides an optional bonding path to Primary Earth through the AccuFlo. If the host is otherwise bonded to PE, do not use this pin.

**Regulator Control:** The regulator must be powered by 24vdc through Pin 7 and ground through Pin 6. The regulator requires 60mA of current. The blast pressure is set by providing a 0-10vdc signal at Pin 8, which corresponds to a pressure of 0-148psi. The internal resistance of the regulator's input is 100ohms minimum.

## AF10-E Cables and Controllers



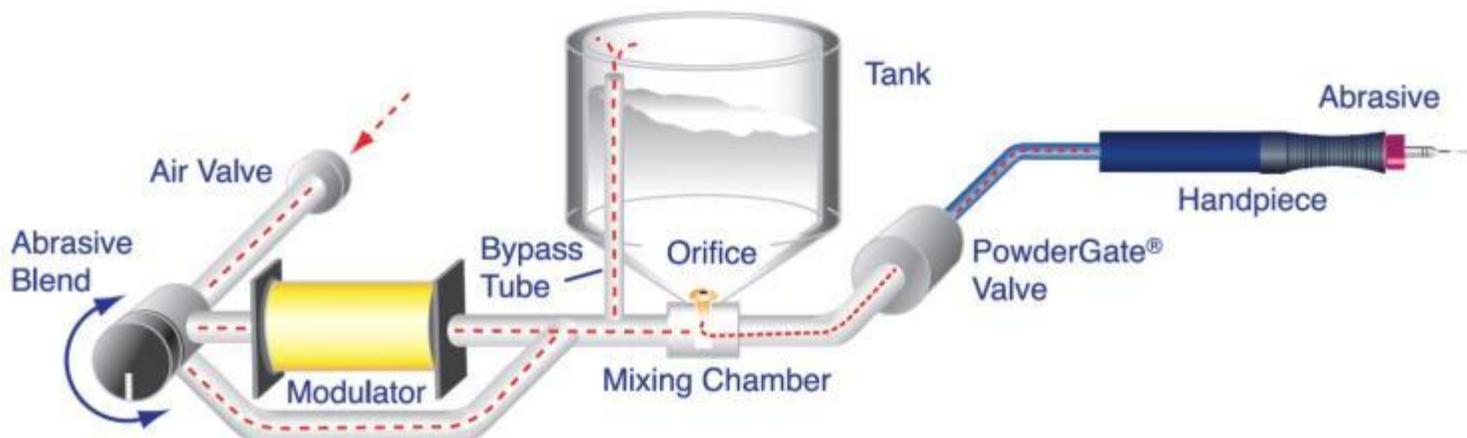
Cabling and control depends on how the user desires to control the AF10-E. Use the above table to determine which cable to use. If the AF10-E is paired with an AutoFill unit, refer to the AutoFill manual for additional wiring information.



Congratulations, the Comco AccuFlo® model AF10-E you have purchased incorporates the latest development in micro-abrasive blasting – Simoom® technology.

This patented method of mixing air and abrasives delivers a steadier, more consistent stream of abrasive allowing you to process parts efficiently and with uniform results. Here's why it works so much better than other micro-abrasive blasters.

## How does Simoom® technology work?



Activated the blast and the modulator opens and closes 50 or 60 times per second (depending on local power supplied at 50Hz or 60Hz), producing pulses in the air stream. The rapid change in air pressure fluidizes the abrasive above the orifice. The powder is then drawn through the orifice into the mixing chamber where it enters the air stream and exits the AccuFlo® through the PowderGate® valve traveling out to the nozzle.

The strength of these modulated pulse and the diameter of the orifice determines the amount of abrasive that drops into the mixing chamber. Three mechanisms enable you to change the amount of abrasive in the air stream: the tank orifice, abrasive blend and bypass tube.

**Tank Orifice:** A larger orifice increases abrasive flow. In most cases the orifice should be at least 5 times the size of the average particle size, but not larger than the nozzle.

**Bypass Tube:** The bypass tube creates an alternate path for the modulator pulses, bypassing the orifice. A larger bypass tube dampens the impact of each pulse, reducing media flow.

**Abrasive Blend:** The abrasive blend changes the strength of the pulse by allowing some air to bypass the modulator. With less air passing through the modulator, the pulse weakens and less abrasive is fed into the air stream. The abrasive blend valve allows you to fine tune the abrasive flow.

For more technical details on Simoom technology, see US patent #7,297,048.



# Tools to Control the Abrasive Volume

The abrasive concentration in the air stream can be made **leaner** (less abrasive) or **richer** (more abrasive) by changing the tank orifice or bypass tube or by adjusting the abrasive blend.

**Tank Orifice:** This is the primary tool for adjusting the richness of abrasive in the air stream. A larger orifice increases abrasive flow. In most cases the orifice should be at least 5 times the size of the average particle size, but not larger than the nozzle.

Example: For 50 μ abrasive				
Tank orifice ID (Part no.)	Nozzle Size (Part no.)			
	.018" Dia. (MB2520-18) 	.030" Dia. (MB2520-30) 	.046" Dia. (MB2520-46) 	.060" Dia. (MB2520-60) 
.018" (MB1409-18)	Orifice is too small			
.025" (MB1409-25)				
.030" (MB1409-30)				
.040" (MB1409-40)				
.060" (MB1409-60)	Nozzle is too small			

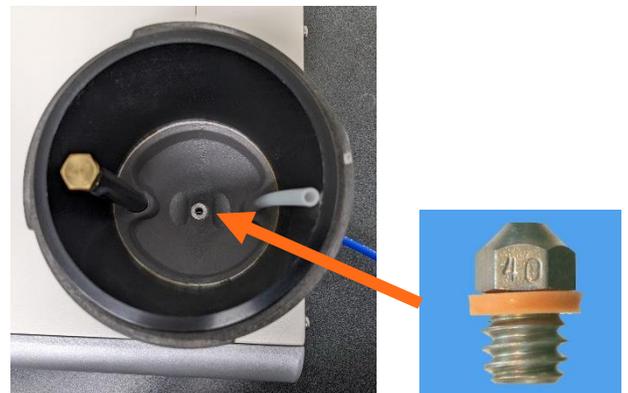


For other size abrasives, [view additional charts](#) on the Comco website to see which tank orifice and nozzle combination flows the abrasive volume desired.

## To change the tank orifice:

- Use a ¼" nut driver.
- Finger tighten and tighten with a ¼ turn.

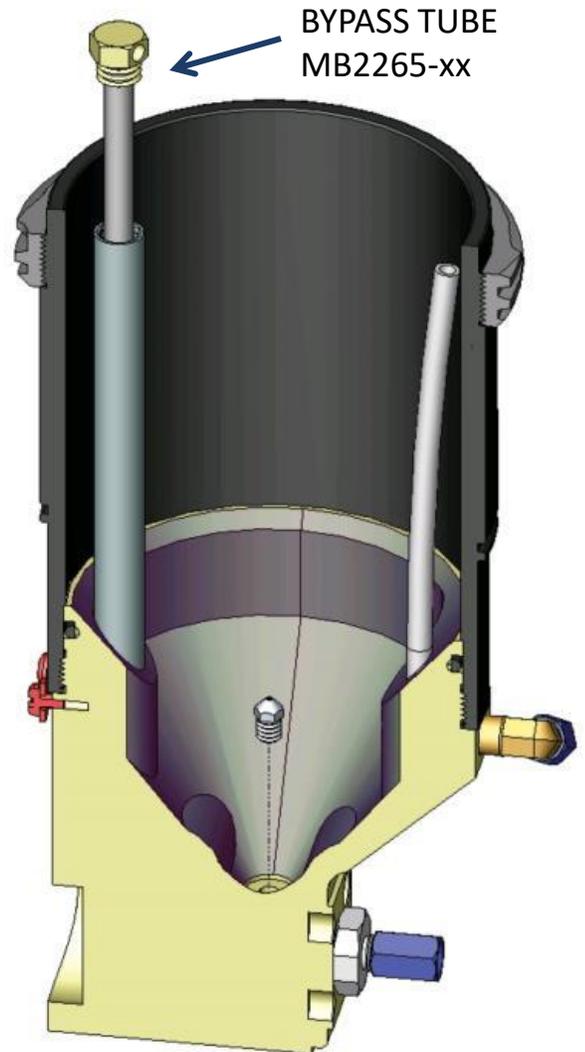
[Watch video](#) on how to change the tank orifice.



# Tools to Control the Abrasive Volume

**Bypass Tube:** This secondary tool impacts abrasive richness. Your blaster has been configured with the bypass tube best suited for your application. The bypass tube also impacts the startup transient.

Comco Tech Support can help determine if your application would benefit from changing to a different sized bypass tube.



**Abrasive Blend:** The abrasive blend valve allows you to fine tune the abrasive flow. For most applications, the factory setting is ideal and no adjustment is necessary.

**All AccuFlo units ship with the abrasive blend at this setting, with the calibration cap installed.**



The tamper evident cap helps to avoid accidental adjustments to the abrasive blend and will need to be replaced if removed for adjustments.

Learn more about the Abrasive Blend and calibration cap in this [web resource](#).



# Hi/Performance AccuFlo® Nozzle Options



MB2520-18 (.018" Dia.)



MB2520-30 (.030" Dia.)



MB2520-46 (.046" Dia.)



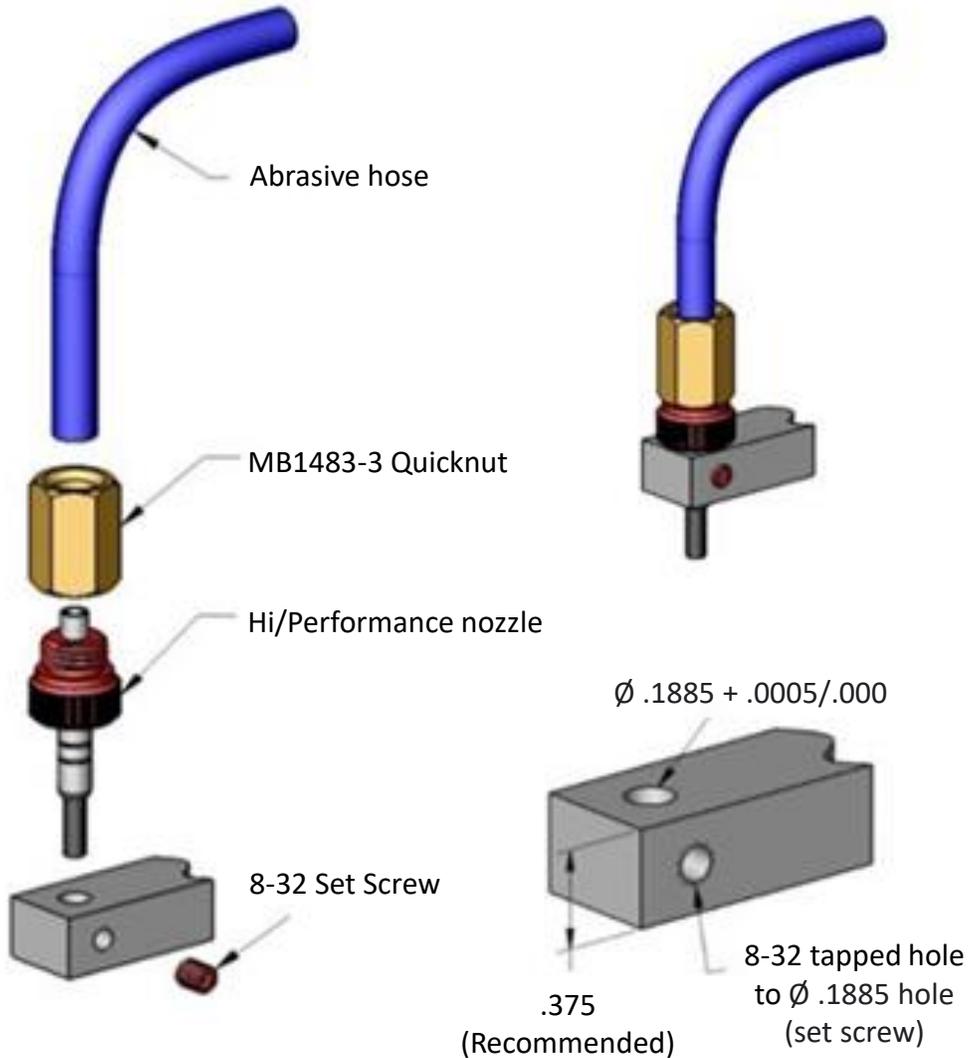
MB2520-60 (.060" Dia.)



MB2599  
ComfortGrip handpiece

The life of your nozzle will depend on the type of abrasive and air pressure you use.  
Check the nozzle for wear on a regular basis.

## Fixtured Nozzle



For additional nozzle options contact Comco Tech Support



# Maintenance Counters

For easier maintenance there are two counters on the front panel.

The **CYC** counts the number of blast cycles on the AccuFlo (each time the PowderGate® valve opens.)

Abrasive type and blast pressure will impact maintenance frequency, but typical configurations will last more than 250,000 cycles before needing maintenance.

The **HRS** counter records the number of blast hours (i.e. actual time the modulator has operated.)

Your maintenance requirements may vary with your application.

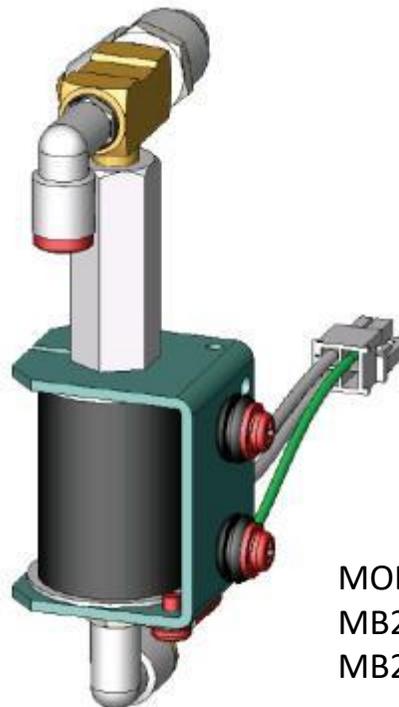
The modulator should be replaced after 5000 hours of operation.



## AccuFlo® Modulator

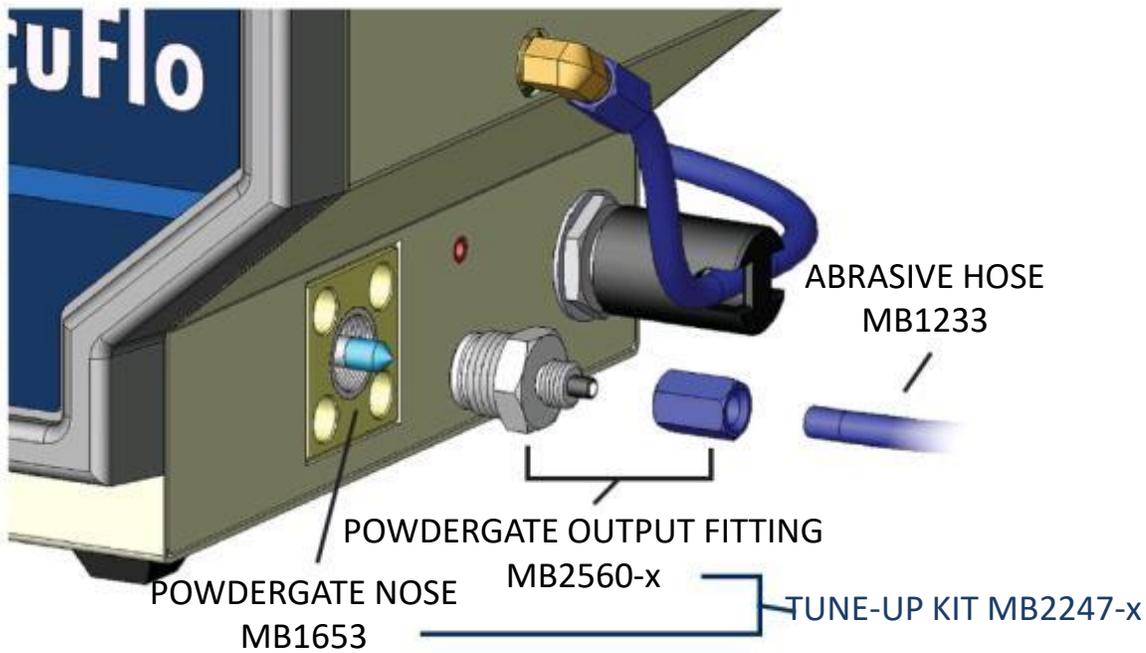
To replace the AccuFlo® AF10-E modulator:

- Disconnect 3 colored tubes from the modulator and the electrical plug from front panel.
- Remove the two screws holding the modulator to the bracket using a Phillips screwdriver.
- Install the new modulator in reverse order, making sure the two grommets remain in the bracket.



MODULATOR  
MB2250-1 (115V)  
MB2250-2 (230V)





## PowderGate® Valve

The PowderGate® Nose and Output Fitting should be replaced after 250,000 cycles. They are both included in the Tune-Up Kit.

- Unscrew the Output Fitting with a 3/4" wrench.
- With pliers, gently pull the worn Nose from shaft.
- Press on new Nose.
- Install the new Output Fitting.
- Connect the tubing with the blue Quicknut.

## Tune-Up Kits

	MB2247-2 1/4" output fitting	MB2247-3 3/8" output fitting
PowderGate Output Fitting	MB2560-3	MB2560-4
PowderGate Nose	MB1653	
O-ring	ST5650-242	

In addition to the tune-up kit, we also recommend that you keep a back-up supply of nozzles and orifices to fit your application.



# Troubleshooting

## **If the unit does not pressurize when you turn it on:**

- *Is there power to the unit? Does the light on the power switch illuminate?*  
If not, check the power cord connections at the back of the unit and at the power source. Check the fuse.
- *Is the air line connected? Are the upstream valves open?*  
Check the inlet air supply.
- *Do you hear air escaping from the unit when it is turned on?*  
Check that the inlet air, vent hose, and abrasive hose exiting the PowderGate® valve are connected properly. See the set-up guide on pages 4 and 5. Make sure the tank cover is securely fastened.

## **If you are getting air through the nozzle, but no abrasive; or if the cutting action decreases:**

- *Is the powder tank empty?* Refill.
- *Is the abrasive in the tank damp and sticking to the walls?*  
Replace with fresh powder. Check that your air dryer is working properly.
- *Is the tank orifice plugged?*  
Empty powder, remove orifice, and inspect. Check to see if your supplier of abrasive powder is providing high quality material. For details see the Support section on our website.
- *Is the modulator functioning properly?*  
You should hear a buzzing sound when the blast is activated. If not, the modulator may need to be replaced. For further details contact Technical Support.

## **If nothing happens when the blast is activated:**

- *Is the nozzle plugged?* Remove and inspect.
- *Is the PowderGate® valve failing to open?* Contact Technical Support.

## **If you suspect the PowderGate® valve is not closing completely:**

When the PowderGate® valve closes, place a finger over the end of the nozzle for 3 seconds. When you remove your finger— is there a small puff of air? If so, there are two possibilities:

- The PowderGate® nose is worn and can be replaced as described above.
- The abrasive mixture may be too rich. Reduce Abrasive Blend adjustment on front panel, or check the Bypass Tube Chart for a leaner mixture to handle your nozzle size.

## Prevent Moisture and Oil Contamination

Contamination of the abrasive powder from moisture and/or oil is one of the most common problems associated with micro-abrasive blasting. Moisture will cause the powder to “clump up,” preventing it from flowing freely from the tank.

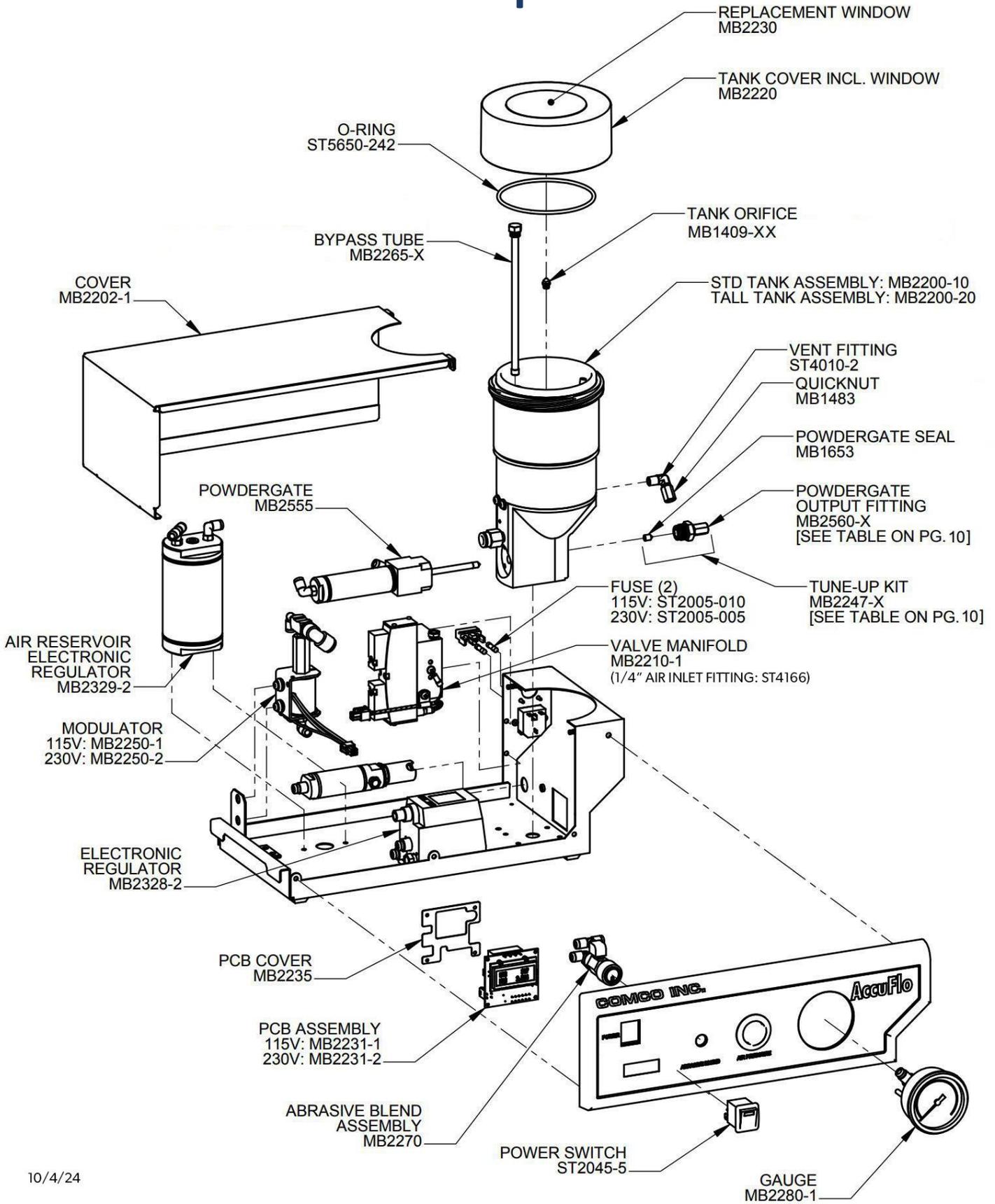
Moisture will cause the powder to "clump up" preventing it from flowing freely from the tank.

Oil in the air supply will not only affect abrasive flow, it can also cause major component failures within your blaster, resulting in costly repairs.

To avoid moisture and oil contamination, run your air supply through a positive air dryer equipped with an appropriate oil filter.



# AF10-E Components

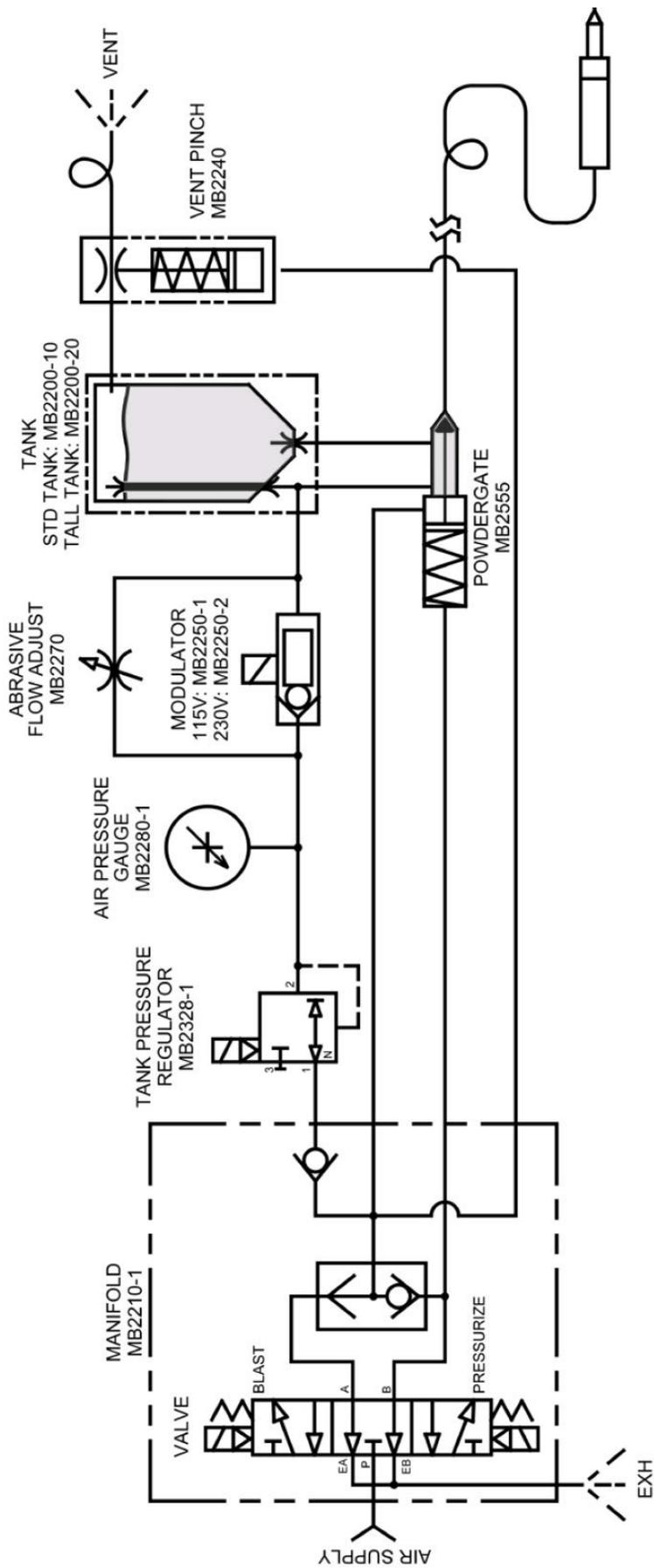


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Tech Support: 1-818-841-5500

# Pneumatic Schematic AF10-E





# The Comco Warranty

Comco warrants that the AccuFlo® model AF10-E will be free from all defects in material and workmanship under normal use for a period of one year from the date of purchase or 2,000 hours of normal operation, whichever comes first.

The warranty period begins when the equipment ships from the Comco facility and applies to the original owner only. Comco is not liable for damages from any cause or use of such equipment beyond the cost of repairing any defective parts.

If the equipment fails to perform satisfactorily during the warranty period, Comco has the option to do any one of the following: 1) Send replacement parts to the customer to be installed by the customer; 2) Repair the unit at the customer's facility; or 3) Request that the unit be returned to the Comco factory. Any replacement parts shall be furnished by Comco without cost, F.O.B. the Comco factory in Burbank, California, provided that Comco is notified of the defect within the warranty period. Any defective parts shall be returned to Comco for inspection and analysis.

## Exclusions

The above warranty does not apply to defects or problems resulting from improper or inadequate maintenance by the customer; unauthorized modification or misuse; failure to follow the operating instructions; the use of any supplies or parts, including but not limited to nozzles, powders, and attachments, not manufactured or supplied by Comco.

The warranty also does not cover problems resulting from improper or inadequate facilities (contaminated air; improper power) or items that should be expected to wear in normal operation, such as nozzles, abrasives, tubing or fittings.

*This is Comco's only warranty and is in lieu of all other warranties of merchantability and fitness for any particular purpose. No representations or warranties are authorized except as herein stated.*



Always operate the AccuFlo® blaster in an appropriate workstation with dust collection.

Never blast toward someone's face or eyes. This is a pressure device.

The Lexan window on the tank cover is abrasion resistant. However, contact with certain chemicals can weaken the cover and cause it to crack.

Inspect the cover daily and replace immediately if cracks develop.

**Refer to Comco Technical Support for full details.**

## WARNING

### MAXIMUM BLAST SETTING ON YOUR BLASTER

Never operate any micro-abrasive blaster with the air pressure regulator fully open. Check your compressor settings to determine the air pressure level it uses to trigger the re-pressurize cycle. The blast pressure setting on your blaster should always be set at 10 psi below this point, which is the lowest supply pressure coming from your compressor. If the inlet pressure drops below the blast pressure setting, air and abrasive will flow backward through your system and damage critical components.



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