

Tech Bulletin

The Importance of Modulator Maintenance

There are major differences that separate the technology of micro-abrasive blasters from larger sandblast cabinets or the Paasche airbrush. With a Comco MicroBlaster[®], DirectFlo[™], or PowerFlo[®], the differences become even more apparent. The consistency and flow of abrasive are significantly better and are directly attributed to the fluidization method we use – the modulator.

The modulator is a patented valve that has been designed to operate effectively in an abrasive environment. The valve opens and closes 60 times per second while the footswitch is activated.

This action stops and starts the airflow from the regulator to the mixing chamber, which creates a pumping action of air within the abrasive tank. The pumping action in the modulator provides the consistent flow of abrasive powder from the tank into the mixing chamber and out the nozzle.


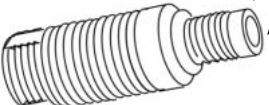
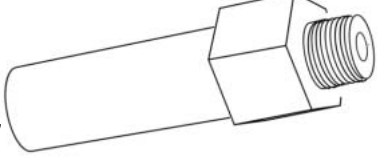
Although the modulator is hardened to withstand the harsh effects of the abrasive, it will eventually begin to wear out. Under normal working conditions, the modulator will need to be replaced between six months and one year of operation.

Signs of Modulator Wear

Over time, the precision features of the modulator will begin to erode. As this happens, the efficiency of the modulator will diminish, affecting the performance of your blaster. Characteristic signs of a worn modulator are:

- A loud rattling sound, instead of a hum, when the footswitch is activated.
- Erratic abrasive flow from the nozzle. A common indication of modulator wear is an initial surge of abrasive when the footswitch is pressed and then a thinning out of the abrasive stream over five to ten seconds. Often the operator will have to “pump” the footswitch to keep the abrasive flow up.

A physical inspection of the modulator assembly will typically show the following types of wear to components:

1. The four edges of the core become rounded with use and the anodized coating on the edges erodes. 
2. A groove forms on the polymer seat of the nose assembly. 
3. Four etched grooves have worn into the interior sides of the body. 

Of the three components in the assembly, the modulator core will show the most visible wear. If the core exhibits signs of wear, the other parts of the assembly are also worn and the entire assembly must be replaced.

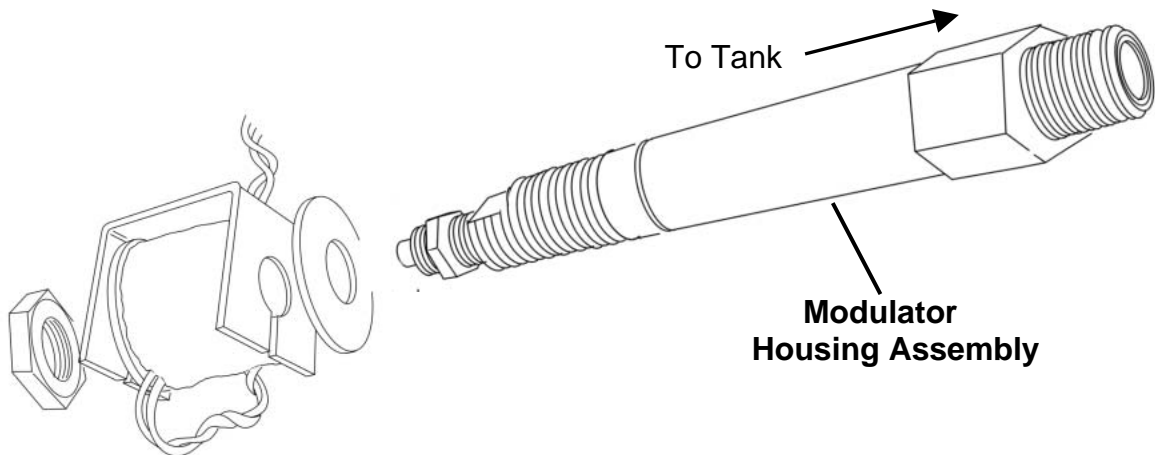
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In order to achieve proper functioning of the valve, all of the pieces need to fit together tightly and seal off completely. It is important to replace the entire **modulator housing assembly** when servicing your MicroBlaster[®], DirectFlo[™], or PowerFlo[®]. Before it is packaged for shipping, every modulator housing assembly is tested in the Comco factory to ensure it is operating properly.

Don't wait until your machine stops working!

The modulator housing assembly should be replaced on a regular basis to keep your machine in peak operating condition. It is recommended that you replace the entire assembly every 2,000 hours of operation. If you run your blaster in a high production environment, you may need to replace it more often.



The modulator housing assembly is the cylindrical assembly contained within the modulator coil. The coil has no moving parts, so it normally lasts the lifetime of the machine and does not need replacing.

- MicroBlaster[®] modulator housing assembly Part No. MB1301-2
- DirectFlo[™] / PowerFlo[®] modulator housing assembly Part No. PF2040

Tune-Up Kits

We have assembled tune-up kits containing all of the normal maintenance items, including the modulator housing assembly, necessary to keep your blaster in top operating condition. The seals and connectors that can be damaged by the harsh abrasive environment in which these machines operate should be replaced at the same intervals as the modulator housing. Replacing all of the components included in the tune-up kit at the same time you replace the modulator housing will ensure you get premium performance from your blaster. Maintaining a preventative maintenance program and keeping all of these parts in good condition will provide many years of trouble-free service from your blaster.

- MicroBlaster[®] tune-up kit Part No. MB1440
- DirectFlo[™] / PowerFlo[®] tune-up kit Part No. PF2190