



# HOW IT WORKS

## S-Series - 8.0 Cu Ft Dual-Chamber™ Abrasive Blasters (Pressure Hold)



**WARNING:** This section of the manual is designed to give you a general understanding of how the Abrasive Blaster functions. **All** sections of this manual must be read and understood before operating the equipment.

### ADDING ABRASIVE

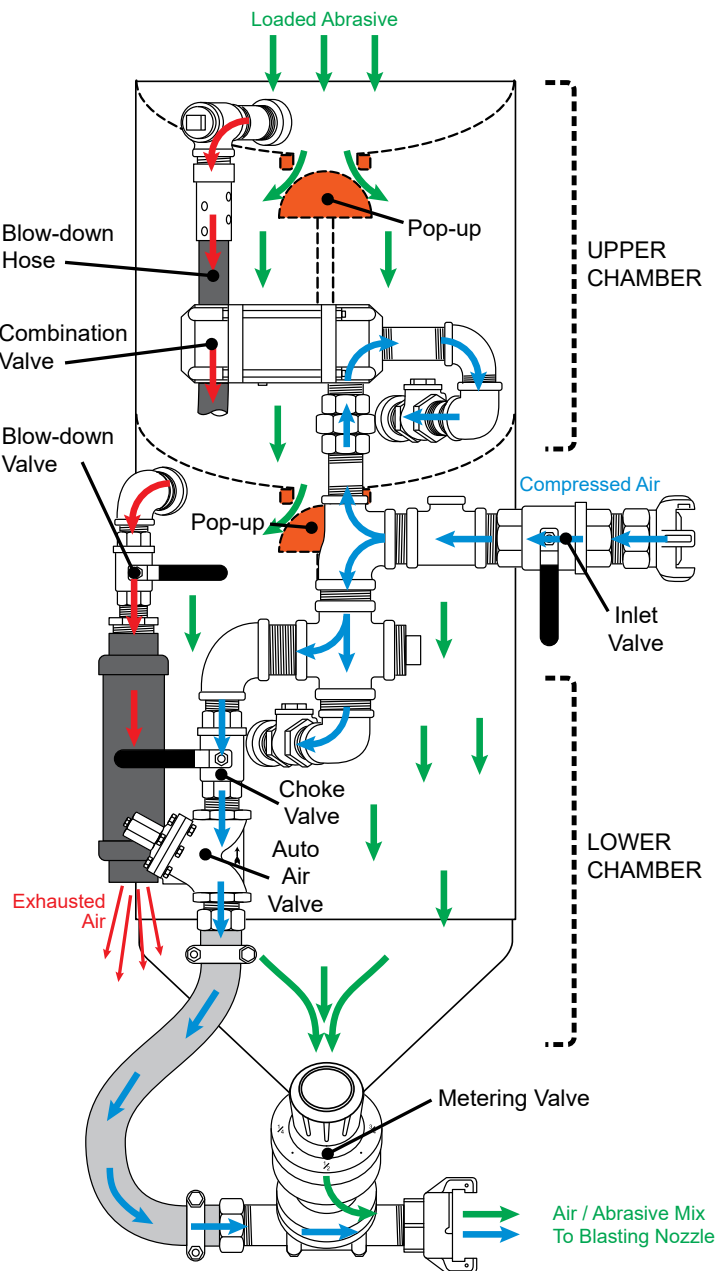
Abrasive is added through the hole in the top of the Abrasive Blaster where the upper chamber Pop-up and its seat are located. When abrasive is added, it flows down through the hole, around the Pop-up and into the upper chamber. Abrasive will flow from the upper chamber into the lower chamber via the lower chamber Pop-up during the automatic cycle process or when the Abrasive Blaster is in its depressurized state.

### PRESSURIZATION

Before pressurization can take place in a pressure hold system, the Blow-down Valve must be closed. Then, when a compressed air source (such as an air-compressor) is connected to the inlet of the Abrasive Blaster and the Inlet Valve is opened, compressed air can flow into the pressure vessel causing the lower chamber Pop-up (located internally) to seal against its seat allowing the lower chamber to become pressurized. When the control handle is activated, the Auto Air Valve and Metering Valve open allowing compressed air & abrasive to flow and mix. The mixture of compressed air and abrasive will now exit the Abrasive Blaster through a blast hose and nozzle connected to the coupling on the Metering Valve and blasting begins. While in use, the Combination Valve will cycle the upper chamber between pressurized and depressurized states, exhausting air through the blow-down hose. This cycling is what allows a dual-chamber abrasive blaster to continuously refill itself from the upper chamber.

### DEPRESSURIZATION (BLOW-DOWN)

When the control handle is released in a pressure hold (SPH) system, the pressure vessel remains filled with compressed air. The compressed air remaining in the pressure vessel is released when the control box power is turned off, the inlet valve is manually closed and the blow-down valve is manually opened.



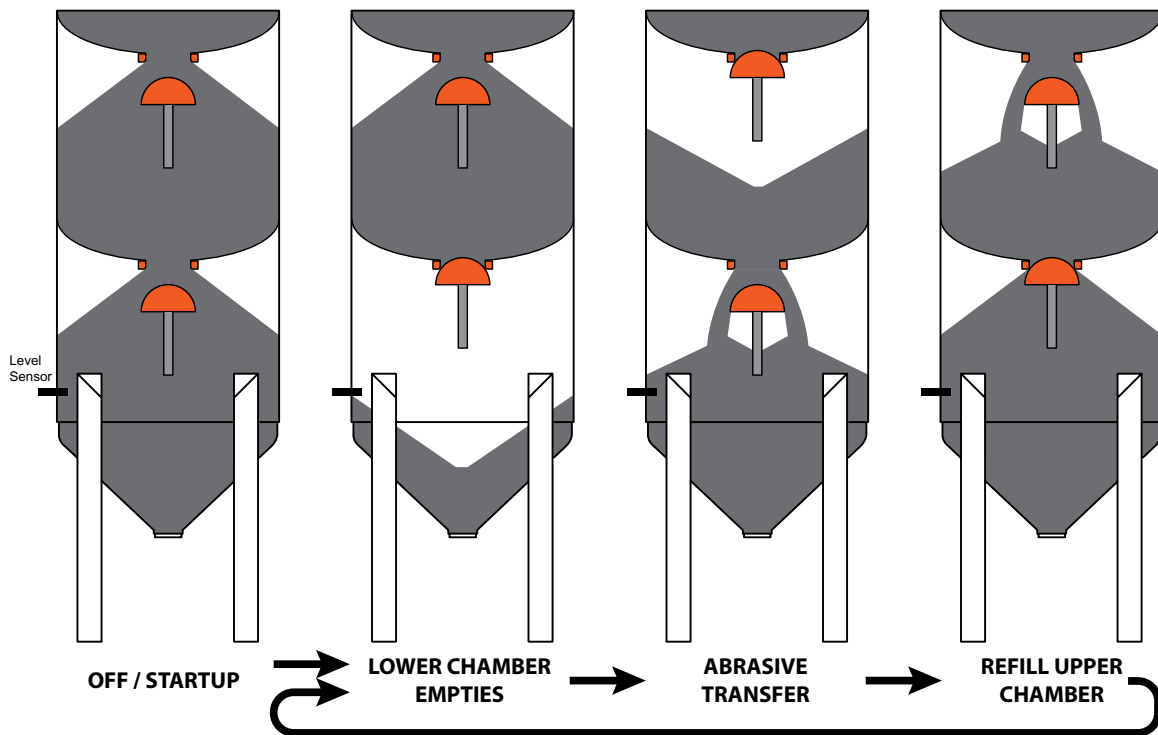
- Flow of Compressed Air
- Flow of Abrasive
- Flow of Exhaust Air During Blow-down



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### AUTOMATED REFILL CYCLE



#### OFF / STARTUP

When the abrasive blaster is off and in a fully depressurized state, both Pop-Ups are lowered and abrasive can flow freely into the upper and lower chambers, filling them completely.

#### LOWER CHAMBER EMPTIES

When the abrasive blaster is pressurized, the lower chamber Pop-Up seals and the lower and upper chambers are isolated from each other. When blasting begins, abrasive from the lower chamber is consumed and the level continues to drop until the Level Sensor is exposed.

#### ABRASIVE TRANSFER

When the Level Sensor is exposed, it sends a signal that triggers the automatic controls to pressurize the upper chamber causing the upper chamber Pop-Up to seal. Once the pressure in the upper chamber is the same as the pressure in the lower chamber, the lower chamber Pop-Up falls. Abrasive can now flow from the upper chamber to the lower chamber while pressurized allowing blasting to continue uninterrupted. When the level sensor becomes covered again, it signals a timer in the automatic controls to begin a countdown. The countdown is set to allow enough time for all of the abrasive in the upper chamber to flow into the lower chamber. When the countdown reaches 0, the automatic controls depressurize the upper chamber causing the lower chamber Pop-Up to seal and the upper chamber Pop-Up to fall.

#### REFILL UPPER CHAMBER

Once the upper chamber Pop-Up falls, abrasive will flow through the opening and into the upper chamber filling it. While the upper chamber is filling, abrasive is being consumed from the lower chamber starting the cycle over again.