

## Model 578b MagnaValve® General Arrangement

For direct pressure applications of the MagnaValve supplemental mechanical valves must be used to isolate the MagnaValve from air pressure. The MagnaValve is designed to operate with a maximum 5 psi air pressure differential from top to bottom of the valve. The MagnaValve has no moving parts, but operates by using a magnetic field to restrict the flow of shot. It is not capable of stopping air pressure by itself. By implementing mechanical valves depicted as (b) and (c) of the layout drawing the MagnaValve will work properly.

During operation the air pressure is equalized from the pressure pot and the blast line input at the mixing tee allowing the MagnaValve to dispense shot into the mixing tee. If isolation mechanical valves are not used, then, at the end of the blast cycle the pressure pot must be relieved (exhausted), otherwise the air pressure will force shot through the MagnaValve down into the mixing tee. If isolation mechanical valves are used then it is not necessary to exhaust the pressure pot at the end of the cycle.

Although the mechanical valves (b) and (c) can be activated at the same time that the MagnaValve (a) is enabled, we recommend a sequenced starting procedure. Starting with valve (c) will establish air pressure in the pressure pot. It takes about 1 second for the air pressure to become established and stabilized in the blast hose all of the way out to the blast nozzle. Once the air pressure is stabilized ( about 1 second) the second mechanical valve (b) can be opened. Then (about 1 second later) the MagnaValve (a) can be enabled.

	Turn - On	Turn - Off
Step 1	(c) air valve	(a) MagnaValve
Step 2	(b) pinch valve	(b) pinch valve
Step 3	(a) MagnaValve	(c) air valve

Failure to follow the above procedure will result in unstable and erratic operation that may continue for up to 10 seconds. Dropping shot into the mixing tee while the air supply is stabilizing contributes to a very unstable start up.

The turn off sequence should be done in reversed order. First turn off the MagnaValve (a). This then purges shot from the mechanical valve (b). which means that when it closes it is void of shot. This is an ideal condition for this valve, as closing upon shot reduces its life expectancy. Next, (about 1 second later) close valve (b) and then (about 1 second later) close mechanical valve (c). If the blast hose is exceptionally long, (more than 3 meters) you may want to delay the shut off of mechanical valve (c) longer to purge all of the shot left in the blast hose at the end of the cycle.

### Notice:

1. We recommend use of unions for easy alignment and removal of the MagnaValve. The manual shut-off valve is provided so that you do not have to drain the pressure pot of shot in order to clear contaminants that may have lodged in the MagnaValve.
2. Allow about 6-inches (15 cm) between the MagnaValve bottom and the mixing tee. If mechanical valve (b) is not used then substitute a 6" (15cm) pipe nipple to provide the required spacing. This helps to isolate air turbulence in the mixing tee from the MagnaValve which may cause abrasion in the bottom of the MagnaValve and decrease its life expectancy.