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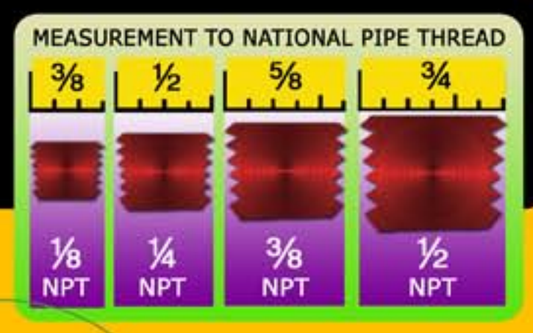
Designing & Maintaining Haunted Attraction Air Systems



ACCUMULATORS
Supply a reservoir of air. Necessary if you are running a lot of props, especially at distances away from each other.

BRANCH AND REDUCE
Using **Union Tees, Tube Push-in Reducers,** and **Unions** to 1/4" (or 3/8") airline for each prop.

VOLTAGES
When voltage is supplied to the solenoid it opens the valve. Solenoids are available in 12 & 24VDC, and 110VAC.

3-WAY VALVE
Used with single & reverse-acting cylinders

4-WAY (5-PORT) VALVE
Used with double-acting cylinders

2-WAY VALVE
For air blasts & air whips.

CYLINDER MAINTENANCE
Lubricating the cylinders or airline only attracts dirt and can break down the oil impregnated seals in the cylinders. A few drops of lubricating oil into the airports is acceptable and should be done before end of season storage.

DOUBLE-ACTING CYLINDERS
Contain two air ports to power the shaft in and out. Most common.

SINGLE-ACTING CYLINDERS
Contain one air port to power the shaft out. An internal spring pushes it back

REVERSE-ACTING CYLINDERS
Contain one air port to power the shaft in. An internal spring pushes it back out.

MANIFOLDS
Branch airline to multiple locations.

MINI WATER FILTERS
Place throughout the haunt to trap water and debris at key locations.

PUSH-ON FITTINGS
Always make sure no air is in the line before releasing.

AIR HOGS
Air blaster, air whips, and anything that opens up the airline to the atmosphere require a lot of CFM.

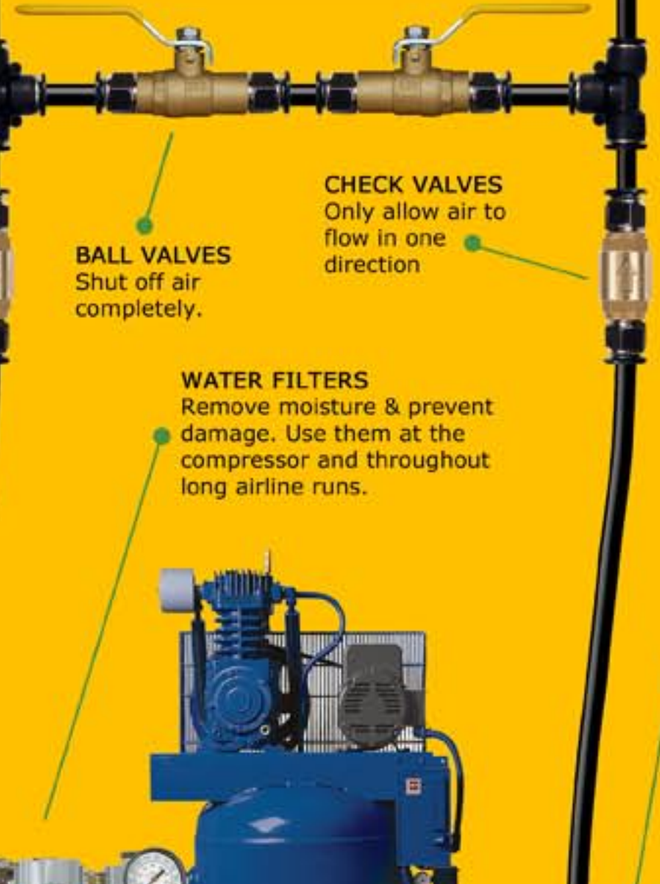
PROPS WITH CYLINDERS
Pneumatic cylinders require very little CFM.

COMPRESSOR MAINTENANCE TIPS

- ✓ **Read the Compressor Manual!**
- ✓ **Drain The Moisture From The Tanks**
  A by-product of compressing air is water. Over time an air compressor tank will fill with water and create rust.
- ✓ **Clean Intake Vents / Filters**
  A clogged intake/filter means your compressor will work harder and push less air.
- ✓ **Tighten All Fasteners**
  Compressors vibrate and shake things loose.
- ✓ **Check Airline Regularly**
  Airline leaks make the compressor work harder.
- ✓ **Test the Safety Shutdown System**
  This is a fail safe built into the compressor that protects from overheating etc.
- ✓ **Check and Change the Oil**
  Compressor oil breaks down over time. Check oil level daily and change per frequency specified in manual (usually every 500-1000 hours of operation).

COMPRESSOR CONNECTION
Compressors use quick-connects. Use a quick-connect to push-on fitting to interface the two.

PLUMBING MULTIPLE COMPRESSORS
Each compressor supplies air to a separate artery going to different parts of the haunt. Plumb them all together and isolate with ball valves as we have done here. If a compressor goes down simply open or close the ball valves to feed from the other compressor(s).



BALL VALVES
Shut off air completely.

CHECK VALVES
Only allow air to flow in one direction

WATER FILTERS
Remove moisture & prevent damage. Use them at the compressor and throughout long airline runs.

AIRLINE CUTTER
Cuts clean right-angles. Do not use scissors or utility knife to cut airline.

POLYETHYLENE AIRLINE
The most popular and affordable airline. Works great with push-on fittings. It is black, semi-rigid, and very tough, but will crush if you bend it in half or step on it.

MAJOR ARTERIES
Use inexpensive 3/8" or 1/2" polyethylene airline as a main supply line from the compressor out around to major prop locations.

POLYURETHANE AIRLINE
Supple yet strong. Kink resistant, so it handles tight bends without collapsing. More expensive than Polyethylene airline, but you can bend it and step on it without crushing it.

AIR DRYERS
Moisture is the #1 enemy! These remove it. "Refrigerated" type (shown) are best. "Desiccant" type use substances that attract moisture.

REGULATORS
Placed at the compressor they adjust air flow (PSI) to the entire system. Should also be used at each prop location.

Mini Compressors

Small Compressors

Medium Sized Compressors

Large Sized Compressors

Multiple Compressors

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