

SALES BULLETIN

From:	Unifiller Systems Product Management
To:	Unifiller Customers
Date:	March 27, 2018
Subject:	Compressed Air Systems for Unifiller Equipment

We assume that you are planning to purchase – or have purchased – a machine from Unifiller Systems if you are receiving this document.

Most of the equipment that Unifiller Systems produces requires compressed air to operate. It is most important that the compressed air system supplies clean, dry air to the Unifiller machines for trouble-free operation over many years.

The compressed air system for Unifiller equipment may range from very simple to complex depending on the size of the Unifiller equipment that you are connecting to. Typically it consists of the three items described in the sections below.

Air Compressor

This unit creates the compressed air. All Unifiller equipment is designed to run at 80 psi (pounds pressure per square inch).

The most important item to consider is the volume of air that the air compressor will supply, measured in cfm (cubic feet per minute). Unifiller typically calculates that each depositor or other air operated function requires 4 cfm at 80 psi pressure. Beyond this calculation, Unifiller recommends to increase the size of the air compressor to at least the next larger unit to have excess capacity and reduce the duty cycle (and extend the life) of the air compressor.

Air compressors are sold by HP (Horsepower) ratings. Typically 1 horsepower provides about 2 – 3.5 cfm of compressed air volume at 90 psi. With this in mind, a single Unifiller depositor requires at minimum a 1.5 hp air compressor. Unifiller recommends purchasing the following:

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1-2 HP at 110 VAC with 15 - 20 gallon receiver tank to run one machine intermittently such as <http://www.californiaairtools.com/ultra-quiet-series-of-air-compressors/2-0-hp-air-compressors/cat-15020c/>

These air compressors are typically oil-free units that have a limited lifespan, but are typically priced economically at \$ 300 - 800

An ultra quiet unit enclosed in a cabinet is available from California Air Tools. <http://www.californiaairtools.com/sound-proof-cabinet-ultra-quiet-air-compressors/cat-10020spc/>

5-7 HP at 220 VAC with a 60 or 80 gallon receiver tank to run multiply machines continuously. A unit to consider may in the series of the Champion or Gardner Denver R-Series of reciprocating, tank mounted, splash lubricated air compressors such as

5 hp GD Model VR5-6 Air Compressor Pkg
7.5 hp GD Model VR7F-6 Air Compressor Pkg

These air compressors are more durable, oil lubricated units that will last a long time. Expect a price of about \$ 2,000 – 3,000 for typical unit

Notes:

- Air compressors up to 2 hp can typically operate on 110V AC (in North America). Larger air compressors require at least 208 – 230 VAC.
- Small, inexpensive air compressors are typically piston based and are quite noisy (except for California Air Tools units that are quieter than average).
- Small, inexpensive air compressors are typically oil free. Their “wear lifetime” is limited to 3000 hours or similar
- Larger compressors include piston, rotary vane and rotary screw types. You will want to choose an oil lubricated compressor for best long term performance.



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Quiet Air Compressor Alternative

Typical piston air compressors tend to be noisy. The units suggested above from California Air Tools are quieter than most.

If even a quieter air compressor is required, consider a rotary sliding vane air compressor such as a Hydrovane from <http://www.gardnerdenver.com/hydrovane/>



Air Dryer

Air contains moisture (water). It is visible to us as humidity in clouds and rain. Warm air can hold more water than cold air. Water in the compressed air, however, is not good. It will damage and may corrode pneumatic components, shortening the life of the Unifiller equipment that you purchased. Unifiller equipment includes a filter where you connect it to the compressed air system. This filter is capable of removing remaining moisture with an auto-drain feature.

Most compressed air systems include an air dryer after the air compressor. If you have a simple, single depositor connected to a small air compressor, you may not require an air dryer. If, however, you power multiple pneumatic machines, Unifiller strongly recommends that you install an air dryer.

Compressed air dryers are available as desiccant units or refrigerated units.

Desiccant air driers are inexpensive and are available from <http://www.mcmaster.com/#air-compressor-dryers/=yuuw2o>



Refrigerated compressed air dryers are available from your local industrial pneumatic supplier or from MacMaster Carr.

<http://www.mcmaster.com/#refrigerated-air-dryers/=mq5gz3>

An economically priced unit (shown beside) is available from Harbor Freight Tools <http://www.harborfreight.com/compressed-air-dryer-40211.html>



Air Distribution System

The air compressor and air dryer are typically placed away from the production area. You may also need to power multiple machines that require compressed air.

The simplest version to supply compressed air to the production machines is to use a hose suitable for compressed air.

Beyond that, the compressed air distribution system usually consists of pipes that are connected in system as shown beside. A proper layout minimizes chances of water getting to the equipment and utilizes water drains. Some additional things you may want to consider include:

- Install a receiver tank at the opposite end of the air compressor. This helps maintain compressed air volume throughout the system
- Install one air outlet in your wash-up area. This allows you to take a Unifiller Depositor to the wash-up area and run it to flush the product out prior to disassembling it.
- Consider your floor layout. Hoses that drop from the ceiling are better suited in most cases because the hoses do not lay across the floors limiting travel of machines and racks around your depositors.

To connect the Unifiller equipment to the compressed air system, you will typically use flexible hose with a minimum inside diameter of 3/8" or ideally 1/2" to power multiple production machines.

All standalone Unifiller machines are fitted with a quick connect 1/4" Foster 10-3 plug. Your flexible hose will require one of the Foster 10-3 couplers shown in the link below to connect to the Unifiller machine. Large Unifiller systems may use larger Foster plugs. <http://www.couplers.com/images/catalog/page4.pdf>



Pneumatic Component Lubrication

The pneumatic components that Unifiller uses are lubricated for "life". Unifiller equipment is not supplied with an oiler and does not require one.

