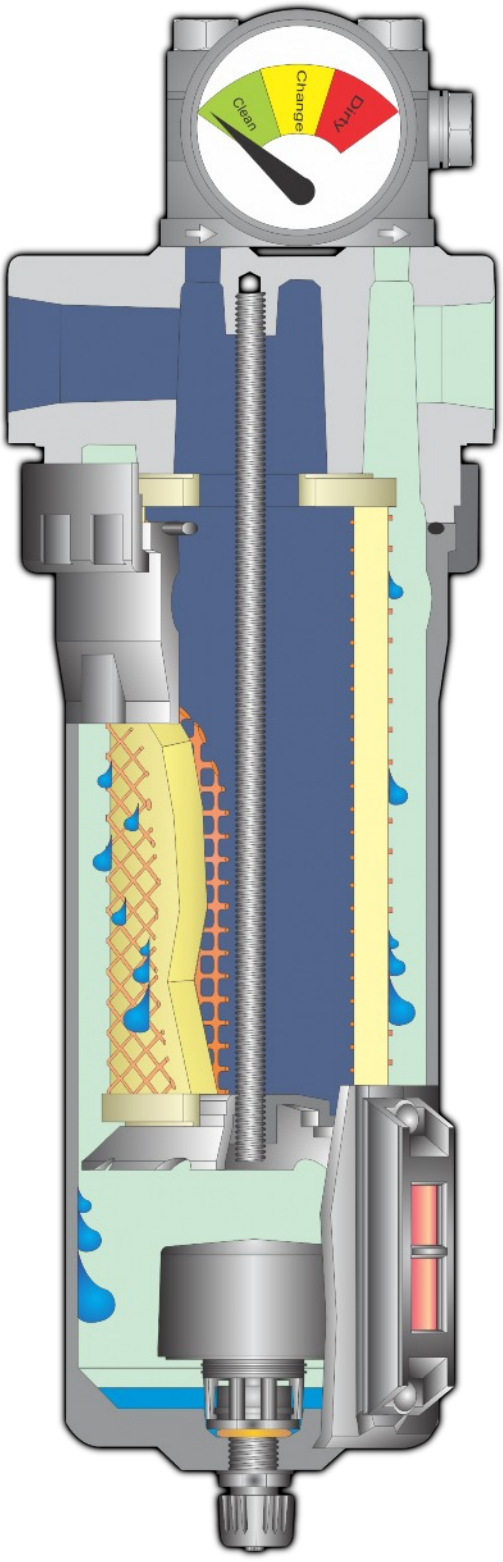
MASTER PNEUMATIC

Air Preparation Applications



- Paint Booth
- Tools
- Cylinders
- Valves
- Air Motors
- Hoists
- And much more .....

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APPLICATIONS

The following information was prepared as a training aid and applications guide for sales personnel and customers.

The configurations provide a general idea of what products are needed. Pipe sizes and air flows will require different product sizes but generally the configurations will remain the same. Our catalog has information on different pipe size products and air flows.

If you need help with proper sizing, contact your local distributor or Master Pneumatic direct.

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SHOP LAYOUT DIAGRAM

AIR LINE PIPE SIZE

Figures in this chart (shown on the following page) are NPT pipe sizes on a 100 PSI air system to carry air with about a 1 PSI pressure loss. When measuring piping distances, to be on the safe side, count each pipe fitting as equal to a 5-foot length of pipe. At 80 PSI slightly less flow can be carried at the same 1 PSI loss, and a 125 PSI slightly more flow can be carried at the same loss by the same pipe size.

It is difficult to estimate the SCFM (standard cubic feet per minute) air flow that a pipe will have to carry. This varies with the application. On some applications, such as in a large plant with many branch circuits, the air flow will be at fairly steady rate. Other applications may call for a high surge of air for a brief period followed by a long no-flow period. If a compressor were running continuously at 100 PSI and its output flowing at a steady rate, its electric motor nameplate HP rating would indicate the approximate SCFM, figured at about 3 1/2 to 4 SCFM per HP.

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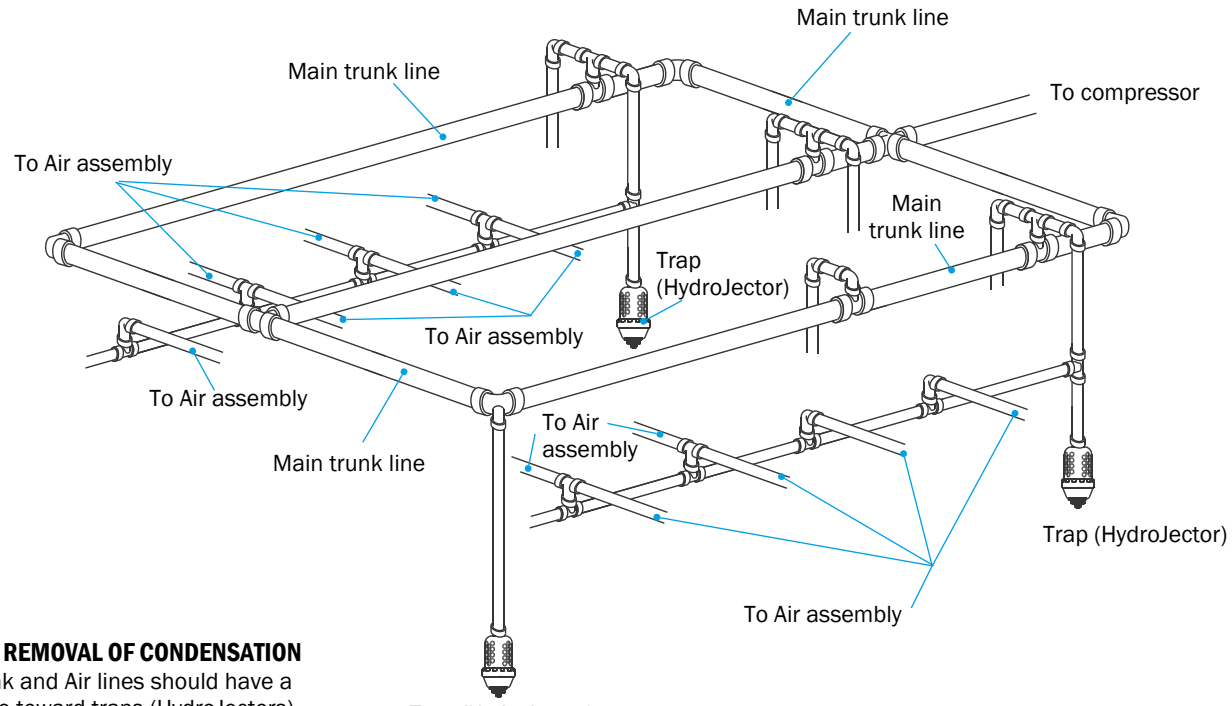
SHOP LAYOUT DIAGRAM



For proper REMOVAL OF CONDENSATION
Main trunk and Air lines should have a 1/2° slope toward traps (HydroJectors)

See the following pages for additional air assembly configurations.

SCFM	LENGTH OF RUN – FEET									Compressor
Flow	25	50	75	100	150	200	300	500	1000	HP
4	1/2	1/2	1/2	1/2	1/2	1/2	1/2	3/4	3/4	1
12	1/2	1/2	1/2	3/4	3/4	3/4	3/4	1	1	3
20	3/4	3/4	3/4	3/4	1	1	1	1-1/4	1-1/4	5
30	3/4	3/4	1	1	1	1	1-1/4	1-1/4	1-1/4	7-1/2
40	3/4	1	1	1	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2	10
60	1	1	1-1/4	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2	2	15
80	1	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2	1-1/2	2	2	20
100	1-1/4	1-1/4	1-1/4	1-1/2	1-1/2	2	2	2	2-1/2	25
120	1-1/4	1-1/2	1-1/2	1-1/2	2	2	2	2-1/2	2-1/2	30
160	1-1/4	1-1/2	1-1/2	2	2	2	2-1/2	2-1/2	3	40
200	1-1/2	2	2	2	2	2-1/2	2-1/2	3	3	50
240	1-1/2	2	2	2	2-1/2	2-1/2	2-1/2	3	3	60
300	2	2	2	2-1/2	2-1/2	3	3	3	3-1/2	75
400	2	2-1/2	2-1/2	2-1/2	3	3	3	3-1/2	4	100
500	2	2-1/2	2-1/2	3	3	3	3-1/2	3-1/2	4	125

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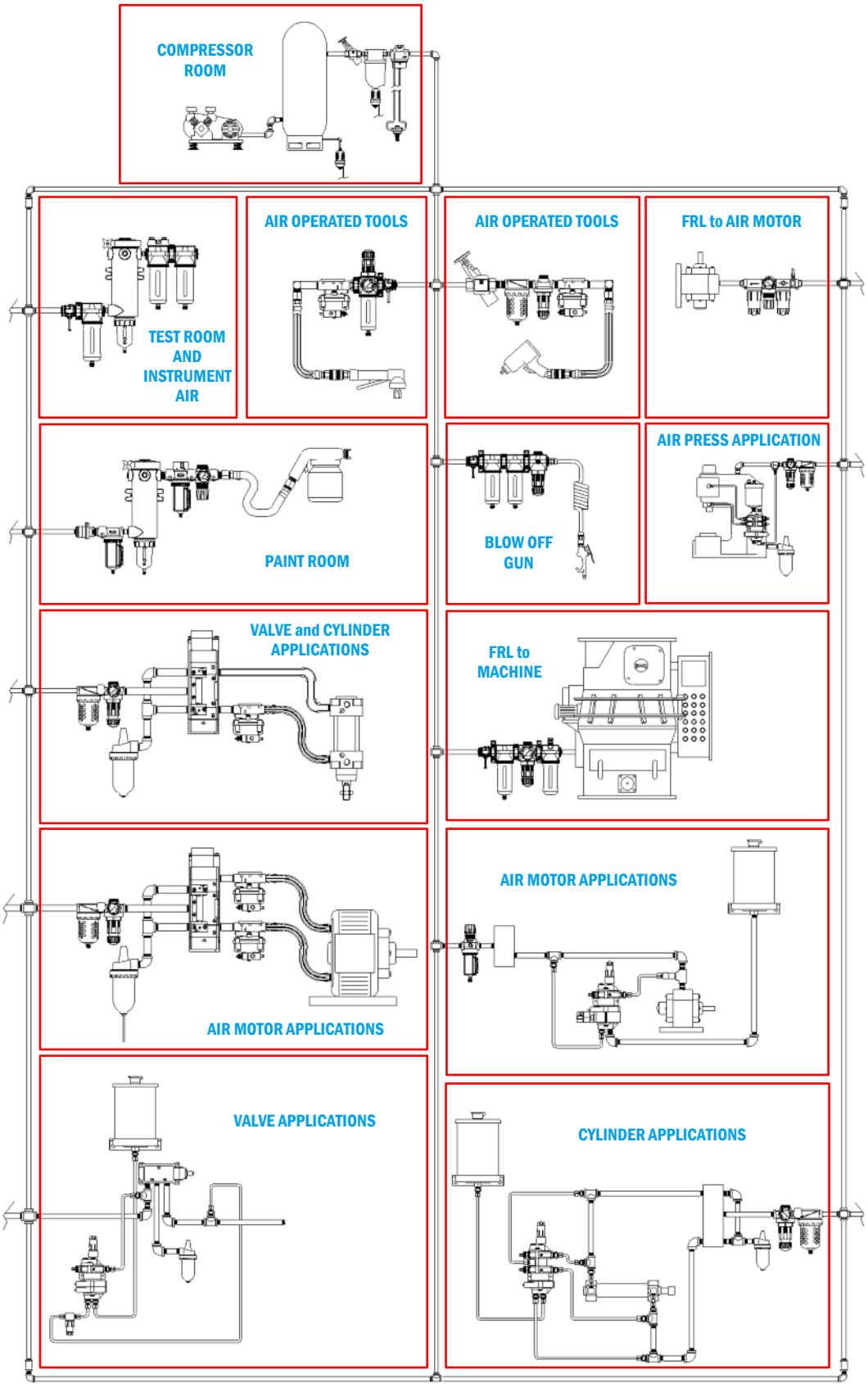

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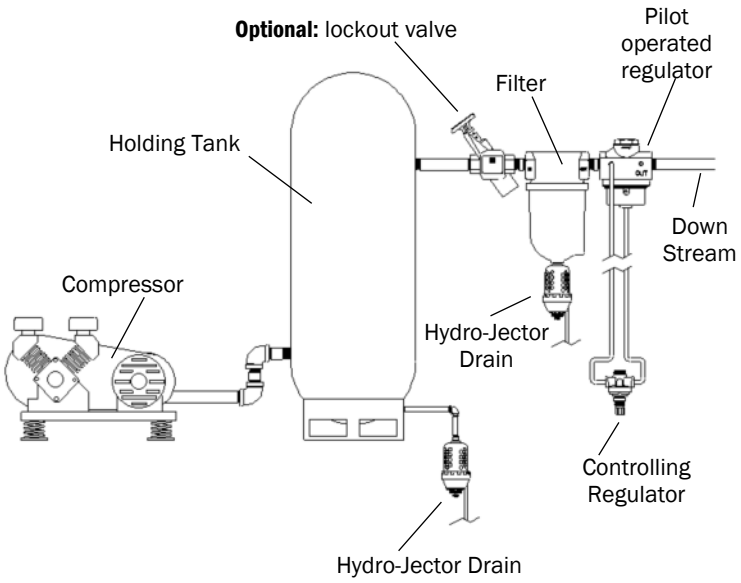
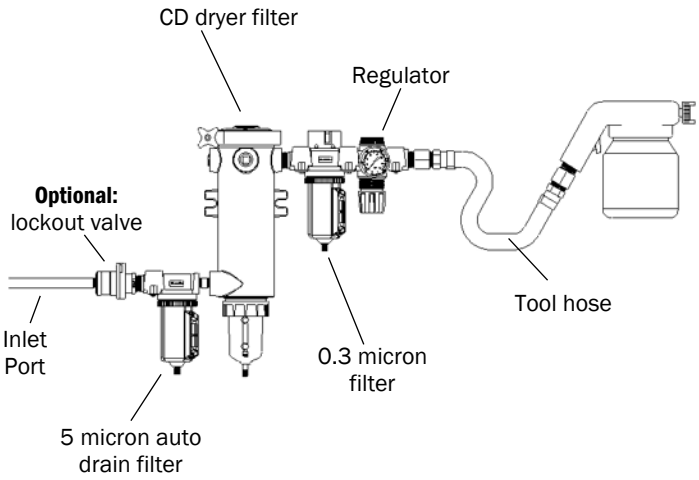
SAMPLE AIR APPLICATIONS

COMPRESSOR ROOM



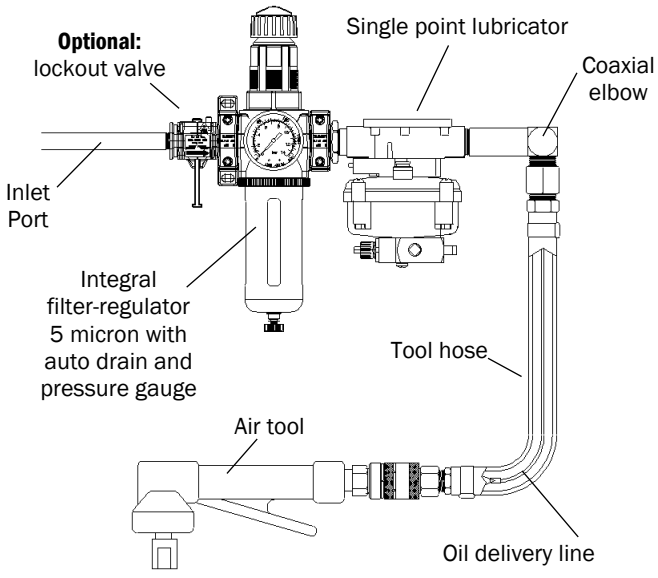
PAINT ROOM



This is one example of clean air to a paint gun application, note that the coalescing filter with differential pressure gauge is installed beyond the CD dryer can be 0.3 or 0.01 micron.

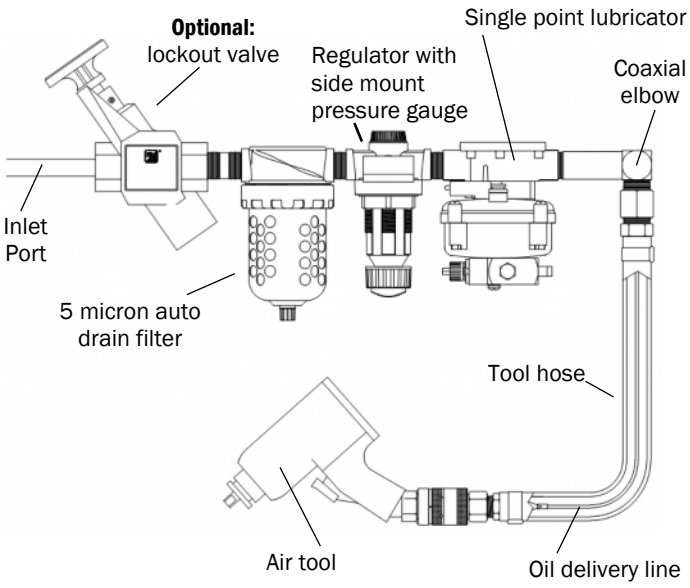
AIR OPERATED TOOLS

CFR: small lockout



Use of a Master Pneumatic integral filter/regulator and single point lubricator with pre-filled oil delivery line with optional **V380** lockout to an air tool

AIR OPERATED TOOLS



Using a Master Pneumatic **FRL** with a single point lubricator with pre-filled oil delivery line with optional **V40** lockout valve to air tool.

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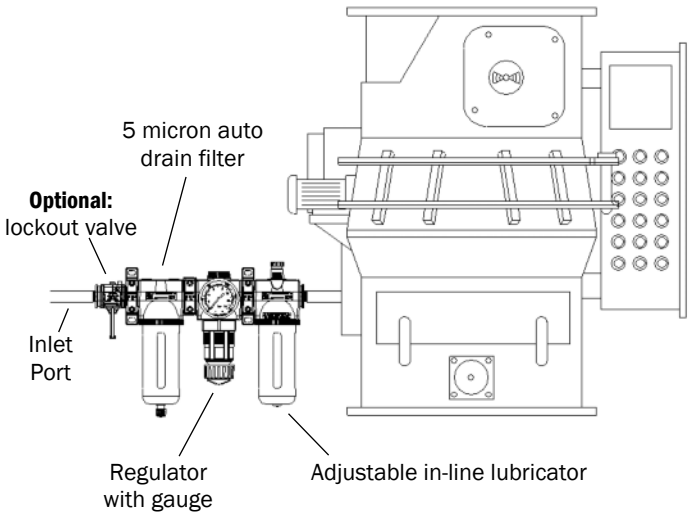
SAMPLE AIR APPLICATIONS

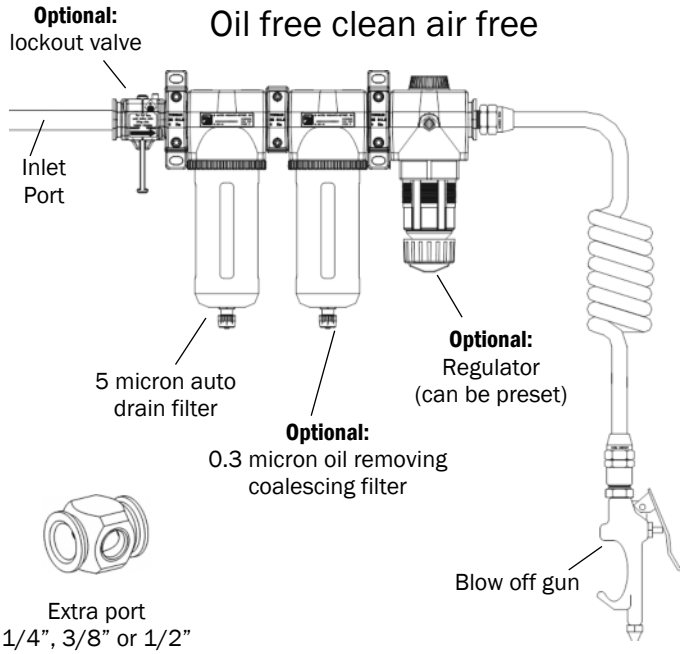
FRL to MACHINE



Note: Lubricator should be installed horizontal and as close as possible to device it is to serve.

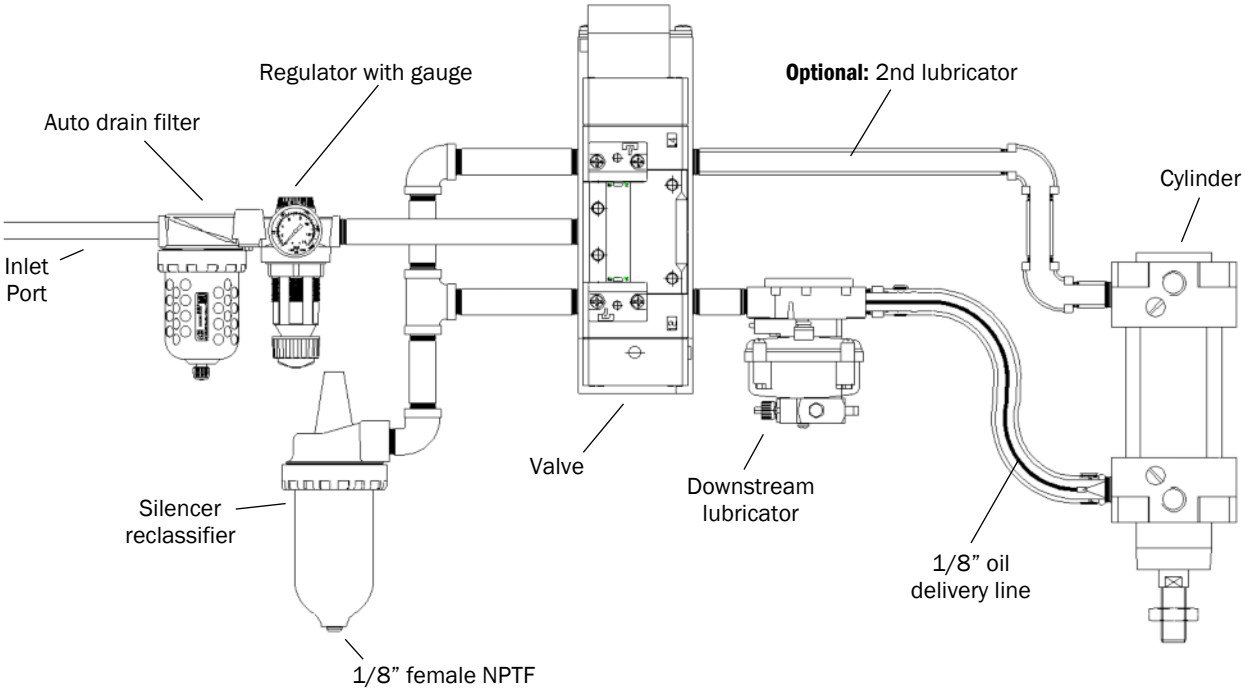
BLOW OFF GUN

Oil free clean air free



With the use of an extra port the blow off gun can be modularly installed in any position in the assembly, M/P catalog for details.

VALVE and CYLINDER APPLICATIONS



An example of using a Master Pneumatic downstream single point lubricator to lubricate a cylinder, note that if required, a second lubricator could be installed depending on the size of the cylinder and lubrication requirements.

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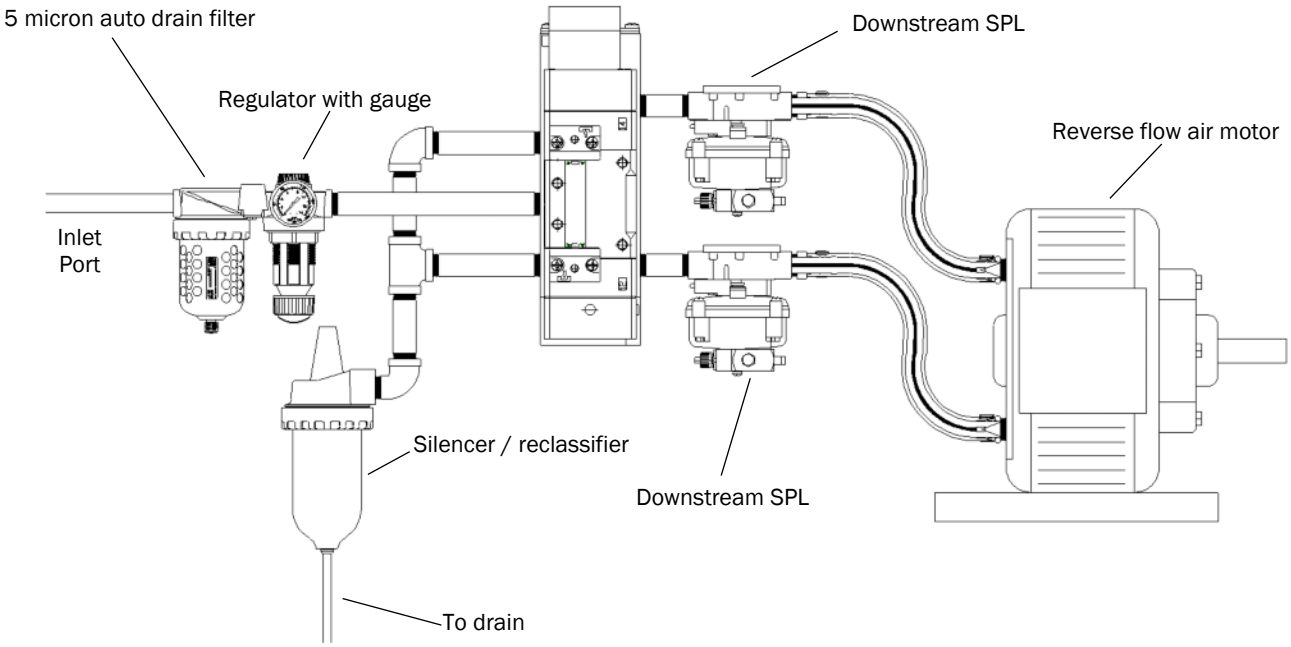
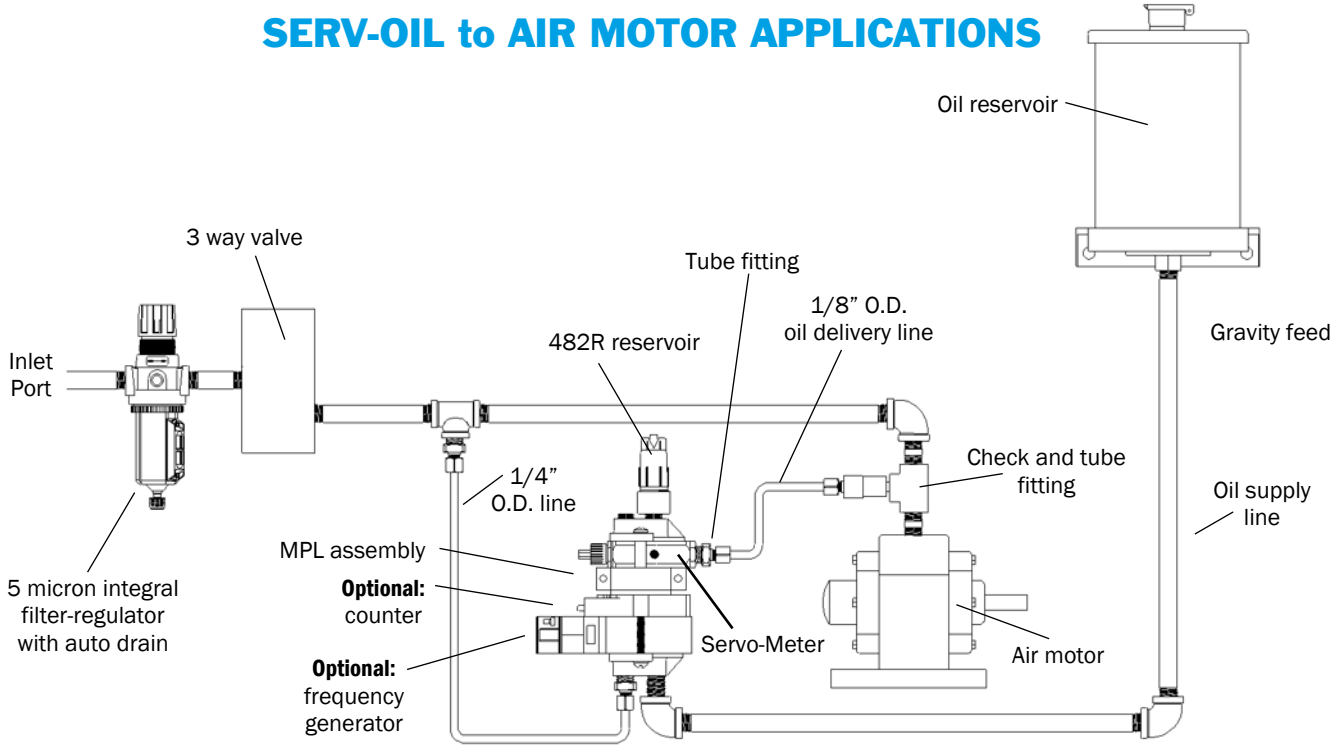
SAMPLE AIR APPLICATIONS

AIR MOTOR APPLICATIONS



Above shows the use of two downstream single point lubricators delivering lubrication to a reverse flow air motor, lubricant can be delivered in both forward and reverse operation. A frequency generator can be added to the single point lubricator in the event that more than one injection of lubrication is required due to length of cycle time.

SERV-OIL to AIR MOTOR APPLICATIONS



Master Pneumatic Serv-Oil system to lubricate an air motor. An optional frequency generator can be added to the assembly if more than one injection of lubricant is required depending on length of operating cycle.

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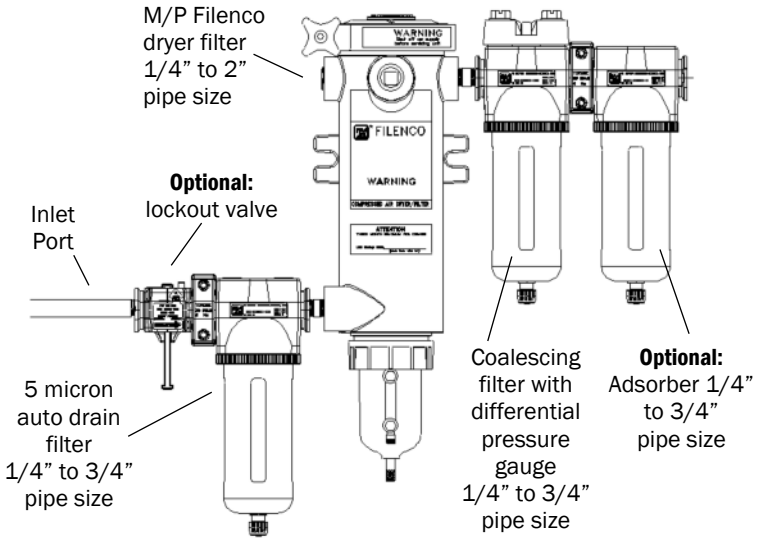
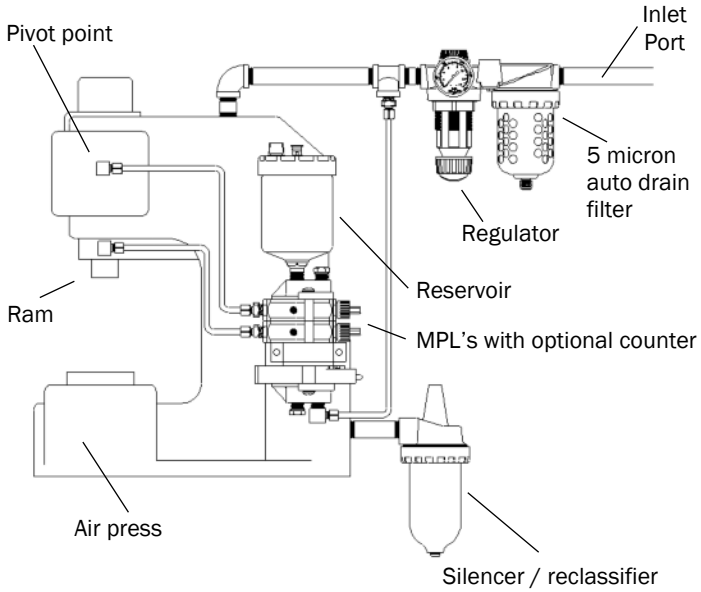
SAMPLE AIR APPLICATIONS

TEST ROOM & INSTRUMENT AIR



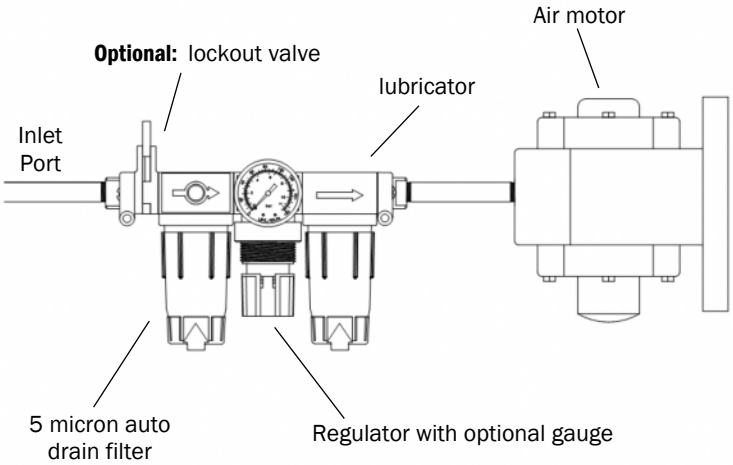
This is an example of air suitable for test room, instruments or other similar applications. Preceded by an optional lockout valve is a 5 micron auto drain filter followed by an M/P Filenco dryer, next is an oil removing coalescing filter which can be supplied with either a 0.3 or a 0.01 micron element and lastly an absorber for removing vapors and hydrocarbons.

AIR PRESS APPLICATIONS

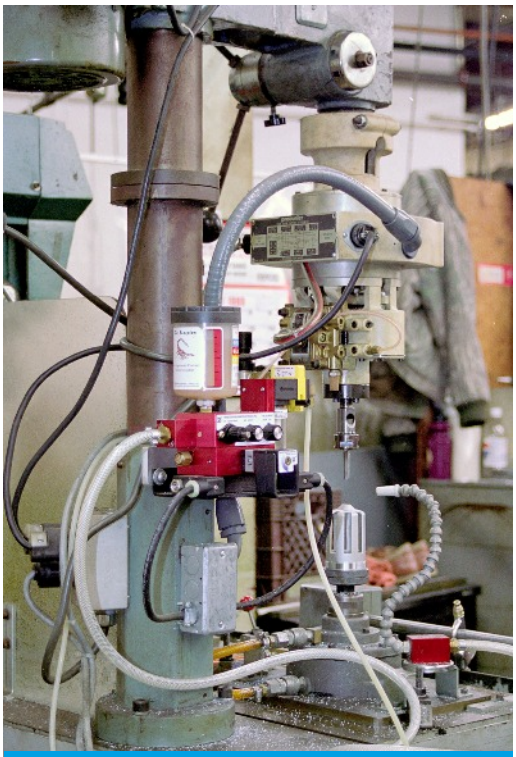


Using Master Pneumatic Serv-Oil to lubricate a press. One lube point is injected directly into the ram area and the second is lubricating the internal pivot point.

FRL to AIR MOTOR



Optional lockout valve with a Master Pneumatic FRL, supplying lubrication to an air motor. Note that the lubricator needs to be installed horizontal and as close as possible to the device being lubricated.



SCORPION SPRAY SYSTEM

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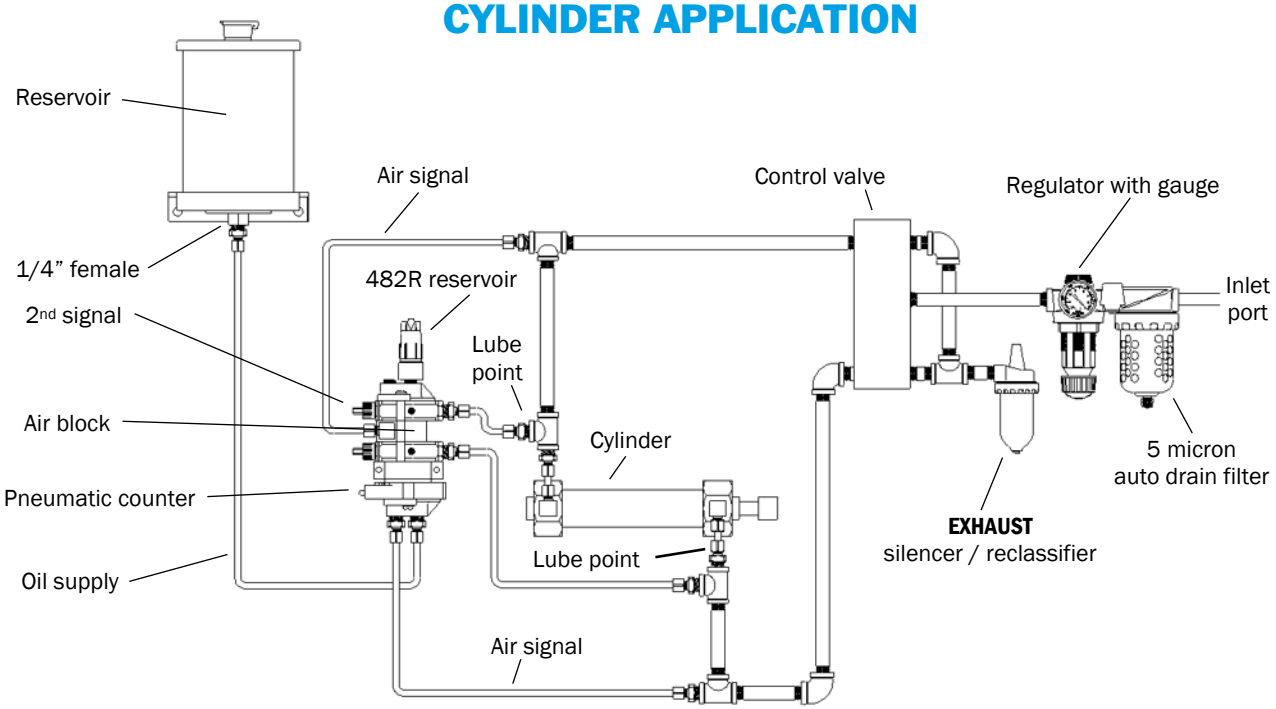
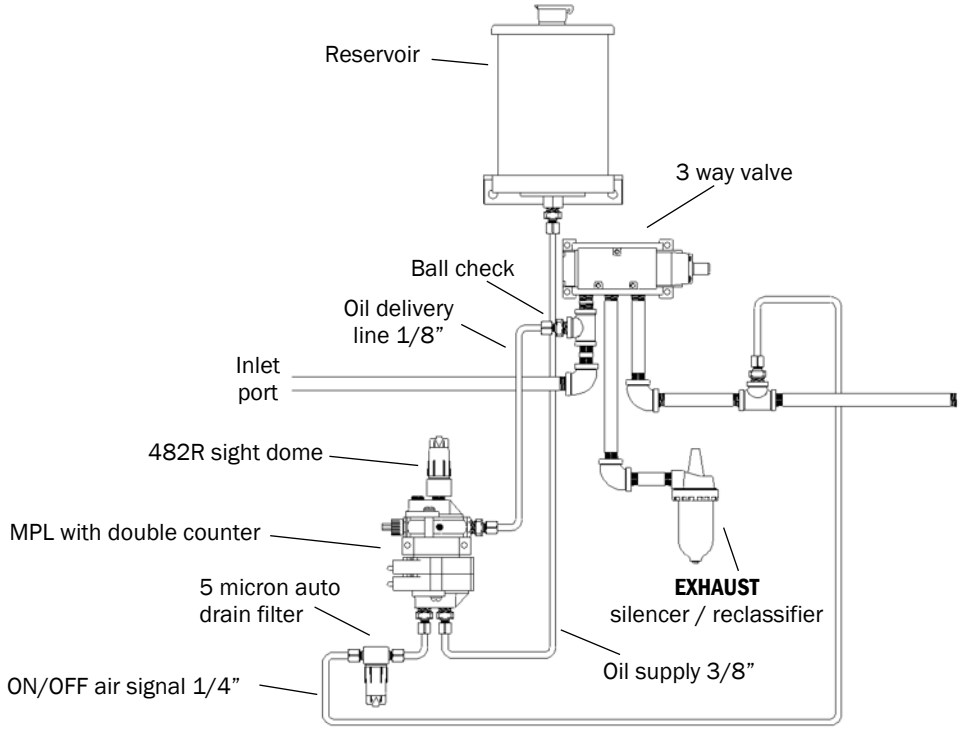
OPERATION SECTIONAL VIEWS

CYLINDER APPLICATION



This is an example of the use of Serv-Oil in an air cylinder application. A cylinder installed in the horizontal position could possibly require two lube points, the same is true if installed vertically. Above shows a lube point and an optional second lube point.

VALVE APPLICATION



In the event that it is necessary to lubricate a valve, this is an example of how it can be done using the Master Pneumatic Serv-Oil system. With the addition of the dual pneumatic pulse counter the valve can receive lubrication every 1, 5, 10, 25, 50, or 100 cycles.

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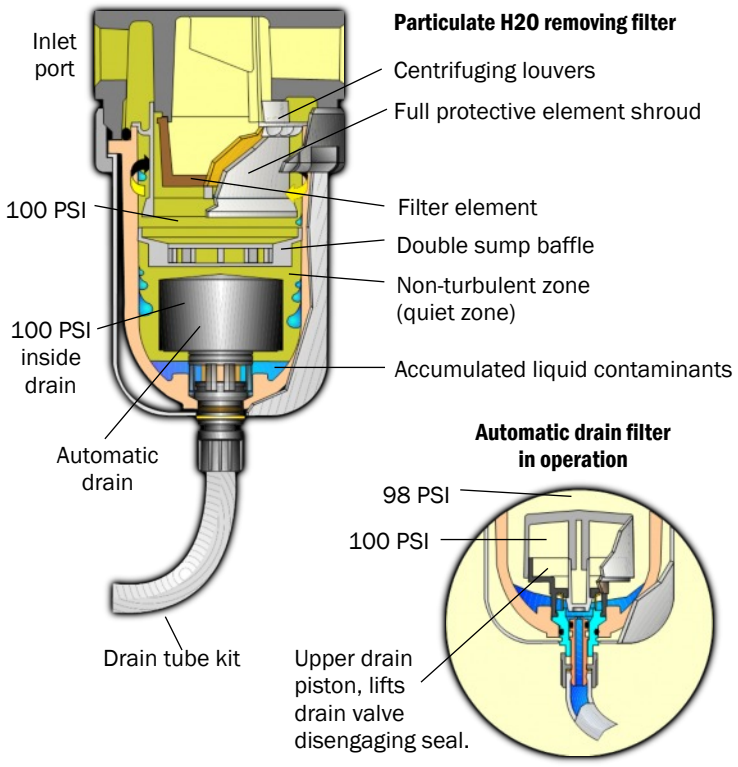
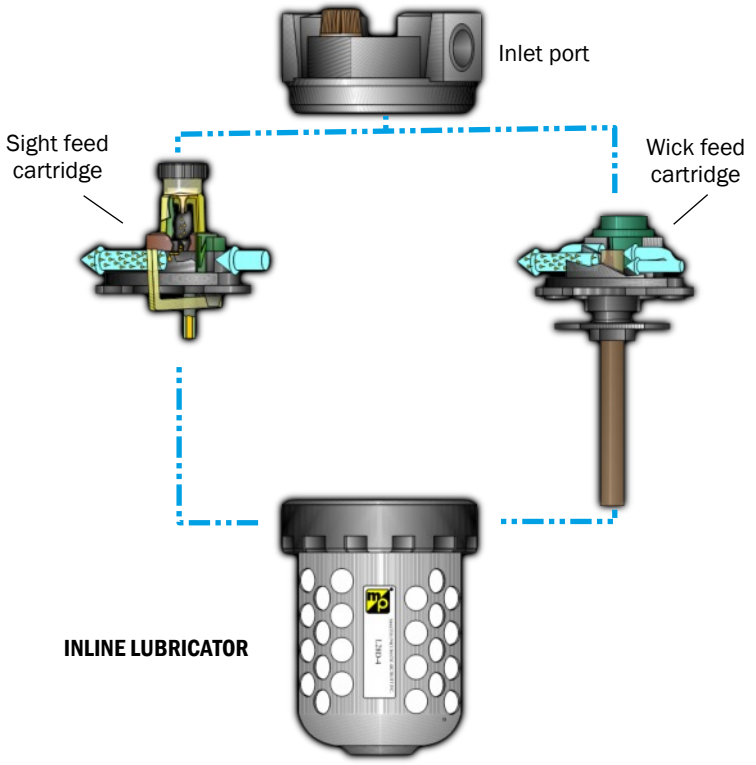
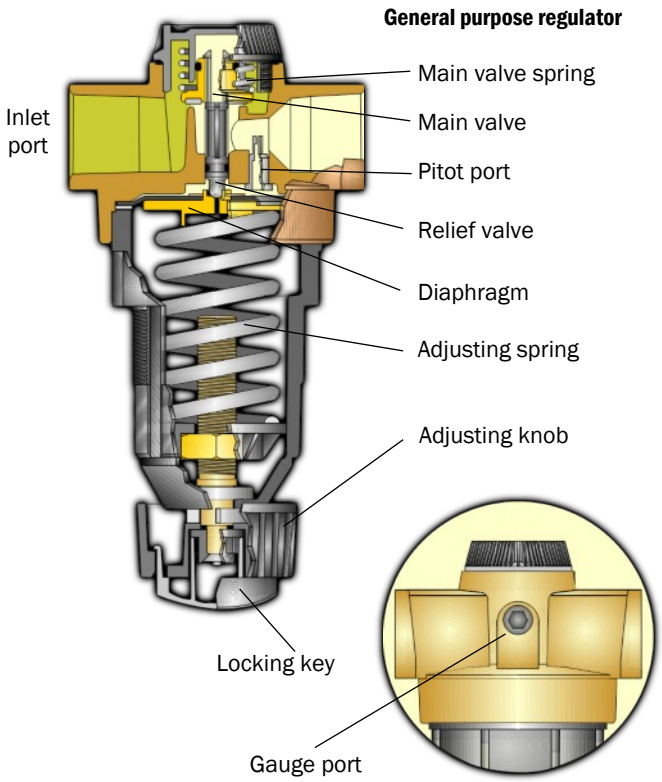
OPERATION SECTIONAL VIEWS



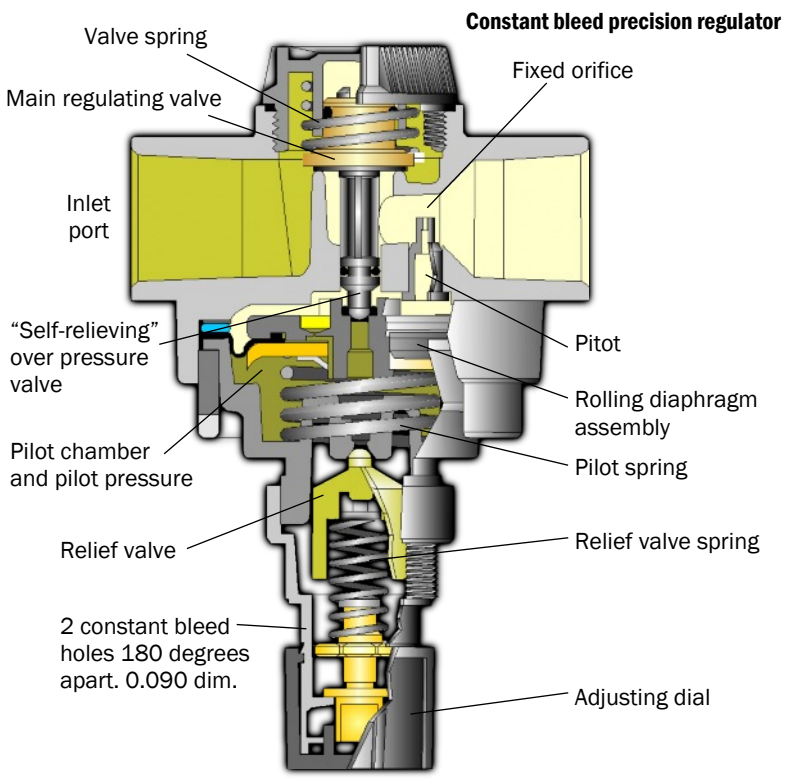
FD100 MODEL SHOWN



L28D and L28W MODEL SHOWN



R100 MODEL SHOWN



IR100 MODEL SHOWN

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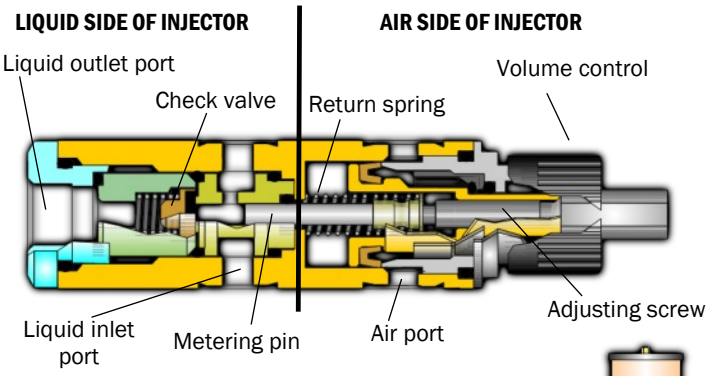
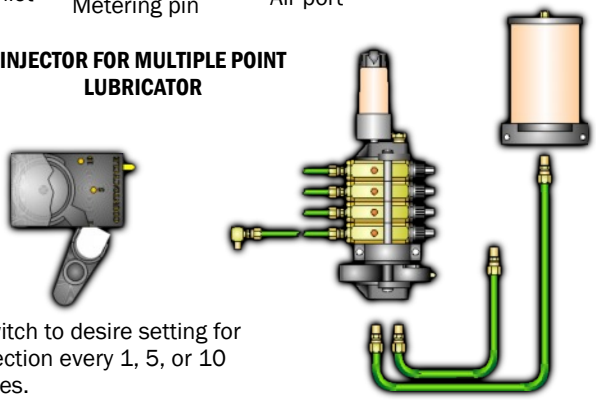
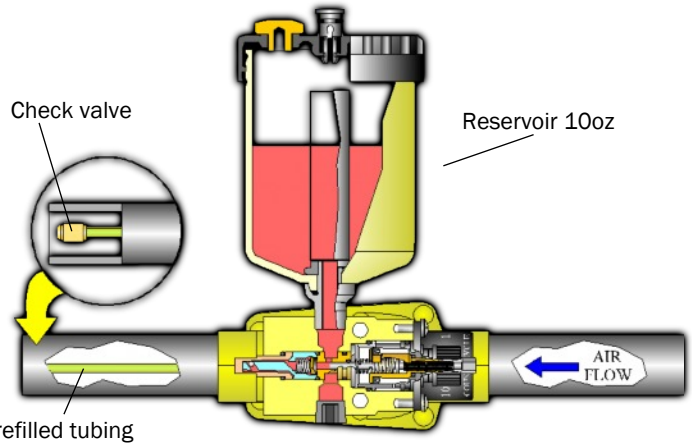
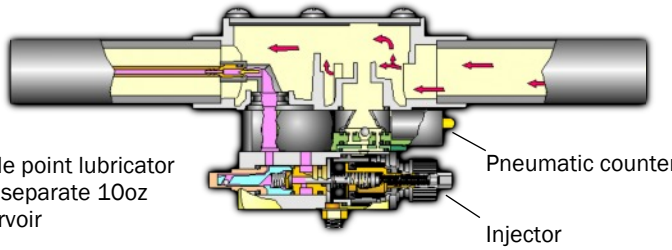


INJECTOR FOR MULTIPLE POINT LUBRICATOR



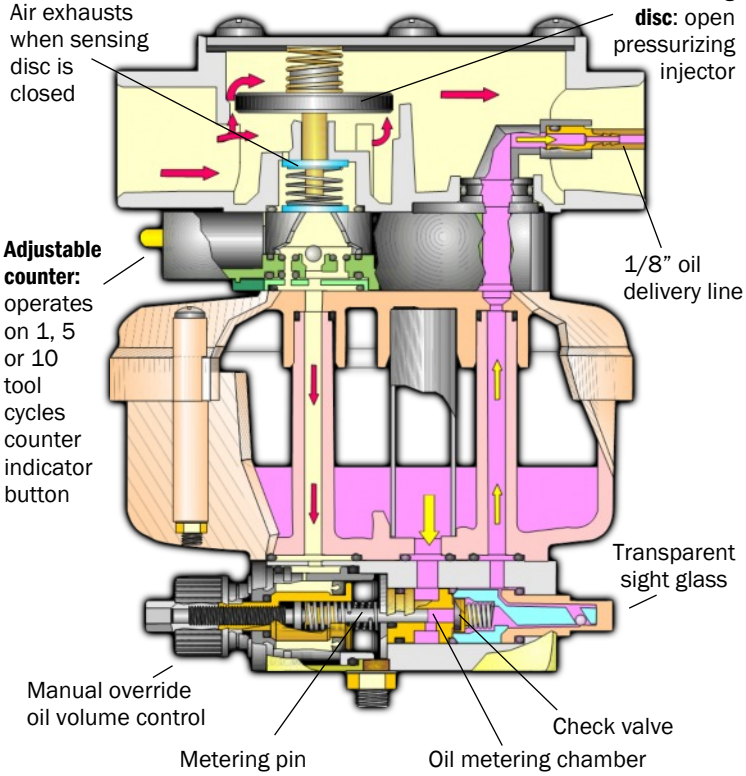
Push switch to desire setting for lube injection every 1, 5, or 10 tool cycles.





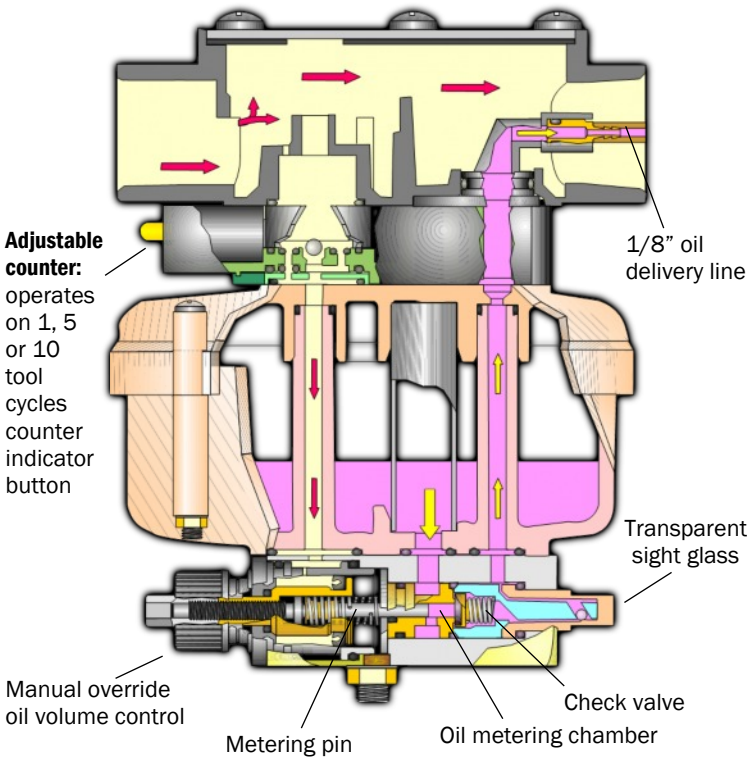
P70 SERIES SHOWN

Single point lubricator with built in 10 oz reservoir



A60041 MODEL SHOWN

Single point lubricator with built in 10 oz reservoir to be used downstream of the valve.



A64041 MODEL SHOWN

D64041 MODEL SHOWN

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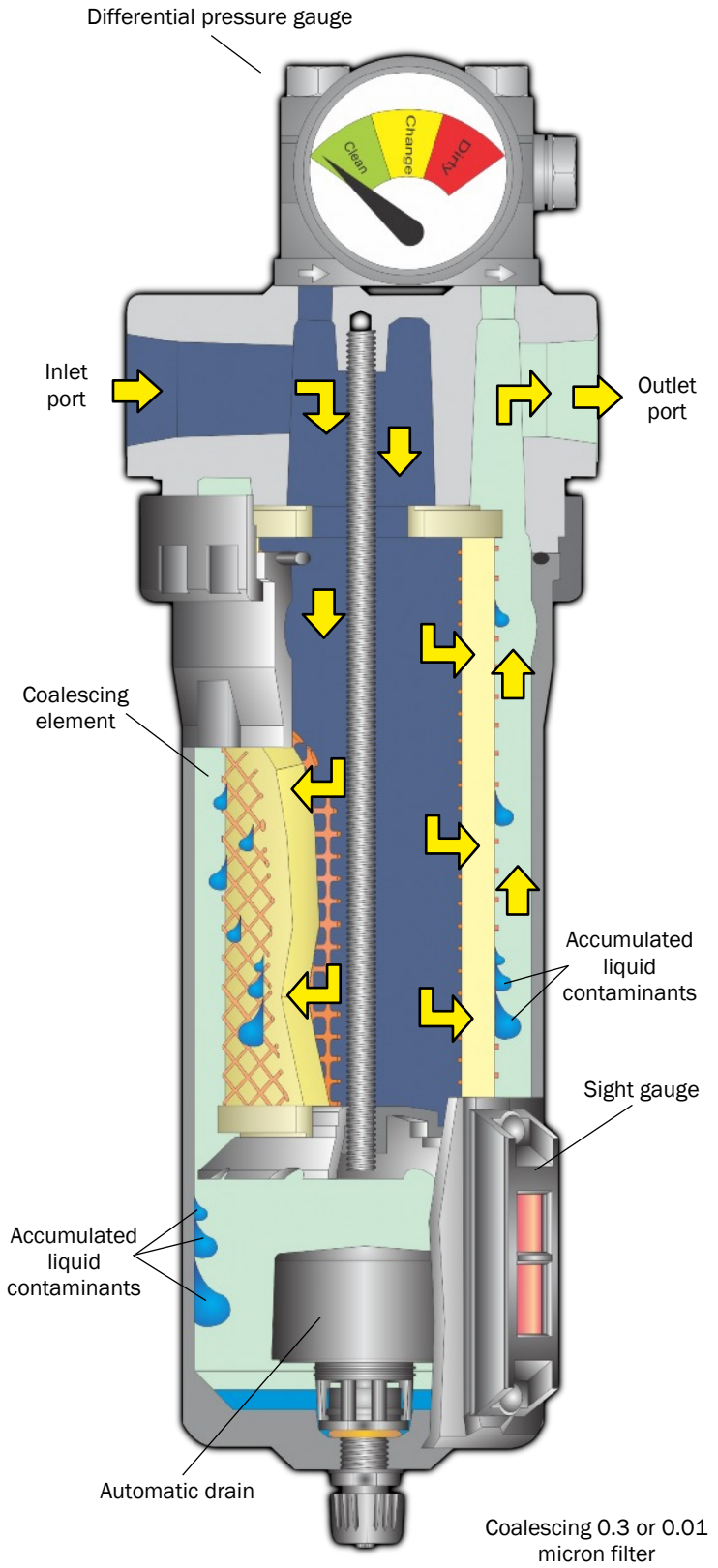
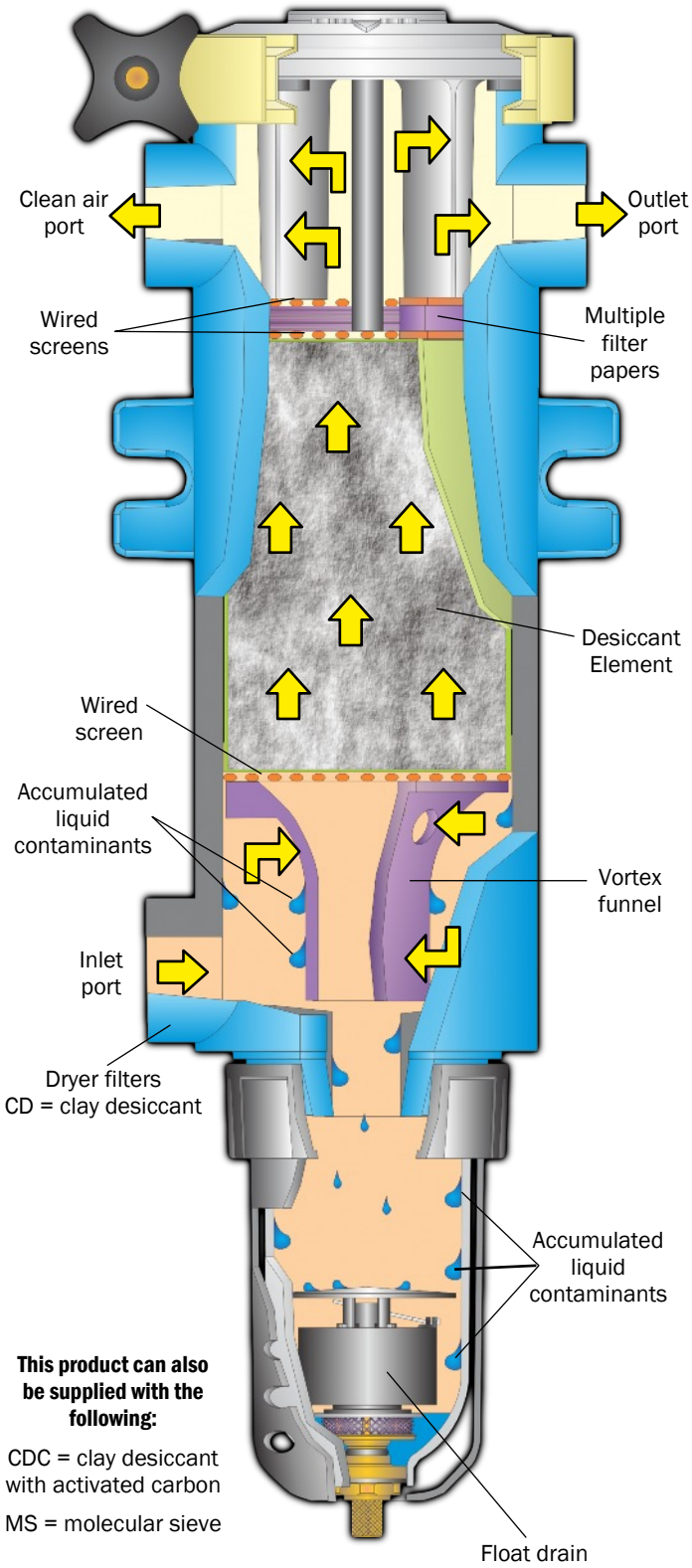
OPERATION SECTIONAL VIEWS



BFC201 MODEL SHOWN



This product can also be supplied with the following:

CDC = clay desiccant with activated carbon

MS = molecular sieve

CD38 MODEL SHOWN

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