Introduction to Inline Lubrication

Master Pneumatic

Sentry

What is the purpose of Inline Lubrication?

Introduce atomized oil into the compressed air line to lubricate:

- Air Motors
- Cylinders
- Gears
- Sliding surfaces

By doing this, some of the benefits realized are:

- Lower friction
- Cooling
- Smoother operation
- Lower noise levels
- Speed control
- Torque
- Lower repair and replacement costs

Miniature

Master Pneumatic Inline Lubricators

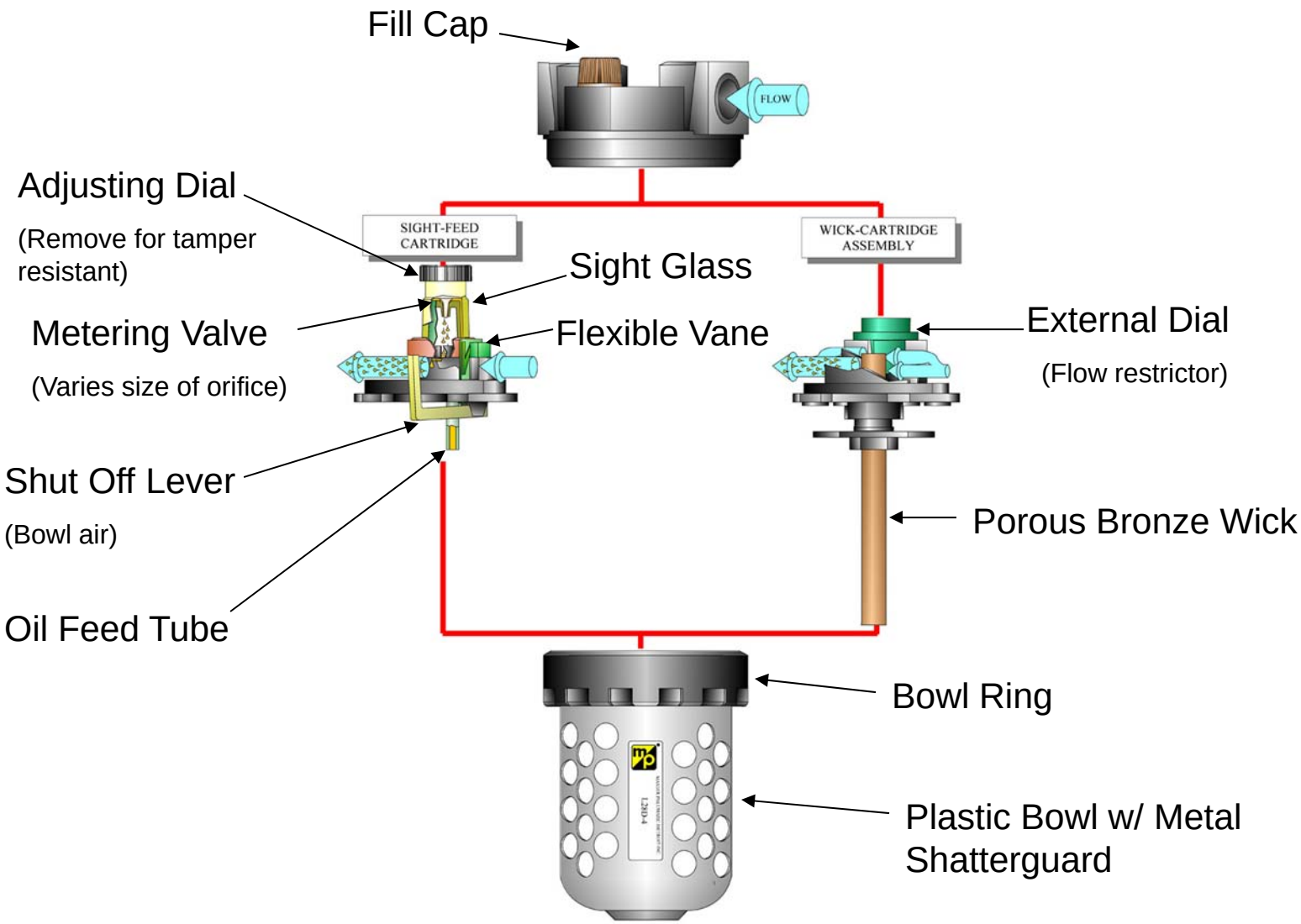
Three types offered:

- Sight Feed Lubricators
- Wick Feed Lubricators
- Single Point Lubricators (Not covered in this presentation)

Sight Feed & Wick Lubricators are commonly referred to as MIST LUBRICATORS

Series
350

Inline MIST Lubricators



Series 350

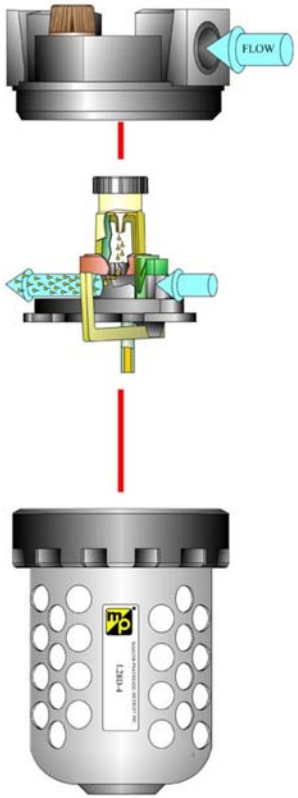
Sight Feed Assembly

•Works on pressure differential. As air passes through the flexible vane a slight pressure drop is created causing oil to move up the oil feed tube, through the metering valve and into the nylon sight feed dome.

•The adjusting dial is used to control the amount of oil that is introduced into the sight feed dome by varying the size of the orifice.

•The adjusting dial is removable to reduce tampering.

•NOTE: Only use lubricants that are compatible with polycarbonate or use a metal bowl.

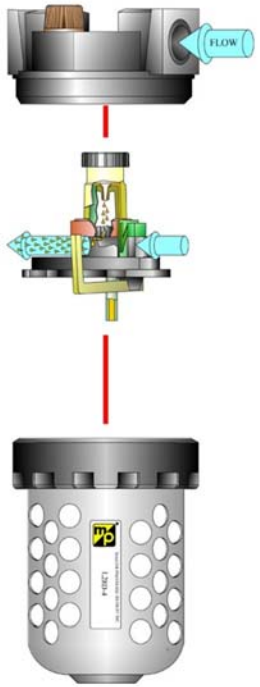


Series
380

Sight Feed Assembly

Benefits:

- External tamper resistant adjustment
  - –No tools required
- Shatterguard with 360º view of oil level
  - –Metal bowls from 70 Series up have site gauges
- Can be filled under pressure
- Clear Nylon Sight Glass (good visual oil adjustment)
- Optional Quick-Fill Q-cap
- Optional Low Level Switch available on larger sizes with metal bowl option

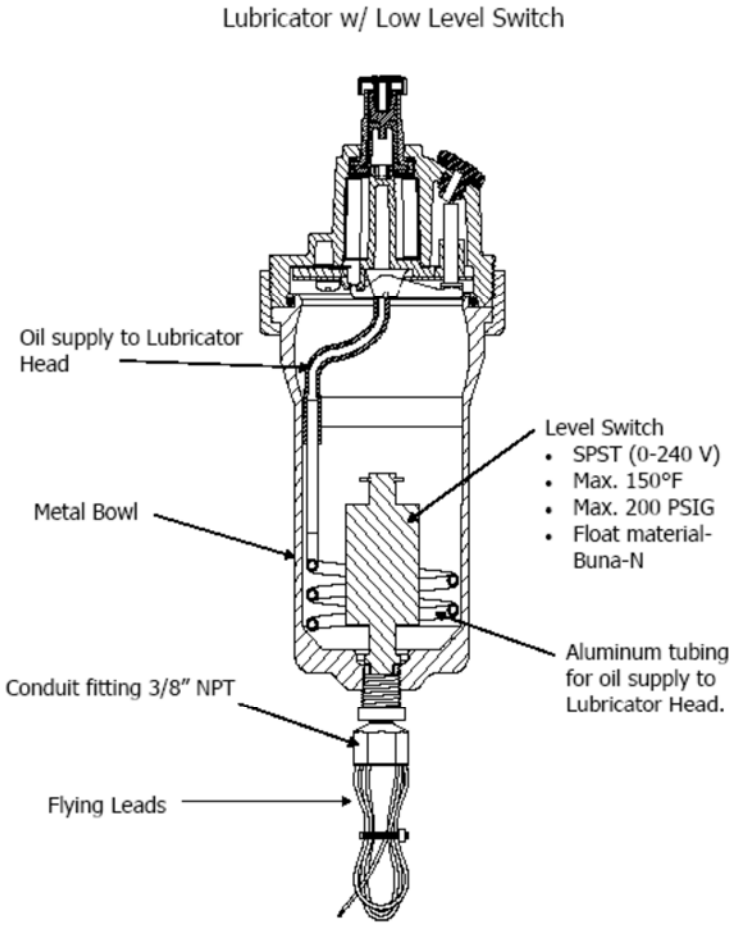


Series
380

Sight Feed Assembly

Optional Low Level Switch

•Available in most metal bowls in the 29, 380 and 237 Series products



High Flow
Vanguard

Wick Feed Assembly

•The porous bronze wick is saturated with oil in the reservoir

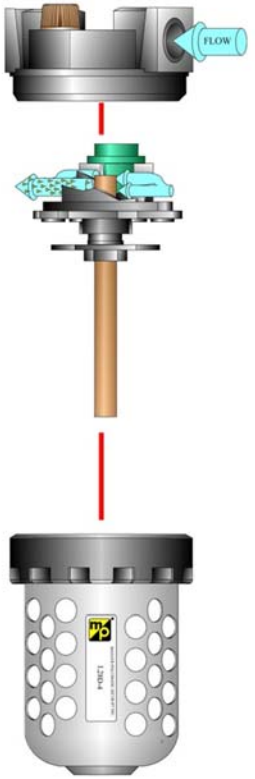
•Capillary action causes the oil to travel up the wick

•Oil is stripped off the upper portion of the wick by the air flow. A constant oil-to-air ratio is maintained

•The ratio is controlled by the manual adjustment of the wick height. Some models can only be adjusted internally making them tamper proof

•Cannot be filled under pressure

•NOTE- Only use lubricant that is compatible with polycarbonate OR use metal bowl option



Series 350

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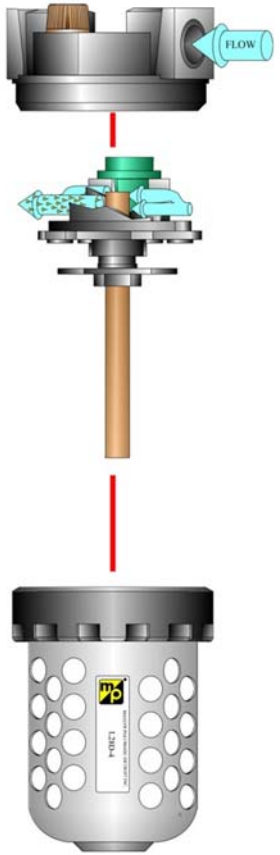
Benefits of Wick Type

- No small orifices to clog and stop oil delivery
- Can be used downstream of 4-Way valve (reverse flow)
- Automatically maintains air-oil ratio regardless of variations in air flow
- Cannot be accidently shut off
- Shatterguard allows for 360º view of oil level
  - Metal bowls from 70 Series up have site gauges
- Optional Quick-Fill Q-Cap (otherwise, cannot be filled under pressure)



Series
380
Extended

Master Pneumatic

Quick-Fill Options & Accessories

•Both Sight Feed and Wick Feed Lubricators can be filled under pressure if a Q-Cap is installed in the head

Q option

•The Master Pneumatic #A10001 Coupler can be installed on a hose line from a fluid delivery pump

A10001 →

If ordered separately, there are different Q-Cap part numbers-depending on which series of Lubricator you have →

High-Flow
Vanguard

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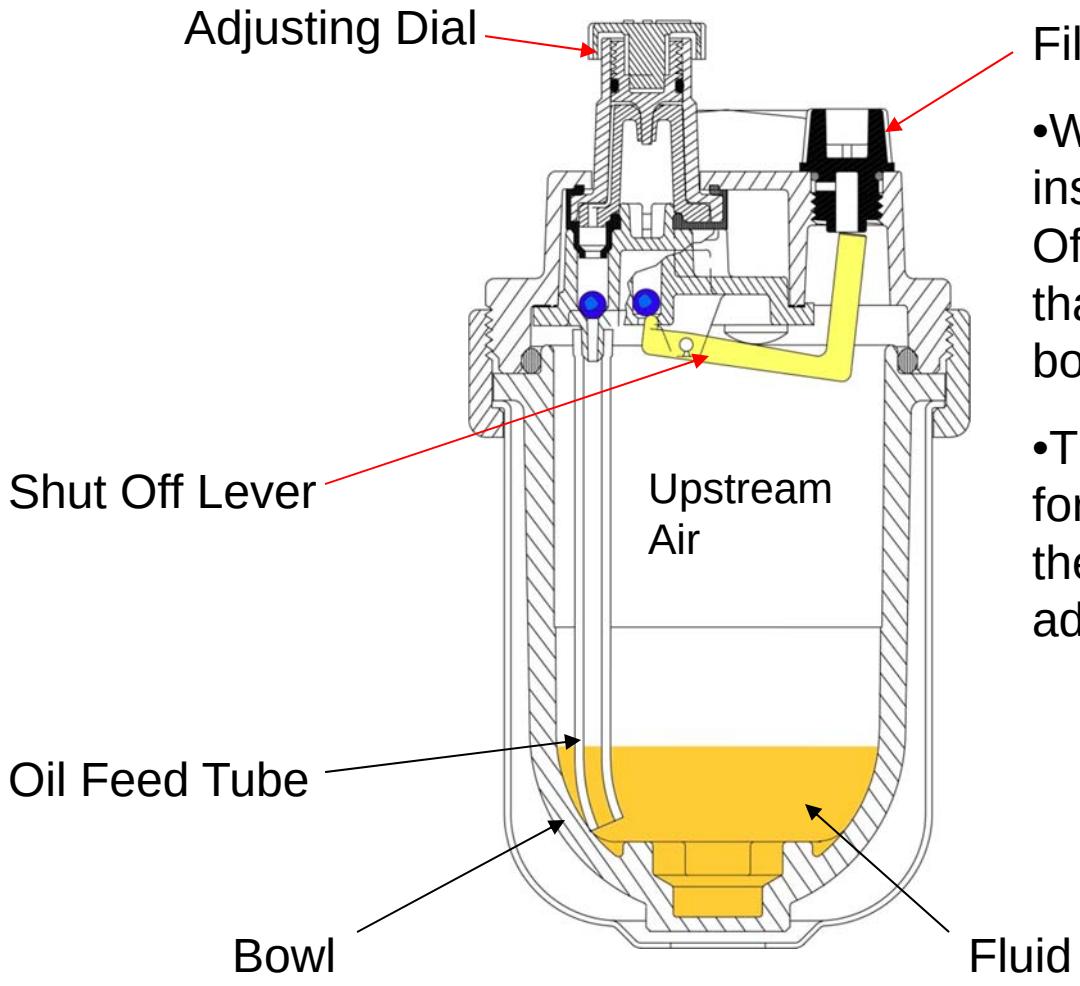
Sight Feed Lubricators can be filled under pressure



- When the Fill Cap is installed, it presses the Shut Off Lever which lifts the ball that allows upstream air into bowl
- The upstream air pressure forces oil from the bowl up the Oil Feed Tube to the adjusting dial

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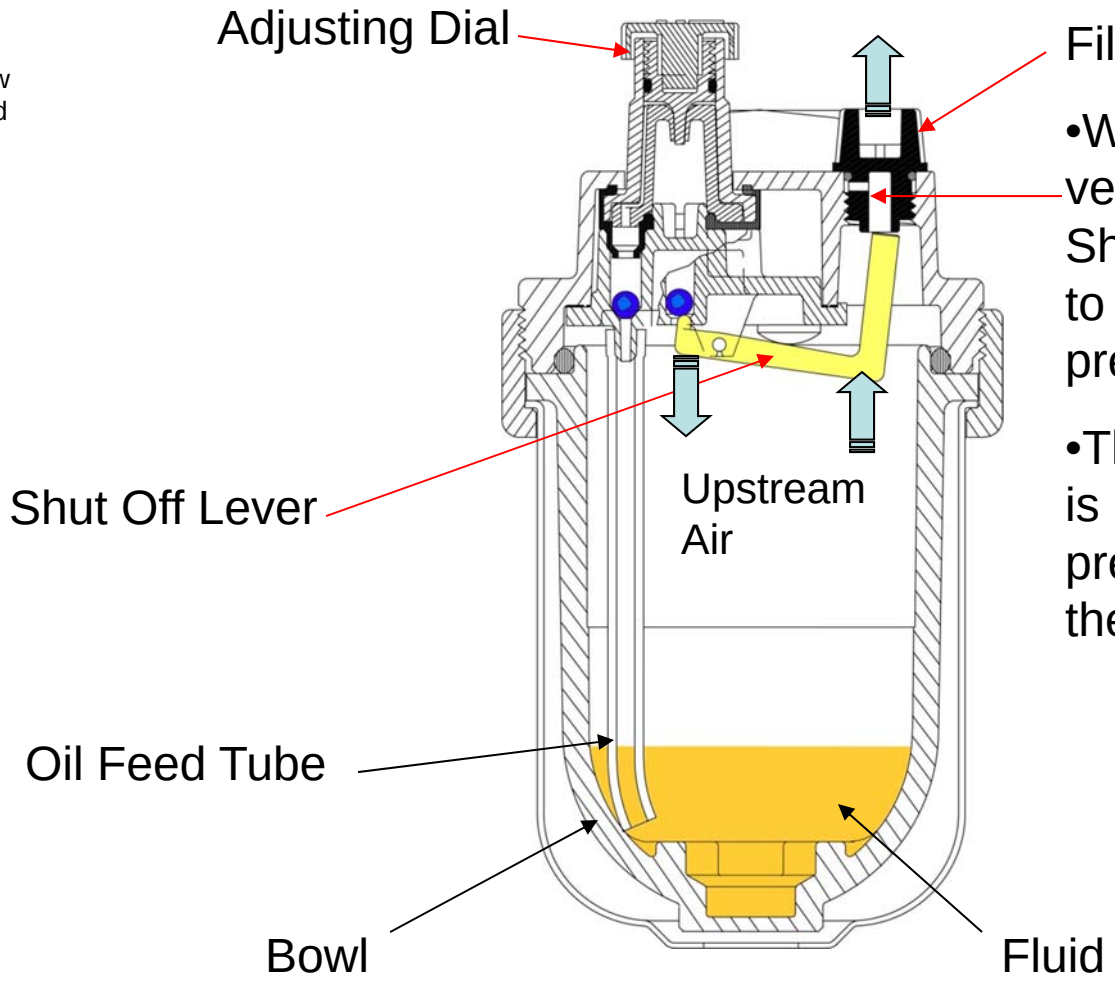
Sight Feed Lubricators can be filled under pressure

High-Flow
Vanguard



- When removing, air is vented from the bowl and the Shut Off Lever allows the ball to seat and seal off upstream pressure
- The air pressure in the bowl is reduced to atmospheric pressure, allowing filling of the bowl with fluid

Series
380

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Specifying the correct Lubricator

- Sight Feed or Wick Type
  - –Downstream of directional valve?
  - –Require tamper resistant?
  - –Need to fill under pressure?
- Plastic or Metal Bowl
  - –Pressure or Temperature requirements
  - –Chemical compatibility
  - –Size of bowl
- Options
  - –Q-Cap
  - –Lo Level Switch
- Port
  - –Size
  - –Thread type (NPT, BSPP, etc.)
  - –Modular
- FLOW REQUIREMENTS

Sentry

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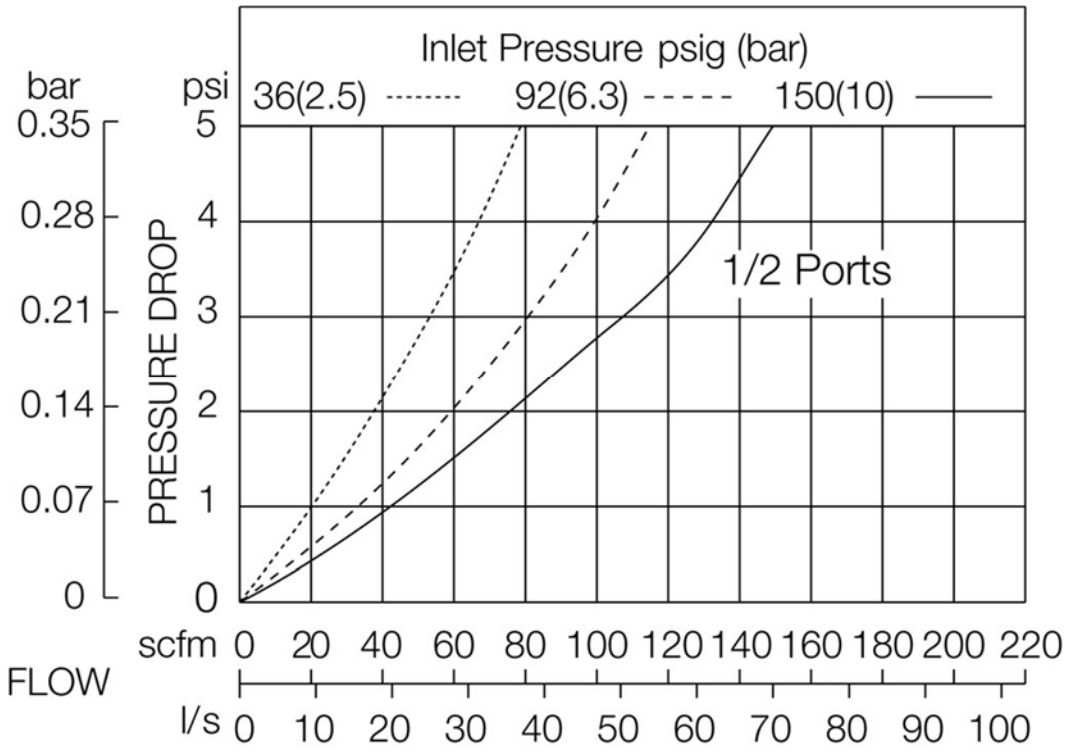
Flow Requirement

Flow is one of the most important factors in sizing a Lubricator. The chart below is for a ½" Lubricator and shows 3 different inlet pressure curves as specified in ISO Standard 6301. This chart illustrates what the pressure drop would be at a given flow.



Series
380

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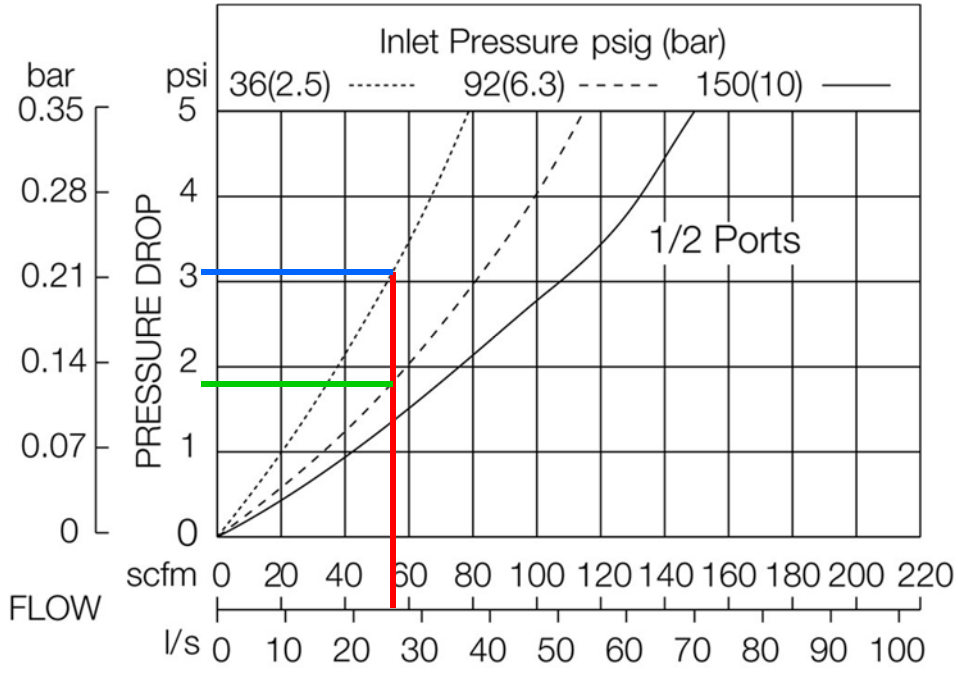
Flow Requirement

The chart below illustrates that the pressure drop would be >3 PSIG *(Blue Line)* at 55 SCFM *(Red Line)* with an inlet pressure of 36 PSIG.

If the inlet pressure was 92 PSIG, the pressure drop would be less than 2 PSIG *(Green Line)* at the same flow.



If the pressure drop at the required flow rate is unacceptable, another Lubricator should be selected.

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Fluids

- The fluid used should be specified by manufacturer of the product being lubricated.

- Master Pneumatic can assist in determining compatibility of your choosen fluid for use in our products.

- Many synthetic oils attack Polycarbonate and Buna-N. Metal Metal bowls and viton seals may help.

- Fluids with suspended solids should be avoided. They can clog the lubricator.

- Check with Master Pneumatic on other fluids that can be dispensed through our lubricators.

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Families of Lubricators

Vanguard

Series 380

Series 350

High-Flow Vanguards

Sentry

Miniature

Air Line Lubricators & Port Sizes.

(Approximate size relationship as shown)

L10 Sentry Modular
NPTF & BSPP Port Sizes:
1/8, 1/4
Tubing Sizes: 1/4, 3/8, 4mm, 6mm, 8mm, & 10mm

L50 Minature
NPTF & BSPP Port Sizes:
1/8, 1/4

L60D Guardsman
NPTF & BSPP Port Sizes:
1/4, 3/8, and 1/2

BL70D Guardsman II
NPTF & BSPP Port Sizes:
1/4, 3/8, and 1/2

L28D Vanguard Modular
NPTF & BSPP Port Sizes:
1/4, 3/8, 1/2, &3/4

L28W Vanguard Modular
NPTF & BSPP Port Sizes:
1/4, 3/8, 1/2, &3/4

L350D Modular
NPTF & BSPP Port Sizes:
1/4, 3/8, & 1/2

L380D Modular
NPTF & BSPP Port Sizes:
3/8, 1/2, & 3/4

L29D High Flow
NPTF & BSPP Port Sizes:
3/4, 1, 1-1/4, & 1-1/2

L100 High Flow
NPTF & BSPP Port Sizes:
1

BL237D High Flow
NPTF & BSPP Port Sizes:
3/4, 1, 1-1/4, & 1-1/2

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This slide and the next slide are also available as a 1 page, front & back handout.

The “Complete Product Sheet” gives an overall picture of MP’s range of lubricator. See catalog for more detailed information.

Air Line Lubricators & Port Sizes.

Boxes that are marked with yellow are available options for the product listed. Numbers and letters inside each yellow box reflects the proper suffix / prefix needed. See Master Pneumatic catalog for complete product breakdown chart.

PIPE SIZE CHART

	TUBING						NPTF AND BSPP PIPE THREADS							
	1/4	3/8				10 mm	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2
L10	04	06	M4	M5	M8	M10	1	2						
L30							1	2						
L30-Y							1	2						
L40D								2	3	4				
BL70D								2	3	4				
L28								2	3	4	6			
L300D								2	3	4				
L38D									3	4	6			
L29											6	8	10	12
L100												8		
L237											6	8	10	12

OPTIONS CHART

	L10	L30	L30-Y	L40D	BL70D	L28	L300D	L38D	L29	L100	L237
BOWL (prefix)											
Metal	B	B	B	B	B	B	B	B	B	B	B
Plastic											
DELIVERY SYSTEM (prefix)											
Wick						W					
Drip				D	D	D	D	D	D		D
Quick Fill	Q	Q	Q	Q	Q	Q		Q	Q	Q	Q
BOWL LENGTH (Prefix)											
Standard											
Extended					H	H (Drip only)	H	H			H

FLOW RATE

	PORT SIZE	Inlet PSIG, set pressure PSIG, 15 PSIG pressure drop flow of SCFM
L10	ALL	Inlet 100 psig, at 5 psig drop flow 25 SCFM. Minimum flow: 1 SCFM
L30	1/8 1/4	Inlet 91 psig, at 5 psig drop flow 10 SCFM. Minimum flow: 2 SCFM Inlet 91 psig, at 5 psig drop flow 25 SCFM. Minimum flow: 6 SCFM
L30-Y	1/8, 1/4	Inlet 36 psig, at 5 psig drop flow 5 SCFM. Minimum flow: 1 SCFM Inlet 91 psig, at 5 psig drop flow 7 SCFM. Minimum flow: 1 SCFM Inlet 145 psig, at 5 psig drop flow 9 SCFM. Minimum flow: 1 SCFM
L40D	1/4 3/8 1/2	Inlet 100 psig, at 5 psig drop flow 40 SCFM. Minimum flow: 2 SCFM Inlet 100 psig, at 5 psig drop flow 78 SCFM. Minimum flow: 2 SCFM Inlet 100 psig, at 5 psig drop flow 110 SCFM. Minimum flow: 2 SCFM
BL70D	1/4 3/8 1/2	Inlet 100 psig, at 5 psig drop flow 40 SCFM. Minimum flow: 2 SCFM Inlet 100 psig, at 5 psig drop flow 78 SCFM. Minimum flow: 2 SCFM Inlet 100 psig, at 5 psig drop flow 110 SCFM. Minimum flow: 2 SCFM
L28	1/4 3/8 1/2 3/4	Inlet 100 psig, at 5 psig drop flow 38 SCFM. Minimum flow: 2 SCFM Inlet 100 psig, at 5 psig drop flow 70 SCFM. Minimum flow: 2 SCFM Inlet 100 psig, at 5 psig drop flow 120 SCFM. Minimum flow: 2 SCFM Inlet 100 psig, at 5 psig drop flow 140 SCFM. Minimum flow: 2 SCFM
L300D	1/4 3/8 1/2	Inlet 36.3 psig, at 5 psig drop flow 32 SCFM. Inlet 91.3 psig, at 5 psig drop flow 50 SCFM. Inlet 145 psig, at 5 psig drop flow 61 SCFM. Inlet 36.3 psig, at 5 psig drop flow 53 SCFM. Inlet 91.3 psig, at 5 psig drop flow 80 SCFM. Inlet 145 psig, at 5 psig drop flow 100 SCFM. Inlet 36.3 psig, at 5 psig drop flow 80 SCFM. Inlet 91.3 psig, at 5 psig drop flow 120 SCFM. Inlet 145 psig, at 5 psig drop flow 148 SCFM.
L38D	3/8 1/2 3/4	Inlet 36 psig, at 5 psig drop flow 58 SCFM. Inlet 92 psig, at 5 psig drop flow 90 SCFM. Inlet 150 psig, at 5 psig drop flow 110 SCFM. Inlet 36 psig, at 5 psig drop flow 80 SCFM. Inlet 92 psig, at 5 psig drop flow 115 SCFM. Inlet 150 psig, at 5 psig drop flow 150 SCFM. Inlet 36 psig, at 5 psig drop flow 110 SCFM. Inlet 92 psig, at 5 psig drop flow 170 SCFM. Inlet 150 psig, at 5 psig drop flow 230 SCFM.
L29	3/4 1 1-1/4, 1-1/2	Inlet 100 psig, at 5 psig drop flow 320 SCFM. Minimum flow: 10 SCFM Inlet 100 psig, at 5 psig drop flow 450 SCFM. Minimum flow: 10 SCFM Inlet 100 psig, at 5 psig drop flow 500 SCFM. Minimum flow: 10 SCFM
L100	3/4 1	Inlet 100 psig, at 5 psig drop flow 160 SCFM. Minimum flow: 35 SCFM Inlet 100 psig, at 5 psig drop flow 350 SCFM. Minimum flow: 35 SCFM
L237	3/4 1 1-1/4, 1-1/2	Inlet 100 psig, at 5 psig drop flow 325 SCFM. Minimum flow: 35-ounce bowl, 10 SCFM. 62-ounce bowl, 14 SCFM Inlet 100 psig, at 5 psig drop flow 450 SCFM. Minimum flow: 35-ounce bowl, 10 SCFM. 62-ounce bowl, 14 SCFM Inlet 100 psig, at 5 psig drop flow 500 SCFM. Minimum flow: 35-ounce bowl, 10 SCFM. 62-ounce bowl, 14 SCFM

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www.masterpneumatic.com,
Catalog & Literature tab;
English Version;
Catalog;
Complete Product Sheets

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•MIST Lubricators should always be installed as close as possible to the product being lubricated. The tubing or pipe should be straight and there should not be anything in between the Lubricator and the product to be lubricated.

•Contact your Master Pneumatic representative regarding our other fluid delivery and *Micro-Lubrication* products.

Thank you for considering
Master Pneumatic products!

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