# PneumaticPlus















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BREATHER VENT W/SPLASH GUARD ..... 3

SCREEN BREATHER VENT ..... 4

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# PneumaticPlus


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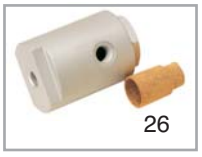
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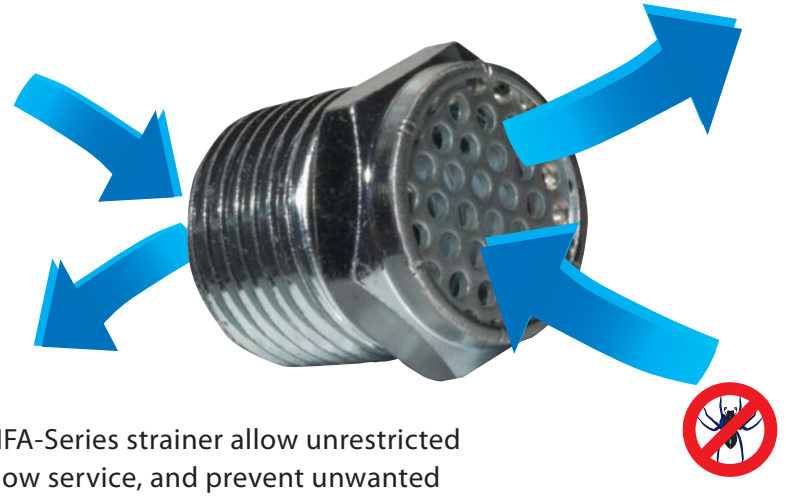
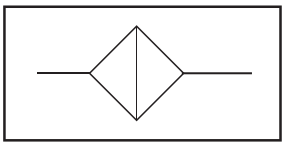
# BHFA-Series, Free Flow Strainer



## SYMBOL



BHFA-Series strainer allow unrestricted air flow service, and prevent unwanted objects from entering the port.

Supplied with standard male pipe thread, unit should be mounted in a protective position, free from excessive vibration. Use wrench on the hex head to tighten unit to the device.

### HOW TO ORDER

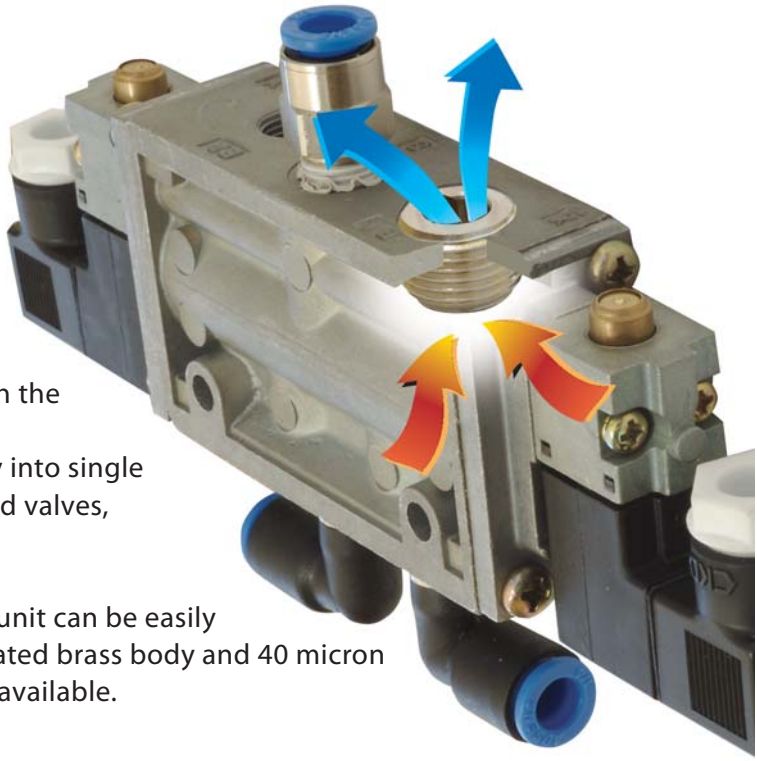
**BHFA — □□ — □**

| Free Flow Strainer | Connection | Port Option |
|---|---|---|
| | 18 = 1/8" | None = NPT |
| | 28 = 1/4" | P = BSPT |
| | 38 = 3/8" | |
| | 48 = 1/2" | |

## SPECIFICATIONS

| ITEM / MODEL | | BHFA-18 | BHFA-28 | BHFA-38 | BHFA-48 |
|---|---|---|---|---|---|
| CONNECTION | NPT | 1/8"-27 | 1/4"-18 | 3/8"-18 | 1/2"-14 |
| OVERALL LENGTH | IN. (mm) | 0.50" (12.7) | 0.70" (17.8) | 0.85" (21.7) | 0.98" (24.8) |
| HEX | IN. (mm) | 7/16" (11.1) | 9/16" (14.2) | 11/16" (17.3) | 7/8" (22.0) |
| MATERIAL | BODY | ZINC-PLATED IRON (Zn-Fe) | | | |
| | STRAINER | ZINC-PLATED IRON (Zn-Fe) | | | |
| MAX OPERATING PRESSURE | | 300 PSI (21.10 kg/cm$^2$) | | | |
| OPERATING TEMPERATURE | | 35˚~ 300˚F (16˚~149˚C) | | | |
| WEIGHT (APPROX.) | OZ. | 0.18 | 0.37 | 0.64 | 1.07 |
| UNIT PACK | EA. | 10 | 10 | 10 | 5 |

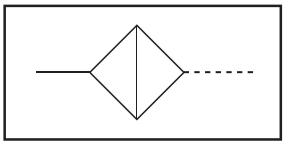
# PGV-Series, Countersink Plug Vent



PGV-Series countersink plug vent is designed to fit flush with the surface while offering free exchange of filtered air vent to atmosphere. These countersink plug vent can be install easily into single action cylinders, gear boxes, storage tanks or other vessels and valves, whenever pressure equalization is required.

Supplied with standard male pipe thread with internal hex, unit can be easily installed with a hex key with little or no protrusion. Nickel-plated brass body and 40 micron is standard, optional 10, 90 and 150 micron filter element are available.

## SYMBOL



***HOW TO ORDER***

**PGV — □□ — □□**

| Countersing Plug Vent | Connection | Filter Porosity |
|---|---|---|
| | 18 = 1/8" NPT | None =40um (standard) |
| | 28 = 3/4" NPT | 10 = 10um |
| | 38 = 3/8" NPT | 90 = 90um |
| | 48 = 1/2" NPT | 150 = 150um |

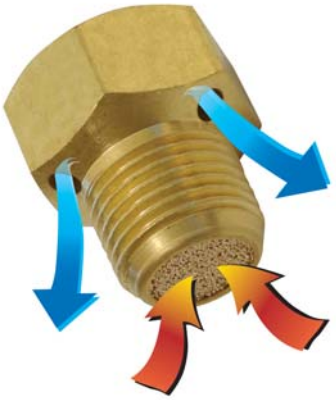
## SPECIFICATIONS

| ITEM / MODEL | | PGV-18 | PGV-28 | PGV-38 | PGV-48 |
|---|---|---|---|---|---|
| CONNECTION | NPT | 1/8"-27 | 1/4"-18 | 3/8"-18 | 1/2"-14 |
| OVERALL LENGTH | IN. (mm) | 0.35" (9.0) | 0.47" (12.0) | 0.49" (12.5) | 0.59" (15.0) |
| INTERNAL HEX | IN. (mm) | 1/4" (6.0) | 5/16" (8.0) | 13/32" (10.1) | 13/32" (10.1) |
| MATERIAL | BODY | NICKEL PLATED BRASS (Ni-Cu) | | | |
| | ELEMENT | SINTERED BRONZE (40 micron) | | | |
| MAX OPERATING PRESSURE | | 150 PSI (10.55 kg/cm$^2$) | | | |
| OPERATING TEMPERATURE | | 35˚~ 300˚F (16˚~149˚C) | | | |
| WEIGHT (APPROX.) | OZ. | 0.09 | 0.22 | 0.39 | 0.84 |
| UNIT PACK | EA. | 10 | 10 | 10 | 5 |

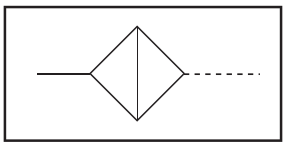
# BVCH-Series, Breather Vent with Splash Guard

BVCH-Series breather vent allow free exchange of filtered air for gear boxes, crank cases or storage tanks vented to atmosphere. The top of breather is closed off but has multiple holes drilled at 60-deg upward angle, just below the hex head to prevent unwanted fluid from entering during periodic wash cycle or splashes.

Solid brass construction, it is rugged and corrosion resistant. Supplied with standard male pipe or SAE thread, unit should be mounting vertically and avoid excessive vibration. Use wrench on hex head to tighten unit to the device. The standard filter element is 100 micron, optional 10 or 40 micron is available; complete stainless-steel construction is also possible on special order.



## SYMBOL



### *HOW TO ORDER*

**BVCH — □□ — □**

| Breather Vent Plub | Connection | | Filter Porosity |
|---|---|---|---|
| | 18 = 1/8" NPT | SAE#4 = 7/16"-20 | None = 100um (standard) |
| | 28 = 1/4" NPT | SAE#6 = 9/16"-18 | 10 = 10um |
| | 38 = 3/8" NPT | SAE#8 = 3/4"-16 | 40 = 40um |
| | 48 = 1/2" NPT | | |
| | 68 = 3/4" NPT | | |
| | 88 = 1" NPT | | |

## SPECIFICATIONS

| ITEM / MODEL | | | BVCH-18 | BVCH-28 | BVCH-38 | BVCH-48 | BVCH-68 | BVCH-88 |
|---|---|---|---|---|---|---|---|---|
| CONNECTION | | NPT | 1/8"-27 | 1/4"-18 | 3/8"-18 | 1/2"-14 | 3/4"-14 | 1"-11.5 |
| OVERALL LENGTH | | IN. (mm) | 0.65" (16.5) | 0.91" (23.0) | 1.22" (31.0) | 1.35" (34.2) | 1.58" (40.2) | 1.81" (46.0) |
| HEX | | IN. (mm) | 1/2" (12.7) | 3/4" (19.0) | 7/8" (22.0) | 1-1/8" (28.5) | 1-1/4" (32.0) | 1-1/2" (38.0) |
| MATERIAL | BODY | | BRASS | | | | | |
| | ELEMENT | | SINTERED BRONZE (100 micron) | | | | | |
| MAX OPERATING PRESSURE | | | 150 PSI (10.55 kg/cm$^2$) | | | | | |
| OPERATING TEMPERATURE | | | 35˚~ 300˚F (16˚~149˚C) | | | | | |
| WEIGHT (APPROX.) | | OZ. | 0.38 | 1.08 | 1.92 | 3.30 | 5.33 | 7.92 |
| UNIT PACK | | EA. | 5 | 5 | 5 | 5 | 5 | 1 |

## SPECIFICATIONS

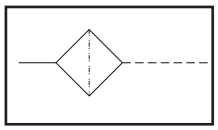
| ITEM / MODEL | | | BVCH-SAE#4 | BVCH-SAE#6 | BVCH-SAE#8 |
|---|---|---|---|---|---|
| CONNECTION | | SAE | 7/16"-20 | 9/16"-18 | 3/4"-16 |
| OVERALL LENGTH | | IN. (mm) | 0.87" (22.0) | 1.22" (31.0) | 1.34" (34.0) |
| HEX | | IN. (mm) | 11/16" (17.5) | 7/8" (22.0) | 1-1/8" (28.5) |
| MATERIAL | BODY | | BRASS | | |
| | ELEMENT | | SINTERED BRONZE (100 micron) | | |
| MAX OPERATING PRESSURE | | | 150 PSI (10.55 kg/cm$^2$) | | |
| OPERATING TEMPERATURE | | | 35˚~ 300˚F (16˚~149˚C) | | |
| WEIGHT (APPROX.) | | OZ. | 0.88 | 1.94 | 3.46 |
| UNIT PACK | | EA. | 50 | 50 | 50 |

# SBN-Series, Screen Breather Evnt

SBN-Series breather vents combine low profile and high air flow into a reality, suitable for many applications, particularly where space is limited. Special screen filter is formed by stainless steel wire, offers very high mechanical resistance, guaranteeing long life even under high pressure. Zinc plated steel fitting offers additional corrosion resistance.

Supplied with standard male pipe threads, they can be installed with little protrusion as a flat integral part of the equipment. Unit should be mounted in a protective position from excessive vibration. Use wrench on hex head to tighten unit to the device. Stainless steel wire screen can be easily cleaned by reversing the flow of the filtered matter.

**Symbol**



***HOW TO ORDER***

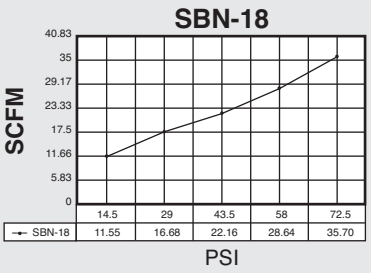
**SBN — □□**

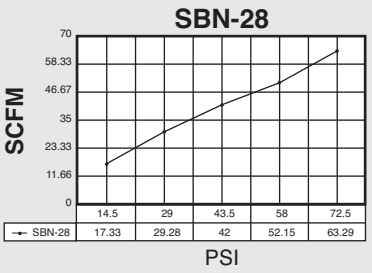
| Screen Breather Vent | Connection (NPTM) |
|---|---|
| | 18 = 1/8", 28 = 1/4" |
| | 38 = 3/8", 48 = 1/2" |
| | 68 = 3/4", 88 = 1" |

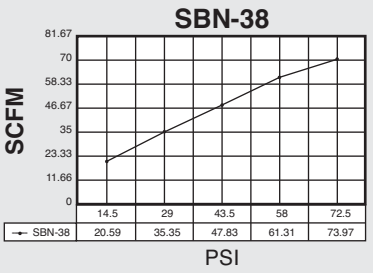
## SPECIFICATIONS

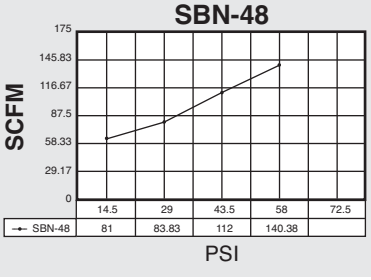
| ITEM | MODEL | SBN-18 | SBN-28 | SBN-38 | SBN-48 | SBN-68 | SBN-88 |
|---|---|---|---|---|---|---|---|
| CONNECTION | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | IN. | 21/32" | 53/64" | 63/64" | 1-3/16" | 1-29/64" | 1-21/32" |
| HEX | IN. | 1/2" | 5/8" | 3/4" | 1" | 1-3/16" | 1-1/2" |
| NOISE LEVEL @60 PSI | dB | 70 | 69 | 85 | 85 | 86 | 88 |
| NOISE LEVEL @115 PSI | dB | 74 | 72 | 88 | 90 | 90 | 92 |
| MATERIAL | BODY | ZINC-PLATED (Zn-Fe) | | | | | |
| | ELEMENT | STAINLESS STEEL WIRE SCREEN (10 ~ 150 micron) | | | | | |
| MAX OPERATING PRESSURE | | 300 PSI (21.1 kg/cm$^2$) | | | | | |
| OPERATING TEMPERATURE | | 35˚~ 300˚F (16˚~149˚C) | | | | | |
| WEIGHT (APPROX.) | OZ. | 0.30 | 0.56 | 0.90 | 1.45 | 2.70 | 4.43 |
| UNIT PACK | EA. | 10 | 10 | 10 | 10 | 5 | 1 |

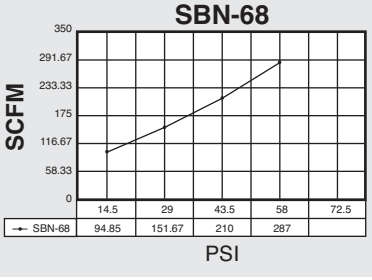
## FLOW CHARACTERISTICS

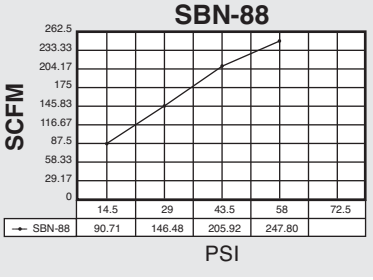




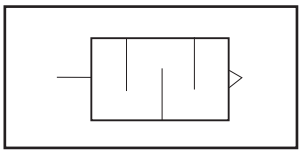

*** All tests are performed by Consolidated Laboratories, Inc.**

# HFRAM-Series, High Flow Repairable Muffler


HFRAM-Series mufflers use strong aluminum housing with polyvinyl foam element. It is compact, light weight and highly effective against noisy exhaust port without excessive back pressure. They are completely non-corrosive and engineered for long service life; cost effective design allows element insert to be easily replaced at the end of its service life, not the entire muffler.

All models are furnished with standard male pipe threads ranging from 1/8" to 1" NPT; unit should be mounted in a protective position free from excessive vibration.

**Symbol**



***HOW TO ORDER***

**HFRAM — □□**

| High Flow Repairable Muffler | Connection (NPTM) |
|---|---|
| | 18 = 1/8", 28 = 1/4" |
| | 38 = 3/8", 48 = 1/2" |
| | 68 = 3/4", 88 = 1" |

## SPECIFICATIONS

| ITEM / MODEL | | HFRAM-18 | HFRAM-28 | HFRAM-38 | HFRAM-48 | HFRAM-68 | HFRAM-88 |
|---|---|---|---|---|---|---|---|
| REPLACEABLE INSERT | | PVI-18 | PVI-28 | PVI-38 | PVI-48 | PVI-68 | PVI-88 |
| FLUID | | AIR | | | | | |
| CONNECTION | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | IN. | 1-3/8" | 1-3/4" | 2-1/4" | 2-23/32" | 3-5/32" | 3-7/8" |
| | (mm) | (36.0) | (45.0) | (58.0) | (70.0) | (81.0) | (100.0) |
| HEX | IN. | 7/16" | 9/16" | 11/16" | 7/8" | 1-1/16" | 1-5/16" |
| | (mm) | (11.1) | (14.2) | (17.4) | (22.2) | (27.0) | (33.3) |
| NOISE ELIMINATION EFFECT | dB | 14 | 16 | 18 | 29 | 34 | 40 |
| MATERIAL | BODY | ALUMINUM | | | | | |
| | ELEMENT | POLYVINYL FOAM (40 micron) | | | | | |
| MAX OPERATING PRESSURE | | 130 PSI (9 kg/cm$^2$) | | | | | |
| OPERATING TEMPERATURE | | 41˚~ 140˚F (5˚~ 60˚C) | | | | | |
| WEIGHT (APPROX.) | OZ. | 0.16 | 0.32 | 0.48 | 0.96 | 1.20 | 2.16 |
| UNIT PACK | EA. | 10 | 10 | 5 | 5 | 1 | 1 |

# HFTO-Series, Fanto Muffler

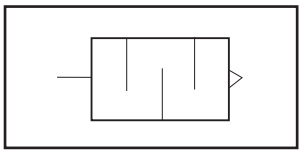

FANTO® mufflers utilize a 50 mesh,self-cleaning stainless steel screen in a strong, yet lightweight aluminum shell so they are completely corrosion-resistant. The large vent holes combined with precisely calculated layers of stainless steel screen is to allow high airflow, but effectively reduce the air exhaust noise level.

It's ULTRA-SLIM profile allows the FANTO® mufflers to be installed anywhere space is limited. Install directly to the exhaust ports of pneumatic valves is possible without interference with other ports, since the overall body diameter is barely larger than the corresponding thread diameter.

Unit should be mounted in a protective position free from excessive vibration. Use wrench on hex head to tighten unit to the device.

**PATENTED**

**Symbol**

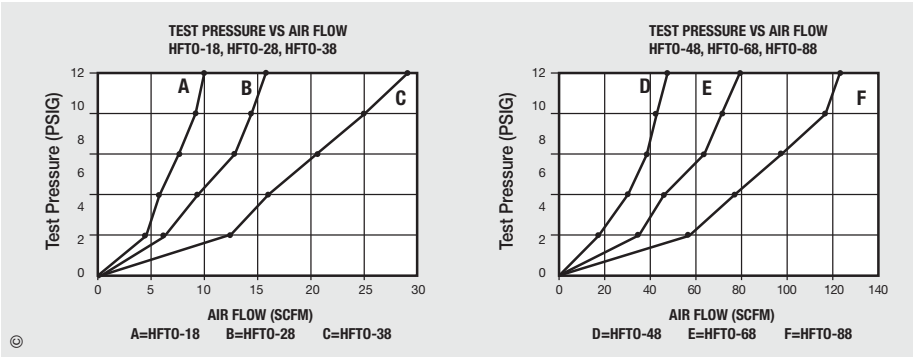


***HOW TO ORDER***

**HFTO — □□**

| Fanto Muffler | Connection (NPTM) |
|---|---|
| | 18 = 1/8", 28 = 1/4" |
| | 38 = 3/8", 48 = 1/2" |
| | 68 = 3/4", 88 = 1" |

## FLOW CHARACTERISTICS - FANTO® MUFFLER






*** All tests are performed by Consolidated Laboratories, Inc.**

## SPECIFICATIONS

| ITEM / MODEL | | HFTO-18 | HFTO-28 | HFTO-38 | HFTO-48 | HFTO-68 | HFTO-88 |
|---|---|---|---|---|---|---|---|
| CONNECTION | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | IN. | 1-3/8" | 1-3/4" | 2-1/4" | 2-23/32" | 3-5/32" | 3-7/8" |
| HEX | IN. | 7/16" | 9/16" | 11/16" | 7/8" | 1-1/16" | 1-5/16" |
| MATERIAL | BODY | ALUMINUM | | | | | |
| | ELEMENT | 50 MESH STAINLESS STEEL SCREEN | | | | | |
| MAX OPERATING PRESSURE | | 300 PSI (21.1 kg/cm$^2$) | | | | | |
| OPERATING TEMPERATURE | | 35˚~ 160˚F (1.6˚~ 70˚C) | | | | | |
| WEIGHT (APPROX.) | OZ. | 0.25 | 0.50 | 0.90 | 1.55 | 2.25 | 4.20 |
| UNIT PACK | EA. | 10 | 10 | 5 | 5 | 1 | 1 |

## SOUND CHARACTERISTICS - FANTO® MUFFLER

| | HFTO-18 | | HFTO-28 | | HFTO-38 | | HFTO-48 | | HFTO-68 | | HFTO-88 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BACK PRESSURE (PSIG) | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db |
| 2 | 4.25 | 73.0 | 5.97 | 70.0 | 12.36 | 71.5 | 18.12 | 70.0 | 34.11 | 82.0 | 55.75 | 85.5 |
| 4 | 5.86 | 78.0 | 9.47 | 76.5 | 15.79 | 77.0 | 30.45 | 74.5 | 43.37 | 84.5 | 75.57 | 86.0 |
| 6 | 7.40 | 81.5 | 12.10 | 80.0 | 20.17 | 80.5 | 35.61 | 77.0 | 62.08 | 84.5 | 97.69 | 86.0 |
| 8 | 8.70 | 83.5 | 14.20 | 82.0 | 24.86 | 83.5 | 42.26 | 78.0 | 70.85 | 85.5 | 115.59 | 86.5 |
| 10 | 10.10 | 86.5 | 16.00 | 83.5 | 28.51 | 86.0 | 47.95 | 80.0 | 80.61 | 88.0 | 127.00 | 85.5 |



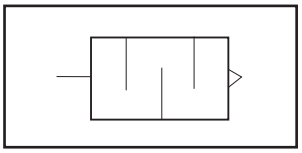
*** All tests are performed by Consolidated Laboratories, Inc.**

# RM-Series, Resin (Polyethylene) Muffler

RM-Series mufflers uses rugged polyethylene housing with polyvinyl foam element. It is compact, light weight and highly effective for noise reduction without excessive back pressure. They are completely
non-corrosive and highly resistant to water and oil. Elements can be easily cleaned with kerosene or similar cleaning solvent.

All models are furnished with standard male pipe threads range from 1/8" to 1/2" NPT; unit should be mounted in a protective position free from excessive vibration. Hand tighten only.

**Symbol**



***HOW TO ORDER***

| **RM** | — | ☐☐ | — | ☐ |
|---|---|---|---|---|
| **Resin Muffler** | | **Connection**<br>**18 = 1/8", 28 = 1/4"**<br>**28L = 1/4" (High Flow)**<br>**38 = 3/8", 48 = 1/2"** | | **Port Option**<br>**None = NPT**<br>**P = BSPT** |

## SPECIFICATIONS

| ITEM / MODEL | | RM-18 | RM-28 | RM-28L | RM-38 | RM-48 |
|---|---|---|---|---|---|---|
| FLUID | | AIR | | | | |
| CONNECTION | NPTM | 1/8" | 1/4" | | 3/8" | 1/2" |
| OVERALL LENGTH | IN. | 1-3/8" | 1-1/2" | 2-7/16" | 2-5/8" | 2-3/4" |
| DIAMETER | IN. | 5/8" | 5/8" | 13/16" | 1" | 1-7/64" |
| HEX | IN. | 9/16" | 9/16" | 11/16" | 1" | 1" |
| NOISE ELIMINATION EFFECT | dB | 18 | 18 | 18 | 27 | 34 |
| MATERIAL | BODY | POLYETHYLENE (PE) | | | | |
| | ELEMENT | POLYVINYL FOAM (5 micron) | | | | |
| MAX OPERATING PRESSURE | | 130 PSI (9 kg/cm$^2$) | | | | |
| OPERATING TEMPERATURE | | 41˚~ 140˚F (5˚~ 60˚C) | | | | |
| WEIGHT (APPROX.) | OZ. | 0.16 | 0.18 | 0.42 | 0.77 | 0.86 |
| UNIT PACK | EA. | 10 | 10 | 5 | 5 | 5 |

**WARNING:** Clean mufflers with neutral cleaning agent or cleaning oil, DO NOT use paint thinner, benzine or other organic solvents.

# PEM-Series, Polyethytlene Muffler

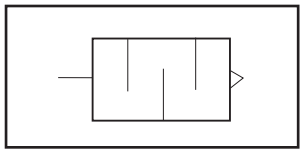
PEM-Series muffler uses high-density porous polyethylene body ultrasonically welded to the solid polythylene base. It is light weight, durable and highly effective for noise reduction without excessive back pressure. The uniquely structured porous polyethylene channels escaping air through a tortuous path reduce the noise level within OSHA requirements.

The durable porous polyethylene body can withstand high working pressures up to 150 PSI. In an unlikely event of a blowout, resilient porous plastic body will not shatter, therefore no danger of flying fragments. The polyethylene plastic is completely non-corrosive and highly resistant to water and oil usually present in compressed air lines and can be easily cleaned with methylene chloride or similar cleansing fluid.

Available in three (3) air flows:

Standard flow (70 um - black base)
Fine flow (20 um - blue base)
Medium flow (35 um - red base)

**Symbol**



Unit should be mounted in a protective position free from excessive vibration. Hand tightens to the device only.

***HOW TO ORDER***

**PEM — □□ — □□**

| Polyethylene Muffler | Connection (NPTM) | Element Porosity |
|---|---|---|
| | 18 = 1/8", 28 = 1/4" | None = Standard flow (70um) |
| | 38 = 3/8", 48 = 1/2" | 20 = Fine flow (20um) |
| | 68 = 3/4", 88 = 1" | 35 = Medium flow (35um) |

## NOISE ELIMINATION EFFECT

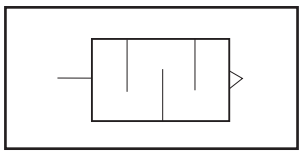
| Model Number | Sound Pressure dB(A) | | |
|---|---|---|---|
| | Fine Flow 20 um (Blue Base) | Medium Flow 35 um (Red Base) | Standard Flow 70 um (Black Base) |
| PEM-18 (1/8") | 80 | 85 | 90 |
| PEM-28 (1/4") | 77 | 80 | 88 |
| PEM-38 (3/8") | 80 | 81 | 86 |
| PEM-48 (1/2") | 77 | 82 | 85 |
| PEM-58 (3/4") | 81 | 81 | 85 |
| PEM-68 (1") | 78.5 | 82 | 84 |
| Inlet Pressure: 125 PSI | | | |

## SPECIFICATION

| ITEM / MODEL | | PEM-18 | PEM-28 | PEM-38 | PEM-48 | PEM-68 | PEM-88 |
|---|---|---|---|---|---|---|---|
| CONNECTION | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | IN. | 1-15/32" (37mm) | 1-3/4" (44mm) | 2-13/16" (71mm) | 3-5/32" (80mm) | 5-1/4" (133mm) | 5-3/32" (129mm) |
| DIAMETER | | 5/8" (15.6mm) | 51/64" (20mm) | 1" (26mm) | 1" (26mm) | 1-1/2" (38mm) | 2" (50mm) |
| MATERIAL | BODY | POLYETHYLENE (PE) | | | | | |
| | ELEMENT | POLYETHYLENE (PE) | | | | | |
| MAX OPERATING PRESSURE | | 150 PSI (10.5 kg/cm$^2$) | | | | | |
| OPERATING TEMPERATURE | | 41˚~ 140˚F (5˚~ 60˚C) | | | | | |
| WEIGHT (APPROX.) | OZ. | 0.10 | 0.15 | 0.36 | 0.41 | 1.34 | 2.22 |
| UNIT PACK | EA. | 10 | 10 | 5 | 5 | 5 | 5 |

# HFSM-Series, High Flow Steel Muffler

**Symbol**



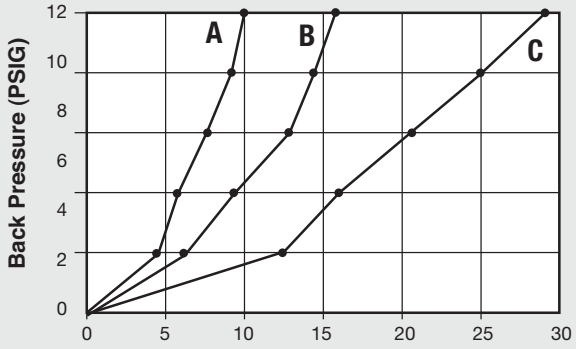
HFSM-Series steel mufflers utilize a 50 mesh, self-cleaning STAINLESS STEEL SCREEN in a tough steel shell to withstand shock and continuous heavy duty use in all applications. All stainless steel models are also available.

Designed with evenly distributed small holes around the steel shell, exhaust air quietly disperses over a 360 degree pattern without restricting air flow. Their SLIM profile allows them to be installed anywhere space is limited. Install directly to the exhaust ports of pneumatic valves, or closely spaced manifold ports is possible without interference with other ports.

Unit should be mounted in a protective position free from excessive vibration. Use wrench on hex head to tighten unit to the exhaust ports of air-operated equipment.

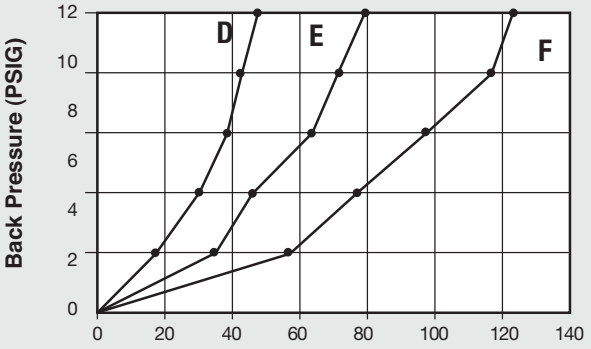
## FLOW CHARACTERISTICS - HIGH FLOW STEEL MUFFLER

**BACK PRESSURE VS AIR FLOW**
**HFSM-18, HFSM-28, HFSM-38**




**A=HFSM-18 B=HFSM-28 C=HFSM-38**

**BACK PRESSURE VS AIR FLOW**
**HFSM-48, HFSM-68, HFSM-88**




**D=HFSM-48 E=HFSM-68 F=HFSM-88**

*** All tests are performed by Consolidated Laboratories, Inc.**



## SOUND CHARACTERISTICS - STEEL MUFFLER

| | HFSM-18 | | HFSM-28 | | HFSM-38 | | HFSM-48 | | HFSM-68 | | HFSM-88 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BACK PRESSURE (PSIG) | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db |
| 2 | 4.25 | 73.0 | 5.97 | 70.0 | 12.36 | 71.5 | 18.12 | 70.0 | 34.11 | 82.0 | 55.75 | 85.5 |
| 4 | 5.86 | 78.0 | 9.47 | 76.5 | 15.79 | 77.0 | 30.45 | 74.5 | 43.37 | 84.5 | 75.57 | 86.0 |
| 6 | 7.40 | 81.5 | 12.10 | 80.0 | 20.17 | 80.5 | 35.61 | 77.0 | 62.08 | 84.5 | 97.69 | 86.0 |
| 8 | 8.70 | 83.5 | 14.20 | 82.0 | 24.86 | 83.5 | 42.26 | 78.0 | 70.85 | 85.5 | 115.59 | 86.5 |
| 10 | 10.10 | 86.5 | 16.00 | 83.5 | 28.51 | 86.0 | 47.95 | 80.0 | 80.61 | 88.0 | 127.00 | 85.5 |



*** All tests are performed by Consolidated Laboratories, Inc.**

# HFSM-Series, High Flow Steel Muffler

**HOW TO ORDER**

**HFSM** — □□ — □

| High Flow Steel Muffler | Connection (NPTM) | Port Option |
|---|---|---|
| | 18 = 1/8", 28 = 1/4" | None = NPT |
| | 38 = 3/8", 48 = 1/2" | P = BSPT |
| | 68 = 3/4", 88 = 1" | |
| | 128 = 1-1/4", 148 = 1-1/2" | |
| | 200 = 2" | |

## SPECIFICATIONS

| ITEM | | MODEL | HFSM-18 | HFSM-28 | HFSM-38 | HFSM-48 | HFSM-68 | HFSM-88 | HFSM-128 | HFSM-148 | HFSM-200 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1-1/4" | 1-1/2" | 2" |
| OVERALL LENGTH | | IN. | 1-5/16" | 1-11/16" | 2-7/64" | 2-41/64" | 3-15/64" | 3-25/32" | 4-27/64" | 4-15/16" | 5-19/32" |
| HEX | | IN. | 7/16" | 9/16" | 11/16" | 7/8" | 1-1/16" | 1-5/16" | 1-3/4" | 2" | 2-3/8" |
| MATERIAL | BODY | | ZINC-PLATED STEEL (Zn-Fe) | | | | | | | | |
| | ELEMENT | | 50 MESH STAINLESS STEEL SCREEN | | | | | | | | |
| MAX OPERATING PRESSURE | | | 300 PSI (21.1 kg/cm$^2$) | | | | | | | | |
| OPERATING TEMPERATURE | | | 35˚~ 160˚F (1.6˚~ 70˚C) | | | | | | | | |
| WEIGHT (APPROX.) | | OZ. | 0.38 | 0.69 | 1.22 | 2.14 | 3.67 | 6.61 | 11.71 | 14.84 | 23.48 |
| UNIT PACK | | EA. | 10 | 10 | 5 | 5 | 1 | 1 | 1 | 1 | 1 |

**HOW TO ORDER**

**FHFSM** — □□

| Female High Flow Steel Muffler | Connection (NPTM) |
|---|---|
| | 18 = 1/8", 28 = 1/4" |
| | 38 = 3/8", 48 = 1/2" |

## SPECIFICATIONS

| ITEM | | MODEL | FHFSM-18 | FHFSM-28 | FHFSM-38 | FHFSM-48 |
|---|---|---|---|---|---|---|
| CONNECTION | | NPTF | 1/8" | 1/4" | 3/8" | 1/2" |
| OVERALL LENGTH | | IN. | 1-45/64" | 2-13/64" | 2-23/32" | 3-7/32" |
| HEX | | IN. | 9/16" | 11/16" | 7/8" | 1-1/16" |
| MATERIAL | BODY | | ZINC-PLATED STEEL (Zn-Fe) | | | |
| | ELEMENT | | 50 MESH STAINLESS STEEL SCREEN | | | |
| MAX OPERATING PRESSURE | | | 300 PSI (21.1 kg/cm$^2$) | | | |
| OPERATING TEMPERATURE | | | 35˚~ 160˚F (1.6˚~ 70˚C) | | | |
| WEIGHT (APPROX.) | | OZ. | 0.80 | 1.55 | 2.65 | 4.60 |
| UNIT PACK | | EA. | 10 | 10 | 5 | 5 |

**HOW TO ORDER**

**HFSS** — □□

| High Flow Stainless Steel Muffler | Connection (NPTM) |
|---|---|
| | 18 = 1/8", 28 = 1/4" |
| | 38 = 3/8", 48 = 1/2" |
| | 68 = 3/4", 88 = 1" |

## SPECIFICATIONS

| ITEM | | MODEL | HFSS-18 | HFSS-28 | HFSS-38 | HFSS-48 | HFSS-68 | HFSS-88 |
|---|---|---|---|---|---|---|---|---|
| CONNECTION | | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | | IN. | 1-3/8" | 1-11/16" | 2-7/64" | 2-41/64" | 3-15/64" | 3-25/32" |
| HEX | | IN. | 7/16" | 9/16" | 3/4" | 7/8" | 1-1/16" | 1-3/8" |
| MATERIAL | BODY | | SUS304 STAINLESS STEEL | | | | | |
| | ELEMENT | | 50 MESH STAINLESS STEEL SCREEN | | | | | |
| MAX OPERATING PRESSURE | | | 300 PSI (21.1 kg/cm$^2$) | | | | | |
| OPERATING TEMPERATURE | | | 35˚~ 160˚F (1.6˚~ 70˚C) | | | | | |
| WEIGHT (APPROX.) | | OZ. | 0.32 | 0.72 | 1.20 | 2.40 | 4.10 | 7.00 |
| UNIT PACK | | EA. | 5 | 5 | 5 | 5 | 1 | 1 |

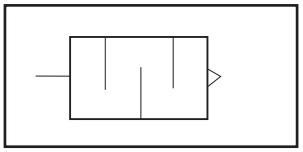
# HFMA-Series, High Flow Aluminum Muffler

HFMA-Series high flow muffler features a 50 mesh,self-cleaning stainless steel screen,and combined with corrosion-resistant aluminum shell to create a highly efficient,ultra-quiet muffler designed with minimal back pressure.

When installed on the exhaust ports of pneumatic valves or manifolds,the aluminum body mufflers provides a quick and inexpensive way to reduce work area noise while preventing contamination from entering into the inside of the pneumatic valves.

Unit should be mounted in a protective position free from excessive vibration. Use wrench on flats to tighten unit to the device.

Symbol



***HOW TO ORDER***

**HFMA** — □□ — □

**High Flow Muffler**
**Aluminum Body**

**Connection (NPTM)**
**18 = 1/8", 28 = 1/4"**
**38 = 3/8", 48 = 1/2"**
**68 = 3/4", 88 = 1"**
**128* = 1-1/4"**
**148* = 1-1/2"**
**200* = 2"**

**Port Option**
**None = NPT**
**P = BSPT**

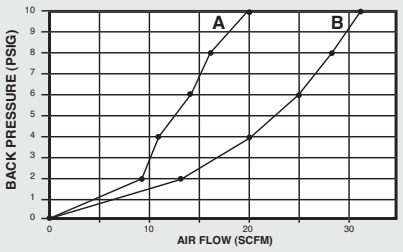
## SPECIFICATIONS

| ITEM | | MODEL | HFMA-18 | HFMA-28 | HFMA-38 | HFMA-48 | HFMA-68 | HFMA-88 | HFMA-128* | HFMA-148* | HFMA-200* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1-1/4" | 1-1/2" | 2" |
| OVERALL LENGTH | | IN. | 1-27/32" | 1-27/32" | 3-19/64" | 3-19/64" | 4-9/16" | 4-9/16" | 6-11/64" | 6-11/64" | 7-21/32" |
| DIAMETER | | IN. | 13/16" | 13/16" | 1-1/4" | 1-1/4" | 2" | 2" | 2-1/2" | 2-1/2" | 3" |
| FLATS | | IN. | 41/64" | 41/64" | 1" | 1" | 1-5/8" | 1-5/8" | 2-3/4" | 2-3/4" | 3" |
| MATERIAL | BODY | | 6061 ALUMINUM | | | | | | | | |
| | ELEMENT | | 50 MESH STAINLESS STEEL SCREEN | | | | | | | | |
| MAX OPERATING PRESSURE | | | 300 PSI (21.1 kg/cm$^2$) | | | | | | | | |
| OPERATING TEMPERATURE | | | 35˚~ 160˚F (1.6˚~ 70˚C) | | | | | | | | |
| WEIGHT (APPROX.) | | OZ. | 0.52 | 0.52 | 1.81 | 1.83 | 5.2 | 5.52 | 13.60 | 13.28 | 27.76 |
| UNIT PACK | | EA. | 5 | 5 | 5 | 5 | 1 | 1 | 1 | 1 | 1 |

** Also available in female thread*

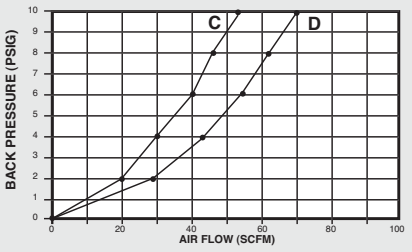
## FLOW CHARACTERISTICS

BACK PRESSURE VS. AIR FLOW



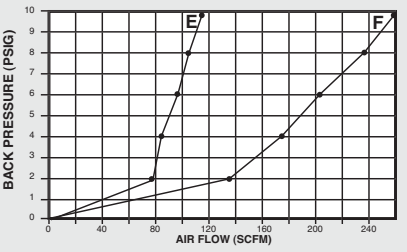

**A = HFMA-18 / HFMP-18**
**B = HFMA-28 / HFMP-28**

BACK PRESSURE VS. AIR FLOW




**C = HFMA-38/ HFMP-38**
**D = HFMA-48/ HFMP-48**

BACK PRESSURE VS. AIR FLOW




**E = HFMA-68**
**F = HFMA-88**

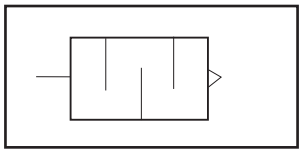
*** All tests are performed by Consolidated Laboratories, Inc.**

# HFMP-Series, High Flow Plastic Muffler

Based on the same concepts as our popular HFMA-Series but more affordable, our HFMP-Series utilize glass-filled nylon housing which is ultrasonically welded for maximum strength.

Both HFMA and HFMP Series offers greater flow with less pressure drop than the BM-Series, while lowering noise levels. Please refer to the sound and flow characteristics charts listed below for more information. Unit should be mounted in a protective position free from excessive vibration. Hand tighten to the device only.

**Symbol**



***HOW TO ORDER***

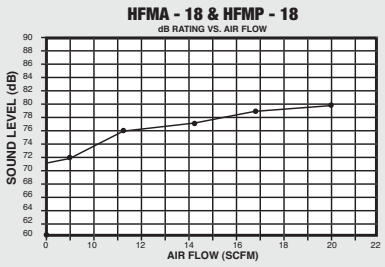
**HFMP** — □□ □ — □

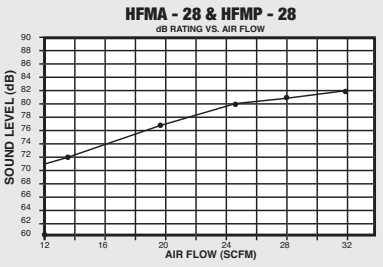
| | Connection | Port Option | Housing Color |
|---|---|---|---|
| High Flow Muffler<br>Plastic Body | 18 = 1/8", 28 = 1/4"<br>38 = 3/8", 48 = 1/2" | None = NPT<br>P = BSPT | None = Black<br>Y = Yellow |

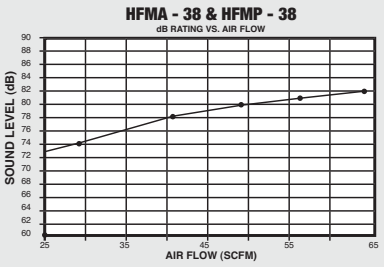
## SPECIFICATIONS

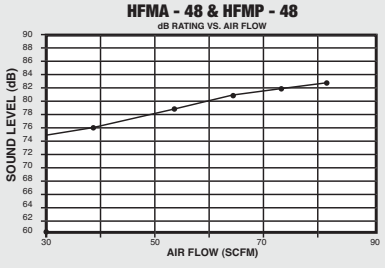
| ITEM / MODEL | | HFMP-18 | HFMP-28 | HFMP-38 | HFMP-48 |
|---|---|---|---|---|---|
| CONNECTION | NPTM | 1/8" | 1/4" | 3/8" | 1/2" |
| OVERALL LENGTH | IN. | 2-1/8" | 2-7/32" | 3-7/16" | 3-7/16" |
| DIAMETER | IN. | 53/64" | 53/64" | 1-1/4" | 1-1/4" |
| HEX | IN. | 11/16" | 11/16" | 1-5/32" | 1-5/32" |
| MATERIAL | BODY | NYLON | | | |
| | ELEMENT | 50 MESH STAINLESS STEEL SCREEN | | | |
| MAX OPERATING PRESSURE | | 150 PSI (10.55 kg/cm$^2$) | | | |
| OPERATING TEMPERATURE | | 35˚~ 120˚F (1.6˚~ 50˚C) | | | |
| WEIGHT (APPROX.) | OZ. | 0.40 | 0.48 | 1.60 | 1.60 |
| UNIT PACK | EA. | 5 | 5 | 5 | 5 |

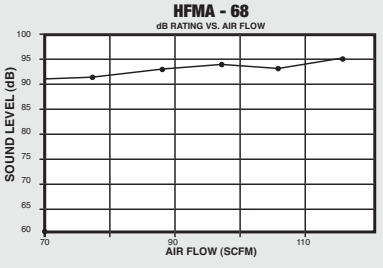
## SOUND CHARACTERISTICS

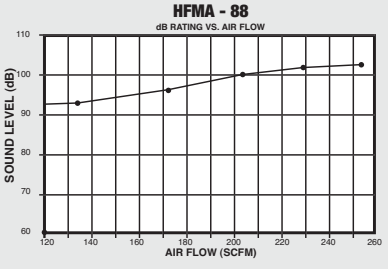





*** All tests are performed by Consolidated Laboratories, Inc.**

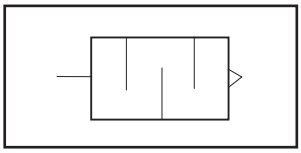
# BM-Series, Sintered Bronze Exhaust Muffler

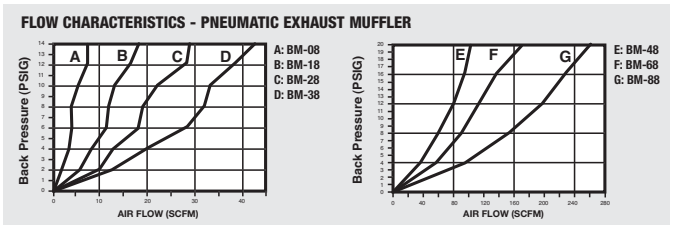
BM-Series mufflers utilize porous sintered bronze filter element secured to standard pipe fittings. These compact and inexpensive mufflers are easy to install and maintain, particularly suitable where space is limited. They are used to diffuse air and muffle noise from the exhaust ports of air valves, air cylinders and air tools to an acceptable level within OSHA noise requirements.

BM-Series mufflers can also be used as filters for gasoline, oil and air exhaust and intake filtering; coalescing of oil mist or water vapor; cryogenic phase separation; pressure of vacuum equalization and many others.

Unit should be mounted in a protective position free from excessive vibration. Use wrench on hex head to tighten unit to the device. Standard unit contains a 40 micron element, and 10 or 90 micron units are available on special order.

**Symbol**








## HOW TO ORDER

**BM** — □□ — □□

Bronze Muffler (Brass Fitting)

| Connection | Port Option |
|---|---|
| 08 = 10-32 UNF | None = NPT |
| 16 = 1/16", 18 = 1/8" | P = BSPT |
| 28 = 1/4", 38 = 3/8" | G = BSPP |
| 48 = 1/2", 68 = 3/4" | |
| 88 = 1" | |

## SPECIFICATIONS

| ITEM | MODEL | BM-08 | BM-16 | BM-18 | BM-28 | BM-38 | BM-48 | BM-68 | BM-88 |
|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | NPTM | 10-32UNF | 1/16" | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | IN. | 3/4" | 53/64" | 29/32" | 1-5/16" | 1-17/32" | 1-57/64" | 2-9/32" | 2-57/64" |
| HEX | IN. | 5/16" | 3/8" | 7/16" | 9/16" | 11/16" | 7/8" | 1-9/64" | 1-11/32" |
| MATERIAL | BODY | BRASS | | | | | | | |
| | ELEMENT | SINTERED BRONZE (40 micron standard, also available in 10 or 90 micron) | | | | | | | |
| MAX OPERATING PRESSURE | | 300 PSI (21.1 kg/cm$^2$) | | | | | | | |
| OPERATION TEMPERATURE | | 35˚~ 300˚F (1.6˚~ 149˚C) | | | | | | | |
| WEIGHT (APPROX.) | Oz. | 0.12 | 0.15 | 0.26 | 0.56 | 0.93 | 1.47 | 2.96 | 4.16 |
| UNIT PACK | EA. | 10 | 10 | 10 | 10 | 10 | 5 | 1 | 1 |

## SOUND CHARACTERISTICS - PNEUMATIC EXHAUST MUFFLER

| | BM-08 | | BM-18 | | BM-28 | | BM-38 | | BM-48 | | BM-68 | | BM-88 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BACK PRESSURE (PSIG) | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db |
| 2 | 1.1 | 72 | 7 | 72 | 10 | 73 | 12 | 74 | 26.6 | 75 | 39.4 | 76 | 67 | 93 |
| 4 | 2.3 | 72 | 9 | 73 | 12 | 74 | 20 | 74 | 39.5 | 76 | 62.0 | 80 | 104 | 95 |
| 6 | 3.6 | 72 | 11 | 73 | 17 | 74 | 26 | 74 | 49.9 | 77 | 80.7 | 88 | 134 | 97 |
| 8 | 5.0 | 73 | 12 | 73 | 19 | 74 | 31 | 75 | 60.9 | 80 | 97.0 | 93 | 154 | 100 |
| 10 | 5.2 | 73 | 13 | 74 | 23 | 75 | 35 | 76 | 71.3 | 86 | 110.2 | 96 | 181 | 101 |
| 12 | 7.4 | 74 | 15 | 74 | 23 | 75 | 39 | 76 | 79.5 | 87 | 121.3 | 97 | 210 | 102 |
| 14 | 8.0 | 74 | 17 | 75 | 29 | 76 | 43 | 77 | 86.6 | 90 | 136.9 | 98 | 231 | 105 |
| 16 | --- | --- | --- | --- | --- | --- | --- | --- | 93.9 | 92 | 144.5 | 99 | 231 | 105 |
| 18 | --- | --- | --- | --- | --- | --- | --- | --- | 102.8 | 95 | 160.9 | 100 | 246 | 105 |
| 20 | --- | --- | --- | --- | --- | --- | --- | --- | 107.5 | 95 | 169.1 | 100 | 261 | 105 |



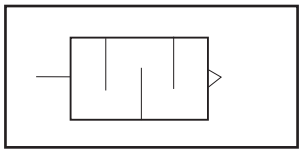
*** All tests are performed by Consolidated Laboratories, Inc.**

# HFMP-Series, High Flow Plastic Muffler

Based on the same concepts as our popular HFMA-Series but more affordable, our HFMP-Series utilize glass-filled nylon housing which is ultrasonically welded for maximum strength.

Both HFMA and HFMP Series offers greater flow with less pressure drop than the BM-Series, while lowering noise levels. Please refer to the sound and flow characteristics charts listed below for more information. Unit should be mounted in a protective position free from excessive vibration. Hand tighten to the device only.

**Symbol**



***HOW TO ORDER***

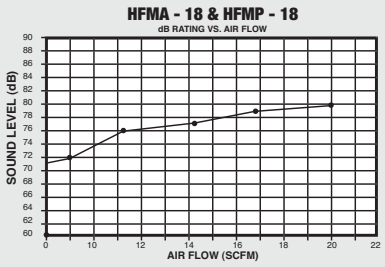
**HFMP** — □□ □ — □

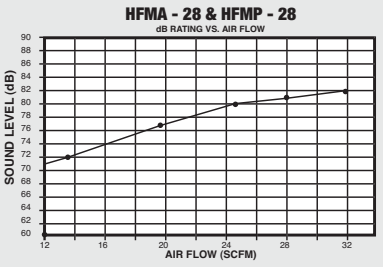
| | Connection | Port Option | Housing Color |
|---|---|---|---|
| High Flow Muffler<br>Plastic Body | 18 = 1/8", 28 = 1/4"<br>38 = 3/8", 48 = 1/2" | None = NPT<br>P = BSPT | None = Black<br>Y = Yellow |

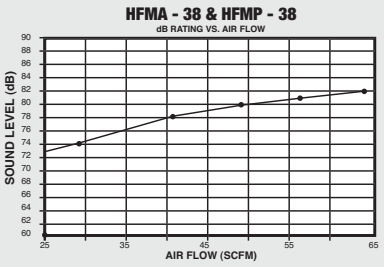
## SPECIFICATIONS

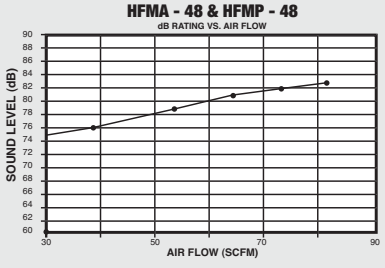
| ITEM / MODEL | | HFMP-18 | HFMP-28 | HFMP-38 | HFMP-48 |
|---|---|---|---|---|---|
| CONNECTION | NPTM | 1/8" | 1/4" | 3/8" | 1/2" |
| OVERALL LENGTH | IN. | 2-1/8" | 2-7/32" | 3-7/16" | 3-7/16" |
| DIAMETER | IN. | 53/64" | 53/64" | 1-1/4" | 1-1/4" |
| HEX | IN. | 11/16" | 11/16" | 1-5/32" | 1-5/32" |
| MATERIAL | BODY | NYLON | | | |
| | ELEMENT | 50 MESH STAINLESS STEEL SCREEN | | | |
| MAX OPERATING PRESSURE | | 150 PSI (10.55 kg/cm$^2$) | | | |
| OPERATING TEMPERATURE | | 35˚~ 120˚F (1.6˚~ 50˚C) | | | |
| WEIGHT (APPROX.) | OZ. | 0.40 | 0.48 | 1.60 | 1.60 |
| UNIT PACK | EA. | 5 | 5 | 5 | 5 |

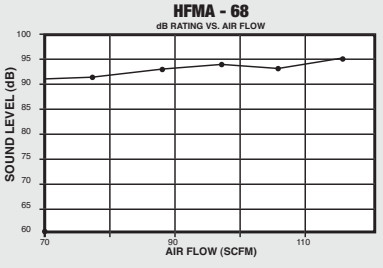
## SOUND CHARACTERISTICS

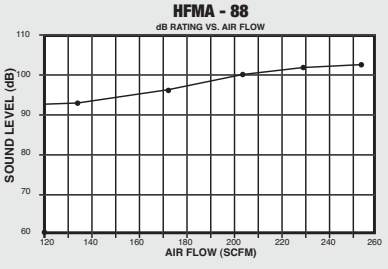


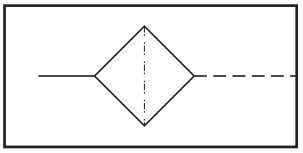






*** All tests are performed by Consolidated Laboratories, Inc.**

# BVS-Series, Breather Vent

**Symbol**



BV-Series low profile breather vents have many applications.They are most often used on single acting cylinders or valves to prevent dirt and foreign particles from entering ports open to the atmosphere.Common uses can also be found on vacuum relief or pressure equalization for gear boxes,crank cases,storage tanks or other vessels whenever pressure equalization is required.

Supplied with standard male pipe threads,they can be installed,with little protrusion, as a flat integral part of the equipment.Unit should be mounted in a protective position from excessive vibration.Use wrench on hex head to tighten unit to the device. The filter element used in the standard breather vent is rated for 40 micron filtration,optional 10 or 90 micron is available upon request.

***HOW TO ORDER***

**BVS** — □□ □ — □□

**Breather Vent (Steel Fitting)**

**Connection (NPTM)**
**18 = 1/8", 28 = 1/4"**
**38 = 3/8", 48 = 1/2"**
**68 = 3/4", 88 = 1"**
**128 = 1-1/4", 148 = 1-1/2"**

**Port Option**
**None = NPT**
**P = BSPT**

**Element Porosity**
**None = 40um**
**10 = 10um**
**90 = 90um**

## SPECIFICATIONS

| ITEM | | MODEL | BVS-18 | BVS-28 | BVS-38 | BVS-48 | BVS-68 | BVS-88 | BVS-128 | BVS-148 |
|---|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1-1/4" | 1-1/2" |
| OVERALL LENGTH | | IN. | 1/2" | 45/64" | 27/32" | 63/64" | 1-3/16" | 1-11/32" | 1-31/64" | 1-9/16" |
| HEX | | IN. | 7/16" | 9/16" | 11/16" | 7/8" | 1-1/8" | 1-63/64" | 1-3/4" | 1-31/32" |
| MATERIAL | BODY | | ZINC-PLATED STEEL (Zn-Fe) | | | | | | | |
| | ELEMENT | | SINTERED BRONZE (40 micron Standard, 10 or 90 micron available) | | | | | | | |
| MAX OPERATING PRESSURE | | | 150 PSI (10.55 kg/cm$^2$) | | | | | | | |
| OPERATING TEMPERATURE | | | 35˚~ 300˚F (1.6˚~ 149˚C) | | | | | | | |
| WEIGHT (APPROX.) | | OZ. | 0.19 | 0.39 | 0.68 | 1.15 | 2.33 | 3.52 | 6.74 | 7.88 |
| UNIT PACK | | EA. | 10 | 10 | 10 | 10 | 5 | 1 | 1 | 1 |

*** SUPPLY WITH GASKET.**

***HOW TO ORDER***

**FBVS** — □□

**Female Breather Vent (Steel Fitting)**

**Connection (NPTF)**
**18 = 1/8", 28 = 1/4"**
**38 = 3/8", 48 = 1/2"**

## SPECIFICATIONS

| ITEM | | MODEL | FBVS-18 | FBVS-28 | FBVS-38 | FBVS-48 |
|---|---|---|---|---|---|---|
| CONNECTION | | NPTF | 1/8" | 1/4" | 3/8" | 1/2" |
| OVERALL LENGTH | | IN. | 45/64" | 55/64" | 31/32" | 1-11/64" |
| HEX | | IN. | 9/16" | 11/16" | 7/8" | 1-9/64" |
| MATERIAL | BODY | | NICKEL-PLATED STEEL (Ni-Fe) | | | |
| | ELEMENT | | SINTERED BRONZE (40 micron Standard, 10 or 90 micron available) | | | |
| MAX OPERATING PRESSURE | | | 150 PSI (10.55 kg/cm$^2$) | | | |
| OPERATING TEMPERATURE | | | 35˚~ 300˚F (1.6˚~ 149˚C) | | | |
| WEIGHT (APPROX.) | | OZ. | 0.56 | 0.98 | 1.70 | 3.81 |
| UNIT PACK | | EA. | 5 | 5 | 5 | 5 |

# BV-Series, Breather Evnt

**HOW TO ORDER**

**BV** — ☐☐ ☐ — ☐☐

| Breather Vent (Brass Fitting) | Connection (NPTM) | Port Option | Element Porosity |
|---|---|---|---|
| | 08 = 10-32, 16 = 1/16" | None = NPT | None = 40um (Standard) |
| | 18 = 1/8", 28 = 1/4" | P = BSPT | 10 = 10um |
| | 38 = 3/8", 48 = 1/2" | G = BSPP | 90 = 90um |
| | 68 = 3/4", 88 = 1" | | |

## SPECIFICATIONS

| ITEM | | MODEL | BV-08* | BV-16 | BV-18 | BV-28 | BV-38 | BV-48 | BV-68 | BV-88 |
|---|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | | NPTM | 10-32UNF | 1/16" | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | | IN. | 11/32" | 13/32" | 1/2" | 11/16" | 27/32" | 31/32" | 1-7/64" | 1-11/32" |
| HEX | | IN. | 5/16" | 3/8" | 7/16" | 9/16" | 11/16" | 7/8" | 1-9/64" | 1-11/32" |
| MATERIAL | BODY | | BRASS | | | | | | | |
| | ELEMENT | | SINTERED BRONZE (40 micron Standard, 10 or 90 micron available) | | | | | | | |
| MAX OPERATING PRESSURE | | | 150 PSI (10.55 kg/cm$^2$) | | | | | | | |
| OPERATING TEMPERATURE | | | 35˚~ 300˚F (1.6˚~ 149˚C) | | | | | | | |
| WEIGHT(APPROX.) | | OZ. | 0.07 | 0.12 | 0.19 | 0.39 | 0.70 | 1.17 | 1.84 | 3.31 |
| UNITPACK | | EA. | 10 | 10 | 10 | 10 | 10 | 10 | 5 | 1 |

*** SUPPLY WITH GASKET.**

**HOW TO ORDER**

**BV** — **SAE#** ☐

| Breather Vent (Brass Fitting) | Connection (SAE) |
|---|---|
| | 4 = 7/16"-20, 6 = 9/16"-18 |
| | 8 = 3/4"-16, 10 = 7/8"-14 |
| | 12 = 1-1/16"-12 |

## SPECIFICATIONS

| ITEM | | MODEL | BV-SAE#4 | BV-SAE#6 | BV-SAE#8 | BV-SAE#10 | BV-SAE#12 |
|---|---|---|---|---|---|---|---|
| CONNECTION | | SAE | 7/16"-20 | 9/16"-18 | 3/4"-16 | 7/8"-14 | 1-1/16"-12 |
| OVERALL LENGTH | | IN. | 47/64" | 53/64" | 15/16" | 1-11/64" | 1-11/32" |
| HEX | | IN. | 9/16" | 11/16" | 7/8" | 1-11/64" | 1-11/32" |
| MATERIAL | BODY | | BRASS | | | | |
| | ELEMENT | | SINTERED BRONZE (70 micron) | | | | |
| MAX OPERATING PRESSURE | | | 150 PSI (10.55 kg/cm$^2$) | | | | |
| OPERATING TEMPERATURE | | | 35˚~ 300˚F (1.6˚~ 149˚C) | | | | |
| WEIGHT (APPROX.) | | OZ. | 0.42 | 0.71 | 1.18 | 2.30 | 3.90 |
| UNIT PACK | | EA. | 50 | 50 | 50 | 50 | 50 |

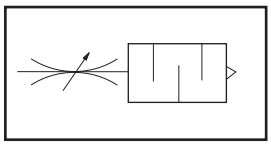
# SCM-Series, Speed Control Muffler

SCM-Series muffler with speed control provides infinite variation of control of air flow at an acceptable sound level on the exhaust ports of air valves with complete safety.

An external adjustment screw accurately varies orifice opening from closed to full flow as required. The final position is then locked in place by the lock nut. Objectionable exhaust air noise is eliminated by the surrounding sleeve of sintered bronze.

SCM-Series mufflers feature complete safety in operation. The sintered bronze sleeve is held securely in position and protected by an integral shroud. Standard pipe thread connections provide easy attachment to equipment. Unit should be mounted in a protective position, free from excessive vibration.

**Symbol**



Use wrench on hex head to tighten unit to the device. Unit contains a 40 micron element.

***HOW TO ORDER***

**SCM — □□ □**

**Speed Control Muffler**

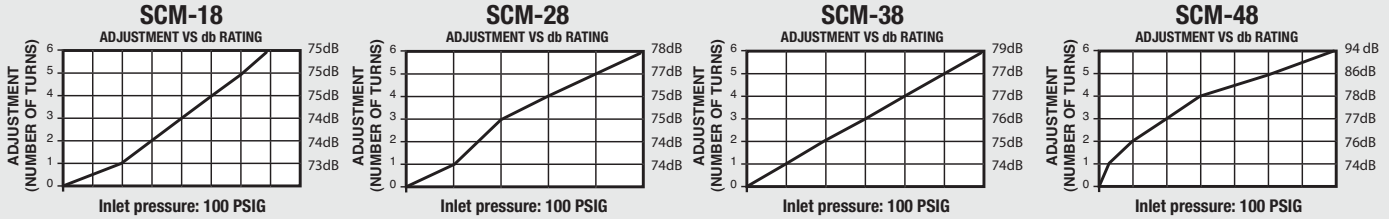
| Connection (NPTM) | Port Option |
|---|---|
| 08 = 10-32UNF | None = NPT |
| 18 = 1/8", 28 = 1/4" | P = BSPT |
| 38 = 3/8", 48 = 1/2" | G = BSPP |
| 68 = 3/4", 88 = 1" | |

## SPECIFICATIONS

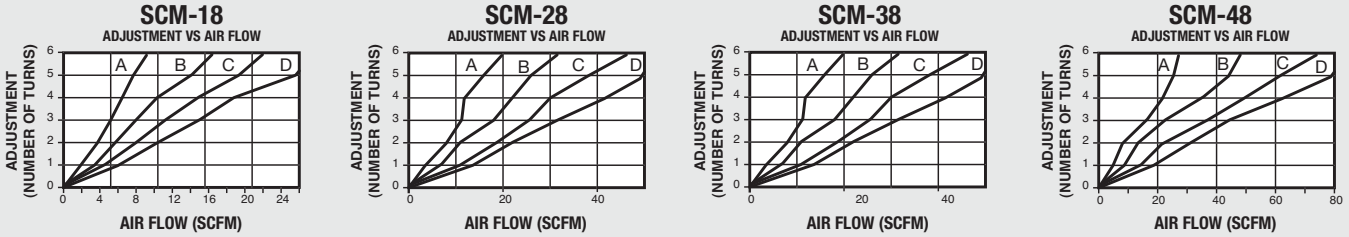
| ITEM / MODEL | | SCM-08 | SCM-18 | SCM-28 | SCM-38 | SCM-48 | SCM-68 | SCM-88 |
|---|---|---|---|---|---|---|---|---|
| CONNECTION | NPTM | 10-32UNF | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| MAX. ADJUSTMENT FLOW | SCFM | 10 | 30 | 50 | 70 | 100 | 130 | 160 |
| APPROX. HEIGHT (FULL OPEN) | IN. | 23/32" | 1-1/2" | 1-11/16" | 1-11/16" | 2" | 2-3/4" | 3" |
| HEX | IN. | 5/16" | 1/2" | 9/16" | 11/16" | 7/8" | 1-7/64" | 1-11/32" |
| MATERIAL | BODY | BRASS | | | | | | |
| | ELEMENT | SINTERED BRONZE (40 micron) | | | | | | |
| MAX OPERATING PRESSURE | | 150 PSI | 300 PSI (21.1 kg/cm²) | | | | | |
| OPERATING TEMPERATURE | | 35˚~ 300˚F (1.6˚~ 149˚C) | | | | | | |
| WEIGHT (APPROX.) | OZ. | 0.18 | 0.65 | 1.12 | 1.73 | 2.95 | 4.72 | 7.57 |
| UNIT PACK | EA. | 10 | 10 | 10 | 10 | 5 | 1 | 1 |

## SOUND CHARACTERISTICS VS. ADJUSTMENT - SPEED CONTROL MUFFLER

INLET PRESSURE=100 PSIG




## FLOW CHARACTERISTICS VS.ADJUSTMENT-SPEED CONTROL MUFFLERS




A=25 PSIG B=50 PSIG C=75 PSIG D=100 PSIG

*** All tests are performed by Consolidated Laboratories, Inc.**

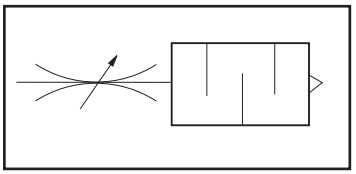
# SPBMS-Series, Bronze Muffler with flow adjustment

SPBMS -Series mufflers utilize our very popular BMS-Series mufflers modified to fit with an external flow adjustment screw.

The external flow adjustment screw accurately varies orifice opening from closed to full flow as required. The final position is then locked in place by the lock nut.

Unit should be mounted in a protective position free from excessive vibration. Use wrench on hex head to tighten unit to the device. All units contain 40- micron filter element.

**Symbol**



***HOW TO ORDER***

**SPBMS — □□**

| Speed Control BMS | Connection (NPTF) |
|---|---|
| | 18 = 1/8" |
| | 28 = 1/4" |
| | 38 = 3/8" |
| | 48 = 1/2" |

## SPECIFICATIONS

| ITEM / MODEL | | SPBMS-18 | SPBMS-28 | SPBMS-38 | SPBMS-48 |
|---|---|---|---|---|---|
| CONNECTION NPTM | | 1/8" | 1/4" | 3/8" | 1/2" |
| OVERALL LENGTH IN. | | 1-41/64" | 2-17/64" | 2-41/64" | 2-63/64" |
| HEX IN. | | 7/16" | 9/16" | 11/16" | 7/8" |
| MATERIAL | BODY | ZINC-PLATED STEEL (Zn-Fe) | | | |
| | ELEMENT | SINTERED BRONZE (40 micron) | | | |
| | ADJUSTMENT SCREW | ZINC-PLATED STEEL (Zn-Fe) | | | |
| | LOCK NUT | ZINC-PLATED STEEL (Zn-Fe) | | | |
| MAX OPERATING PRESSURE | | 300 PSI (21.1 kg/cm$^2$) | | | |
| OPERATING TEMPERATURE | | 35˚~300˚F (1.6˚~149˚C) | | | |
| WEIGHT (APPROX.) OZ. | | 0.40 | 0.80 | 1.52 | 2.48 |
| UNIT PACK EA. | | 5 | 5 | 5 | 5 |

# SSBM-Series, Stainless Steel Exhaust Muffler

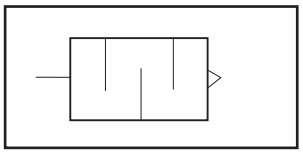
SSBM-Series mufflers are constructed with 300-Series stainless steel materials, they are resistant to atmospheric corrosion, foodstuffs, sterilizing solutions, many organic chemicals, dyestuffs and a wide variety of inorganic chemicals.

These compact mufflers are furnished with standard male pipe thread connection, they are easy to install and maintain, particularly suitable for confined area. They are used to diffuse air and muffle noise from the exhaust ports of air valves, air cylinders and air tools to an acceptable level within OSHA noise requirement.

SSBM-Series mufflers can also be used as filters for gasoline, various chemical solutions, oil and air exhaust and intake filtering, coalescing of oil mist or water vapor, etc.; cryogenic phase separation; pressure of vacuum equalization and many others.

Unit should be mounted in a protective position free from excessive vibration. Use wrench on hex head to tighten unit to the device. All units contain 70-micron filter element.

**Symbol**



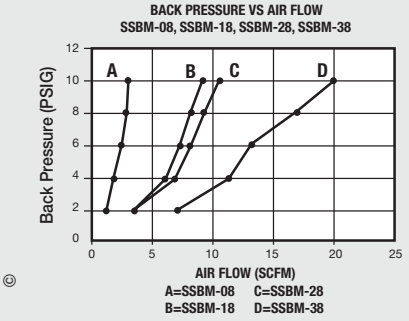
***HOW TO ORDER***

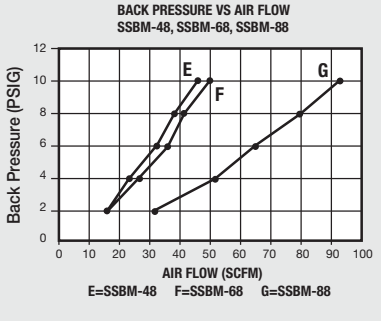
**SSBM** — □□

**Stainless Steel Exhaust Muffler**

**Connection (NPTM)**
**08 = 10-32UNF**
**18 = 1/8", 28 = 1/4"**
**38 = 3/8", 48 = 1/2"**
**68 = 3/4", 88 = 1"**

## FLOW CHARACTERISTICS - S.S. EXHAUST MUFFLER






## SPECIFICATIONS

*** All tests are performed by Consolidated Laboratories, Inc.**

| ITEM / MODEL | | | SSBM-08 | SSBM-18 | SSBM-28 | SSBM-38 | SSBM-48 | SSBM-68 | SSBM-88 |
|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | | NPTM | 10-32 UNF | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | | IN. | 51/64" | 1-3/32" | 1-3/8" | 1-7/8" | 2-1/4" | 2-51/64" | 3-11/64" |
| HEX | | IN. | 5/16" | 1/2" | 5/8" | 3/4" | 15/16" | 1-1/8" | 1-1/2" |
| MATERIAL | BODY | | SUS303 STAINLESS STEEL | | | | | | |
| | ELEMENT | | SUS316 STAINLESS STEEL (70 micron) | | | | | | |
| MAX OPERATING PRESSURE | | | 300 PSI (21.1 kg/cm$^2$) | | | | | | |
| OPERATING TEMPERATURE | | | 35˚~ 392˚F (1.6˚~ 200˚C) | | | | | | |
| WEIGHT (APPROX.) | | OZ. | 0.13 | 0.53 | 0.88 | 1.34 | 2.13 | 3.72 | 6.32 |
| UNIT PACK | | EA. | 5 | 5 | 5 | 2 | 2 | 1 | 1 |

## SOUND CHARACTERISTICS - STAINLESS STEEL EXHAUST MUFFLER

| | SSBM-08 | | SSBM-18 | | SSBM-28 | | SSBM-38 | | SSBM-48 | | SSBM-68 | | SSBM-88 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BACK PRESSURE (PSIG) | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db |
| 2 | 0.9 | 60.0 | 3.4 | 60.0 | 3.4 | 60.5 | 7.0 | 60.0 | 15.0 | 60.0 | 15.0 | 64.0 | 31.0 | 68.0 |
| 4 | 1.2 | 60.0 | 5.2 | 60.5 | 5.4 | 61.5 | 11.0 | 60.5 | 24.0 | 62.0 | 25.0 | 65.0 | 51.0 | 75.0 |
| 6 | 1.7 | 60.0 | 6.8 | 61.0 | 7.1 | 62.0 | 13.0 | 61.0 | 31.0 | 63.5 | 32.0 | 66.0 | 65.0 | 79.0 |
| 8 | 1.9 | 60.0 | 8.1 | 61.5 | 8.7 | 62.5 | 17.0 | 62.0 | 38.5 | 65.5 | 40.0 | 67.0 | 79.5 | 81.0 |
| 10 | 2.2 | 60.0 | 9.5 | 62.0 | 10.4 | 63.0 | 20.0 | 62.5 | 45.0 | 67.0 | 50.0 | 67.5 | 93.0 | 82.5 |

*** All tests are performed by Consolidated Laboratories, Inc.**

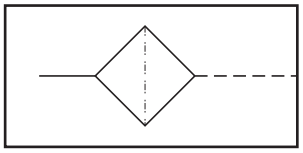
# SSBV-Series, Stainless Steel Breather Vent

SSBV-Series low profile breather vents are constructed with 300-Series stainless steel materials,they are resistant to atmospheric corrosion, foodstuffs, sterilizing solutions,many organic chemicals,dyestuffs and wide variety of inorganic chemicals.

SSBV-Series compact breather vents are furnished with standard male pipe thread connections,they are often used on single acting stainless steel cylinders or valves to prevent dirt and foreign particles from entering port open to the atmosphere. Other common uses can also be found on vacuum relief or pressure equalization for gearboxes,crank cases, storage tanks or other vessels whenever pressure equalization is required.

Unit should be mounted in a protective position free from excessive vibration. Use wrench on hex head to tighten unit to the device. All units contain 70-micron filter element.

**Symbol**

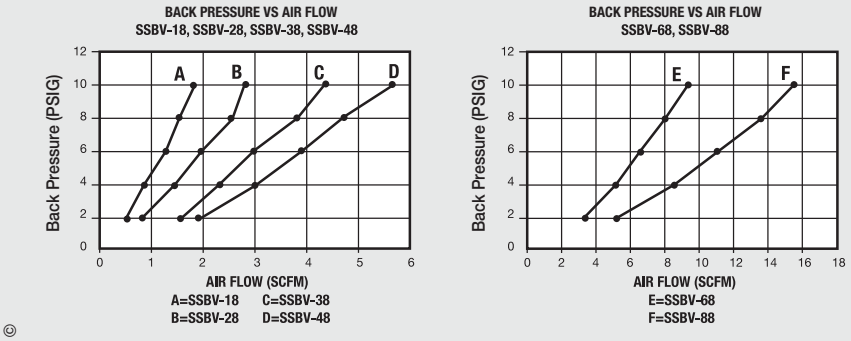


***HOW TO ORDER***

**SSBV — □□**

| Stainless Steel Breather Vent | Connection (NPTF) |
|---|---|
| | 18 = 1/8", 28 = 3/4" |
| | 38 = 3/8", 48 = 1/2" |
| | 68 = 3/4", 88 = 1" |

## FLOW CHARACTERISTICS - S.S. BREATHER VENT






*** All tests are performed by Consolidated Laboratories, Inc.**

## SPECIFICATIONS

| ITEM | MODEL | SSBV-18 | SSBV-28 | SSBV-38 | SSBV-48 | SSBV-68 | SSBV-88 |
|---|---|---|---|---|---|---|---|
| CONNECTION | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | IN. | 37/64" | 3/4" | 57/64" | 1" | 1-5/32" | 1-1/4" |
| HEX | IN. | 1/2" | 5/8" | 3/4" | 15/16" | 1-1/8" | 1-1/2" |
| MATERIAL | BODY | SUS303 STAINLESS STEEL | | | | | |
| | ELEMENT | SUS316 STAINLESS STEEL (70 micron) | | | | | |
| MAX OPERATING PRESSURE | | 150 PSI (10.55 kg/cm$^2$) | | | | | |
| OPERATING TEMPERATURE | | 35˚~ 392˚F (1.6˚~ 200˚C) | | | | | |
| WEIGHT (APPROX.) | OZ. | 0.27 | 0.54 | 0.81 | 1.36 | 2.11 | 3.31 |
| UNIT PACK | EA. | 5 | 5 | 2 | 2 | 1 | 1 |

## SOUND CHARACTERISTICS - STAINLESS STEEL EXHAUST MUFFLER

| | SSBV-18 | | SSBV-28 | | SSBV-38 | | SSBV-48 | | SSBV-68 | | SSBV-88 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BACK PRESSURE (PSIG) | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db | FLOW (SCFM) | db |
| 2 | 0.6 | 60.0 | 0.9 | 60.0 | 1.5 | 60.0 | 1.9 | 62.0 | 3.3 | 60.0 | 5.0 | 60.0 |
| 4 | 1.0 | 60.0 | 1.5 | 60.0 | 2.4 | 60.5 | 3.0 | 62.5 | 5.0 | 61.5 | 8.5 | 61.0 |
| 6 | 1.2 | 60.0 | 2.0 | 60.0 | 3.0 | 61.0 | 3.9 | 64.0 | 6.6 | 62.0 | 11.0 | 61.5 |
| 8 | 1.5 | 60.0 | 2.4 | 60.5 | 3.7 | 61.5 | 4.8 | 64.5 | 7.9 | 63.5 | 13.5 | 62.0 |
| 10 | 1.8 | 60.0 | 2.7 | 60.5 | 4.4 | 62.5 | 5.7 | 65.0 | 9.3 | 65.0 | 15.5 | 62.0 |



*** All tests are performed by Consolidated Laboratories, Inc.**

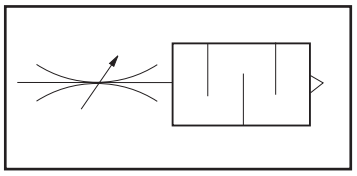
# SSSCM-Series, Stainless Steel Speed Control Muffler

SSSCM-Series stainless steel muffler with speed control provides infinite variation of control of air flow at an acceptable sound level on the exhaust ports of air valves or single acting cylinder with complete safety. They are constructed with 300-Series stainless steel materials, therefore they are resistant to atmospheric corrosion, foodstuffs, sterilizing solutions, many organic chemicals, dyestuffs and a wide variety of inorganic chemicals.

An external adjustment screw accurately varies orifice opening from closed to full flow as required. The final position can then be locked in place by the lock nut. The surrounding sleeve of stainless steel element reduces exhaust air noise. And it is protected by the integral stainless steel shroud/cage.

Unit should be mounted in a protective position free from excessive vibration. Use wrench on hex head to tighten unit to the device. All units contain 70 micron filter element.

**Symbol**



***HOW TO ORDER***

**SSSCM — □□**

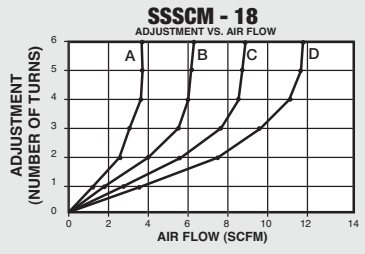
| Stainless Steel Speed Control Muffler | Connection (NPTM) |
|---|---|
| | 18 = 1/8", 28 = 3/4" |
| | 38 = 3/8", 48 = 1/2" |
| | 68 = 3/4", 88 = 1" |

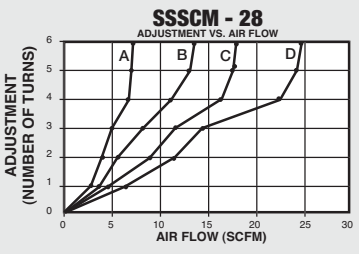
## SPECIFICATIONS

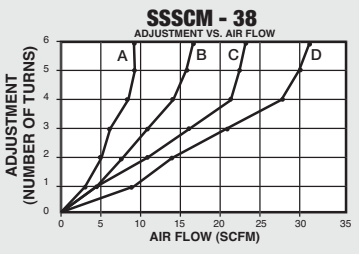
| ITEM / MODEL | | SSSCM-18 | SSSCM-28 | SSSCM-38 | SSSCM-48 | SSSCM-68 | SSSCM-88 |
|---|---|---|---|---|---|---|---|
| CONNECTION | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | IN. | 1-17/32" | 1-59/64" | 2-1/16" | 2-25/64" | 2-27/32" | 3-1/16" |
| HEX | IN. | 1/2" | 9/16" | 43/64" | 7/8" | 1-1/16" | 1-3/8" |
| MATERIAL | BODY | SUS303 STAINLESS STEEL | | | | | |
| | ELEMENT | SUS316 STAINLESS STEEL (70 micron) | | | | | |
| MAX OPERATING PRESSURE | | 300 PSI (21.1 kg/cm$^2$) | | | | | |
| OPERATING TEMPERATURE | | 35˚~392˚F (1.6˚~200˚C) | | | | | |
| WEIGHT (APPROX.) | OZ. | 0.63 | 1.03 | 1.63 | 2.91 | 4.85 | 7.81 |
| UNIT PACK | EA. | 5 | 5 | 2 | 2 | 1 | 1 |

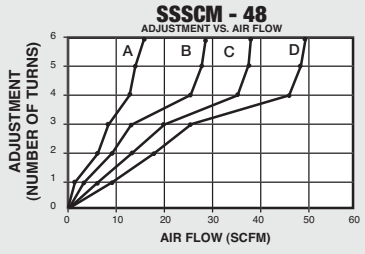
## FLOW CHARACTERISTICS VS ADJUSTMENT - STAINLESS STEEL SPEED CONTROL MUFFLER

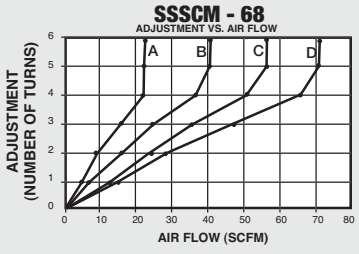
A=25 PSIG
B=50 PSIG
C=75 PSIG
D=100 PSIG

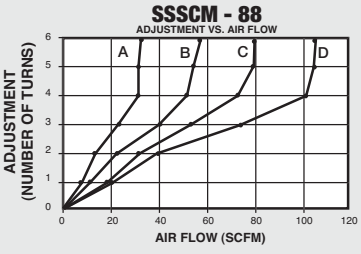


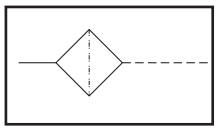






*** All tests are performed by Consolidated Laboratories, Inc.**

# SSSBN-Series, Stainless Steel Screen Breather Vent

Symbol



SSSBN-Series breather vents combine low profile and high air flow into a reality, suitable for many applications, particularly where space is limited. Special screen filter is formed by stainless steel wire, offers very high mechanical resistance, guaranteeing long life even under high pressure. 316 grade stainless steel fitting offers complete corrosion resistance.

Supplied with standard male pipe threads, they can be installed with little protrusion as a flat integral part of the equipment. Unit should be mounted in a protective position from excessive vibration. Use wrench on hex head to tighten unit to the device. Stainless steel wire screen can be easily cleaned by reversing the flow of the filtered matter.

**HOW TO ORDER**

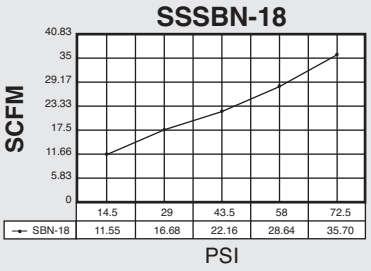
**SSSBN — □□ — 316**

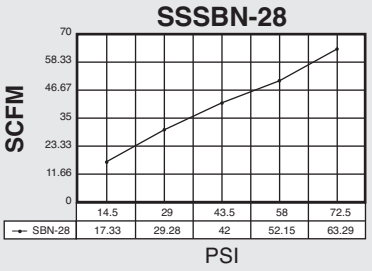
| Stainless Steel Screen Breather Vent | Connection (NPTM) |
|---|---|
| | 18 = 1/8", 28 = 1/4" |
| | 38 = 3/8", 48 = 1/2" |
| | 68 = 3/4", 88 = 1" |

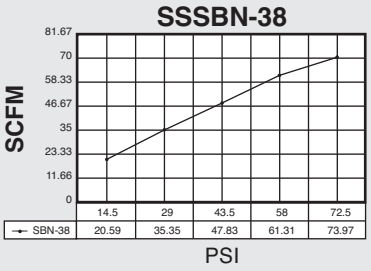
## SPECIFICATIONS

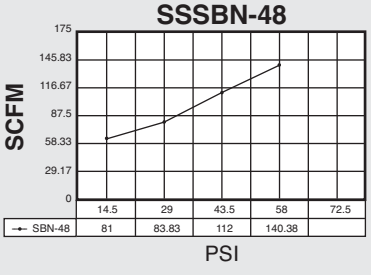
| ITEM | MODEL | SSSBN-18-316 | SSSBN-28-316 | SSSBN-38-316 | SSSBN-48-316 | SSSBN-68-316 | SSSBN-88-316 |
|---|---|---|---|---|---|---|---|
| CONNECTION | NPTM | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" |
| OVERALL LENGTH | IN. | 43/64" | 53/64" | 1" | 1-11/64" | 1-31/64" | 1-11/16" |
| HEX | IN. | 1/2" | 5/8" | 3/4" | 61/64" | 1-3/16" | 1-1/2" |
| NOISE LEVEL @60 PSI | dB | 70 | 69 | 85 | 85 | 86 | 88 |
| NOISE LEVEL @115 PSI | dB | 74 | 72 | 88 | 90 | 90 | 92 |
| MATERIAL | BODY | SUS316 STAINLESS STEEL | | | | | |
| | ELEMENT | STAINLESS STEEL WIRE SCREEN (10 ~ 150 micron) | | | | | |
| MAX OPERATING PRESSURE | | 300 PSI (21.1 kg/cm$^2$) | | | | | |
| OPERATING TEMPERATURE | | 35˚~ 392˚F (1.6˚~ 200˚C) | | | | | |
| WEIGHT (APPROX.) | OZ. | 0.30 | 0.56 | 0.90 | 1.45 | 2.70 | 4.43 |
| UNIT PACK | EA. | 10 | 10 | 10 | 10 | 5 | 1 |

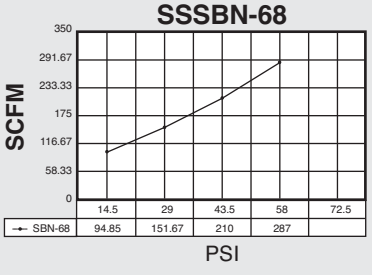
## FLOW CHARACTERISTICS

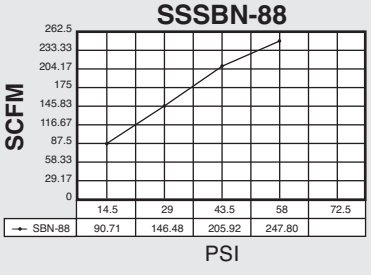


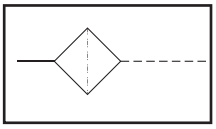






*** All tests are performed by Consolidated Laboratories, Inc.**

# RIF-Series, Repairable Air/Oil Inline Filter

**Symbol**



RIF-Series in-line filters are designed to protect small air tools, such as grinders, impact wrenches, nut runners and screwdrivers. It will extend tool life and reduces downtime by preventing foreign particles from entering the air tool, therefore eliminating expensive tool repair.

Its compact and lightweight anodized aluminum body can be easily installed directly before the air tool.

RIF-Series inline filters can also be used in low-pressure hydraulic applications. They can remove debris or contaminants, hence decrease tool wear and improve system efficiency. The 40-micron filter element insures minimum pressure drop and can be easily replaced or cleaned, and is available in 20 and 90 microns.

***HOW TO ORDER***

**RIF — □□□ — □□ — □□**

| Repairable Inline Filter | Connection (NPT) | O-ring Type | Filter Porosity |
|---|---|---|---|
| | 18 = 1/8", 28 = 1/4" | None = Buna "N" | None = 40um (Standard) |
| | 38 = 3/8", 48 = 1/2" | V = Viton | 20 = 20um |
| | 68 = 3/4", 48F = 1/2" F-F | | 90 = 90um |
| | 68F = 3/4" F-F | | |

**RK — □ — □□**

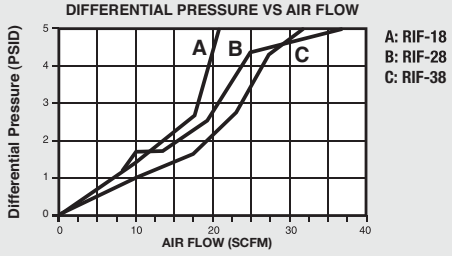
| Repair Kit* | | | Filter Porosity |
|---|---|---|---|
| 1 = For | RIF-18 | | 20=20um |
| | RIF-28 | | 40=40um |
| | RIF-38 | | 90=90um |
| 2 = For | RIF-48 | | |
| | RIF-48F | | |
| | RIF-68 | | |
| | RIF-68F | | |

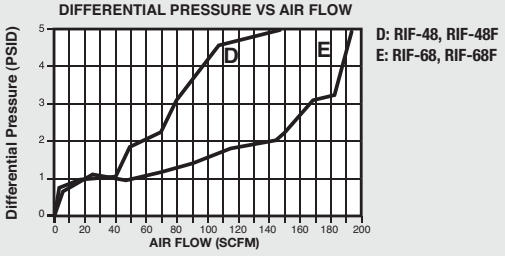
*Each kit consist of 1 x Spring
1 x Filter Element
1 x O-Ring

## SPECIFICATIONS

| ITEM / MODEL | | RIF-18 | RIF-28 | RIF-38 | RIF-48 | RIF-48F | RIF-68 | RIF-68F |
|---|---|---|---|---|---|---|---|---|
| FLUID | | AIR, OIL AND WATER | | | | | | |
| CONNECTION | NPT | 1/8" F-M | 1/4"F-M | 3/8"F-M | 1/2"F-M | 1/2"F-F | 3/4"F-M | 3/4"F-F |
| OVERALL LENGTH | IN. | 2-11/64" | 2-21/64" | 2-3/8" | 3-13/16" | 3-21/64" | 3-7/8" | 3-21/64" |
| HEX | IN. | 3/4" | 3/4" | 7/8" | 1-1/2" | 1-1/2" | 1-1/2" | 1-1/2" |
| MATERIAL | BODY | ANODIZED ALUMINUM | | | | | | |
| | ELEMENT | SINTERED BRONZE (40 micron standard, 20 or 90 micron available) | | | | | | |
| MAX OPERATING PRESSURE | | 500 PSI (35.0 kg/cm$^2$) | | | | | | |
| OPERATING TEMPERATURE | | Standard Buna "N": 35˚~ 200˚F (1.6˚~ 93.3˚C), Optional Viton: 35˚~ 400˚F (1.6˚~ 204˚C) | | | | | | |
| WEIGHT (APPROX.) | OZ. | 1.28 | 1.28 | 1.28 | 7.36 | 7.36 | 7.36 | 7.36 |
| UNIT PACK | EA. | 5 | 5 | 5 | 1 | 1 | 1 | 1 |

## FLOW CHARACTERISTICS




Inlet Pressure = 100 psi

# NIF-Series, Nipple Inline Filter

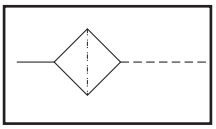
Pneumatic Plus


NIF-Series nipple inline filter is compact, light weight and inexpensive to install at the point of use. Common usages are filtration for air, oil and water.

Unit Construction features a unique conical shaped porous sintered bronze filter element in a brass nipple fitting. Conical filter provides larger filtering surface and uninterrupted axial flow than typical disc filter.

The porous sintered bronze element is available in 40 or 90 microns; element can not be replaced and must be disposed upon end of its service life.

**Symbol**



***HOW TO ORDER***

**NIF** — ☐☐ — ☐☐

| Nipple Inline Filter | Connection (NPTF) | Filter Porosity |
|---|---|---|
| | 18 = 1/8", 28 = 1/4" | 40 = 40um |
| | 38 = 3/8", 48 = 1/2" | 90 = 90um |

## SPECIFICATIONS

| ITEM / MODEL | | NIF-18 | NIF-28 | NIF-38 | NIF-48 |
|---|---|---|---|---|---|
| FLUID | | AIR, OIL AND WATER | | | |
| CONNECTION | NPTM | 1/8" | 1/4" | 3/8" | 1/2" |
| OVERALL LENGTH | IN. | 1-3/16" | 1-15/32" | 1-11/16" | 1-29/32" |
| | (mm) | (30.2) | (37.2) | (42.8) | (48.4) |
| HEX | IN. | 7/16" | 9/16" | 11/16" | 7/8" |
| MATERIAL | BODY | BRASS | | | |
| | ELEMENT | SINTERED BRONZE (40 or 90 micron) | | | |
| OPERATING PRESSURE | | 300 PSI (21.1 kg/cm$^2$) | | | |
| OPERATING TEMPERATURE | | 35˚~ 300˚F (1.6˚~ 149˚C) | | | |
| WEIGHT (APPROX.) | OZ. | 0.58 | 0.56 | 2.10 | 3.53 |
| UNIT PACK | EA. | 5 | 5 | 5 | 5 |

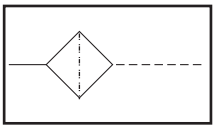
# HIF-Series, Hydraulic Inline Filter



The HIF-Series inline filter is used to protect high-pressure hydraulic systems up to 3,000 PSI. When installed at the pressure side of a pump, the sintered bronze filter element can trap all debris larger than 25um to prevent damage to the valves in the system. The conical shaped sintered bronze element is positioned by a retaining spring to allow true, uninterrupted axial flow while protecting against system crashing by increasing pressure drop across the filter.

The strong yet lightweight anodized aluminum housing can be ordered with special viton O-rings for oil systems where chemical action or heat may be a problem for the standard Buna "N" O-rings. The standard 25um sintered bronze filter element can be easily cleaned or replaced. Filter elements are also available in pore sizes of 10, 40 or 90 um.

**Symbol**



***HOW TO ORDER***

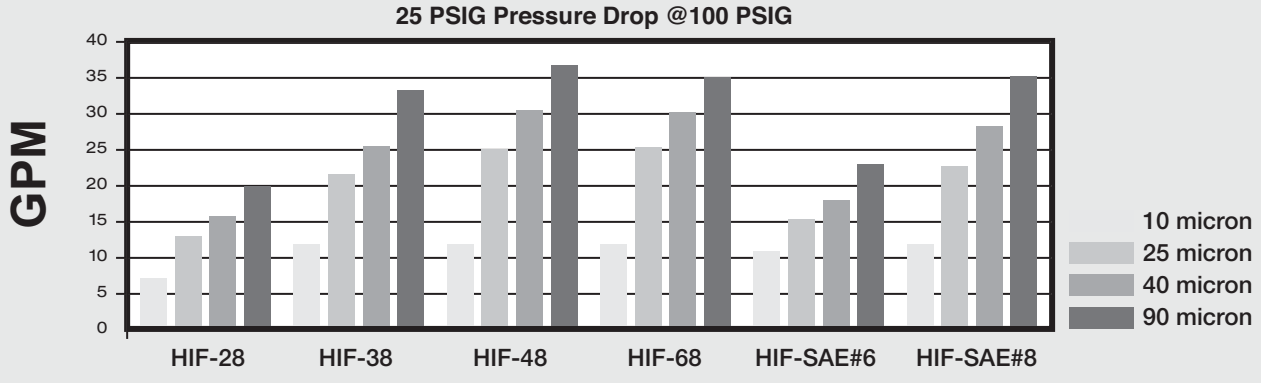
**HIF — □□ — □□ — □**

| Hydraulic Inline Filter | Connection | Element Porosity | O-Ring Type |
|---|---|---|---|
| | 28 = 1/4", 38 = 3/8" | None = 25um | None = Buna "N" |
| | 48 = 1/2", 68 = 3/4" | 10 = 10um | V = Viton |
| | SAE#6 =9/16"-18 | 40 = 40um | |
| | SAE#8 =3/4"-16 | 90 = 90um | |

## SPECIFICATIONS

| ITEM / MODEL | | HIF-28 | HIF-38 | HIF-48 | HIF-68 | HIF-SAE#6 | HIF-SAE#8 |
|---|---|---|---|---|---|---|---|
| CONNECTION | NPTM | 1/4" | 3/8" | 1/2" | 3/4" | 9/16"-18 SAE | 3/4"-16 SAE |
| OVERALL LENGTH | IN. | 3-3/16" | 3-3/16" | 4-15/16" | 4-15/16" | 3-1/4" | 3-1/4" |
| HEX | IN. | 1-1/2" | 1-1/2" | 1-1/2" | 1-1/2" | 1-1/2" | 1-1/2" |
| MATERIAL | BODY | ANODIZED ALUMINUM | | | | | |
| | ELEMENT | SINTERED BRONZE (25 um standard, 10, 40 and 90 um available) | | | | | |
| MAX OPERATING PRESSURE | | 3,000 PSI (210 kg/cm$^2$) | | | | | |
| OPERATING TEMPERATURE | | Standard Buna "N": 35˚~ 200˚F (1.7˚~ 93˚C), Optional Viton: 35˚~ 400˚F (1.7˚~ 204˚C) | | | | | |
| UNIT PACK | EA. | 2 | 2 | 2 | 2 | 2 | 2 |

## FLOW CHARACTERISTICS



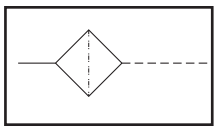
# HIL-Series, Hydraulic Inline Filter



The HIL-Series inline filter is used to protect high-pres sure hydraulic systems up to 5,000 PSI. When installed at the pressure side of a pump, the sintered bronze filter element can trap all debris larger than 25um to prevent damage to the valves in the system. The design and performamce is similar to the HIF-Series filters, but allows the filter element to be removed without breaking the line connections. Filter cleaning or replacement is as easy as unscrew-ing the filter access cap.

The strong yet lightweight anodized aluminum housing can be ordered with special viton O-rings for oil systems where chemical action or heat may be a problem for the standard Buna "N" O-rings. The standard 25um sintered bronze filter element can be easily cleaned or replaced. Filter elements also available in pore size of 10, 40 or 90um.

**Symbol**



## REPLACEMENT FILTER ELEMENT KIT

| FILTER TYPE | ELEMENT & SEAL KIT | UNIT PACK |
|---|---|---|
| HIF-28, HIF-38<br>HIF-SAE#6, HIF-SAE#8<br>All HIL-Series | REK2 (25 micron)<br>REK2-10 (10 micron)<br>REK2-40 (40 micron)<br>REK2-90 (90 micron) | 5 |
| Above with Viton Seal | REK2V (25 micron)<br>REK2V-10 (10 micron)<br>REK2V-40 (40 micron)<br>REK2V-90 (90 micron) | 5 |
| HIF-48 & HIF-68 | REK4 (25 micron)<br>REK4-10 (10 micron)<br>REK4-40 (40 micron)<br>REK4-90 (90 micron) | 5 |
| Above with Viton Seal | REK4V (25 micron)<br>REK4V-10 (10 micron)<br>REK4V-40 (40 micron)<br>REK4V-90 (90 micron) | 5 |

## REPLACEMENT SPRING KIT

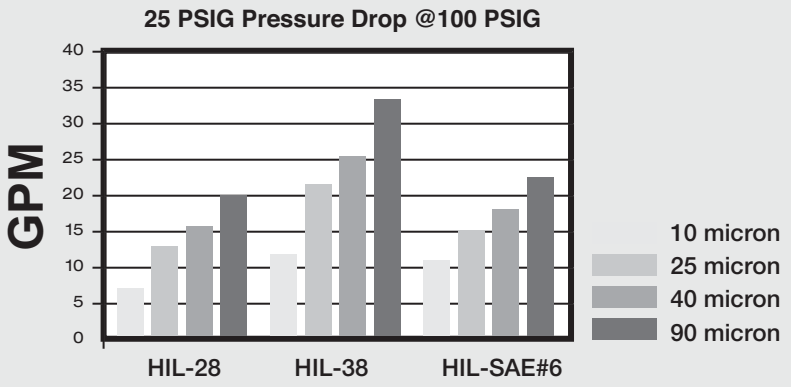
| FILTER TYPE | SPRING KIT | UNIT PACK |
|---|---|---|
| HIF-28, HIF-38,<br>HIF-SAE#6, HIF-SAE#8 | RSK2 | 5 |
| All HIL-Series | RSK2T | 5 |
| HIF-48 and HIF-68 | RSK4 | 5 |

### *HOW TO ORDER*

**HIL — □□ — □□ — □**

| Hydraulic Inline Filter L-Type | Connection | Element Porosity | O-Ring Type |
|---|---|---|---|
| | 28 = 1/4" | None = 25um | None = Buna "N" |
| | 38 = 3/8" | 10 = 10um | V = Viton |
| | SAE#6 = 9/16"-18 | 40 = 40um | |
| | | 90 = 90um | |

## FLOW CHARACTERISTICS




## SPECIFICATIONS

| ITEM / MODEL | | HIL-28 | HIL-38 | HIL-SAE#6 |
|---|---|---|---|---|
| CONNECTION | NPT | 1/4" | 3/8" | 9/16"-18 SAE |
| OVERALL LENGTH | IN. | 3-3/16" | 3-3/16" | 3-3/16" |
| DIAMETER | IN. | 2-1/2" | 2-1/2" | 2-1/2" |
| MATERIAL | BODY | ANODIZED ALUMINUM | | |
| | ELEMENT | SINTERED BRONZE (25 um standard, 10, 40 and 90 um available) | | |
| MAX OPERATING PRESSURE | | 5,000 PSI (350 kg/cm$^2$) | | |
| OPERATING TEMPERATURE | | Standard Buna "N": 35˚~ 200˚F (1.7˚~ 93˚C), Optional Viton: 35˚~ 400˚F (1.7˚~ 204˚C) | | |
| UNIT PACK | EA. | 2 | 2 | 2 |

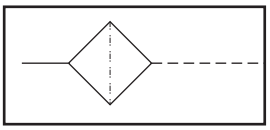
# PS-Series, Pressure Snubber

Pneumatic Plus

PS-Series pressure snubber protects pressure instruments from sudden pressure surges and fluctuations, therefore insures accurate gauge reading.Housing is made out of solid brass with a porous bronze element to handle up to 9,000-PSI maximum pressure.Unit can also be used as a miniature inline filter.

Six different porosity elements are packaged with each unit, which allows user to tailor the snubbing capacity for different application.Replacement elements are inexpensive and easy to replace,makes cleaning of the element unnecessary.

**Symbol**



***HOW TO ORDER***

**PS** — □□ — □□

**Pressure Snubber**

**Connection (NPT)**
- **28 = 1/4" Male to 1/4" Female**
- **38 = 3/8" Male to 3/8" Female**
- **E = 5 Replacement Elements**

**Filter Porosity**
- **None = 40um (Standard)**
- **10 = 10um**
- **20 = 20um**
- **25 = 25um**
- **30 = 30um**
- **40 = 40um**

| RECOMMENDED ELEMENT POROSITY RATING | | |
|---|---|---|
| POROSITY | COLOR CODE | APPLICATION |
| 40 um | NONE | VISCOUS FLUIDS (OVER 500 SSU) |
| 30 um | BLACK | MED. TYPE OILS (225 TO 500 SSU) |
| 25 um | BROWN | WATER & LT. OILS (30 TO 225 SSU) |
| 20 um | GREEN | LOW VISCOSITY FLUIDS (UNDER 30 SSU) |
| 10 um | RED | AIR & OTHER GASES |
| 5 um | PURPLE | |

## SPECIFICATIONS

| ITEM / MODEL | | | PS-28 | PS-38 |
|---|---|---|---|---|
| FLUID | | | AIR, OIL AND WATER | |
| CONNECTION | | IN. | 1/4" M-F | 3/8" M-F |
| OVERALL LENGTH | | IN. | 1-3/8" | 1-3/8" |
| HEX | | IN. | 3/4" | 1" |
| MATERIAL | BODY | | BRASS | |
| | ELEMENT | | SINTERED BRONZE | |
| MAX OPERATING PRESSURE | | | 9,000 PSI (633 kg/cm$^2$) | |
| OPERATING TEMPERATURE | | | 35˚~ 300˚F (1.6˚~ 149˚C) | |
| WEIGHT (APPROX.) | | OZ. | 2.4 | 3.2 |
| UNIT PACK | | EA. | 5 | 5 |

# SHV-Series, Sliding Hand Valve

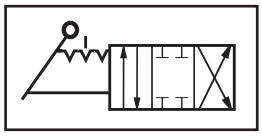
Pneumatic Plus

SHV-Series sliding hand valves are 4-way, 3-position, rotary disc, manual-operated air valves. Recommended for stationary air cylinders, arbor presses, and/or as a throttling valve for positioning air cylinder.

The 90˚ lever movement provides reliable switching function by the rotary disc. The rotary disc is under consistent spring pressure to provide a leak-proof seal. In center position, inlet is closed to pressure, and the outlet is closed to exhaust. Each position is positively detented and the removable handle prevents unauthorized movement.

Unit should be mounted in a protective position, free from excessive vibration. Use of filtered and lubricated air is highly recommended for maximum valve life and minimum maintenance.

**Symbol**



***HOW TO ORDER***

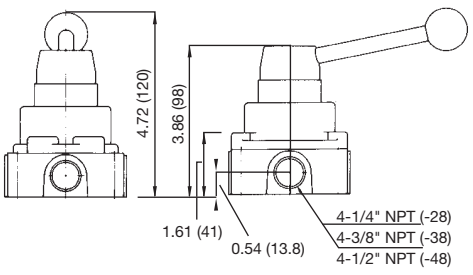
**SHV — □□ — □□**

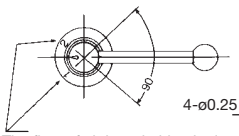
| Sliding Hand Valve | Connection | Port Option |
|---|---|---|
| | 28 = 1/4" | None = Side Port |
| | 38 = 3/8" | BP = Bottom Port |
| | 48 = 1/2" | (Not available in 1/2") |

## SPECIFICATIONS

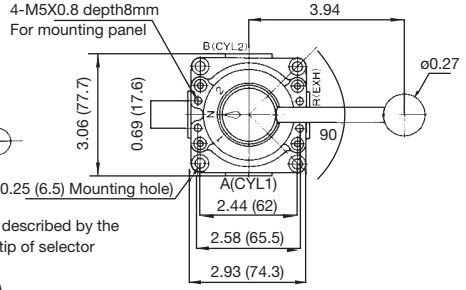
| ITEM \ MODEL | | SHV-28 | SHV-38 | SHV-48 |
|---|---|---|---|---|
| CONNECTION | NPT | 1/4" | 3/8" | 1/2" |
| FLUID | | AIR | | |
| VALVE FUNCTION | | 4-WAY, 3 POSITION | | |
| OPERATION METHOD | | ROTARY DISK, DIRECT-ACTING TYPE | | |
| LEVER OPERATING ANGLE | | 90˚(45˚ EACH DIRECTION) | | |
| CV FACTOR | JIS | 2.17 | 2.17 | 3.25 |
| PRESSURE RANGE | | 0 ~ 140 PSI (0 ~ 10.0 kg/cm$^2$) | | |
| PROOF PRESSURE | | 213 PSI (15.0 kg/cm$^2$) | | |
| OPERATING TEMPERATURE | | 41˚~ 140˚F (5˚~ 60˚C) | | |
| MATERIAL | BODY | ZINC | ALUMINUM | |
| | COVER | ZINC | | |
| | ROTARY DISK | TEFLON | | |
| WEIGHT | OZ. | 21.50 | 21.50 | 20.50 |

## DIMENSION

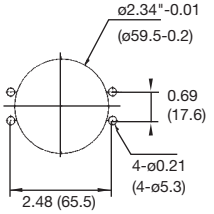



The flow of air in switching is described by the figure which the arrow at the tip of selector handle shows.
In case of 1: P(IN) ↛ A (CYL1)




Detailed diagram for machining panel mounting holes




Inch (mm)

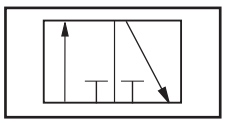
# SLV-Series, Sleeve Valve

Pneumatic Plus

SLV-Series sleeve valves combines high flow capability with short stroke in a small package. Unlike ball valves, sleeve valves do not require space for a handle.

SLV-Series sleeve valves features smooth opening/closing operation. Outlet is exhausted to atmosphere when the valves is closed. Unit is constructed of brass body and anodized aluminum sleeve for corrosion resistance.

**Symbol**



***HOW TO ORDER***

**SLV** — □□

**Sleeve Valve**

**Connection (NPT)**
**18 = 1/8", 28 = 1/4"**
**38 = 3/8", 48 = 1/2"**

## SPECIFICATIONS

| ITEM / MODEL | | SLV-18 | SLV-28 | SLV-38 | SLV-48 |
|---|---|---|---|---|---|
| CONNECTION | NPT | 1/8" M-F | 1/4" M-F | 3/8" M-F | 1/2" M-F |
| FLUID | | AIR | | | |
| VALVE FUNCTION | | 2-POSITION, 3-WAY, VENT TO EXHAUST | | | |
| LENGTH | IN. | 2-11/16" | 2-27/32" | 3" | 3-5/8" |
| | (mm) | (68.0) | (72.0) | (76.0) | (92.0) |
| HEX | IN. | 5/8" | 43/63" | 3/4" | 61/64" |
| | (mm) | (16.0) | (17.0) | (19.0) | (24.0) |
| SLEEVE DIAMETER | IN. | 1-3/16" | 1-3/16" | 1-3/16" | 1-7/8" |
| | (mm) | (30.0) | (30.0) | (30.0) | (47.5) |
| MATERIAL | BODY | BRASS | | | |
| | SLEEVE | ANODIZED ALUMINUM | | | |
| OPERATING PRESSURE | | 0 ~ 140 PSI (0 ~ 10 kg/cm$^2$) | | | |
| OPERATING TEMPERATURE | | 41˚~ 140˚F (5˚~ 60˚C) | | | |
| WEIGHT | OZ. | 3.30 | 3.38 | 3.69 | 9.06 |

# CHV-Series, Check Valve



CHV-Series check valves are used in fluid systems to permit free flow of air in one direction (forward flow) and prevent flow in the opposite direction (reverse flow) only, as indicated by an arrow stamped on the valve body.

**Symbol**

***HOW TO ORDER***

**CHV — □□ — □□**

| Check Valve | Connection | Port Option |
|---|---|---|
| | 18 = 1/8", 28 = 1/4" | None = Female to Female |
| | 38 = 3/8", 48 = 1/2" | MF = Male (IN) to Female (OUT) |

## SPECIFICATIONS

| ITEM / MODEL | | CHV-18 | CHV-28 | CHV-38 | CHV-48 |
|---|---|---|---|---|---|
| CONNECTION | NPT | 1/8"-27 | 1/4"-18 | 3/8"-18 | 1/2"-14 |
| FLUID | | AIR | | | |
| LENGTH | IN. | 1-37/44" | 1-31/32" | 2-9/32" | 2-39/64" |
| | (mm) | (40.0) | (50.0) | (58.0) | (66.0) |
| HEX | IN. | 9/16" | 43/64" | 3/4" | 63/64" |
| | (mm) | (14.0) | (17.0) | (19.0) | (25.0) |
| EFFECTIVE AREA | Cv | 1.22 | 2.00 | 2.50 | 3.80 |
| | ($mm^2$) | (22.51) | (36.90) | (46.13) | (70.11) |
| MATERIAL | BODY | NICKEL-PLATED BRASS (Ni-Cu) | | | |
| | VALVE | NICKEL-PLATED BRASS (Ni-Cu) | | | |
| | SPRING | STAINLESS STEEL | | | |
| | O-RING | BUNA "N"(NBR) | | | |
| CRACKING PRESSURE | | 5 PSI | | | |
| OPERATIING PRESSURE | | 5 ~ 213 PSIG (0.3 ~ 15.0 $kg/cm^2$) | | | |
| OPERATING TEMPERATURE | | 41˚~ 140˚F (5˚~ 60˚C) | | | |
| WEIGHT | OZ. | 1.38 | 2.33 | 2.79 | 5.96 |

# CONVERSION FACTORS

Pneumatic Plus

## LENGTH

| | | |
|---|---|---|
| inch-mm | inch x 25.4=mm | mm x 0.03937=inch |
| inch-cm | inch x 2.54=cm | cm x 0.3937=inch |
| feet-m | feet x 0.3048=m | m x 3.2808=feet |
| yard-m | yard x 0.9144=m | m x 1.0936=yard |

## WEIGHT

| | | |
|---|---|---|
| g-ounce | g x 0.0352=oz | ounce x 28.349=g |
| kg-pound | kg x 2.2046=lb. | lb. x 0.4535=kg |

## PRESSURE (Vacuum)

| | | |
|---|---|---|
| Pa-Kgf/cm$^2$ | Pa x 0.00001=kgh/cm$^2$ | kgf/cm$^2$ x 98070=Pa |
| kPa-kgf/cm$^2$ | kPa x 0.01002=kgf/cm$^2$ | kgf/cm$^2$ x 980.71=kPa |
| MPa-kgf/cm$^2$ | MPa x 1.02=kgf/cm$^2$ | kgf/cm$^2$ x 0.098=MPa |
| Pa-psi | Pa x 0.000145=psi | psi x 6895=Pa |
| KPa-psi | kPa x 0.145=psi | psi x 6.895=kPa |
| MPa-psi | MPa x 145=psi | psi x 0.006895=MPa |
| mmHg-in. Hg | mmHg x 0.03937=in.Hg | in.Hg x 25.4=mmHg |
| mmHg-Torr | mmHg + 760=Torr | Torr-760=mmHg |

## AIR FLOW

| | | |
|---|---|---|
| SCFM-NI/min | SCFM x 28.57=NI/min | NI/min x 0.035=SCFM |

## EFFECTIVE CROSS-SECTIONAL AREA-Cv FACTOR

| | | |
|---|---|---|
| mm$^2$-Cv | mm$^2$ x 0.0542=Cv | Cv x 18.45=mm$^2$ |

## TEMPERATURE

| | | |
|---|---|---|
| C˚- F˚ | ˚C x 9/5 + 32=˚F | (˚F-32) x 5/9=˚C |

## FORCE

| | | |
|---|---|---|
| N-kgf | N x 0.10197=kgf | kgf x 9.8067=N |
| N-lbf | N x 0.22481=lbf | lbf x 4.4482=N |
| kgf-lbf | kgf x 2.20462=lbf | lbf x 0.45359=kgf |

## TORQUE

| | | |
|---|---|---|
| N.m-kgf.m | N.m x 0.10197=kgf.m | kgf.m x 9.8067=N.m |
| N.m-lbf.ft | N.m x 0.73756=lbf.ft | lbf.ft x 1.3558=N.m |
| kgf.m-lbf.ft | kgf.m x 7.233=lbf.ft | lbf.ft x 0.13826=kgf.m |

# LIMITED WARRANTY

PneumaticPlus warrants each product against defects in material and workmanship for a period of one year from the date of original invoice. In the event of such defects within the warranty period, Pneumatic Plus will at its option, replace or recondition the product without charge, provided that product is shipped prepaid to the factory (UPS or Parcel Post only).

Pneumatic Plus shall not be responsible for any incidental or consequential damages, including without limitation damages or other costs resulting from labor charge, delays, vandalism, fouling caused by foreign material, damage from adverse air conditions, chemicals, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication or improper installation of the product.

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