

Vacuum Pump Accessories

Chapter 11

QR



Diffuser-type Silencers

- Pressure connection by G1/8" female fitting
- Connection to vacuum network by G1/8" male thread
- Release rate to atmosphere: about 150 NL/min
- Allows a quick and automatic release to atmosphere of a vacuum network
- Reduces cycle times
- Avoids the addition of a blow-off distributor
- Check valve control synchronized with ejector's supply

P 11/3

MS



Blow-off Devices

- Direct connection on the micro- and mini-ejectors via an M5 fitting
- Pressure connection by push fitting for Ø 4x6 or 2.7x4 tube
- 100 NL/min blow-off flow at 5 bar
- Allows direct blow-off on the VR type micro-ejectors or any other M5 fitting
- Reduces cycle times
- Avoids using a vacuum-proof distributor

P 11/4

FVI



Vacuum Filters

- A range of 8 different models of vacuum filters for optimum adaptation depending on the source of vacuum generation
- 3 filtration materials: paper, polyester and stainless steel
- 6 types of fitting, depending on the model: G3/8", G1/2", G3/4", G1"1/4, G1"1/4 and G2"
- Ideal vacuum filter for high suction flow rate vacuum sources
- Solution optimized to suit each operating environment thanks to three types of filtering material used in the filter cartridges
- A wide range adapted to your application
- Easy-to-replace cartridges in case of clogging

P 11/5

FVUM FVUG



Vacuum Filters

- A range of 4 models
- 2 sizes and 3 types of fittings: G1/4", G3/8" and G1/2"
- Transparent tank
- Transparent tank, visual checking on clogging possible
- Different models mean you can select a solution adapted to your application

P 11/7

FVG



Mini Vacuum Filters

- A range of 4 models
- Ideal for mounting with micro and mini in-line ejectors
- Easy-to-replace cartridges in case of clogging

P 11/8

FVL12



In-line Filter

- 400 micron stainless steel screen
- Easy to mount in-line on the vacuum network or directly on the vacuum pump

P 11/9

FVL68



In-line Vacuum Filter

- Simple push connection for 6x8mm hose
- Quick integration into vacuum network

P 11/9

FSLI



Liquid Separator Vacuum Filters

- 2 filtration (60 and 100 microns)
- Transparent tank
- Manual drain
- We particularly recommend using the FSL series liquid separator vacuum filters to retain liquid and particles that may be found in a vacuum network

P 11/10

Vacuum Pump Accessories

Chapter 11

SIL GV



Diffuser-type Silencers

- Noise reduction of between 30 and 39 dBA
- Passage of air through a soundproof material
- Available in 4 sizes
- 4 types of fitting, M-5F, G1/8", G1/4", G 1/2"
- Very good sound reduction
- Air outlet gently diffused
- Reduced size

P 11/11

SIL K--C



Through Type Silencers

- Through type silencer
- Noise reduction of between 30 and 33 dBA
- Noise absorbed laterally by soundproof textile
- Available in 5 sizes
- 3 types of fitting, G1/8", G1/4", G1/2"
- Noise reduction mastered
- No clogging
- No pressure loss
- Ideal for dusty environments
- Possibility of collecting the exhaust

P 11/11

CD CC



Screw-type Electrical Connectors

- M8 and M12
- 4 and 5 poles
- Straight or elbow(90°)

P 11/12



Economic solution developed especially for micro ejectors to respond to applications requiring a quick release back to atmospheric pressure of a vacuum network with reduced space and weight.

Operating:

When the ejector is pressurized to generate vacuum it applies to the internal valve of the QR18 and blocks atmospheric evacuation. When the pressure is interrupted to stop vacuum generation, the network is automatically vented to atmosphere.

Advantages

- Allows a quick and automatic release to atmosphere of a vacuum network.
- Reduces cycle times
- Avoids the addition of a blow-off distributor.
- Check valve control synchronized with ejector's supply
- No energy consumption
- Easy disassembly for cleaning

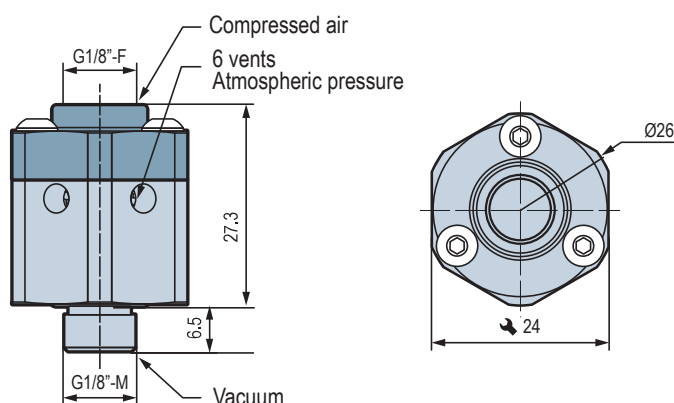
Specifications

| Model | Fitting | Weight (g) |
|-------|---------|------------|
| QR18 | G1/8" | 35 |

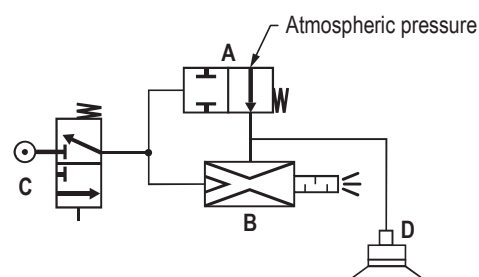
- Pressure connection by G1/8" female fitting
- Connection to vacuum network by G1/8" male thread
- Operating pressure: 2 to 7 bar
- Release rate to atmosphere: about 150 NI / min
- Nominal diameter : 4mm
- Materials : aluminium, nitrile (NBR), brass, steel
- Operating temperature : 0 to 50°C



Dimensions



Pneumatic assembly



- A: QR18 Quick Release device
 B: Ejector (Venturi).
 C: Compressed air distributor
 D: Vacuum network



Specify the part number: QR18
Please refer to the characteristics table above

Note: All dimensions are in mm

MS

Quick Release Devices



Economical solution developed especially for Coval micro-ejectors to suit applications requiring blow-off combined with very reduced size and weight. This device enables the user to connect the compressed air network directly onto the M5 push fitting.

Advantages

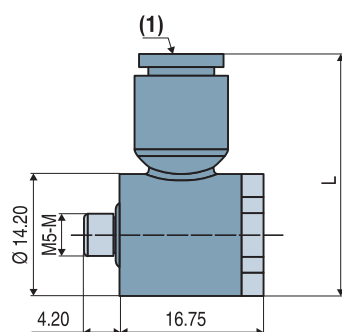
- Allows blow-off on VR or any other M5 fitting
- Reduces cycle times
- Avoids using a vacuum-proof distributor.

Technical Characteristics

| Model | Push fitting | L |
|-------|--------------|-------|
| MS2M5 | Ø 2.7x4 | 25.8 |
| MS4M5 | Ø 4x6 | 28.10 |

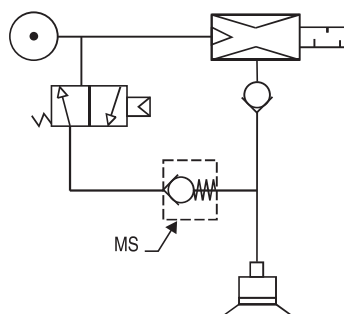
- Pressure connection by push fitting for Ø 4x6 or 2.7x4 tube
- Connection to the vacuum network by M5 male threaded fitting
- Blow-off flow rate at 5 bar: 100 Nl/min
- Materials: polyamide PA 6.6 + brass (CuZn) + nitrile (NBR)

Dimensions



(1) Push fitting

Pneumatic Diagram



For all orders, please specify:
Model + Push fitting
e.g. : MS2M5

| 1: Model | 2: Push fitting |
|----------|-----------------|
| MS2M5 | Ø 2.7x4 |
| MS4M5 | Ø 4x6 |

Note: all dimensions are shown in (mm)

FVI

Vacuum Filters



The FVI range is compatible with pneumatic vacuum generators (venturi) or electric vacuum pumps (the FVI 2 model is suitable for a suction turbine). Each filter is fitted with an interchangeable cartridge treated to guarantee long life expectancy for the whole unit.

The filtering element consists of a 5 micron filter (made of paper for version C), which is sufficient to protect pumps and venturi under normal operating conditions.

Note: For filtration leaving large deposits (powder), mount the filter horizontally or upside down.

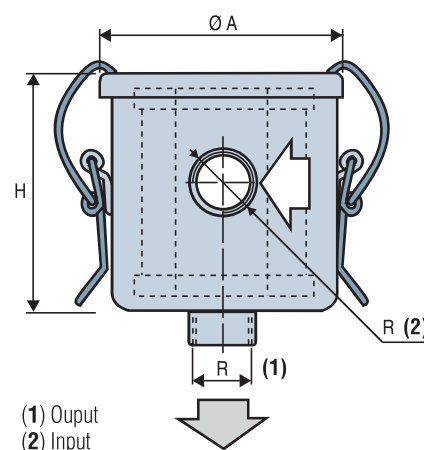
Important: These filters are designed for vacuum. They cannot withstand pressure greater than atmospheric pressure.

Filter cartridge available in 3 versions: paper, polyester and stainless steel.

Characteristics

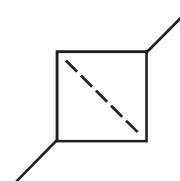
| Models | A | H | R | Flow rate (Nl/min) | Weight (g) |
|-----------|-----|-----|----------|--------------------|------------|
| FVI 38 | 79 | 76 | G3/8"-F | 400 | 270 |
| FVI 12 | 101 | 86 | G1/2"-F | 600 | 600 |
| FVI 34 | 101 | 86 | G3/4"-F | 600 | 600 |
| FVI 114 | 135 | 96 | G1"1/4-F | 1400 | 1050 |
| FVI 114 G | 173 | 156 | G1"1/4-F | 2400 | 1850 |
| FVI 2 | 201 | 258 | G2"-F | 5000 | 3900 |

Note: all dimensions are shown in (mm)



Specifications

| | |
|---------------|---|
| Body material | Stamped steel sheet |
| Treatment | Black paint |
| Filtration | 5 microns with a paper cartridge 3 microns with a polyester cartridge 60 microns with a stainless steel cartridge |
| Pressure loss | 2 to 4% vacuum with a new filter 5 to 7% vacuum with average clogging |



For all orders, please specify:
Model + Fitting + Filtering material
e.g.: FVI34P

| 1: Model | 2: Fitting | 3: Filtering material |
|----------|--|---|
| FVI | 38 G3/8" 12 G1/2" 34 G3/4" 114 G1"1/4 114G G1"1/4 2 G2" | C Paper P Polyester I Stainless steel |



Filter

| Models | Use |
|----------------|------------------------------|
| FVI 38 | GVP 20 |
| FVI 12 | GVP 25 - 30 - PVR 6 (6 m³/h) |
| FVI 34 | Vacuum pumps: 10/16 m³/h |
| FVI 114 | Vacuum pumps: 20/25 m³/h |
| FVI 2 | Turbine |

Filtration

COVAL offers three filtration principles:

Model C: CE filtration element

- Paper cartridge with 5 micron filtration.
- No damp cleaning process possible.
- Incompatible to very humid conditions

Model P: PE filtration element

- Polyester cartridge with 3 micron filtration.
- Damp cleaning possible.

Model I: IE filtration element

- Stainless steel cartridge, 60 micron filtration.
- For use in very damp environments (water, liquid)

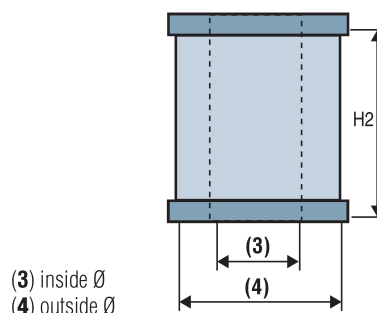
Accessories

| Models | Replacement cartridge (*) | External Ø | Internal Ø | H2 |
|------------------|---------------------------|------------|------------|-----|
| FVI 38 | FVI 38*E | 51 | 23 | 57 |
| FVI 12 | FVI 12*E | 64 | 38 | 68 |
| FVI 34 | FVI 12*E | 64 | 38 | 68 |
| FVI 114 | FVI 114*E | 98 | 60 | 71 |
| FVI 114 G | FVI 114G*E | 125 | 64 | 125 |
| FVI 2 | FVI 2*E | 149 | 88 | 221 |

(*) Specify the filter material: **C** (paper) ; **P** (polyester) ; **I** (stainless steel).

Note: all dimensions are shown in (mm)

Replacement cartridge



Other Models

FVG 11-2-3-5-6 series vacuum filters, for micro-ejectors

- Polyester cartridge
- See page 11/8

FVUM 14-38 series vacuum filters for GVP 12 and 15 vacuum pumps

- FVUG 38-12 vacuum filters, in-line stainless steel cartridge for GVP 15 and 25 vacuum pumps and small electric vacuum pumps.
- See page 11/7

FVUM. FVUG

In-line Filters

The advantage of this range of filters is that they are equipped with a transparent tank so that clogging is visible.



Characteristics

| Models | A | B | C | D | G | Flow rate (NI/min) |
|---------|------|-------|------|-------|---------|--------------------|
| FVUM 14 | 75 | 60 | 49.5 | 49.5 | G1/4"-F | 150 |
| FVUM 38 | 75 | 64 | 49.5 | 51.5 | G3/8"-F | 350 |
| FVUG 38 | 90.5 | 126.5 | 75 | 112.5 | G3/8"-F | 350 |
| FVUG 12 | 90.5 | 130 | 75 | 114.5 | G1/2"-F | 500 |

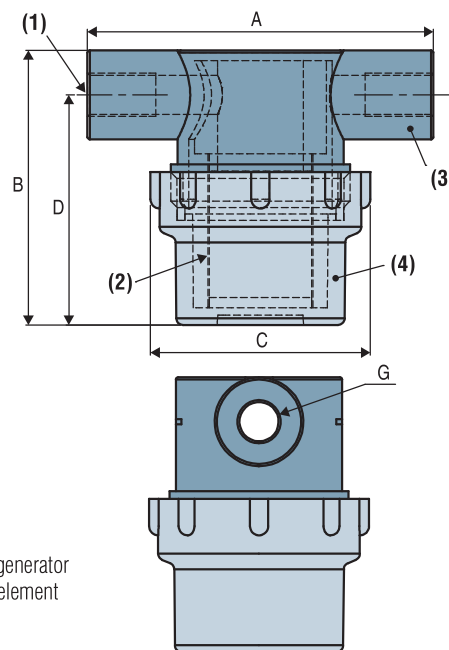
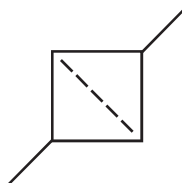
Note: all dimensions are shown in (mm)

Operating range

■ - 1 to 10 bar

Specifications

| | |
|---------------|--|
| Body material | High: nylon 6.6 Tank: transparent polyamide |
| Filtration | Two options available: 50 micron stainless steel grill or Polyethylene 80 micron |
| Temperature | 0 to 50°C |



- (1) Vacuum generator
- (2) Filtering element
- (3) Body
- (4) Tank



For all orders, please specify:
Model + Size + Fitting + Type of cartridge
e.g.: FVUG38P

| 1: Model | 2: Size | 3: Fitting | 4: Cartridge |
|----------|---------|---------------|--|
| FVU | M G | Mini Large | 14 38 12 |
| | | | G1/4" for M series G3/8" for M and G series G1/2" for G series |
| | | | - P |
| | | | Stainless steel Polyethylene |



To order a replacement filtering element, please specify:
e.g.: FVUM12E

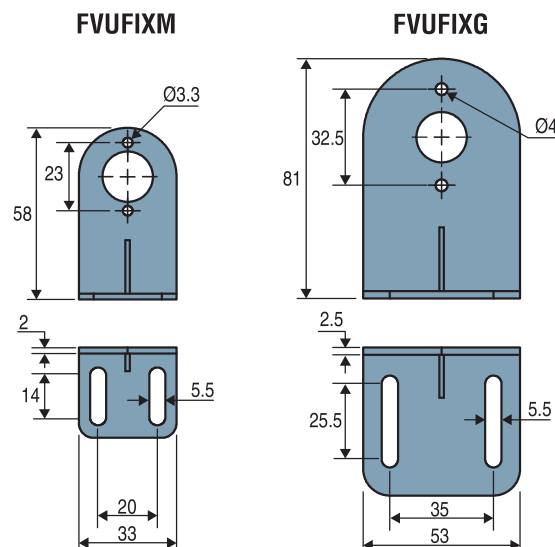
| Model | Reference of the filtering element |
|-----------------|------------------------------------|
| FVUM14 and 38 | FVUM12E (Stainless steel) |
| FVUG12 and 38 | FVUG12E (Stainless steel) |
| FVUM14P and 38P | FVUM12PE (Polyethylene) |
| FVUG12P and 38P | FVUG12PE (Polyethylene) |

Mounting bracket for vacuum filter

| Model | Designation | Material |
|---------|----------------------------------|-----------------|
| FVUFIXM | Mounting bracket for filter FVUM | Stainless steel |
| FVUFIXG | Mounting bracket for filter FVUG | Stainless steel |



Please specify part n°, eg: FVUFIXM
Please see table above



FVG

Mini Vacuum Filters



FVG series vacuum filters are especially recommended for fine filtration. Their light weight allows easy on-board installation.

Mini-filters

| Models | Vacuum pumps |
|--------------|------------------------|
| FVG 3 | GVP 10 - VR 07 - VR 09 |
| FVG 5 | GVP 12 and 14 |
| FVG 6 | GVP 20 |

Characteristics

| Models | A | B | C | E | F | G | D1 | D2 |
|--------------|------|------|------|----|----|----|---------|---------|
| FVG 3 | 8 | 20.5 | 33.8 | 55 | 50 | 18 | G1/8"-F | G1/8"-F |
| FVG 5 | 12.5 | 25 | 42 | 65 | 50 | 23 | G1/4"-F | G1/4"-F |
| FVG 6 | 15 | 30 | 47 | 70 | 60 | 23 | G3/8"-F | G3/8"-F |

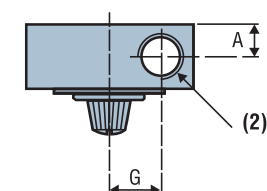
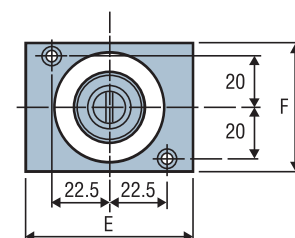
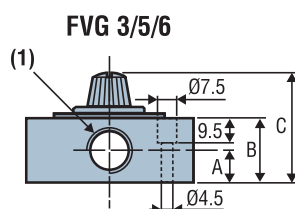
Note: all dimensions are shown in (mm)

Specifications

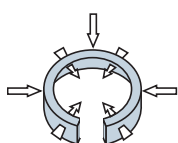
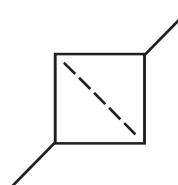
| | |
|---------------------------|--|
| Operating pressure | -1 to 5 bar |
| Temperature | 0 to 60 °C |
| Filtration (μ) | FVG 3-5-6 : 40 |
| Weight (g) | FVG 3/5/6: 70/138.5/220 |
| Material | Body : POM Hood : Polycarbonate Seal : Nitrile (NBR) Screws / large washers : Polyethylene and plated steel Filter : Porex |

Accessories

Replacement cartridges: interchangeable filtration element.
Add E to the filter model reference to order the replacement cartridge.



(1) D1 (input)
(2) DE (Output)



Filtration angle 300°



For all orders, please specify:
Model + Type + Filter or Cartridge
e.g.: FVG5

| 1: Model | 2: Type | 3: Filter or Cartridge |
|------------|--|---------------------------------------|
| FVG | 3 FVG 3 5 FVG 5 6 FVG 6 | - Filter E Cartridge |

FVL 12

In-line Filter



The FVL12 in-line filter allows quick integration for vacuum pumps GVP and GEMP.


Specifications

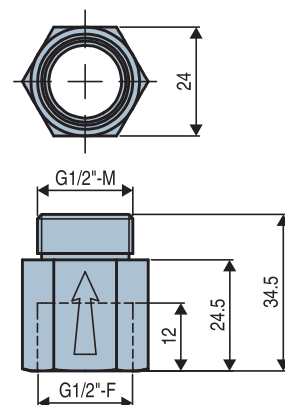
| | |
|-----------------|---|
| Material | Body: Nickel-plated brass Grille: 400 micron stainless steel |
| Weight | 50 g |

Mounting on option

The FVL 12 series in-line filter can also be mounted as a GVO P option on GVP series vacuum pumps. See page 7/7.

Note: all dimensions are shown in (mm)

 For all orders, please specify: FVL12



FVL 68

In-line Vacuum Filter



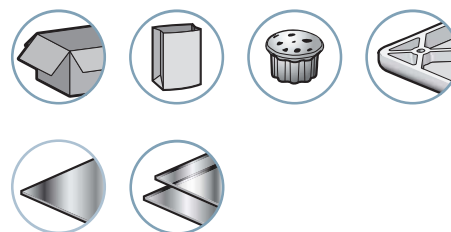
The FVL68 in-line filter ensures quick integration into a vacuum network, thanks to its push fitting for 6 x 8 calibre pipes.

Ideal for protecting a vacuum generator from normal clogging. The FVL is equipped with a 400 micron filtering grille.

Applications

The FVL68 in-line filter is ideal for protecting LEM mini vacuum pumps. Installation directly onto the vacuum outlet of the pump, using a 6 x 8 push fitting.


Industry-specific applications



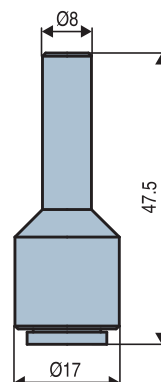
Specifications

| | |
|-----------------|---|
| Material | Body: POM Grille: 400 micron stainless steel Push fitting Brass – Steel and polymer |
| Weight | 7 g. |

Note: all dimensions are shown in (mm)

 For all orders, please specify: FVL68

Dimensions



Example usage



FSLI

Liquid Separator Vacuum Filter



We particularly recommend using the FSLI series liquid separator vacuum filter to retain liquid and particles that may be found in a vacuum network. The filtering element consists of a 50 micron stainless steel filter and protects the vacuum generator under normal operating conditions.

Advantages

- Transparent tank that makes clogging visible.
- Manual drain in the bottom of the tank used to remove any liquid and dirt (Note: This operation must only be carried out when the vacuum network is at atmospheric pressure).

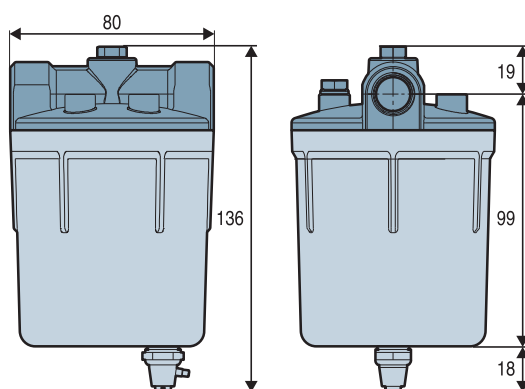
Characteristics

| Model | Fitting | Stainless steel filtering | Flow rate ⁽¹⁾ (NI/min) |
|-----------|---------|---------------------------|-----------------------------------|
| FSLI38X50 | G3/8"-F | 50 µ | 350 |

(1) The flow rate may vary according to the viscosity of the liquid drawn in.

Specifications

| | |
|------------------------|---|
| Material | Lid: molded aluminium Tank: transparent polycarbonate Filter cartridge: stainless steel Accessories: stainless steel, brass and nickel-plated brass Seal: nitrile |
| Filtering | Two options available: 50 microns |
| Operating range | -1 to 2 bar |
| Pressure max. | 2 bar |
| Temperature | 0 to 50 °C |



For all orders, please specify:

- For complete filter: FSLI38X50
- For a replacement filtering element: FVUM12E

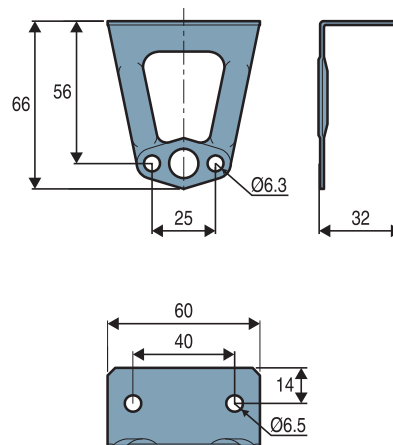
Mounting bracket for FSLI series liquid separator filter

Material: zinc-plated steel

Model

FSL38FIX Mounting bracket for FSLI filter

Note: Supplied with two M6 screws to mount bracket on filter.



Specify part n°: FSL38FIX

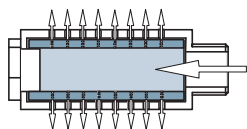
Note: all dimensions are shown in (mm)

SIL GV. SIL K -- C

Diffuser Type Silencers, Through-type Silencers

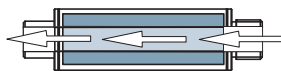
From when it was founded, COVAL has always given particular attention to reducing the noise of vacuum pumps and improving their performance.

Often copied, never equalled, the acoustic performance of COVAL vacuum pumps stems from the inside shape of the venturi system and the innovative design of the hit-tech soundproof materials used for the silencers.



Diffuser type silencer

- Very good noise reduction
- Air output gently diffused.



Through-type silencer

- Noise reduction mastered.
- No clogging.
- No pressure loss.

SIL GV series diffuser-type silencers

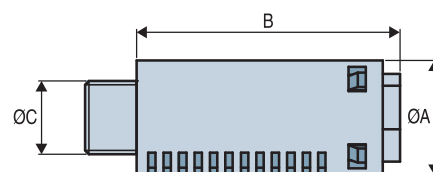
Noise reduction by breaking up the air jet in a baffle inside the diffuser. Passage of air through a soundproof material.



Characteristics

| Models | ØA | B | ØC | Weight (g) | Medium-level noise reduction (dBA) |
|----------------|----|----|---------|------------|------------------------------------|
| SIL GV 10 M5 F | 18 | 36 | M5-F | 5 | 30 |
| SIL GV 10 | 18 | 36 | G1/8"-M | 5 | 30 |
| SIL GV 15 | 20 | 46 | G1/4"-M | 10 | 35 |
| SIL GV 20 | 30 | 62 | G1/2"-M | 29 | 39 |

Note: all dimensions are shown in (mm)



Specifications

| | |
|-------------|--|
| Material | POM (Polyoxymethylene) + interior: Textile soundproof material |
| Temperature | -10 to 50 °C |

SIL K -- C series through-type silencers

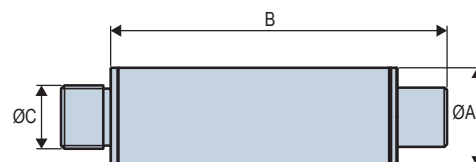
- Noise absorbed laterally by soundproof material.
- Free output without pressure loss or clogging.



Characteristics

| Models | ØA | B | ØC | Weight (g) | Medium-level noise reduction (dBA) | Materials |
|-------------|----|-----|---------|------------|------------------------------------|-----------------------|
| SIL K 18 C | 20 | 68 | G1/8"-M | 22 | 33 | thread: aluminum |
| SIL K 14 C | 20 | 68 | G1/4"-M | 25 | 31 | tube: PA6, 30% GF |
| SIL K 38 C | 30 | 121 | G3/8"-M | 90 | 33 | polycarbonate, 15% GF |
| SIL K 12 C | 30 | 121 | G1/2"-M | 92 | 33 | |
| SIL K 12 CS | 30 | 54 | G1/2"-M | 61 | 28 | |

Note: all dimensions are shown in (mm)



Specifications

| | |
|-------------|---|
| Material | Anodised aluminium and black Polyamide or Polycarbonate (according to Ø) interior: Textile soundproof material |
| Temperature | -10 to 50 °C |

Special:

COVAL develops tailor-made through-type silencers according to specifications, male or female fitting, length, diameter, characteristics on request.

CD-CC

Connectors

M8 / M12 / RJ45



Single-Ended Cordsets

Cable properties

| Models | Connection | Number of conductors | Orientation | Cable length | Cable |
|-----------|------------------------|----------------------|-------------|--------------|-------|
| CDM8 | M8 - Female - A-Coded | 4 | Straight | 2 m | PUR |
| CDM8N | M8 - Female - A-Coded | 4 | Straight | 0.5 m | PVC |
| CCM8 | M8 - Female - A-Coded | 4 | Elbow | 2 m | PVC |
| CDM12N | M12 - Female - A-Coded | 4 | Straight | 2 m | PUR |
| CDM12L5 | M12 - Female - A-Coded | 4 | Straight | 5 m | PVC |
| CCM12 | M12 - Female - A-Coded | 4 | Elbow | 2 m | PVC |
| CCM12L5 | M12 - Female - A-Coded | 4 | Elbow | 5 m | PVC |
| CDM125PL2 | M12 - Female - A-Coded | 5 | Straight | 2 m | PUR |
| CDM125PL5 | M12 - Female - A-Coded | 5 | Straight | 5 m | PUR |
| CCM125PL2 | M12 - Female - A-Coded | 5 | Elbow | 2 m | PUR |
| CDM128PL2 | M12 - Female - A-Coded | 8 | Straight | 2 m | PUR |



Specifications

Cable : Drag chain compatible

Open end

Double-Ended Cordsets

Characteristics

| Models | Connection 1 | Connection 2 | Number of conductors | Orientation | Cable length | Specifications | Cable |
|---------------|-----------------------|------------------------|----------------------|-------------|--------------|-------------------------------|-------|
| CDM8MF4PL2 | M8 - Male - A-Coded | M8 - Female - A-Coded | 4 | Straight | 2 m | - | PUR |
| CDM8MF4PL5 | M8 - Male - A-Coded | M8 - Female - A-Coded | 4 | Straight | 5 m | - | PVC |
| CDM8M12 | M8 - Female - A-Coded | M12 - Male - A-Coded | 4 | Straight | 1 m | - | PVC |
| CDM8MM12F4PL2 | M8 - Male - A-Coded | M12 - Female - A-Coded | 4 | Straight | 2 m | - | PVC |
| CDM8MM12F4PL5 | M8 - Male - A-Coded | M12 - Female - A-Coded | 4 | Straight | 5 m | - | PUR |
| CDM8FFL05 | M8 - Female - A-Coded | M8 - Female - A-Coded | 4 | Straight | 0.5 m | COVAL bus cable | PUR |
| CDM8FFL1 | M8 - Female - A-Coded | M8 - Female - A-Coded | 4 | Straight | 1 m | COVAL bus cable | PUR |
| CDM8FFL2 | M8 - Female - A-Coded | M8 - Female - A-Coded | 4 | Straight | 2 m | COVAL bus cable | PUR |
| CDM8FFL4 | M8 - Female - A-Coded | M8 - Female - A-Coded | 4 | Straight | 4 m | COVAL bus cable | PUR |
| CDM8RJ45L2 | M8 - Female - A-Coded | RJ45 | 4 | Straight | 2 m | Cat 5 shielded Ethernet cable | PUR |
| CDM8RJ45L5 | M8 - Female - A-Coded | RJ45 | 4 | Straight | 5 m | Cat 5 shielded Ethernet cable | PUR |
| CDM8RJ45L10 | M8 - Female - A-Coded | RJ45 | 4 | Straight | 10 m | Cat 5 shielded Ethernet cable | PUR |
| 80003053 | M8 - Female - A-Coded | M8 - Female - A-Coded | 4 | Straight | 1 m | Cat 5 shielded Ethernet cable | PUR |



CDM8MF4PL_



CDM8M12



CDM8MM12F4PL_



CDM8FFL_



CD8RJ45L_



80003053

Specifications

Cable : Drag chain compatible



Specify part n°, eg: CDM8N
Refer to characteristics table above