

HYDAC

Components, Systems and Service. All from one Company.

Our fluid engineering solutions are defined by the scope and complexity of our customers' requirements.

Our products range from individually designed components in the fields of fluid engineering, hydraulics and electronics right up to complete systems for specific functions.

All components and systems are conceived and designed in-house. Experienced industrial and product specialists develop innovative products and efficient solutions for high-quality, cost-effective production. Throughout the globe, our production facilities share one common goal: quality. We take great pride in both our products and solutions.

Industries and Applications



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Accessory Division

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NOTE

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HYDAC ACCESSORIES

We've made **Advanced Technical Support (ATS)** better by adding a "hunt" telephone number:

484-240-2871

HOW ATS BENEFITS YOU:

ATS is one central phone, Skype and email contact to remember or save

ATS answers every call by utilizing the hunt group telephone number



ATS addresses your day-to-day concerns while finding the most appropriate contact

ATS eliminates missed calls due to any one team member being out of the office



OUR COMMITMENT:

Answer all phone calls and return or acknowledge emails in two hours or less!

Call Hours:
8am to 5pm (EST)

Internal Skype: Accessories ATS
Email: Accessories.ATS@hydacusa.com

Global Replacement

The offerings of HYDAC Technology Corp, the USA branch of HYDAC Accessories GmbH, does not have an identical line of offerings and as such maintains a separate catalog housed at www.hydac-na.com. However, as a global company, we also provide our commitment to our US based customers to replace any items offered by our European counterparts that is installed on a machine or piece of equipment. If you need to replace one of these items, contact our Advanced Technical Support Team today!

A

Reservoir Accessories

The reservoir of a hydraulic system can be a significant source of contamination. At the same time, the reservoir is an ideal location for correcting adverse fluid conditions. The application of proper HYDAC reservoir accessories will allow for the monitoring and control of oil cleanliness, temperature, and level.

OVERVIEW OF RESERVOIR ACCESSORIES

Overview of Reservoir Accessories

The reservoir of a hydraulic system can be a significant source of contamination. At the same time, the reservoir is an ideal location for correcting adverse fluid conditions. The application of proper HYDAC reservoir accessories will allow for the monitoring and control of oil cleanliness, temperature, and level.

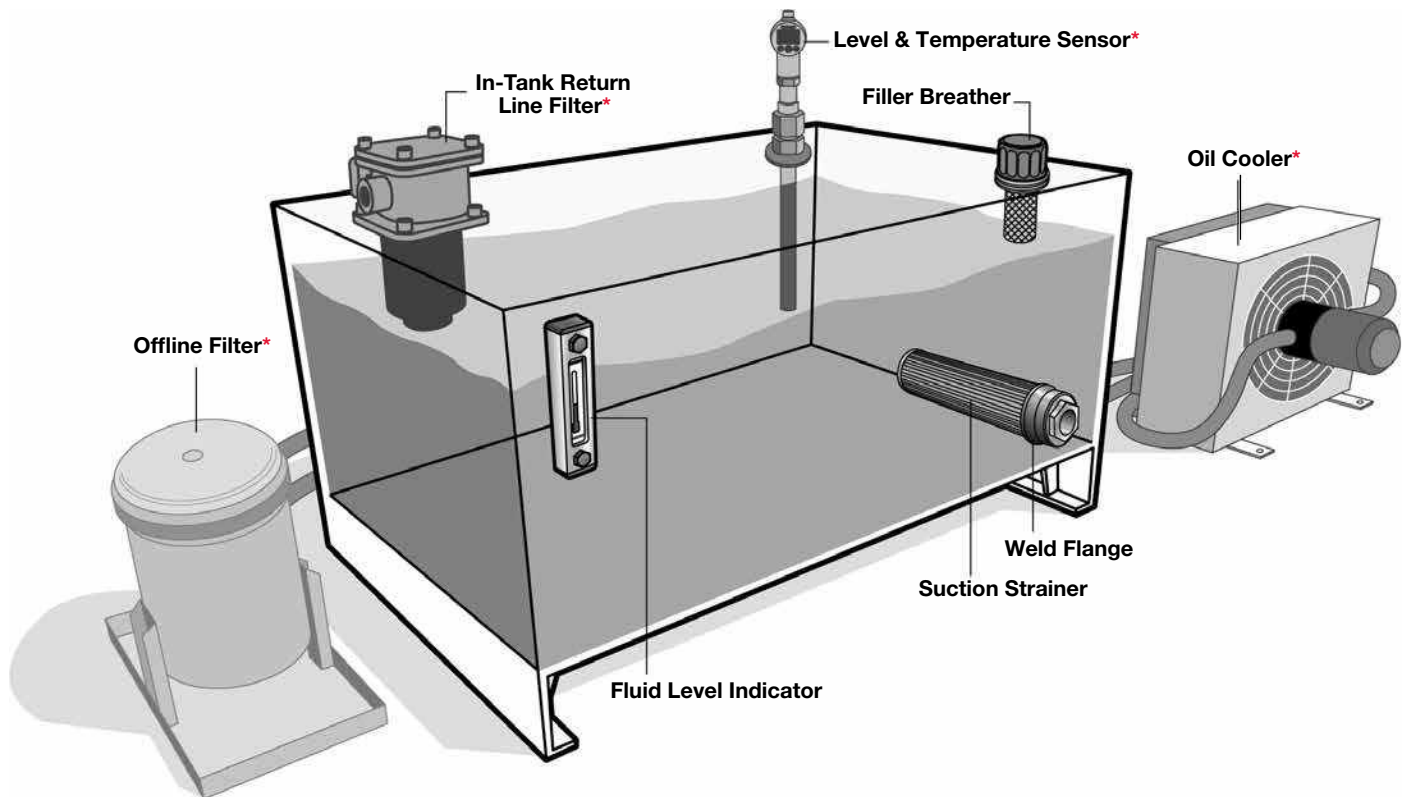
Breathers are commonly overlooked, or regarded as a commodity, and selected based solely upon price. This mistake can cause system inefficiency and component failure, resulting in lost production and costly repairs, especially when harsh environmental conditions exist. Using high quality HYDAC breathers and filler breathers will effectively combat the ingress of airborne contamination and moisture, therefore increasing the efficiency and reliability of the system.

The addition of new oil to a reservoir is yet another opportunity for contaminant to enter the system. Sometimes large contaminant, which will undoubtedly cause catastrophic damage to the pump. HYDAC filler breathers will ensure that large contaminant do not enter the tank during filling, and suction strainers will keep any large contaminant that do exist in the reservoir from entering the supply line. New oil also contains more fine particle contaminant than recommended for most systems. That's right... most new oil is "dirty." Removal of these fine particles is easily accomplished by using HYDAC portable filter carts, or hand held filtration units.

Fluid level must also be monitored to avoid starving the pump. HYDAC offers fluid level indicators (sometimes called sight gauges) which allow for the oil level to be viewed outside of the tank. These indicators are also available with electric switches which can be used to trigger alarms. Thermometers and thermal probes are additional options in HYDAC's line of fluid level indicators.

The reservoir provides an excellent opportunity to remove solid contamination as well as water through the use of offline filtration loops. HYDAC manufactures offline filtration units for both types of contamination. The application of such units will increase system reliability, and increase the service life of the system's other filter elements by capturing a large percentage of total system contamination. These units provide the added benefit of being serviceable during system operation.

If excessive heat becomes a problem, HYDAC manufactures a wide range of coolers (both air-cooled and water-cooled) to remove this heat. Cooling packages are also available complete with filters, providing a compact solution to remove both heat and contamination.



*Products not included in this catalog

For additional information on these products please refer to:

Filters Hydraulic & Lube Oil

- In-Tank
- Inside Tank
- Inline
- Duplex
- Return Line

Cooling Systems

- Air Cooled Oil Coolers
- Water Cooled Oil Coolers
- Mobile Coolers
- Industrial Coolers

Filter Systems

- Portable Filters
- Offline Filtration
- Contamination Monitors & Diagnostics
- Water Content Control
- Fluid Analysis

Electronics

- Pressure & Temperature Transducers & Switches
- Flow Rate Meters
- Digital Displays
- Portable Data Recorders

Breathers & Filler Breathers

BF, BL & BLT, BDE, BDZ, & ELF Series

Air Flow Rates from 80 to 1600 gpm
 Various connection types
 Pressurized or free flowing



Suction Strainers

SFE, HTMS Series

In-tank models (SFE) mount to an internal fitting on reservoir.
 Tank Mount models (HTMS) mount through the tank wall and act as the external fitting for connecting supply line hoses.

- Flow rates from 3 to 100 gpm
- NPT and SAE connections
- Models available with bypass



Fluid Level Indicators

FSK & FSA Series

3" to 15" sight tubes
 Electric level switches available
 Pressurized or free flowing thermometers and temperature probes available



Gauge Isolators

MA, MSL & MS Series



Gauges

HPG Series



Test Points

1620 & 1215 Series

Install these for measuring pressure, or fluid sampling while system is in operation, without fluid loss.



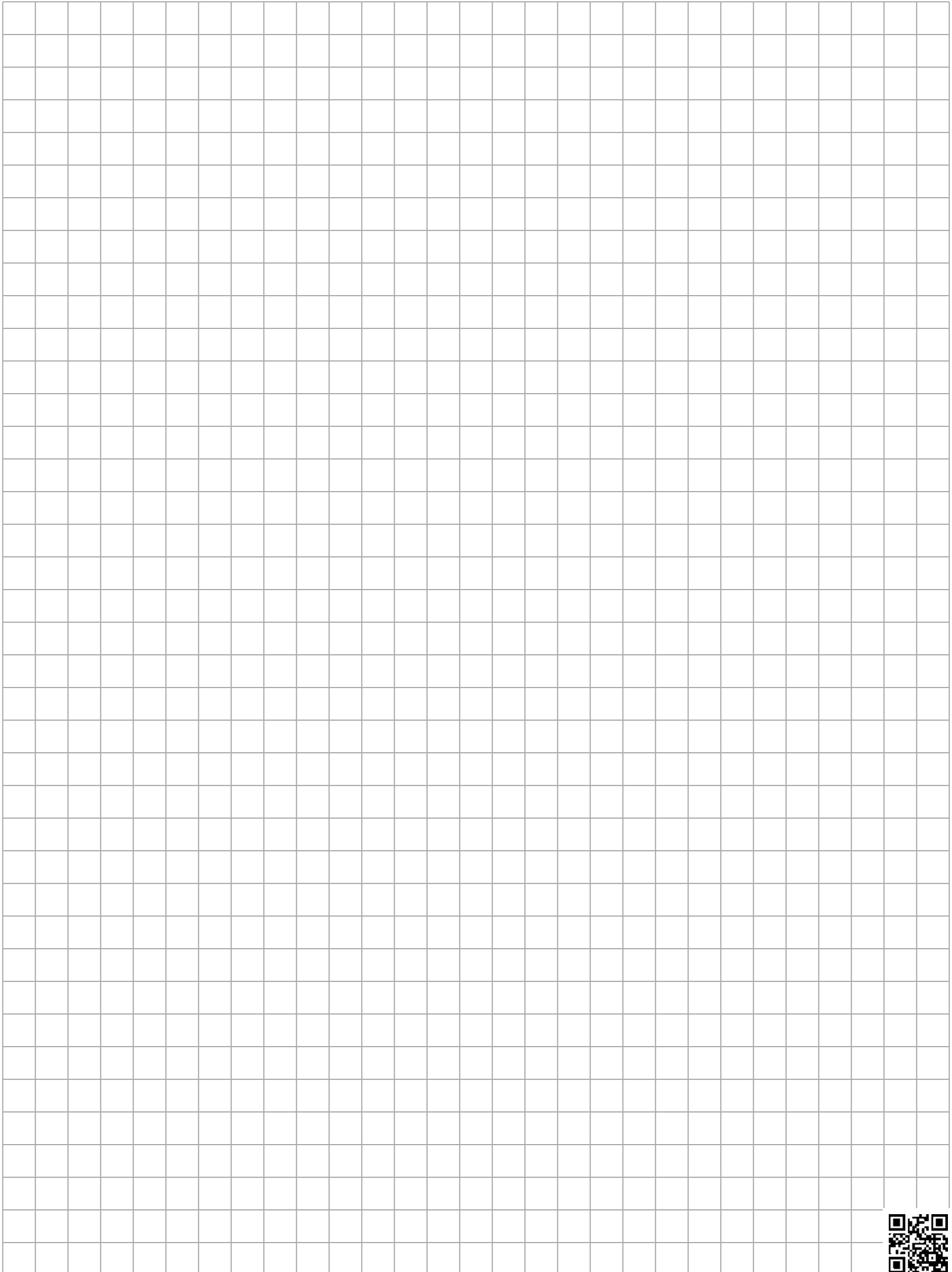
Split Flanges

SAE Code 61 & 62



OVERVIEW OF RESERVOIR ACCESSORIES

Notes



B Breathers Overview

Breathers are an integral component in any hydraulic system. Breathers provide protection from contamination found in harsh industrial environments. It is well advised to address both contaminant exclusion and removal. An old rule of thumb states that it costs 10 times as much to **remove** a particle from your system as it does to **exclude** it. Since this is true, it is easy to see that the benefits of using a high quality breather greatly outweigh the costs. Whether removing particulate, preventing moisture from getting into your reservoir or both, HYDAC has a solution, the know-how, and a product for you.

BREATHERS OVERVIEW

Overview

Particulate Breather Product Range



Model

Technical Details	BF10	ELF10	BF4	ELF4	BF30	ELF30	BF3	ELF3	BF7	BF72
GPM (cfm) (at $\Delta p = 0.01$ bar)	53 (7)	53 (7)	33 (4.4)	33 (4.4)	105 (14)	105 (14)	105 (14)	105 (14)	105 (14)	260 (35)
GPM (cfm) (at $\Delta p = 0.04$ bar)	100 (13)	100 (13)	90 (12)	90 (12)	230 (31)	230 (31)	230 (31)	230 (31)	230 (31)	475 (63)
Cap Material	Polyamide	Polyamide	Steel	Steel	Polyamide	Polyamide	Steel	Steel	Steel	Polyamide
Strainer Material	N/A	Polyamide	N/A	Polyamide	N/A	Polyamide	N/A	Polyamide	Polyamide	N/A
Replaceable Element	No	No	No	No	No	No	No	No	No	Yes
Connection Type	Threaded	Flanged	Threaded	Flanged	Threaded	Flanged	Threaded	Flanged	Flanged	Threaded
Connection Size(s)	G 1/4, 1/2 NPT, M22, M18, SAE-12, 3/8 NPT	3 hole flange	G1/4	3 hole flange	G 3/4, 3/4 NPT, 1 NPT, M42, SAE-12	6 hole flange	G 3/8, G 1/2, G 3/4, 3/4 NPT	6 hole flange	6 hole flange	G 1, 3/4 NPT, SAE-16
Element Media	3 μ m paper	3 μ m paper	3 or 10 μ m paper	3 or 10 μ m paper	3 μ m paper	3 μ m paper	3 or 10 μ m paper	3 or 10 μ m paper	3 or 10 μ m paper	3 μ m paper

Options

Clogging Indicator	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Optional
Relief Valve	Optional	Optional	N/A	N/A	Optional	Optional	Optional	Optional	Optional	N/A
Antisplash	Optional	Optional	N/A	N/A	Optional	Optional	N/A	N/A	N/A	Optional
Dipstick	Optional	Optional	N/A	N/A	Optional	Optional	Optional	Optional	Optional	N/A

For sizes BF/ELF 10 thru BF/ELF 72 we recommend you size the breathers at $\Delta p = 0.01$ bar but in optimal conditions you may size the breathers at up to $\Delta p = 0.04$ bar (Call HYDAC Accessories Division if you have any questions).

BREATHERS OVERVIEW



Model

ELF7	BF72	ELF72
260 (35)	315 (42)	315 (42)
475 (63)	555 (74)	555 (74)
Polyamide	Polyamide	Polyamide
Polyamide	N/A	Polyamide
Yes	Yes	Yes
Flanged	Threaded	Flanged
6 hole flange	G1	6 hole flange
3 µm paper	3 µm paper	3 µm paper

Technical Details	BF5	ELF5	BF52	ELF52	BF8	BF9
GPM (cfm) (at v = 20 m/s)	690 (92)	690 (92)	950 (127)	950 (127)	1450 (193)	2550 (340)
GPM (cfm) (at Δp = 0.01 bar)	790 (105)	790 (105)	1320 (176)	1320 (176)	2640 (352)	3960 (528)
Cap Material	Steel	Steel	Steel	Steel	Steel	Steel
Strainer Material	N/A	Steel	N/A	Steel	N/A	N/A
Replaceable Element	Yes	Yes	Yes	Yes	Yes	Yes
Connection Type	Threaded	Flanged	Threaded	Flanged	Flanged	Flanged
Connection Size(s)	G 2-1/2 female	G 2-1/2, G 3 male	G 2-1/2 female	G 2-1/2, G3 male	DN93 4 hole flange	DN125 8 hole flange
Element Media	3 µm paper	3 µm paper	3 µm paper	3 µm paper	1 or 2 µm betamicon	2 µm betamicon

Options

Optional	Optional	Optional
N/A	N/A	N/A
Optional	N/A	N/A
N/A	N/A	N/A

Clogging Indicator	N/A	N/A	N/A	N/A	Optional	Optional
Relief Valve	Optional	N/A	N/A	N/A	N/A	N/A
Antisplash	N/A	N/A	N/A	N/A	N/A	N/A
Dipstick	N/A	N/A	N/A	N/A	N/A	N/A

For sizes BF/ELF 5 thru BF 9 we recommend you size the breathers at v = 20 m/s but in optimal conditions you may size the breathers at up to Δp = 0.01 bar. (Call HYDAC Accessories Division if you have any questions).

BREATHERS OVERVIEW

Breathers Technical Overview

Importance of Breathers

Breathers are an integral component in any Hydraulic system. Breathers provide protection from contamination found in harsh industrial environments. It is well advised to address both contaminant exclusion and removal. An old rule of thumb states that it **cost 10 times as much to REMOVE a particle from your system as it does to EXCLUDE it**. Since this is true, it is easy to see that the benefits of using a high quality breather greatly outweigh the costs.

Recommendations

- 1) HYDAC recommends selecting a breather with a filtration rating (*micron rating*) that is equivalent to or finer than your finest system filter.
- 2) Breathers do get clogged over time. HYDAC recommends the following change-out schedules:
 - For breathers without pressure gauges**
 - Change your breather annually or with every service interval
 - For breathers with pressure gauges**
 - Change your breathers at a 3 psi pressure drop, at 7 psi pressure drop the pump can cavitate

HYDAC High Quality Breathers

HYDAC Breathers use HIGH quality filtration.

- For 3 μ m breathers: d99.85 = 3 μ m
 - For 10 μ m breathers: d100 = 10 μ m
- The d100 rating means that 100% of 10 μ m particles are captured by the breather during a standard ISO single pass test. Standard elements are made of phenolic resin impregnated paper, which provides resistance to moisture, ensuring proper filtration over the operational service life of your breather.

Pressurized Breathers

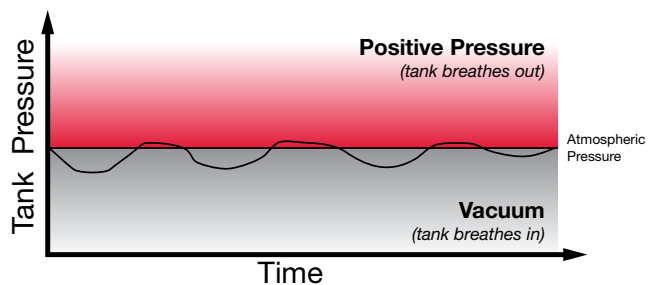
The use of pressurized breathers adds certain benefits:

- Provides additional protection from moisture which can condense in your tank, causing oil degradation and tank erosion
- Provides positive pressure to pump suction line
- Increased breather service life due to less breathing
- Performs anti-splash function

It cost 10X as much to REMOVE a particle from your system, as it does to EXCLUDE it.



Tank Pressure Using a Standard Breather

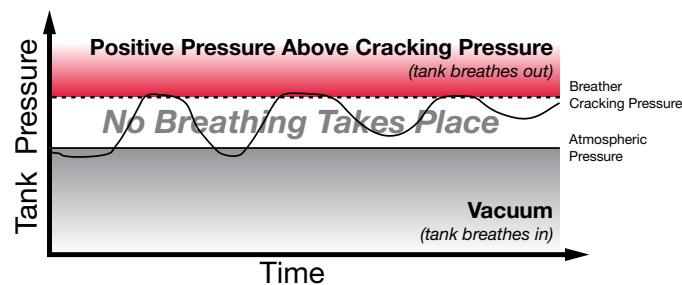


When fluid level rises, the tank pressure rises and air is immediately expelled through the breather whenever positive pressure exists.

When fluid level lowers, the tank pressure drops and air is immediately drawn in through the breather whenever a vacuum exists.

Air is constantly moving through the breather in order to maintain atmospheric pressure.

Tank Pressure Using a Pressurized Breather



When fluid level rises, the existing air volume is compressed, and no air is expelled until the cracking pressure is surpassed.

When fluid level lowers, the tank pressure drops until a vacuum is created at which point, air will be drawn in through the breather.

Air is only expelled when the tank pressure is above the cracking pressure, and air is only drawn in below atmospheric pressure. The majority of the operational cycle will take place between these two conditions.

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

BF 3 Series

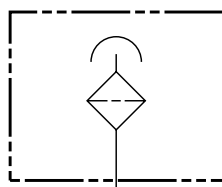
Particulate



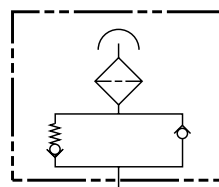
Specifications

- Maximum flow rate - 31 scfm / 230 gpm at 0.04 bar
- Epoxy coated steel cap
- Zinc-plated internals
- 3 or 10 micron
- Threaded connection
- Pressurized breather with relief valve (*optional - BF3 only*)
- Phenolic resin impregnated filter element

Hydraulic Symbols

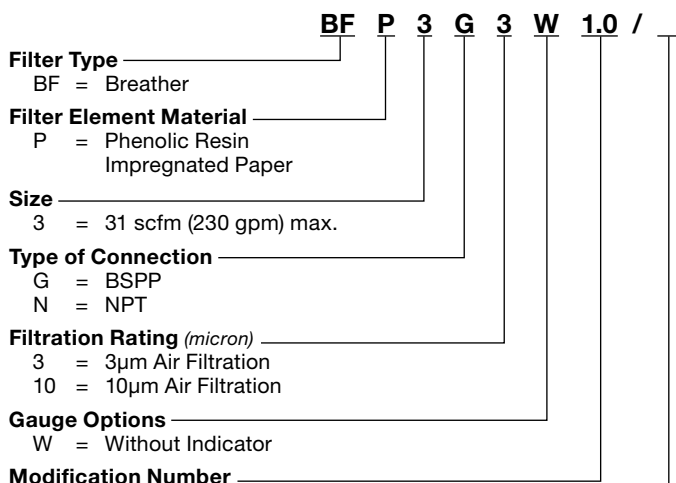


Standard



with Relief Valve

Model Code

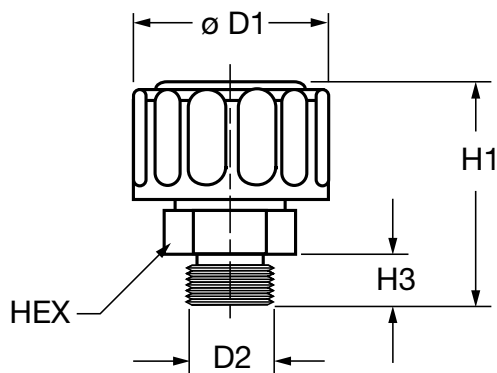


Modification Number	G(BSPP)	Relief Pressure	N (NPT)	Relief Pressure
1.0 = G 3/4		-	3/4 NPT	-
2.0 = G 3/8		-	-	-
3.0 = G 1/2		-	-	-
4.0 = G 3/4		0.4 bar	3/4 NPT	0.4 bar
5.0 = G 3/4		0.7 bar	3/4 NPT	0.7 bar
6.0 = G 3/4		0.2 bar	3/4 NPT	0.2 bar

Supplementary Details

- (omit) = standard
 RV = Relief Valve (*for use on pressurized tanks*)

Dimensions



Size	ØD1	D2	H1	H3	HEX
BF 3..1.0	2.99"	G 3/4"	3.11"	0.63"	1-7/16"
BF 3..2.0	2.99"	G 3/8"	2.83"	0.47"	7/8"
BF 3..3.0	2.99"	G 1/2"	2.99"	0.55"	1-1/16"
BF 3..4.0	2.99" (76mm)	G 3/4"	3.11" (79mm)	0.63" (16mm)	1-7/16" (36mm)
BF 3..5.0		G 3/8"			
BF 3..6.0		G 1/2"			

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
 Dimensions are in inches/(mm)

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BF 4 Series

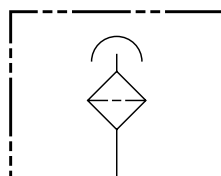
Particulate



Specifications

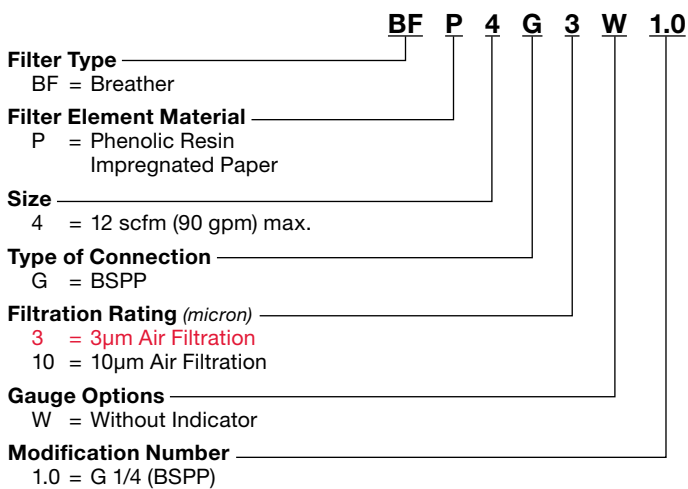
- Maximum flow rate - 12 scfm / 90 gpm at 0.04 bar
- Epoxy coated steel cap
- Zinc-plated internals
- 3 or 10 micron
- Threaded connection
- Phenolic resin impregnated filter element

Hydraulic Symbols

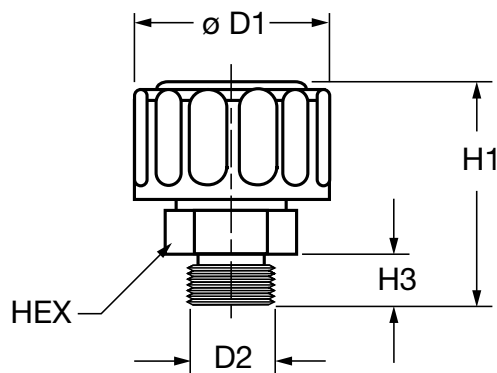


Standard

Model Code



Dimensions



Size	ØD1	D2	H1	H3	HEX
BF 4..1.0	1.73" (44mm)	G 1/4" (ISO 228)	2.44" (62mm)	0.53" (13.5mm)	11/16" (17mm)

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm)

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

ELF...3 & ELF...4 Series

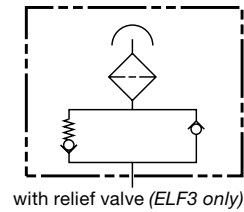
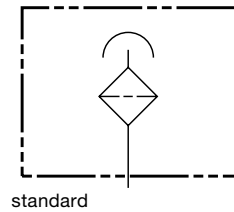
Particulate Filler



Specifications

- Maximum flow rate - 31 scfm / 230 gpm at 0.04 bar
- Epoxy coated steel cap
- Zinc-plated internals
- 3 or 10 micron
- 500 micron plastic filler basket (standard)
- Bayonet connection to access fill port
- Installs via 3 or 6 bolt circle (bolts included)
- Locking tabs (optional - ELFL 3 only)
- Pressurized breather with relief valve (optional - ELF3 only)
- Phenolic resin impregnated filter element

Hydraulic Symbols



Model Code

ELF P 3 F 10 W 1 . 0 /

Filter Type

- ELF = Filler Breather
- ELFL = Lockable Filler Breather (not available for size 4)

Filter Element Material

- P = Phenolic Resin Impregnated Paper

Size

- 3 = 31 scfm (230 gpm) max.
- 4 = 12 scfm (90 gpm) max.

Type of Connection

- F = Flanged

Filtration Rating (micron)

- 3 = 3µm Air Filtration
- 10 = 10µm Air Filtration

Gauge Options

- W = Without Indicator

Type

- 1 = ELF 3 and 4
- 4 = ELF 3 RV; Reseat Pressure 6 psi (0.4 bar)
- 5 = ELF 3 RV; Reseat Pressure 10 psi (0.7 bar)
- 6 = ELF 3 RV; Reseat Pressure 3 psi (0.2 bar)

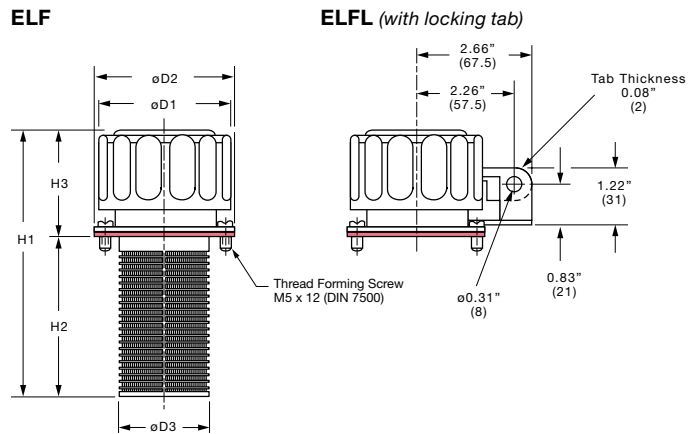
Modification Number

- 0 = Standard

Supplementary Details

- RV = Relief Valve (for use on Pressurized Tanks; ELFP3 only)
- SO169H3.5 = 3.5 inch plated steel filler basket
- SO169H6 = 6 inch plated steel filler basket
- SO169H8 = 8 inch plated steel filler basket (ELFP3 only)

Dimensions

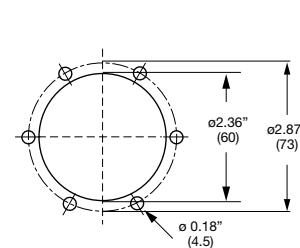


Size	ø D1	ø D2	ø D3	H1	H2	H3
ELF 3	2.99" (76)	3.27" (83)	2.05" (52)	6.26" (159)	3.80" (96.5)	2.46" (62.5)
ELF 4	1.73" (44)	1.97" (50)	1.10" (28)	5.32" (135)	3.21" (81.5)	2.11" (53.5)

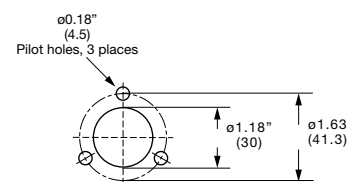
Mounting Hole Patterns

ELF 3

(flange interface to DIN 24557/T2)



ELF4



Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

ELF 3 Series

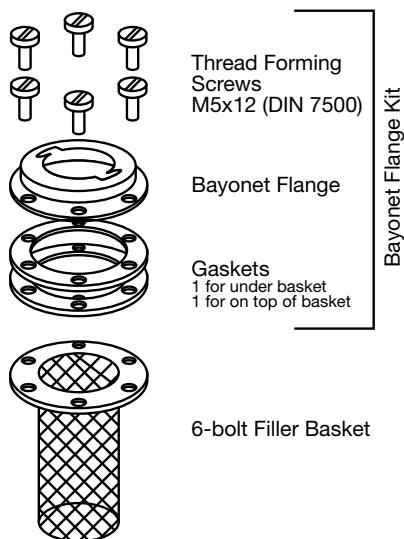
Particulate Filler Breather Parts

ELF 3 Breather Caps



Part	Model Code	Part No.
Breather Cap	ELF P 3 CAP 10 W 1.0 W/CHAIN	02080124
Breather Cap with 3 psi relief valve	ELF P 3 CAP 10 W 6.0/RV W/CHAIN	02080125

6 bolt Bayonet Flange

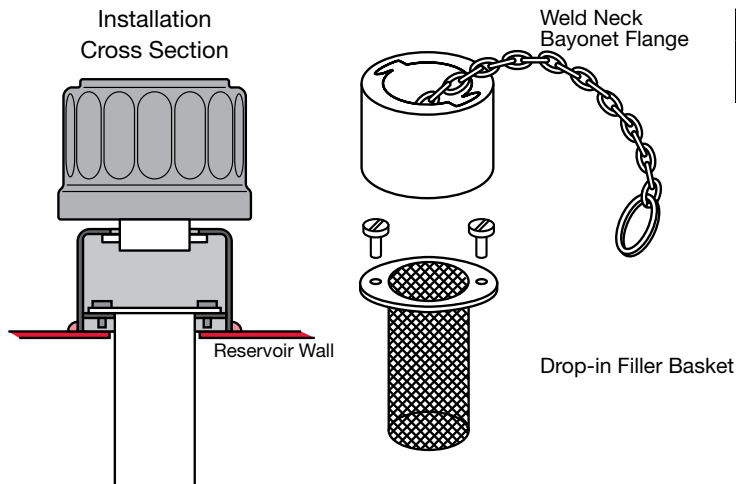


Part	Model Code	Part No.
Bayonet Flange Kit	ELF3 BAYONET FLANGE KIT ASSY	1200002680

Note: Parts not sold separately

Part	Model Code	Part No.
3.5" Steel Filler Basket	ELF3 STRAINER BASKET 3.5" PLATED STEEL	02701474
6" Steel Filler Basket	ELF3 STRAINER BASKET 6" PLATED STEEL	02701475
8" Steel Filler Basket	ELF3 STRAINER BASKET 8" PLATED STEEL	02701441
4" Plastic Filler Basket	ELF3 STRAINER BASKET 4" PLASTIC	01202916

Weld Neck Bayonet Flange



Part	Model Code	Part No.
Weld Neck	ELF3 WELD NECK W/CHAIN	02080126
Drop-in Strainer	ELF3 WELD NECK STRAINER	02078939

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

BF 10 Series

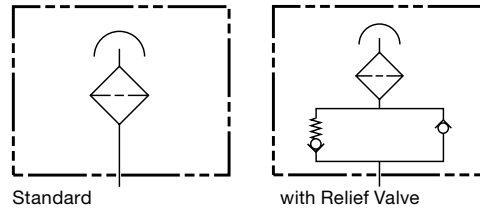
Particulate



Specifications

- Maximum Flow Rate 13 scfm / 100 gpm at 0.04 bar
- Durable synthetic material (PA6)
- Filtration Rating 3 μ m
- Buna N O-Ring
- Optional dipstick (contact factory)
- Optional customer logo (contact factory)
- Optional pressurized breather with relief valve
- Optional anti-splash device
- -22° to 212°F (-30° to 100°C)
- Phenolic resin impregnated filter element

Hydraulic Symbols



Model Code

BF P 10 G 3 W 1.0 / - RV0.4 - PS 74

Filter Type

BF = Breather

Filter Element

Material

P = Phenolic Resin
Impregnated
Paper

Size

10

Type of Connection

G = BSPP
N = NPT
U = SAE
M = Metric threads

Filtration Rating (micron)

3 = 3 μ m Air Filtration

Gauge Option

W = Without Indicator

Modification Number

Connection Type

	G (BSPP)	N (NPT)	U (SAE)	M (Metric)
1.0 = G 1/4	1/2 NPT	-	M22x1.5	
2.0 = G 3/8	3/8 NPT	-	M18x1.5	
3.0 = G 1/2	-	SAE-12	-	

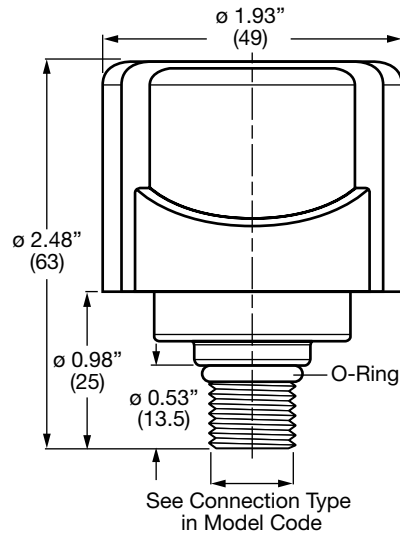
Options

(omit) = None
 RV0.2 = Relief Pressure 3 psi (0.2 bar)
 RV0.4 = Relief Pressure 6 psi (0.4 bar)
 RV0.7 = Relief Pressure 10 psi (0.7 bar)
 AS = Anti-splash protection (only for version without RV)

Dipstick

PS# = Dipstick (Length follows PS in millimeters)
 minimum quantities apply

Dimensions



Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
 Dimensions are in inches/(mm)

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

ELF...10 Series

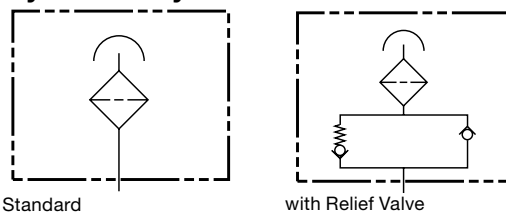
Particulate Filler



Specifications

- Maximum Flow Rate - 13 scfm / 100 gpm at 0.04 bar
- Durable synthetic material (PA6)
- Filtration rating 3 μ m
- Buna N O-Ring
- Threaded connection to access fill port
- Optional dipstick (*contact factory*)
- Optional customer logo (*contact factory*)
- Optional pressurized breather with relief valve
- Optional anti-splash device
- -22° to 212°F (-30° to 100°C)
- Phenolic resin impregnated filter element

Hydraulic Symbols

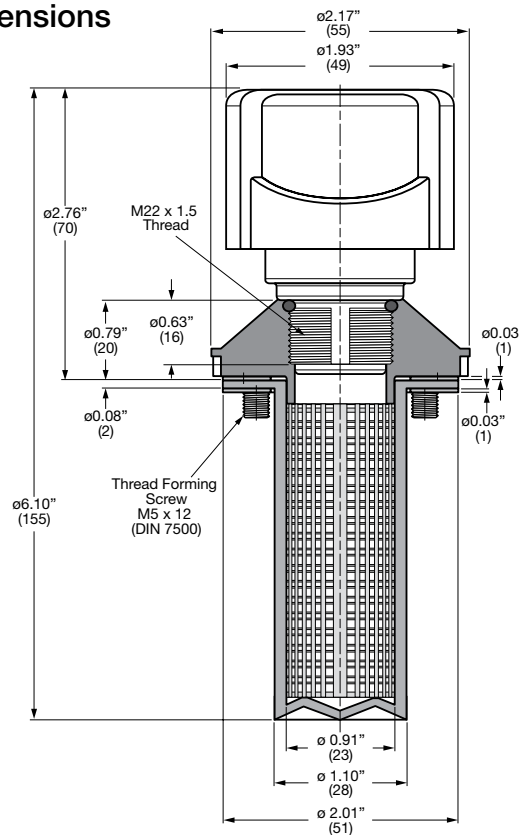


Model Code

ELF P 10 F 3 W 1.0 / - RV0.4

- Filter Type**
 ELF = Filler Breather
- Filter Element Material**
 P = Phenolic Resin Impregnated Paper
- Size**
 10
- Connection**
 F = Flanged connection
- Filtration Rating (micron)**
 3 = 3 μ m air filtration
- Gauge Option**
 W = without indicator
- Type**
 1 = Flanged connection (see dimensions above)
- Modification Number**
 0 = Standard
- Options**
 (omit) = Standard
 RV0.2 = Relief Pressure, 3 psi (0.2 bar)
 RV0.4 = Relief Pressure, 6 psi (0.4 bar)
 RV0.7 = Relief Pressure, 10 psi (0.7 bar)
 AS = Anti-splash protection (*only for version without RV*)

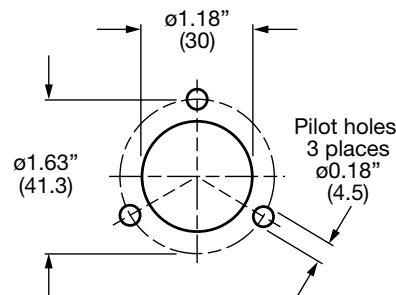
Dimensions



Replacement Cap Only (with M22x1.5 thread)

Model	Part No.
BF P 10 M 3 W 1.0	01284377
BF P 10 M 3 W 1.0 /-AS	01284378
BF P 10 M 3 W 1.0 /-RV0.2	01284379
BF P 10 M 3 W 1.0 /-RV0.4	01284380
BF P 10 M 3 W 1.0 /-RV0.7	01284381

Mounting Hole Pattern



Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

BF 30 Series

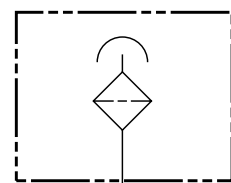
Particulate



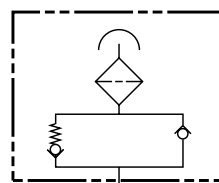
Specifications

- Maximum flow rate - 31 scfm / 230 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 micron
- Buna N O-Ring
- Threaded breather connection
- Optional dipstick (*contact factory*)
- Optional customer logo (*contact factory*)
- Optional pressurized breather with relief valve
- Optional anti-splash device
- -22° to 212°F (-30° to 100°C)
- Phenolic resin impregnated filter element

Hydraulic Symbols



Standard



with Relief valve

Model Code

BF P 30 G 3 W 1.0 / -RV0.4 - DS150

Filter Type

BF = Breather

Filter Element Mat.

P = Phenolic Resin Impregnated Paper

Size

30

Type of Connection

G = BSPP
N = NPT
U = SAE
M = Metric Threads

Filtration Rating (micron)

3 = 3µm Air Filtration

Gauge Options

W = Without Indicator

Modification Number

Connection Type

	G (BSPP)	N (NPT)	U (SAE)	M (Metric)
1.0 =	G 3/4	3/4 NPT	SAE-12	M42x2
2.0 =	-	1 NPT	-	M30x1.5

Options

(omit) = None

RV0.2 = Relief Pressure 3 psi (0.2 bar)

RV0.4 = Relief Pressure 6 psi (0.4 bar)

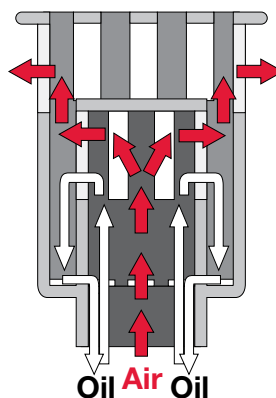
RV0.7 = Relief Pressure 10 psi (0.7 bar)

AS = Anti-Splash protection (*only for version without RV*)

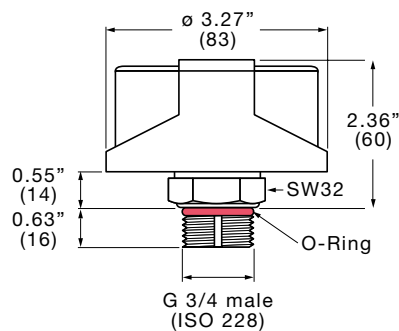
Dipstick

DS# = Dipstick (*Length follows DS in millimeters*)
minimum quantities apply

Anti-Splash



Dimensions



Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm)

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

ELF...30 Series

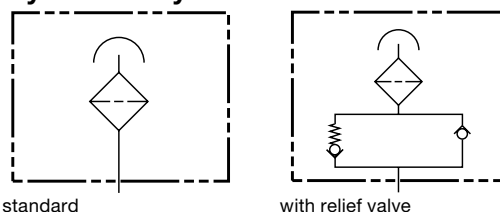
Particulate Filler



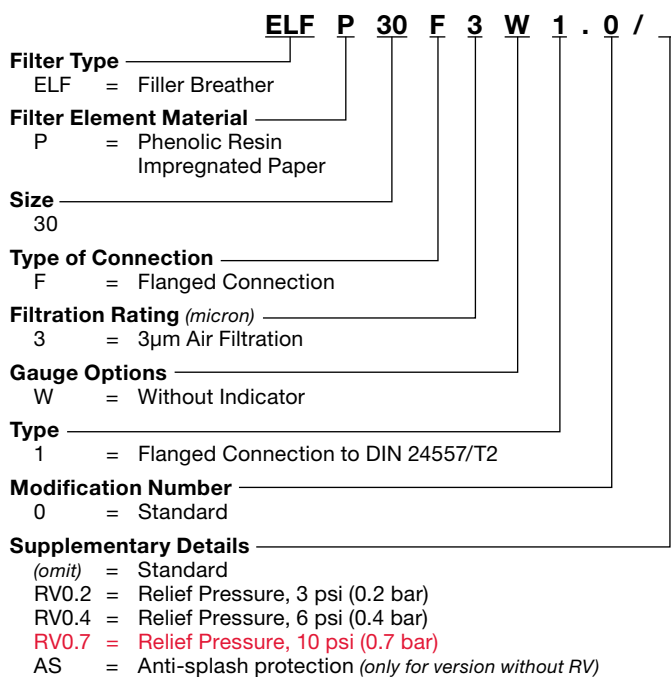
Specifications

- Maximum flow rate - 31 scfm / 230 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 micron
- Buna N O-Ring
- Threaded connection to access fill port
- Installs via 6-bolt circle (*bolts included*)
- Optional dipstick (*contact factory*)
- Optional customer logo (*contact factory*)
- Optional pressurized breather with relief valve
- Optional anti-splash device
- -22° to 212°F (-30° to 100°C)
- Phenolic resin impregnated filter element

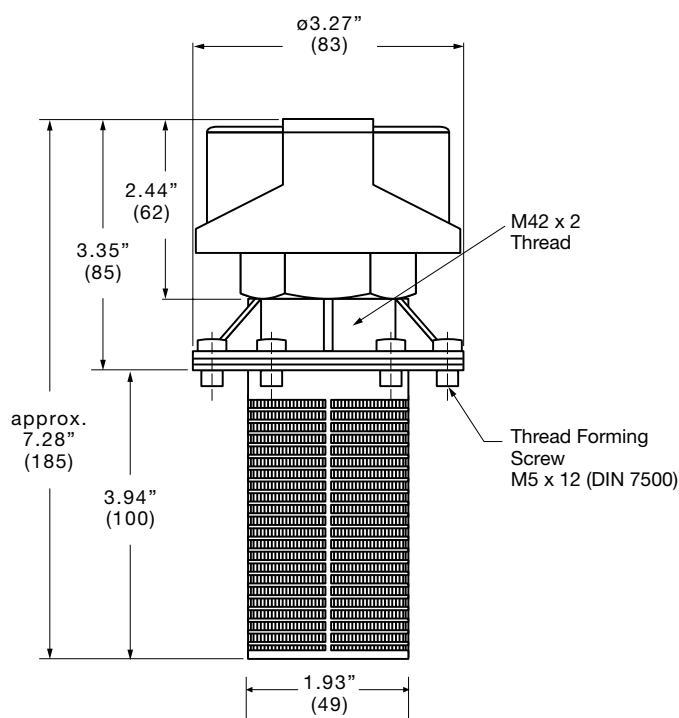
Hydraulic Symbols



Model Code



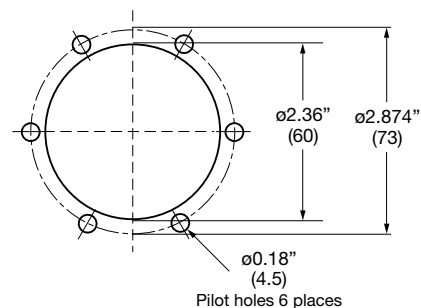
Dimensions



Replacement Cap Only (with M42x2 thread)

Model	Part No.
BF P 30 M 3 W 1.0	01286298
BF P 30 M 3 W 1.0 /-AS	03246445
BF P 30 M 3 W 1.0 /-RV0.2	01291009
BF P 30 M 3 W 1.0 /-RV0.4	01290498
BF P 30 M 3 W 1.0 /-RV0.7	01294026

Mounting Hole Pattern (flange interface to DIN 24557/T2)



Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

BF 5 Series

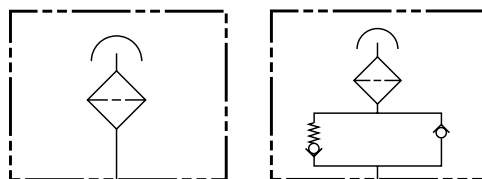
Particulate



Specifications

- Maximum flow rate - 105 scfm / 790 gpm at 0.01 bar
- Steel housing
- 3 micron
- Replaceable element
- Phenolic resin impregnated filter element

Hydraulic Symbols



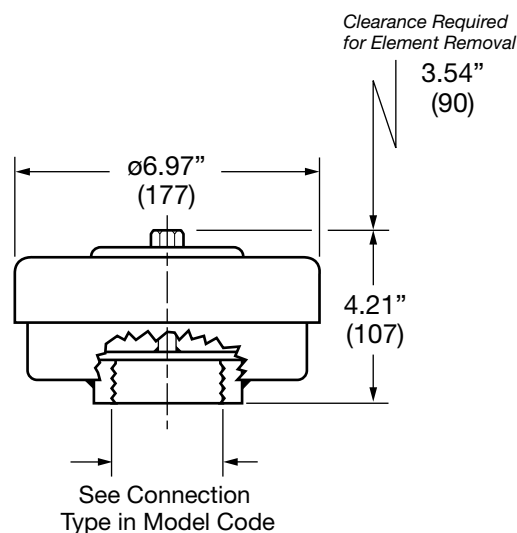
Standard

with Relief Valve

Model Code

	BF	P	5	G	3	W	1	.	0	/	-RV0.4
Filter Type											
BF = Breather											
Filter Element Material											
P = Phenolic Resin Impregnated Paper											
Size											
5											
Type of Connection											
G = BSPP											
N = NPT											
Filtration Rating (micron)											
3 = 3µm Air Filtration											
Gauge Options											
W = Without Indicator											
Tank Thread Connection (ISO 228)											
G(BSPP)											
1 = 2 1/2" BSPP (ISO 228, female)											
N(NPT)											
2 1/2" NPT, (female)											
Modification Number											
0 = Standard											
Options											
(omit) = None											
RV0.4= Relief Pressure 6 psi (0.4 bar)											

Dimensions



See Connection Type in Model Code

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm)

Replacement Elements



Micron	Model Code	Part No.
3	0005L003P	00309450

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

ELF 5 Series

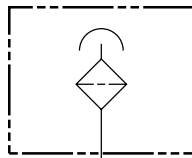
Particulate Filler



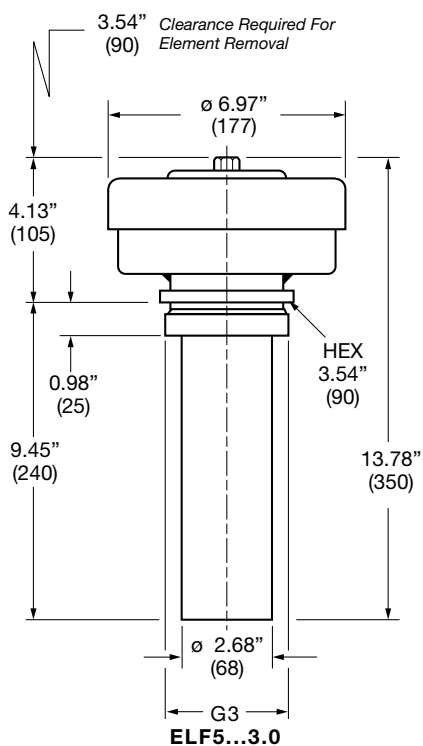
Specifications

- Maximum flow rate - 105 scfm / 790 gpm at 0.01 bar
- Steel element housing
- 240 mm Zinc-plated metal filler basket
- 3 micron
- Replaceable element
- Removable Lid to access fill port
- Installs via threaded connection (*weld ring optional*)
- Phenolic resin impregnated filter element

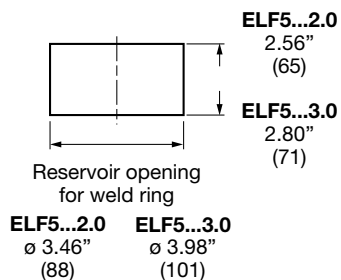
Hydraulic Symbols



Dimensions



G2 1/2
ELF5...2.0



Model Code

ELF P 5 G 3 W 2 . 0 /

Filter Type — ELF = Filler Breather

Filter Element Material — P = Phenolic Resin Impregnated Paper

Size — 5

Type of Connection — G = Threaded (*matching threaded weld ring available see supplementary details below*)

Filtration Rating (micron) — 3 = 3µm Air Filtration

Gauge Options — W = Without Indicator

Connection Type — 2 = G 2 1/2 threaded connection
3 = G 3 threaded connection

Modification Number — .0 = Standard

Supplementary Details — NO WELD RING = without weld ring
W/ WELD RING = with weld ring

Replacement Elements



Micron	Model Code	Part No.	Qty Req.
3	0005L003P	00309450	1

Weld Rings



Size	Model Code	Part No.
G 2 1/2	RING WELD ELF 5 G 2 1/2	02065053
G 3	RING WELD ELF 5 G 3	02065054

Notes:

1. Dimensions are in inches (mm).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

BF 52 Series

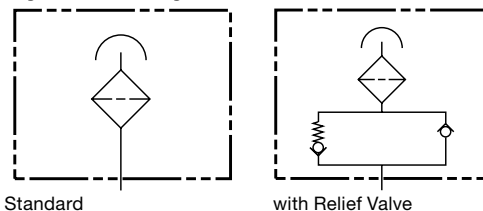
Particulate



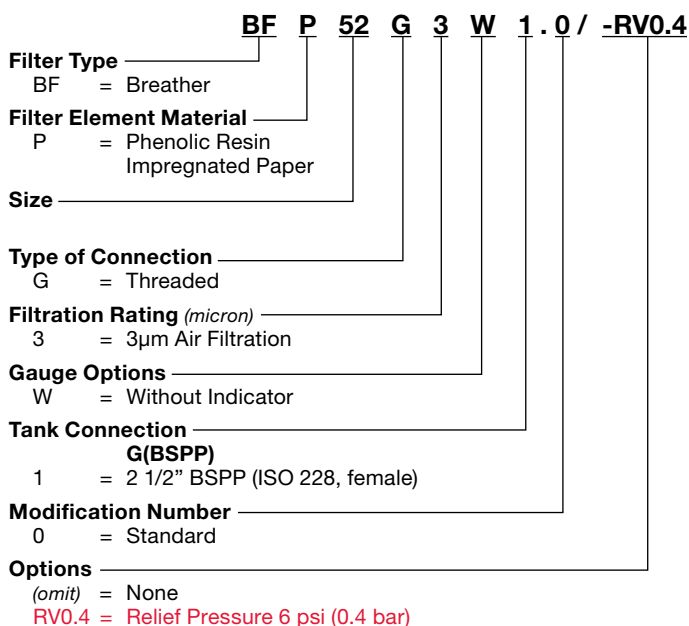
Specifications

- Maximum flow rate - 176 scfm / 1320 gpm at 0.01 bar
- Steel housing
- 3 micron
- Replaceable element (uses 2 of the standard size 5 elements)
- Phenolic resin impregnated paper
- G 2 1/2" female threaded connection

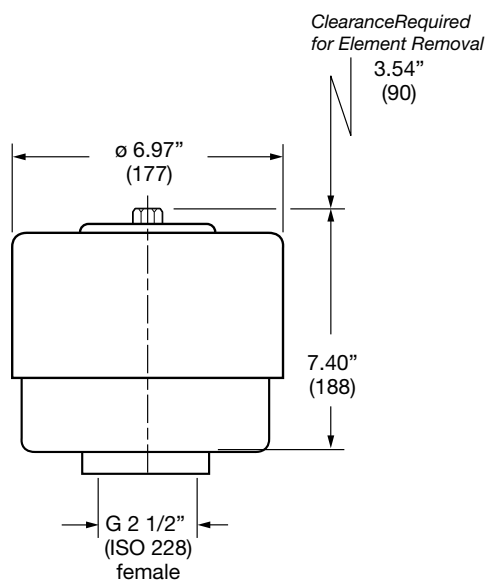
Hydraulic Symbols



Model Code



Dimensions



Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm)

Replacement Elements



Micron	Model Code	Part No.	Qty Req.
3	0005L003P	00309450	2

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

ELF 52 Series

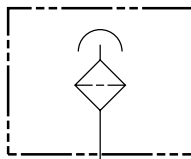
Particulate Filler



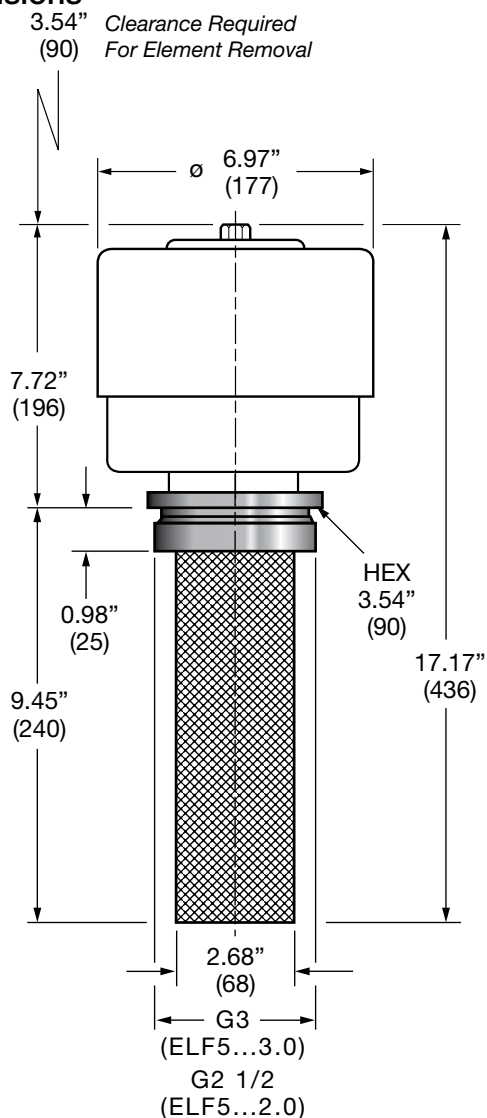
Specifications

- Maximum flow rate - 176 scfm / 1320 gpm at 0.01 bar
- Steel housing
- 3 micron
- Replaceable element
(uses 2 of the standard size 5 elements)
- Phenolic resin impregnated paper
- Installs via threaded connection
(weld ring optional)

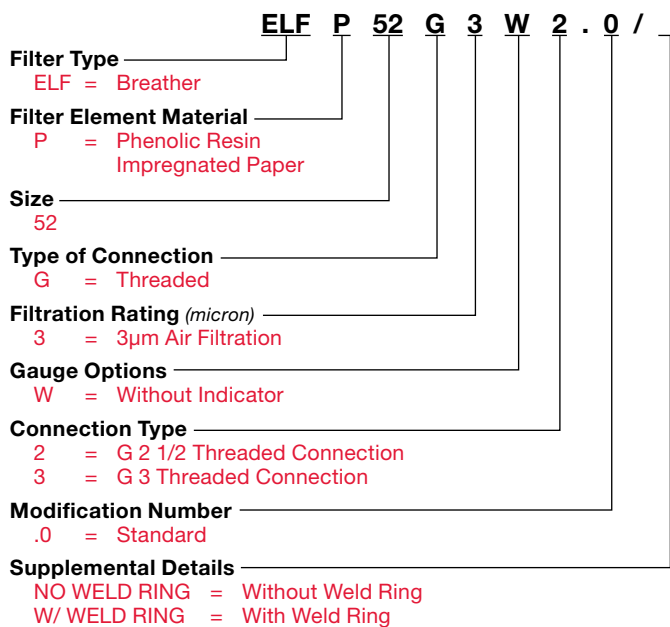
Hydraulic Symbols



Dimensions



Model Code



Replacement Elements



Micron	Model Code	Part No.	Qty Req.
3	0005L003P	00309450	2

Weld Rings



Size	Model Code	Part No.
G 2 1/2	RING WELD ELF 5 G 2 1/2	02065053
G 3	RING WELD ELF 5 G 3	02065054

Notes:

1. Dimensions are in inches (mm).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

BF 7 Series

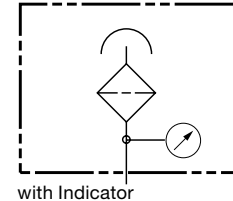
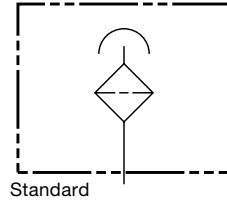
Particulate



Specifications

- Maximum flow rate - 63 scfm / 475 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 micron
- Replaceable element Phenolic resin impregnated paper
- Threaded breather cap connection
- Differential gauge (*optional*)
- -22° to 212°F (-30° to 100°C)

Hydraulic Symbols

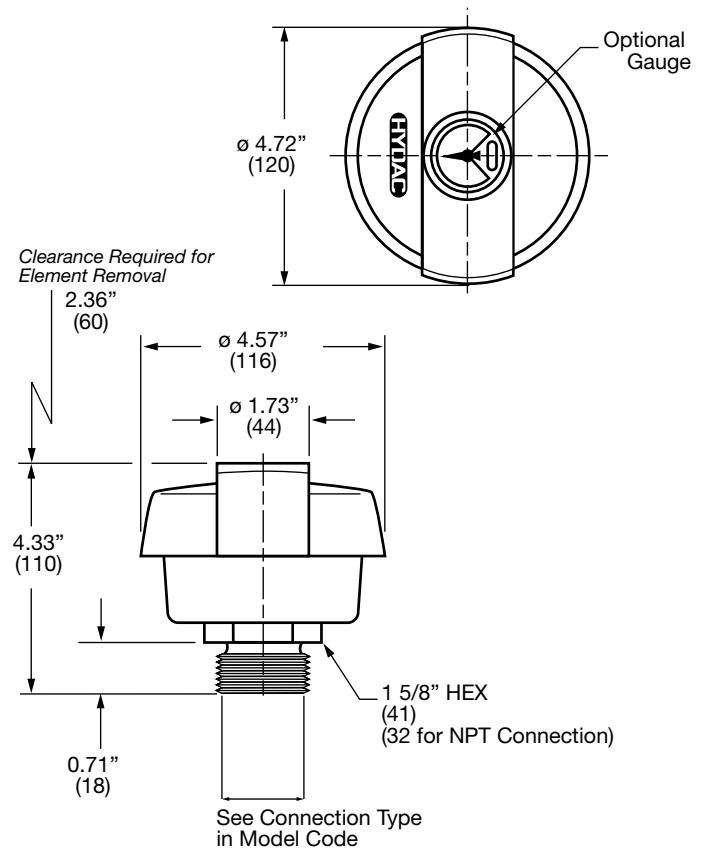


Model Code

BF P 7 G 3 K 1.0 / -AS

Filter Type	BF	P	7	G	3	K	1.0	/ -AS
BF = Breather								
Filter Element Material		P						
P = Phenolic Resin Impregnated Paper								
Size			7					
Type of Connection				G				
G = BSPP								
N = NPT								
U = SAE								
Filtration Rating (micron)					3			
3 = 3µm Air Filtration								
Gauge Options						K		
W = Without Indicator								
K = With Indicator - Range: -14.5 to 9 psi (-1 to 0.6 bar)								
Modification Number							1.0	
Connection Type								
G (BSPP)								
N (NPT)								
U (SAE)								
1.0 = G 1 3/4 NPT SAE-16								
Options								
(omit) = None								
AS = Anti-Splash protection								

Dimensions



Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print. Dimensions are in inches/(mm)

Replacement Elements

Micron	Model Code	Part No.
3	0007L003P	00310948



Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BF 7 Series

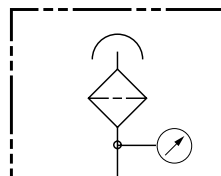
Particulate with Visual Indicator



Specifications

- Maximum flow rate - up to 74 scfm / 555 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 micron
- Replaceable element
- Phenolic resin impregnated paper
- Threaded or flanged breather connection
- Visual indicator (*see below*)
- -22° to 212°F (-30° to 100°C)

Hydraulic Symbols



with Indicator

Model Code

BF P 7 F 3 UBM 0.0 /- AS

Filter Type ———— BF = Breather

Filter Element Material ———— P = Phenolic Resin Impregnated Paper

Size ———— 7 (63 scfm / 475 gpm)

Type of Connection ———— F = Flanged
G = Threaded
N = NPT

Filtration Rating (micron) ———— 3 = 3µm Air Filtration

Gauge Options ———— UBM = Visual Indicator of Vacuum Pressure with Manual Reset - Range to 0.5 psi (0.035 bar)

Tank Connection

	G(BSPP)	F(Flanged)	N(NPT)
0.0	-	DIN 24557/2 6 Hole Flange	-
1.0	1" BSPP	-	3/4"
2.0	3/4" BSPP	-	-
3.0	1 1/2-16 UN-2B (female)	-	-

Options

(omit) = None
AS = Anti-Splash protection

Visual Indicator

The visual indicator shows by percentage the increase in vacuum pressure drop across the element. The percentage remains visible even when the system is turned off. When the element is changed a manual reset button must be pressed.

Model Code

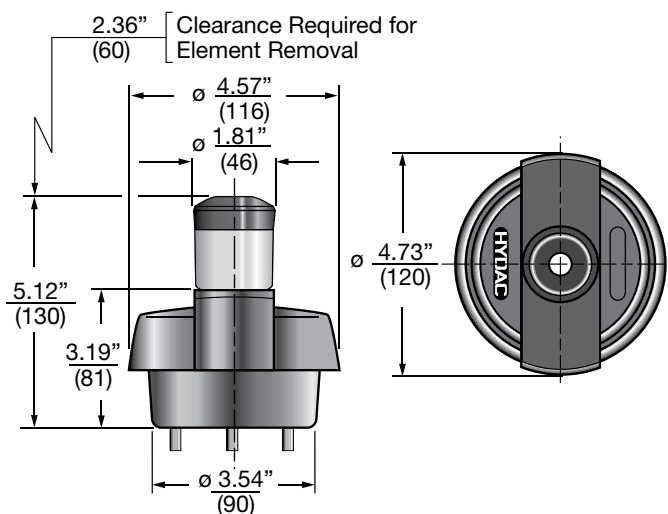
VMF 0.035 UBM.X

Part Number

01279244



Dimensions



Replacement Elements

Micron	Model Code	Part No.
3	0007L003P	00310948



Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm)

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

ELF...7 Series

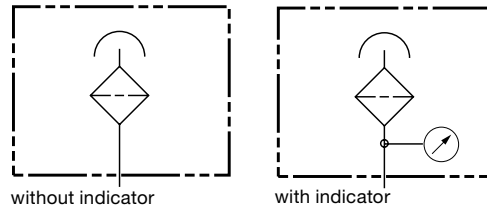
Particulate Filler



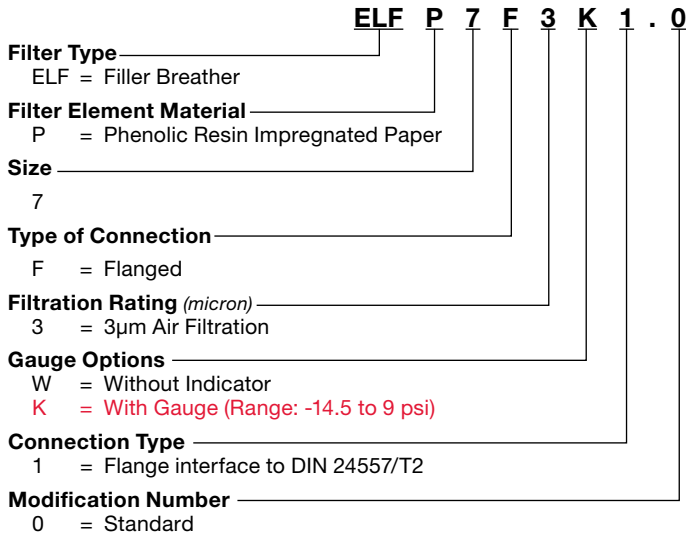
Specifications

- Maximum flow rate - 63 scfm / 475 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 micron
- 500 micron plastic filler basket
- Replaceable element Phenolic resin impregnated paper
- Removable lid to access fill port
- Installs via 6-bolt circle (*bolts included*)
- Differential gauge (*optional*)
- -22° to 212°F (-30° to 100°C)

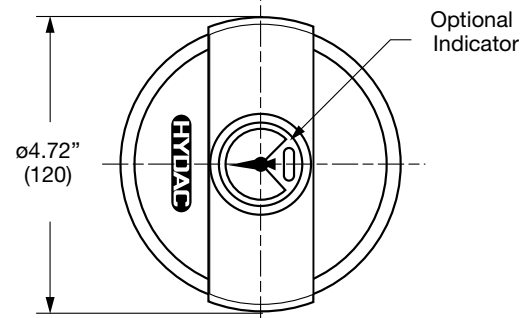
Hydraulic Symbols



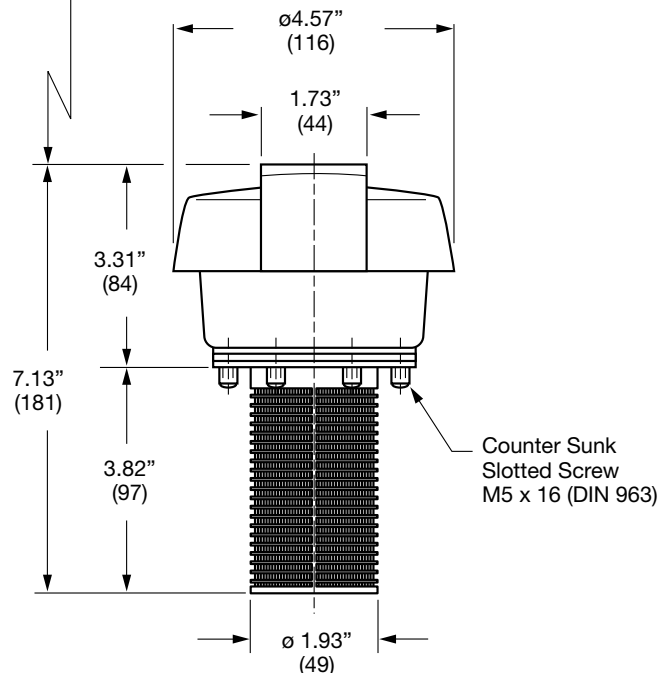
Model Code



Dimensions



Clearance Required
For Element Removal
2.36"
(60)



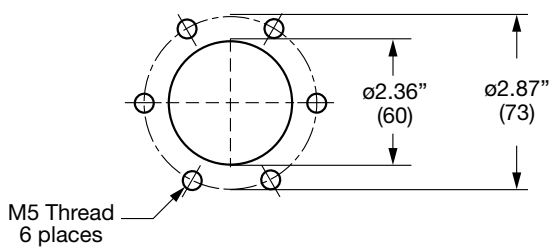
Replacement Elements



Micron	Model Code	Part No.
3	0007L003P	00310948

Mounting Hole Pattern

(flange interface to DIN 24557/T2)



Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BF 72 Series

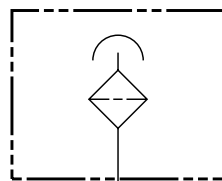
Particulate



Specifications

- Maximum flow rate - 74 scfm / 555 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 micron
- Replaceable element
- Phenolic resin impregnated paper
- Removable lid to access fill port
- Threaded breather cap connection
- Differential gauge (optional)
- -22° to 212°F (-30° to 100°C)

Hydraulic Symbols



Standard

Model Code

BF P 72 G 3 W 1 . 0 / -AS

Filter Type

BF = Breather

Filter Element Material

P = Phenolic Resin Impregnated Paper

Size

72

Type of Connection

G = Threaded BSPP

N = Threaded NPT (consult factory)

Filtration Rating (micron)

3 = 3µm Air Filtration

Gauge Options

W = Without Indicator

Tank Thread Connection

G (BSPP) N (NPT)

1.0 = G1

3/4 NPT

Modification Number

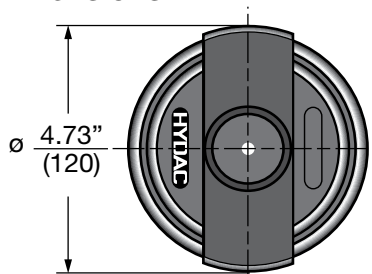
0 = Standard

Options

(omit) = None

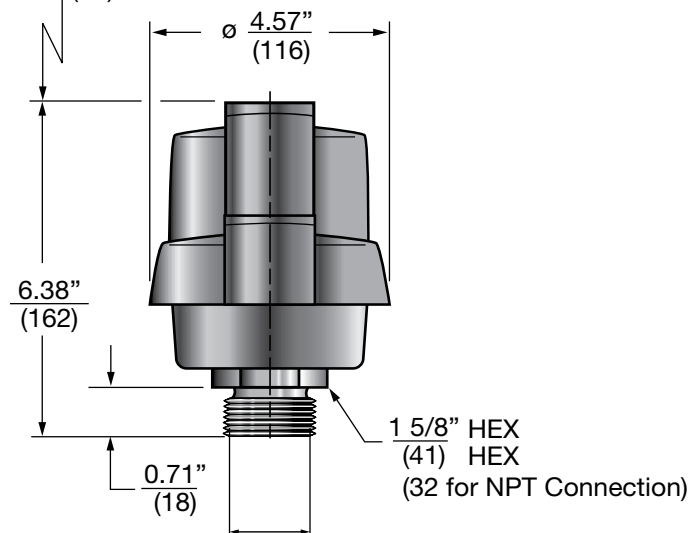
AS = Anti-splash protection

Dimensions



Clearance Required for Element Removal

2.36" (60)



See Connection Type in Model Code

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print. Dimensions are in inches/(mm)

Replacement Elements



Micron	Model Code	Part No.
3	0072L003P	1293285

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

ELF...72 Series

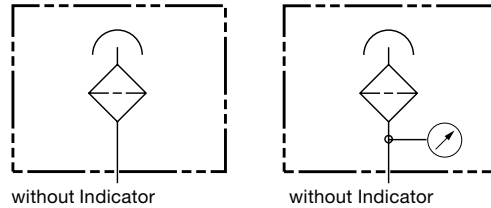
Particulate Filler



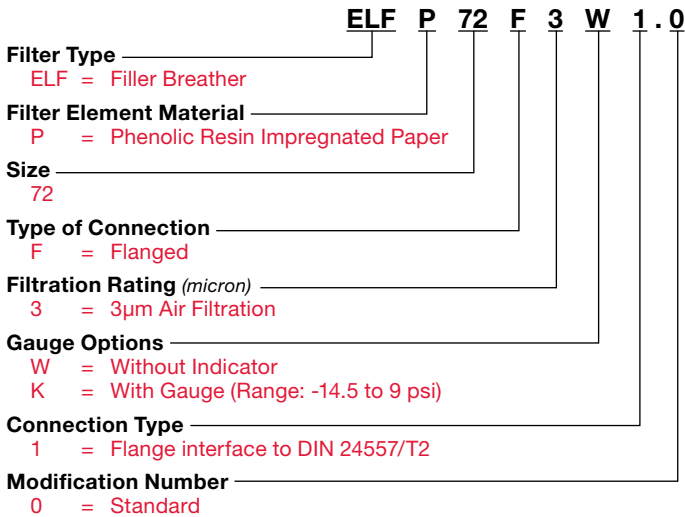
Specifications

- Maximum flow rate - 74 scfm / 555 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 micron
- 500 micron plastic filler basket
- Replaceable element
- Phenolic resin impregnated paper
- Removable lid to access fill port
- Installs via 6-bolt circle (bolts included)
- Differential gauge (optional)
- -22° to 212°F (-30° to 100°C)

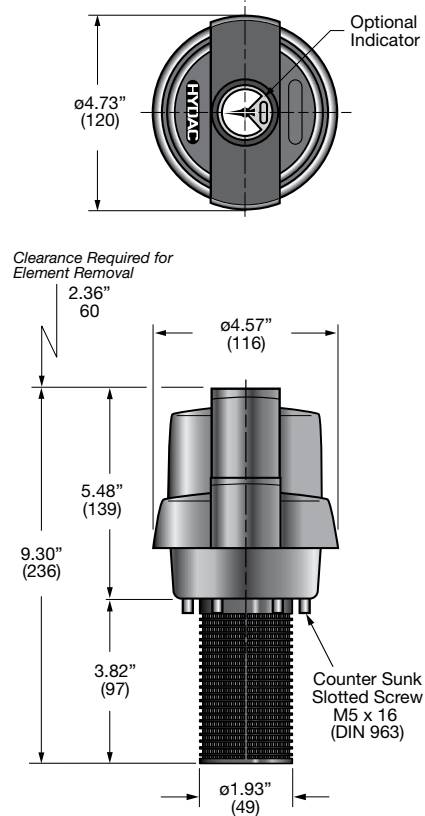
Hydraulic Symbols



Model Code



Dimensions



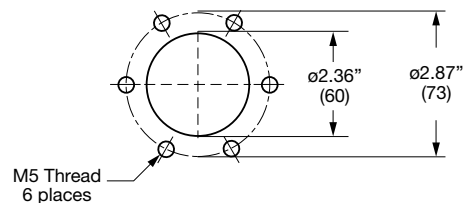
Replacement Element



Micron	Model Code	Part No.
3	0072L003P	1293285

Mounting Hole Pattern

(flange interface to DIN 24557/T2)



Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BF 8 Series

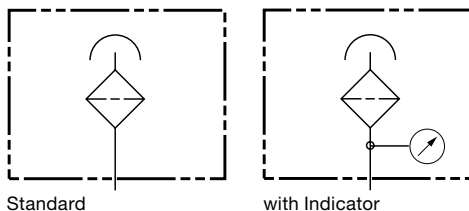
Particulate



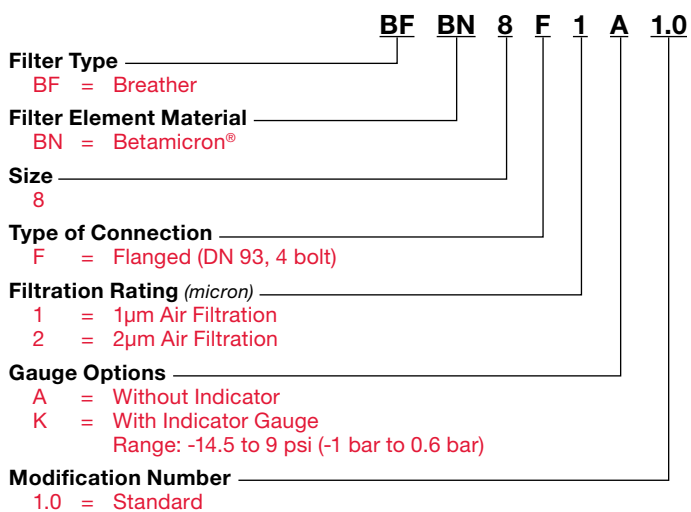
Specifications

- Maximum flow rate - 352 scfm / 2640 gpm at 0.01 bar
- Steel housing
- 1 micron Air Filter
- Replaceable element
- 4 bolt DN 93 flange

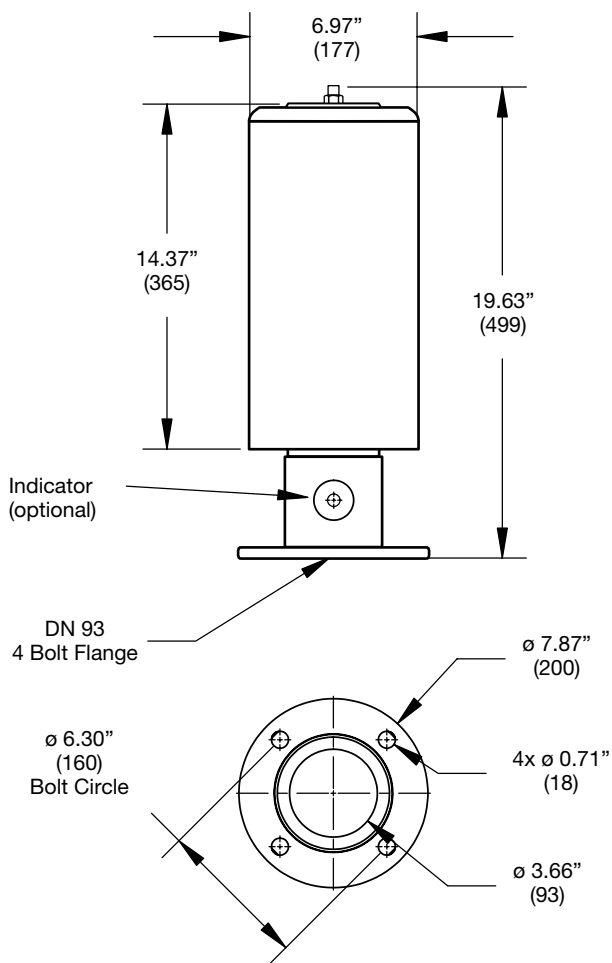
Hydraulic Symbols



Model Code



Dimensions



Replacement Elements



Micron	Model Code	Part No.
1	0008L001BN4	01266598
2	0008L002BN4	01265021

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print. Dimensions are in inches/(mm)

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

BF 9 Series

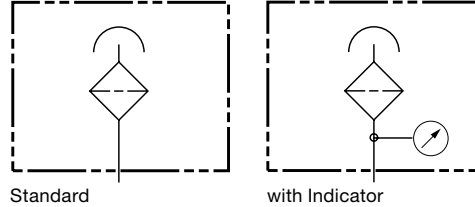
Particulate with Oil Mist Trap



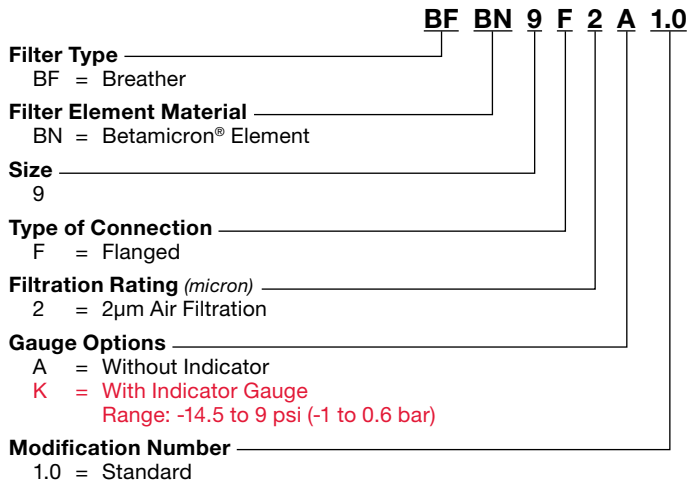
Specifications

- Maximum flow rate - 528 scfm / 3960 gpm at 0.01 bar
- Aluminum housing
- Replaceable element
- 2 μ m Air Filter
- 8 bolt DN 125 flange

Hydraulic Symbols

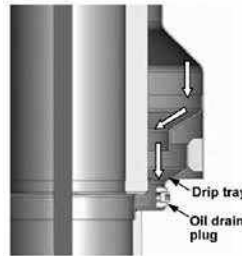


Model Code

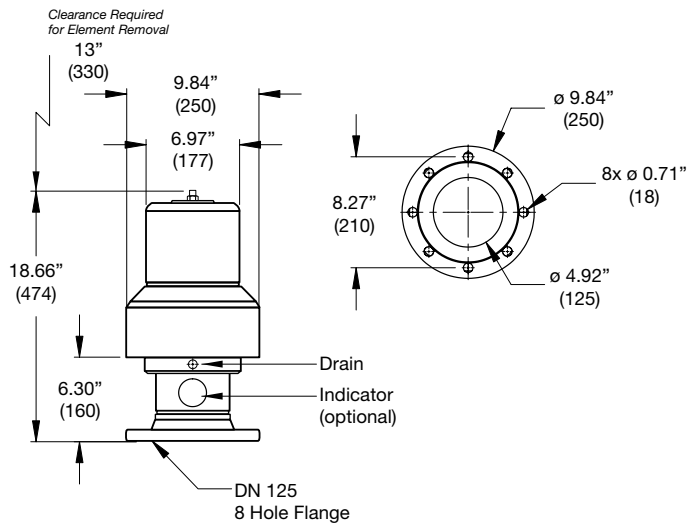


Oil Mist Trap

The oil mist in the filter is collected in a "drip tray" and is returned safely to the tank, or it can be drained via an oil drain plug. No oil runs down onto the top of the tank.



Dimensions



Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print. Dimensions are in inches/(mm)

Replacement Elements



Micron	Model Code	Part No.
2	0009L002BN	01287471

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BL Series

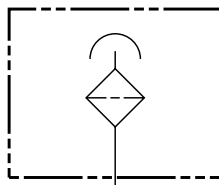
Spin-on



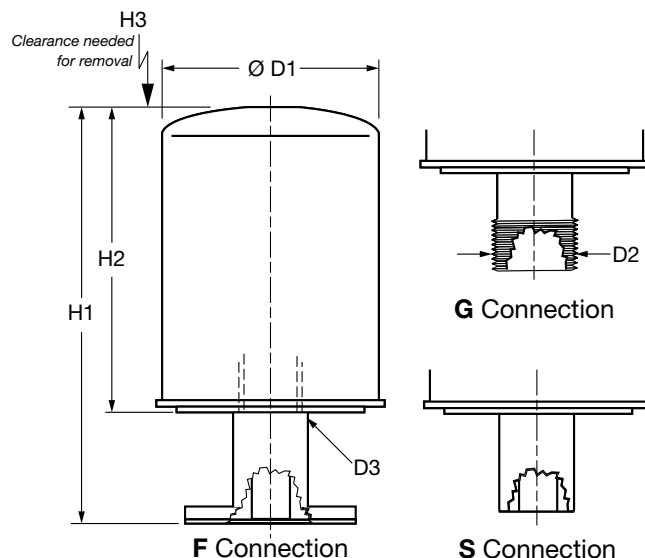
Specifications:

- Maximum flow rate: 110 scfm /850 gpm
- 3 or 10 micron
- Steel Canister
- 10 micron Betamicon®
- Replaceable element

Hydraulic Symbols



Dimensions



Size	ø D1	D2 NPT	D3	H1 (F or S)	H1 (G)	H2	H3
BL...80	3.67 (93)	3/4"	1"-12UNF-2B	-	7 (178)	5.4 (137)	0.75 (19)
BL...160	5.00 (127)	1 1/4"	1 1/2"-16UN-2B	9.25 (235)	8.75 (222)	7 (178)	1.00 (25.4)
BL...180	5.00 (127)	1 1/4"	1 1/2"-16UN-2B	13.25 (337)	12.75 (324)	11 (279)	1.00 (25.4)
BLT...160	5.33 (136)	1 1/4"	1 1/2"-16UN-2B	9.25 (235)	8.75 (222)	7 (178)	1.00 (25.4)

- Notes:
1. Dimensions are in inches/(mm).
 2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

Model Code

BL P 160 G 10 W 2.0

Filter Type

- BL = Spin-on Breather
- BLT = Spin-on Breather with Dehumidifying Element (size 160 only)(in 3 micron only)

Filter Element Material

- P = Impregnated Paper
- BN = Betamicon®
- M = Desiccant (type BLT only)

Size

- 080 = 35 scfm (250 gpm) max.
- 160 = 110 scfm (850 gpm) max.
- 180 = 110 scfm (850 gpm) max.

Type of Connection

- G = Threaded
- F = Flanged (DIN 24557/T2)
- S = Weld Fitting

Filtration Rating (micron)

- 3 = 3µm Air Filtration (paper only)
- 5 = 5µm Air Filtration (Betamicon Only)
- 10 = 10µm Air Filtration

Gauge Options

- W = Without Indicator

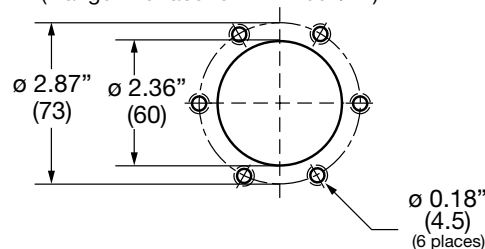
Type Connection

Type	G(Threaded)	F(Flanged)	S(Welded)
1.0 = BLT 160	1 1/4" NPT	DIN 24557/T2	Weld Fitting
2.0 = 160/180	1 1/4" NPT	DIN 24557/T2	Weld Fitting
3.0 = 080	3/4" NPT	-	-

Modification Number (standard)

Mounting Hole Pattern for Flange Connection (F)

(Flange Interface to DIN 24557/T2)



Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BREATHERS

BL Series

Spin-On (Components)

Replacement Elements



(Paper Media)

Size	3 Micron		10 Micron	
	Part. No.	Model Code	Part No.	Model Code
080	02058079	0080 MA 003 P	02058058	0080 MA 010 P
160	02058114	0160 MA 003 P	02058116	0160 MA 010 P
180	02057912	0180 MA 003 P	02058121	0180 MA 010 P

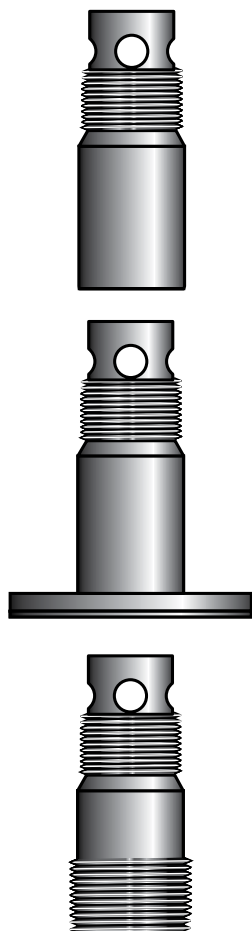
(Betamicron Media)

Size	3 Micron		5 Micron		10 Micron	
	Part. No.	Model Code	Part No.	Model Code	Part No.	Model Code
080	N/A		02059423	0080 MA 005 BN	02059424	0080 MA 010 BN
160	02059434	0160 MA 003 BN	02059435	0160 MA 005 BN	02059436	0160 MA 010 BN
180	02059438	0180 MA 003 BN	02059439	0180 MA 005 BN	02059440	0180 MA 010 BN

(Desiccant Media)

Size	3 Micron	
	Part. No.	Model Code
BLT 0160	01265765	0160 MU 003 M

Adapters



(S, Weld Fitting)

Size	Part No.	Model Code
080	N/A	
160	00416311	ADAPTER BL 160/180 S (PHOS)
180		

(F, Flanged)

Size	Part No.	Model Code
080	N/A	
160	00407646 02073864	ADAPTER BL 160/180 F (PHOS) ADAPTER BL 160/180 F (PHOS) (w/ Cardboard Gasket)
180		

(G, Threaded)

Size	Thread Size	Part No.	Model Code
080	3/4" NPT	02064393	ADAPTER BL 080 G 3/4" NPT NBR
160	1-1/4" NPT	02064394	ADAPTER BL 160/180 G 1 1/4" NPT NBR
180			

(Replacement Gaskets)

Part No.	Model Code
00247102	ELF 3 GASKET 6 HOLE CARDBD 83X58X1

Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BDE Series

Drymicron

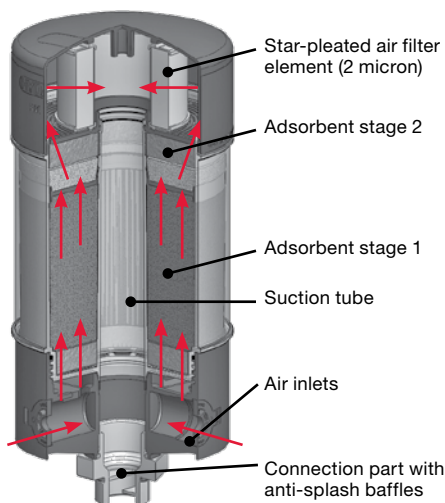


Description

Desiccant Breather for removing moisture from air entering gearboxes, reservoirs, fuel tanks, etc.

Features

- 2-Stage Adsorbent Filling
- Distribution of Flow by special design of the inner components
- Star-pleated air filter element (2 µm) reduces/prevents dirt and dust ingress into tank
- Integrated anti-splash tool to protect the adsorbent from oil contamination
- Replacement cartridges
- Color Indication: When maximum adsorption is reached, the silica gel turns from purple to orange
- Optional visual indicator



Shelf Life

- BDE Desiccant breathers have a recommended shelf life of 18 months from the date of manufacturing. All desiccant breather cartridge packaging is labeled with a manufactured date.
- In order to achieve the recommended shelf life the product must be stored in its original packaging in a climate controlled warehouse without direct exposure to UV light.

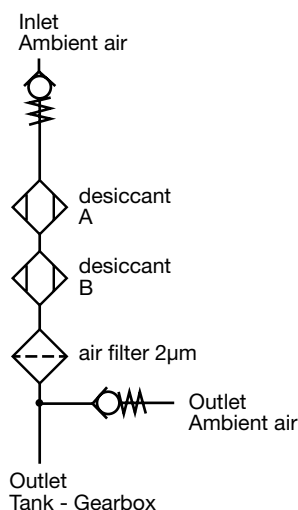
Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.
NOT intended for high vibration environments.

Benefits

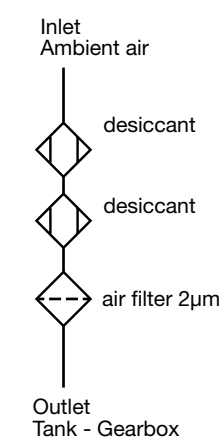
- Extending the life cycle of the lube oil
- Minimize component wear, down time and repairs due to moisture
- Minimize oil oxidation, additive depletion and freezing due to moisture
- Minimize corrosion
- Extended oil filter life

Hydraulic Symbols

BDE with valves



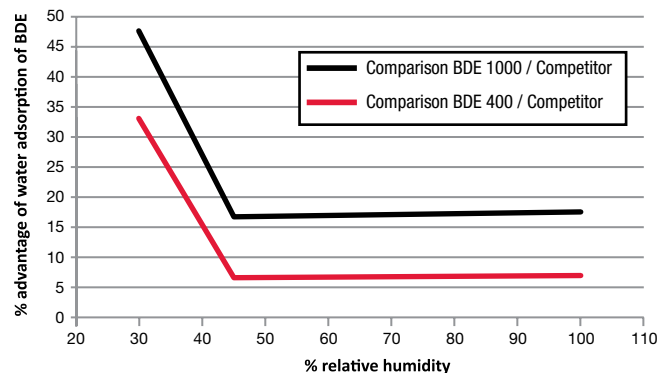
BDE without valves



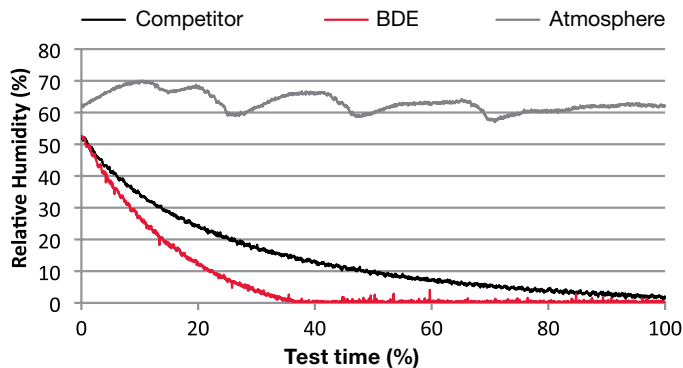
Advantages

Water Adsorption Efficiency

% advantage of water capacity of BDE vs. Competitor

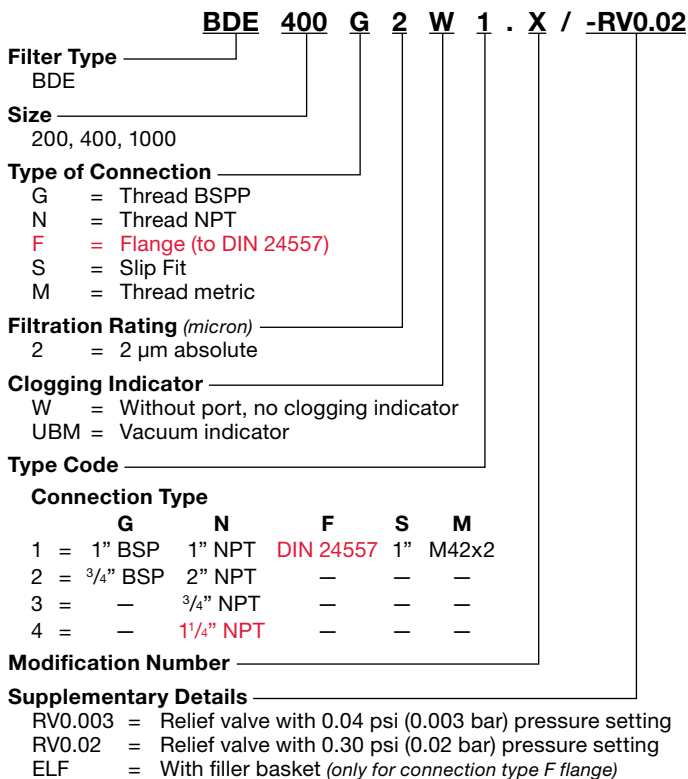


Water Adsorption Efficiency

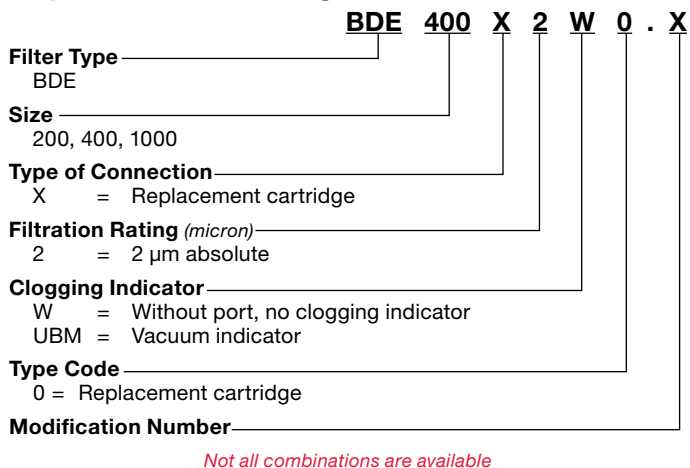


BREATHERS

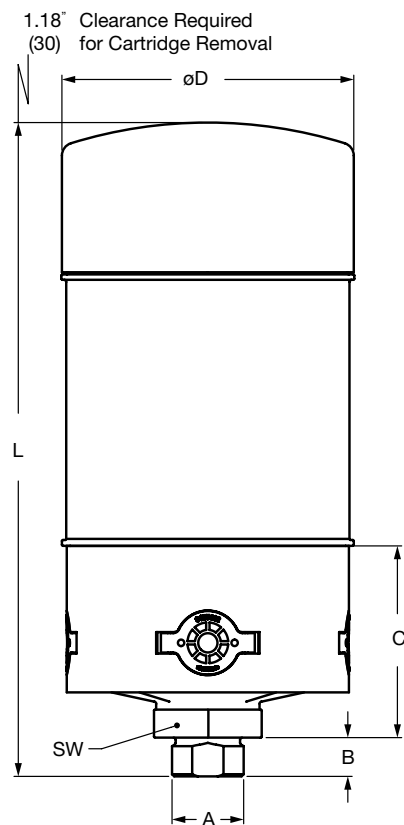
Model Code



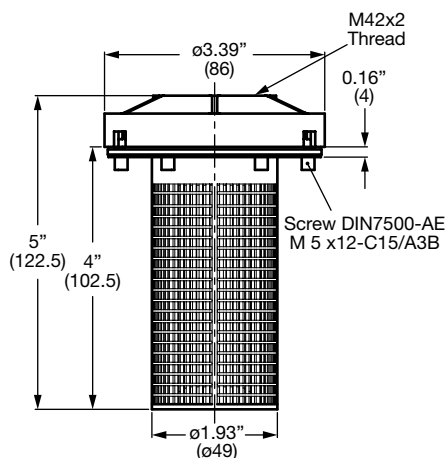
Replacement Cartridge



BDE Dimensions

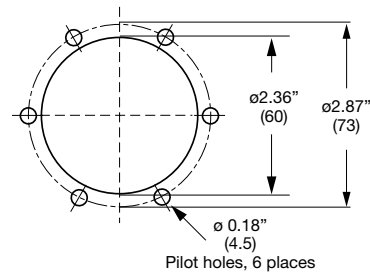


ELF Filler Basket



Mounting Hole Patterns

ELF 3
(flange interface to DIN 24557/T2)



Connection A	Thread length B	AF with SW
1" Slip fit connection Ø33.4	0.71 (18)	1.97 (50)
G1"	0.71 (18)	1.97 (50)
NPT 1"	0.71 (18)	1.97 (50)
NPT 2"	0.94 (24)	2.56 (65)
Flange adapter DIN 24557	0.79 (20)	1.97 (50)
M42x2	0.71 (18)	1.97 (50)

Size	C	Ø D	L	Optimum air flow rate * (l _{air} /min)	Max. drying capacity for avg. humidity (m ³ _{air})	Max. drying capacity for high humidity (m ³ _{air})	Water Retention Capacity	Weight
200	3.50 (89)	5.35 (136)	8.86 (225)	10	10	6	0.25l	3.75 (1.7)
400			11.97 (304)	20	25	15	0.50l	5.07 (2.3)
1000			15.12 (384)	35	42	25	0.75l	6.61 (3.0)

*Air flow rate with the highest drying efficiency. Dimensions are in inches/(mm) and lbs./(kg)

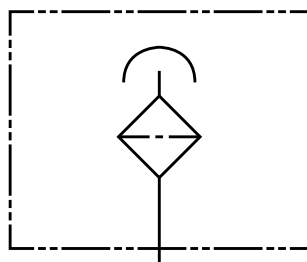
Note: Low temperature options available. All breathers are available with special options and materials. Please contact the factory.

BD Series

Drymicron



Hydraulic Symbol



Description

HYDAC BD entry level desiccant breathers are specifically designed for Hydraulic Reservoirs, Gearboxes, and Storage tanks.

Benefits

HYDAC BD breathers keep dirt and water vapor from entering the gearbox or hydraulic system, increasing equipment life.

- Minimize Corrosion
- Extend Oil Life

Features

- Wide range of connection adaptors
- Completely disposable

Replacement Cartridge

BD 400 G 2 W 1 . X

Filter Type ————— **BD**

Size ————— **400**
200, 400, 1000

Type of Connection ————— **G**

G = Thread BSPP
 N = Thread NPT
F = Flange (to DIN 24557)
 S = Slip Fit
 M = Thread metric

Filtration Rating (micron) ————— **2**
2 = 2 µm absolute

Clogging Indicator ————— **W**
W = Without port, no clogging indicator

Type Code ————— **1 . X**

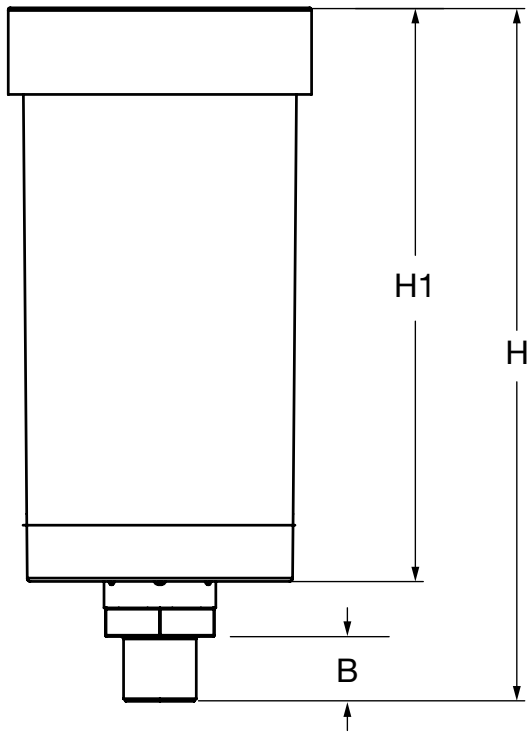
Connection Type					
	G	N	F	S	M
1 =	1" BSP	1" NPT	DIN 24557	1"	M42x2
2 =	3/4" BSP	2" NPT	—	—	—
3 =	—	3/4" NPT	—	—	—
4 =	—	1/4" NPT	—	—	—

Modification Number —————

Model Codes Containing RED are non-stock items — Minimum quantities may apply – Contact HYDAC for information and availability

BREATHERS

BD Dimensions



Connection A	Thread length B
1" Slip fit connection Ø33.4	0.71 (18)
G1"	0.71 (18)
NPT 1"	0.71 (18)
NPT 2"	0.94 (24)
Flange adapter DIN 24557/T2	0.79 (20)
M42x2	0.71 (18)
G 3/4"	0.71 (18)
NPT 3/4"	0.71 (18)
NPT 1-1/4"	0.89 (22.5)

Size	Standard Connection	H	H1	ØD	Flow rate at 1 psi	H ₂ O Capacity (lbs)
200	1" NPT	7.05 (179)	5.35 (136)	5.47 (139)	17 cfm / 125 gpm	0.3 kg / .6 lb
400	1" NPT	9.96 (253)	8.26 (210)	5.47 (139)	17 cfm / 125 gpm	0.5 kg / 1.1lb
800	2" NPT	12.32 (313)	10.39 (264)	5.47 (139)	19 cfm / 140 gpm	0.7 kg / 1.6 lb

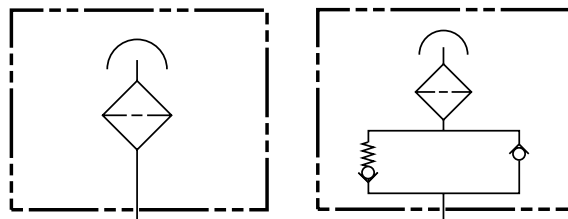
Model Code	Part Number	Connection	Weight (lbs)
BD 200 N 2 W 1.1	2212324	1" NPT	1.8
BD 200 S 2 W 1.1	2213232	Slip Fit	1.8
BD 400 N 2 W 1.1	2212325	1" NPT	3.4
BD 400 S 2 W 1.1	2213233	Slip Fit	3.4
BD 800 N 2 W 2.1	2212326	2" NPT	4.5

BDM Series

Mobile Mini Drymicron



Hydraulic Symbols



Benefits

- HYDAC BDM breathers prevent dirt and water vapor from entering the gearbox or hydraulic system, improving the overall life of the equipment they're mounted on.
- The optional check valves increase the overall service life of the unit.

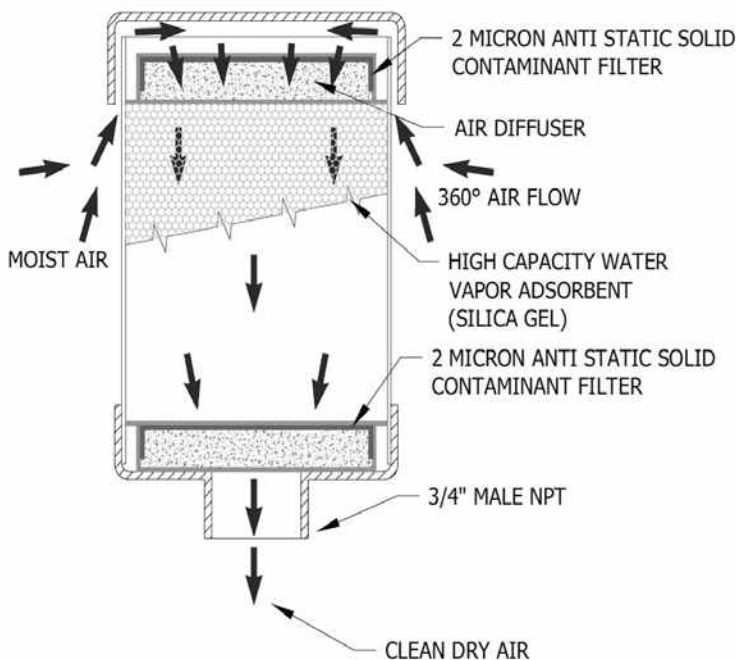
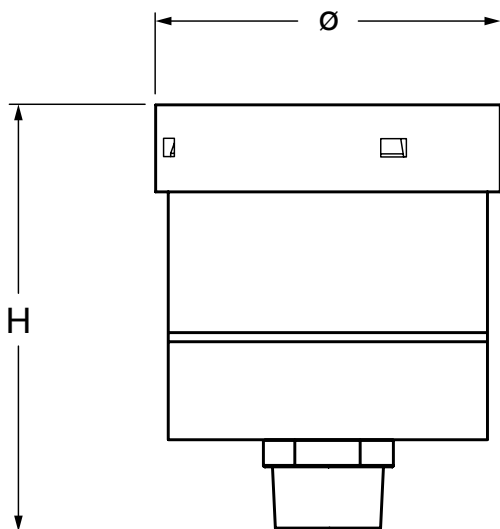
Features

- 2 micron Filter
- 3/4" NPT male fitting
- All models are rated for 5 SCFM at 1 psig
- Optional Check valves

Description

HYDAC BDM mini desiccant breathers are specifically designed for models markets. Their compact packaging allows them to be placed where space is limited.

BDM Dimensions



Model	H2O Capacity lbs (ltr)	Part Number	H	Ø	Weight (lbs)
BDM 085 N 2 W 2.0	0.18 (0.082)	2207462	3.50	3.25	.75
BDM 085 N 2 W 2.0 / -RV0.02	0.18 (0.082)	2207463	3.50	3.25	.75

Notes:

1. Dimensions are in inches (mm) and lbs (kg).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

All breathers are available with special options and materials. Please contact the factory.

BREATHERS

BDLP Series

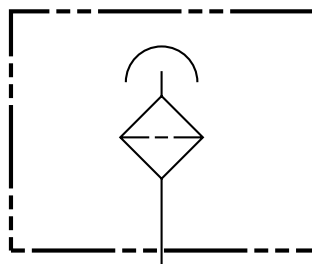
Mobile Drymicron



Description

HYDAC BDLP desiccant breathers are specifically designed large for mobile machines.

Hydraulic Symbols

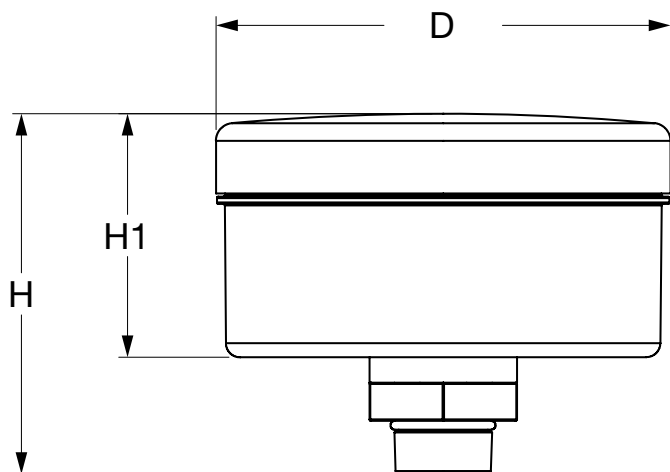


Features

- 2 Micron Filter
- 0.280 lb Water adsorption capacity
- Standard NPT & BSPP 1" male fittings available

Benefits

HYDAC BDLP breathers prevent dirt and water vapor from entering the gearbox or hydraulic system, improving the overall life of the equipment they're mounted on.



Model	H2O Capacity (lbs)	Part Number	H1	H	D
BDLP G 2 W 1.0	.280	2206357	4.75	3.25	6.00
BDLP N 2 W 1.0	.280	2207476	4.75	3.25	6.00

Notes:

1. Dimensions are in inches (mm) and lbs (kg).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

All breathers are available with special options and materials. Please contact the factory.

C Other Reservoir Accessories

In addition to Breathers HYDAC offers; suction strainers, fluid level indicators, gauge isolators, and test points. Our suction strainers are designed and built in the USA. We offer a large selection of fluid level indicators and options for level indicators.

SUCTION STRAINERS

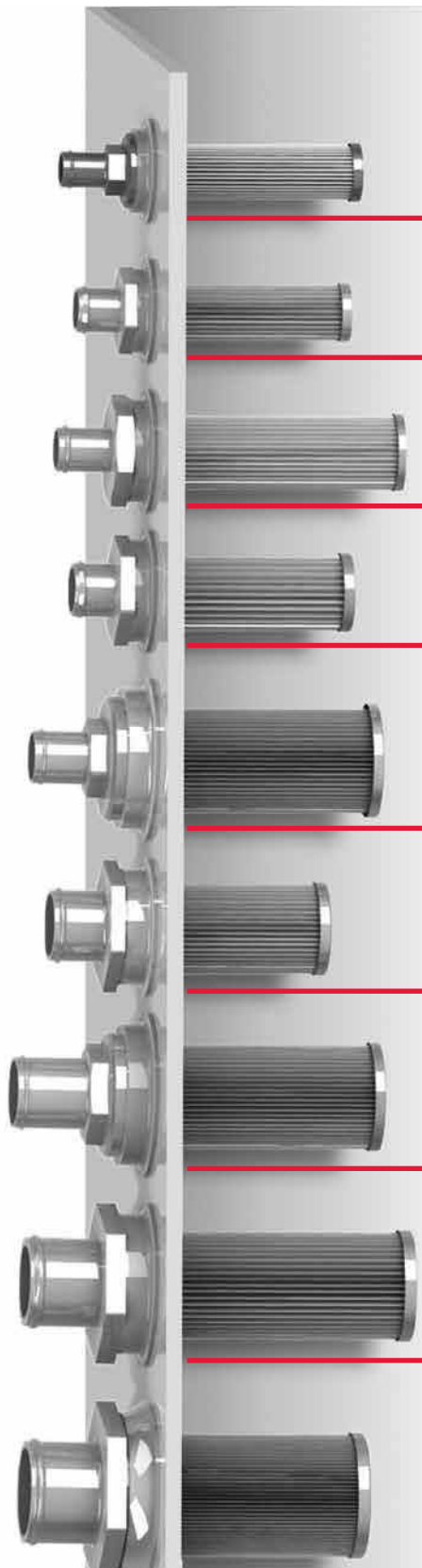
SFE In-Tank



	Size	Nominal flow* (gpm)	Connection NPT	Overall Length	Bypass
	SFE 11	3	3/8"	2.7"	N/A
	SFE 15	5	1/2"	4.2"	Optional
	SFE 25	8	3/4"	2.7"	Optional
	SFE 50	10	1"	2.7"	Optional
	SFE 80	20	1 1/4"	3.5"	Optional
	SFE 100	30	1 1/2"	3.5"	Optional
	SFE 180	50	2"	4.0"	Optional
	SFE 280	75	2 1/2"	5.2"	Optional
	SFE 380	100	3"	5.2"	Optional

*Flow ratings listed are nominal flow ratings for typical applications. High velocity/ low temperature applications may require a strainer with a high flow rating. Consult HYDAC Engineering for more information. These strainers are in-tank mounted with NPT ports. Materials are plastic nut caps, stainless steel wire cloth, and plated steel support tubes and end caps.

HTMS Hose Barb



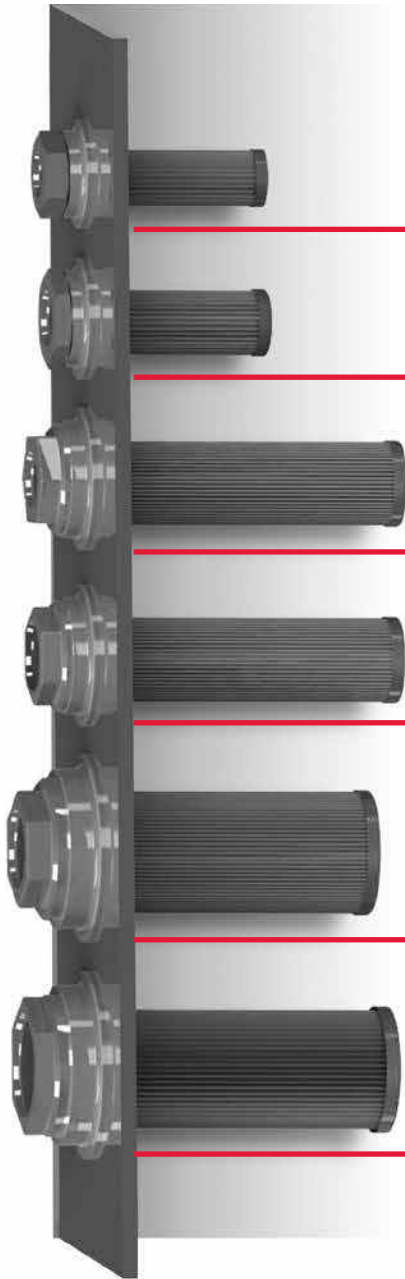
	Size	Nominal flow* (gpm)	Connect. Pump Side	Connect. Tank Side	Overall Length	Install Length	Bypass
	1" HB / SAE-24	8	1" HB	1-7/8"-12	9.3"	7.3"	Optional
	1.25" HB / SAE-24	12	1.25" HB	1-7/8"-12	8.5"	6.9"	N/A
	1.25" HB / SAE-32	15	1.25" HB	2-1/2"-12	10.5"	8.5"	Optional
	1.5" HB / SAE-32	20	1.5" HB	2-1/2"-12	8.5"	6.9"	N/A
	1.5" HB / SAE-48	25	1.5" HB	3-3/8"-12	10.3"	7.8"	Optional
	2" HB / SAE-40	30	2" HB	2-7/8"-12	8.2"	6.3"	N/A
	2" HB / SAE-48	40	2" HB	3-3/8"-12	10.7"	7.7"	Optional
	2.5" HB / SAE-48	50	2.5" HB	3-3/8"-12	11.1"	8.5"	N/A
	3" HB / SAE-48	75	3" HB	3-3/8"-12	9.7"	7.1"	N/A

*Flow ratings listed are nominal flow ratings for typical applications. High velocity/ low temperature applications may require a strainer with a high flow rating. Consult HYDAC Engineering for more information.

These strainers are externally mounted with SAE threaded tank connection. Materials are plated steel or aluminum nut caps, stainless steel wire cloth, and plated steel support tubes and end caps.

SUCTION STRAINERS









HTMS SAE



	Size	Nominal flow* (gpm)	Connect. Pump Side	Connect. Tank Side	Overall Length	Install Length	Bypass
	SAE-12 / SAE-20	5	1-1/16"-12	1-5/8"-12	5.5"	4.9"	Optional
	SAE-16 / SAE-24	7	1-5/16"-12	1-7/8"-12	5.4"	5.0"	N/A
	SAE-16 / SAE-32	9	1-5/16"-12	2-1/2"-12	9"	8.3"	Optional
	SAE-20 / SAE-32	14	1-5/8"-12	2-1/2"-12	9"	8.3"	Optional
	SAE-24 / SAE-48	21	1-7/8"-12	3-3/8"-12	8.8"	7.8"	Optional
	SAE-32 / SAE-48	39	2-1/2"-12	3-3/8"-12	9.2"	8.3"	Optional

*Flow ratings listed are nominal flow ratings for typical applications. High velocity/low temperature applications may require a strainer with a high flow rating. Consult HYDAC Engineering for more information. These strainers are externally mounted with SAE threaded tank connection. Materials are plated steel or aluminum nut caps, stainless steel wire cloth, and plated steel support tubes and end caps.

Weld Flange

SAE 6	SAE 8	SAE 12	SAE 16	SAE 20	SAE 24	SAE 32	SAE 48
9/16"-18	3/4"-16	1-1/16"-12	1-15/16"-12	1-5/8"-12	1-7/8"-12	2-1/2"-12	3-3/8"-12
							
2078493	2078494	2078495	2078496	2078497	2078482	2078483	2078484

For use with HTMS Hose Barb and SAE Strainers. Materials are low carbon steel suitable for all welding techniques.

SFE Series

In-Tank Suction Strainer Element



Description

HYDAC Suction Strainer Elements are designed for installation into suction lines of pumps. Extra caution should be taken to ensure that the suction elements are always mounted below the minimum oil level of the reservoir.

The suction strainer elements can be supplied with a bypass valve to reduce high pressure drops caused by contaminated elements or high viscosity fluids during cold starting. The bypass valve opens at 3 psi. For best results, suction strainer elements should be sized for clean element pressure drops of no higher than 0.5 to 0.7 psi.

HYDAC Suction Strainer Elements are manufactured using stainless steel wire screen media, plastic nut caps, and plated steel end caps and support tubes.

Suction strainer elements are only intended to protect hydraulic pumps against catastrophic failure caused by coarse contaminant.

Suction strainer elements should be inspected and cleaned regularly.

Suction strainer elements should not be used as the only filtration elements in a hydraulic system. Pressure filters and return line filters, with reasonable dirt holding capacity, must be installed to provide protection against component damage caused by fine contaminants.

Cleaning Procedure

Remove external build-up of contaminant with cleaning fluid in separate tank.

Flush element with clean solvent and blow through wire screen media with air.

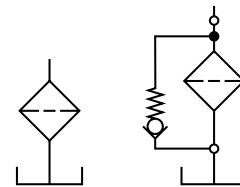
Hydraulic Data

Pressure Drop vs. Flow:

- Pressure drop will be < 2 psi when strainers are used within the recommended flow range, and with a standard hydraulic fluid with a viscosity of 141 SSU and specific gravity of 0.86.

Temperature:

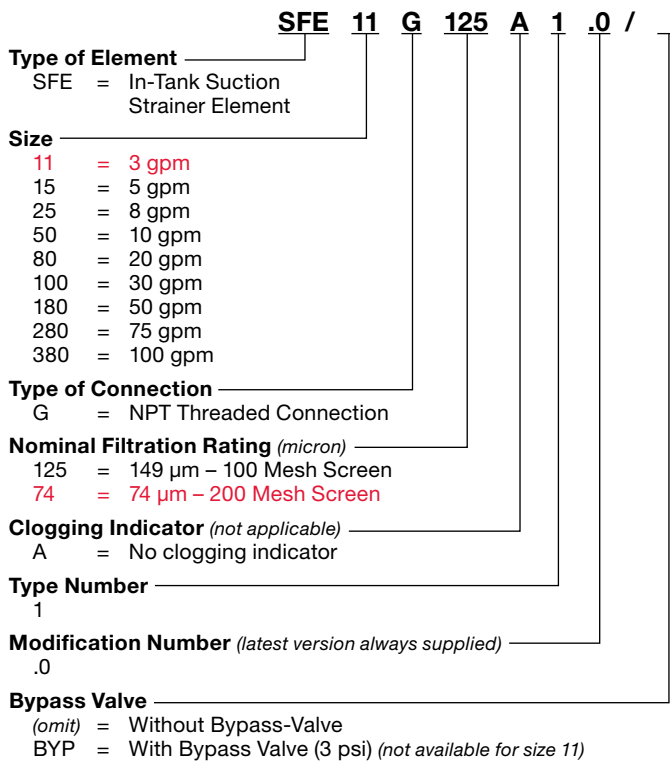
- 15° to 180°F (-9° to 82°C)



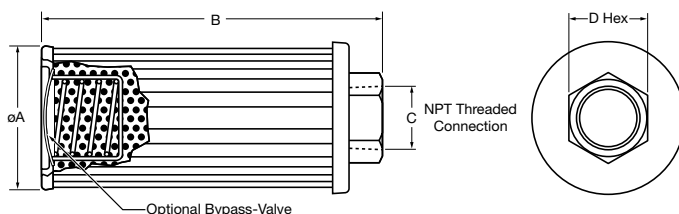
Without Bypass-Valve

With Bypass-Valve

Model Code



Dimensions



Size	Nominal Flow (gpm)	ØA	B	C (NPT)	D HEX	Media Area (sq. in.)
SFE 11	3	1.95	2.68	3/8	1.00	15
SFE 15	5	1.95	4.19	1/2	1.00	25
SFE 25	8	2.67	3.55	3/4	1.43	50
SFE 50	10	2.67	5.25	1	1.62	90
SFE 80	20	3.47	6.62	1 1/4	2.00	135
SFE 100	30	3.47	8.01	1 1/2	2.38	195
SFE 180	50	4.03	9.88	2	2.78	260
SFE 280	75	5.19	10.25	2 1/2	3.25	325
SFE 380	100	5.19	11.75	3	3.75	410

Notes:

- Dimensions are in inches (mm).
- Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

SUCTION STRAINERS

MSS Series

Magnetic Suction Separators



Standard
Outer Screen

SS20
Mesh Screen

Description

With the use of HYDAC's Magnetic Suction Separators, suction line filtration is provided without starving the pump. They offer unique protection for pumps from all sizes of ferrous particles, some of which have the potential of destroying a pump in a single pass. Large ceramic magnets are spaced along the length of the separator. All hydraulic fluid entering the pump must move at low velocity through a powerful magnetic field. This field traps large quantities of micronic ferrous particles. The viscous properties of the fluid can cause some non-ferrous particles to adhere to the magnetically trapped particles.

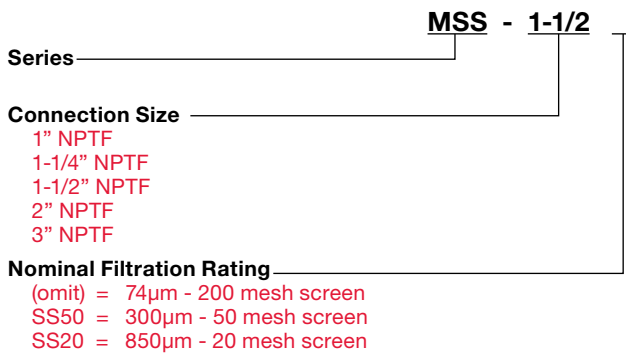
The MSS series is available in sizes ranging from one to three inches. The chart below shows the part numbers, specifications, and dimensions of available models.

The standard outer screen has adequate open area (0.079 inch diameter perforations) to eliminate the possibility of pump starvation.

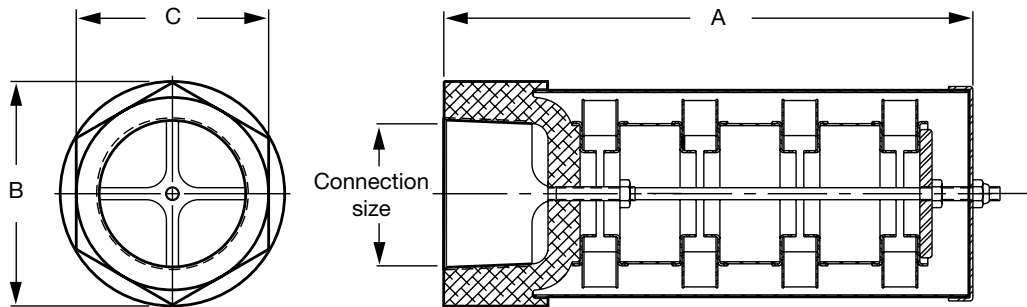
All models are also available with a pleated 20 mesh screen (850 μ) by adding SS20 to the model number. (Example MSS-1 SS20).

All units have a removable outer screen that can be cleaned and re-used to extend service life and minimize pressure drop.

Model Code



Dimensions



Model Number	Part No.	Connection Size	Max. Flow gpm (lpm)	Δ psi at Max. gpm	Dimensions		
					A	B*	C
MSS-1	02082431	1" NPT	15 (55)	0.05	5.25" (133)	3.25" (83)	1.62" (41)
MSS-1 1/4	02082432	1 1/4" NPT	25 (95)	0.05	8.25" (210)	3.50" (89)	3.00" (76)
MSS-1 1/2	02082433	1 1/2" NPT	35 (135)	0.08	8.25" (210)	3.50" (89)	3.00" (76)
MSS-2	02082434	2" NPT	50 (190)	0.10	8.25" (210)	3.50" (89)	3.00" (76)
MSS-3	02082435	3" NPT	100 (380)	0.02	10" (254)	3.50" (89)	4.00" (102)

*B Dimension larger for SS20 versions

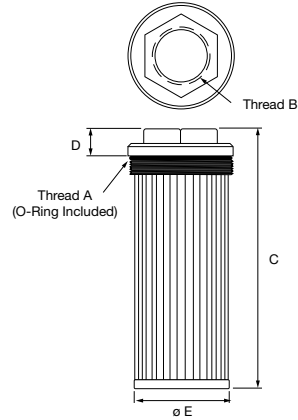
Notes:

1. Dimensions are in inches (mm).

2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

HTMS Series

Tank Mounted Suction Strainer Elements
SAE O-Ring

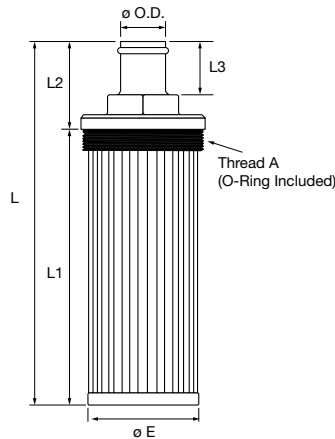


Model Code

Series **HTMS**
 Thread Type **SAE**
 Thread B Size **16**
 Mesh Size **100**
 100 = 100 Mesh (149 micron)
 Options
 (omit) = Standard (no bypass)
 RV3 = 3 psi bypass valve

Model Code	Part No.	Per SAEJ514		Hex Size	GPM*	Screen Area (Sq. In.)	Dimensions		
		THD A	THD B				C	D	ØE
HTMS SAE 16 100	02078472	2-1/2"-12	1-5/16"-12	2.13	9	90	9.00"	0.75"	2.24"
HTMS SAE 20 100	02078473	2-1/2"-12	1-5/8"-12	2.13	14	90	9.00"	0.75"	2.24"
HTMS SAE 24 100	02078474	3-3/8"-12	1-7/8"-12	2.50	21	230	8.80"	0.90"	3.22"
HTMS SAE 32 100	02078475	3-3/8"-12	2-1/2"-12	3.00	39	230	9.30"	0.98"	3.22"

Hose Barb

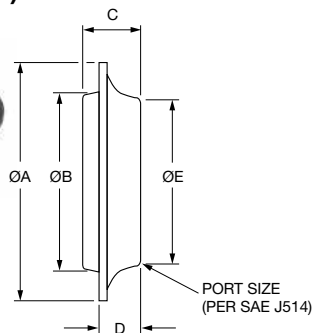


Model Code

Series **HTMS**
 Connection Type **HB**
 Connection / Hex Size **1/1.25**
 Mesh **100**
 100 = 100 Mesh (149 micron)
 Options
 (omit) = Standard (no bypass)
 RV3 = 3 psi bypass valve

Model Code	Part No.	Thread A	ø O.D.	Hex Size	GPM*	Dimensions				
						L	L1	L2	L3	ø E
HTMS HB 1 / SAE 24 100	02078485	1-7/8"-12	1.00"	1.25"	8	9.30"	7.30"	2.00"	1.25"	1.65"
HTMS HB 1.25 / SAE 32 100	02078486	2-1/2"-12	1.25"	1.50"	14	10.00"	8.00"	2.00"	1.25"	2.12"
HTMS HB 1.5 / SAE 48 100	02078487	3-3/8"-12	1.50"	2.00"	21	10.30"	7.82"	2.48"	1.50"	3.22"
HTMS HB 2 / SAE 48 100	02078488	3-3/8"-12	2.00"	2.50"	40	10.80"	7.84"	2.97"	2.00"	3.22"

Weld Flange (SAE)



Model Code	Part No.	Port Size	Dimensions				
			ØA	ØB	C	D	ØE
HTMS TWF-6	02078493	9/16"-18	1.50"	0.93"	0.56"	0.31"	1.00"
HTMS TWF-8	02078494	3/4"-16	1.50"	0.93"	0.56"	0.31"	1.00"
HTMS TWF-12	02078495	1-1/16"-12	2.13"	1.38"	0.69"	0.44"	1.44"
HTMS TWF-16	02078496	1-5/16"-12	2.38"	1.66"	0.75"	0.50"	1.75"
HTMS TWF-20	02078497	1-5/8"-12	2.69"	2.00"	0.75"	0.50"	2.13"
HTMS TWF-24	02078482	1-7/8"-12	3.00"	2.25"	0.75"	0.50"	2.38"
HTMS TWF-32	02078483	2-1/2"-12	3.50"	2.63"	0.84"	0.59"	2.88"
HTMS TWF-48	02078484	3-3/8"-12	4.63"	3.66"	1.00"	0.81"	3.94"

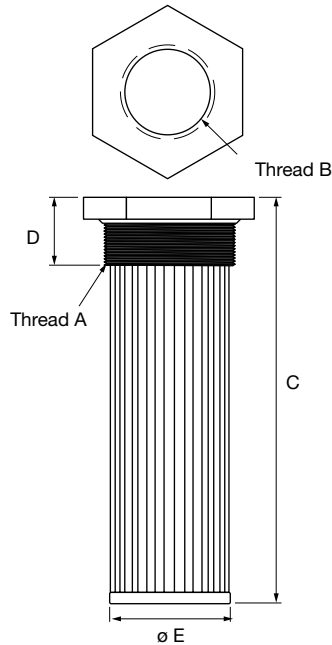
*Flow ratings listed are nominal flow ratings for typical applications. High viscosity, low temperature applications may require a strainer with a higher flow rating. Consult HYDAC Engineering for more information.

Notes:

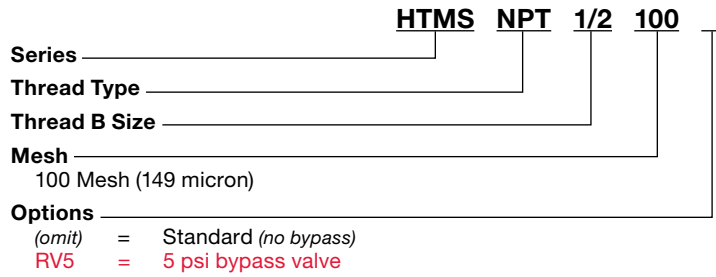
1. Dimensions are in inches (mm).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

SUCTION STRAINERS

NPT

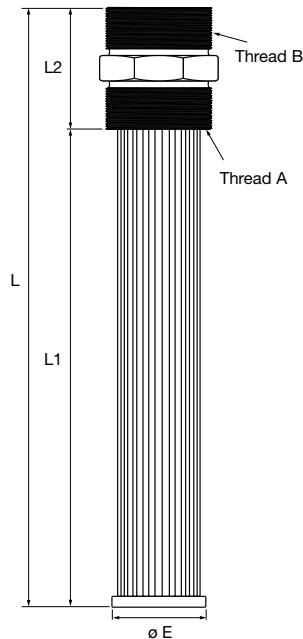


Model Code

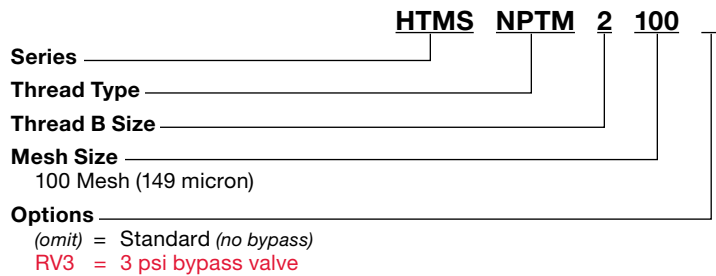


Model Code	Part No.	GPM*	Screen Area (Sq. In.)	THD A	THD B	Hex Size	Dimensions		
							C	D	ø E
HTMS NPT 1/2 100	02078460	5	35	1" NPT	1/2" NPT	1.43	5.38"	1.10"	1.18"
HTMS NPT 3/4 100	02078461	10	64	1 1/4" NPT	3/4" NPT	1.81	7.50"	1.20"	1.14"
HTMS NPT 1 100	02078462	15	86	1 1/2" NPT	1" NPT	2.00	8.25"	1.30"	1.65"
HTMS NPT 1 1/4 100	02078463	25	125	2" NPT	1 1/4" NPT	2.55	10.00"	1.30"	2.12"
HTMS NPT 2 100	02078464	50	260	3" NPT	2" NPT	3.30	10.25"	1.70"	3.03"
HTMS NPT 3 100	02078465	100	315	4" NPT	3" NPT	5.00	11.30"	1.80"	3.78"

Male NPT Ports



Model Code



Model Code	Part No.	GPM*	THD A	THD B	Hex Size	Dimensions			
						L	L1	L2	ø E
HTMS NPTM 2 100	02078480	50	2" NPT	2" NPT	2.75"	13.50"	10.75"	2.70"	2.12"

*Flow ratings listed are nominal flow ratings for typical applications. High viscosity, low temperature applications may require a strainer with a higher flow rating. Consult HYDAC Engineering for more information.

Notes:

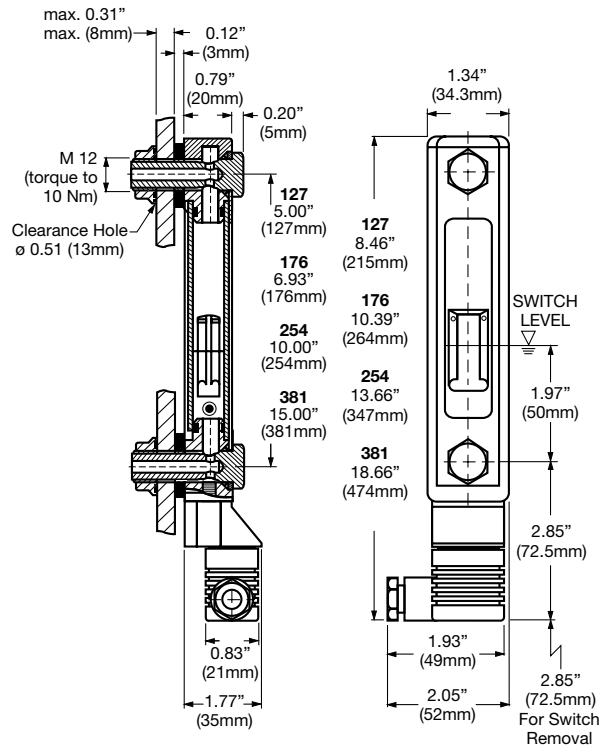
1. Dimensions are in inches (mm).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

FSK Series

Fluid Level Indicator with Electric Level Switch



Dimensions



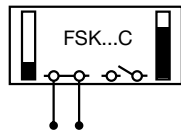
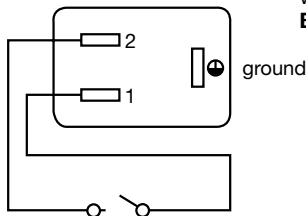
Notes:

1. Dimensions are in inches (mm).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

Electric Level Switch

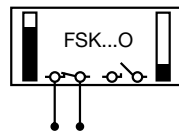
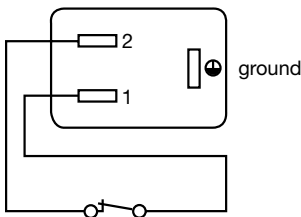
FSK...C (open at normal level)

Contacts **CLOSE** when fluid level drops **BELOW** switching level



FSK...O (closed at normal level)

Contacts **OPEN** when fluid level drops **BELOW** switching level



Electrical Specifications

Contact Ratings

- Max. 8W

Maximum Voltage

- 50V AC or DC

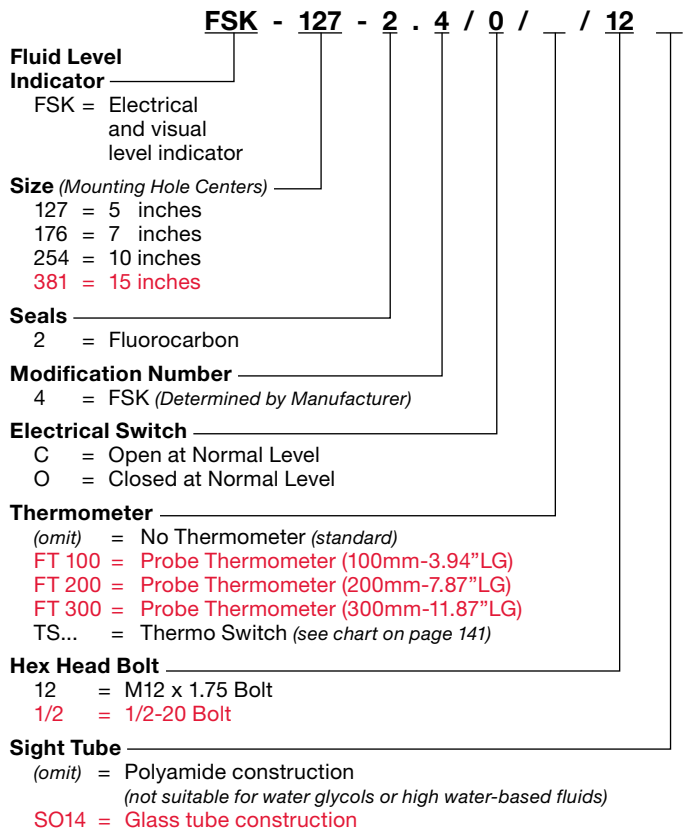
Maximum Current

- 200 mA

Magnetic Float inside tube trips switch when fluid level drops within 50mm of lower bolt. (see illustration)

Fluid Level Indicators are compatible with water and mineral oils. Exposure to cleaners and rust inhibitors can cause cracking of the tube and leaks. Contact HYDAC if your application could be exposed to cleaners or rust inhibitors.

Model Code



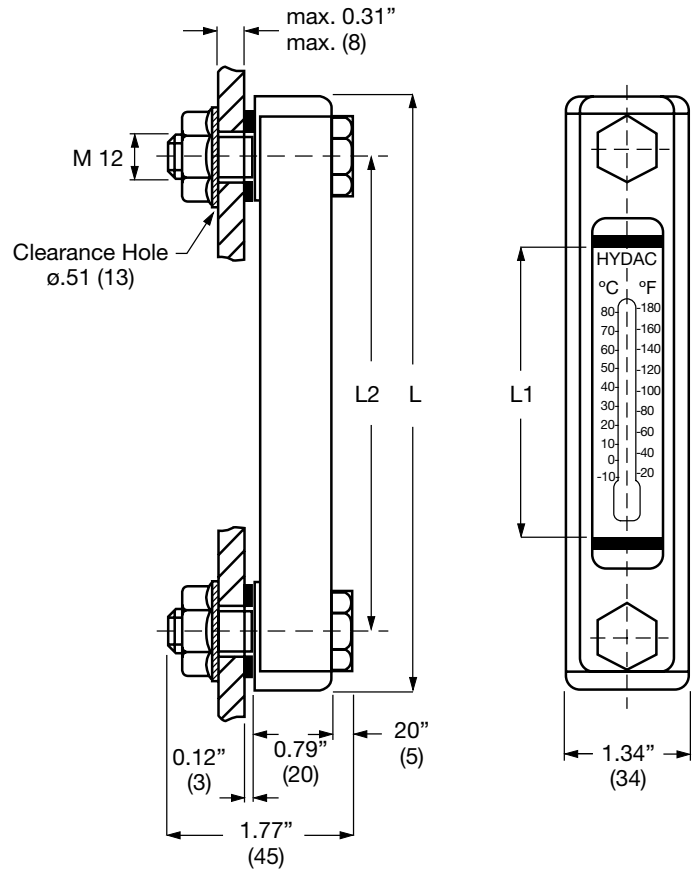
FLUID LEVEL INDICATORS

FSA Series

Fluid Level Indicator



Dimensions



Model Code

FSA 127 - 1 . 1 / T / 12 -

Fluid Level Indicator

FSA = Visual level indicator

Size (Mounting Hole Centers)

- 76 = 3 inches
- 127 = 5 inches
- 176 = 7 inches
- 254 = 10 inches
- 381 = 15 inches
- 500 = 20 inches
- 600 = 24 inches
- 700 = 28 inches
- 1000 = 39 inches

Seals

- 1 = NBR
- 2 = Fluorocarbon

Housing Material

- 0 = Steel (only for SO14 glass tube construction)
- 1 = Aluminum

Thermometer

- (omit) = No Thermometer
- T = Built-in Tube
- FT 100 = Probe Thermometer (100mm-3.94"LG)
- FT 200 = Probe Thermometer (200mm-7.87"LG)
- FT 300 = Probe Thermometer (300mm-11.87"LG)
- TS... = Thermo Switch (see chart on page C2-11)

Hex Head Bolt

- 12 = M12 x 1.75 Bolt
- 1/2 = 1/2-20 Bolt

Sight Tube Material

- (omit) = Polyamide construction
(not suitable for water glycols or high water-based fluids)
- SO14 = Glass tube construction

Low Temperature options available

Size	L	L1	L2
76	4.25" (108mm)	1.46" (37mm)	2.99" (76mm)
127	6.26" (159mm)	2.99" (76mm)	5.00" (127mm)
176	8.19" (208mm)	4.92" (125mm)	6.93" (176mm)
254	11.26" (286mm)	7.99" (203mm)	10.00" (254mm)
381	16.26" (413mm)	12.99" (330mm)	15.00" (381mm)

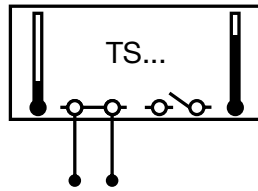
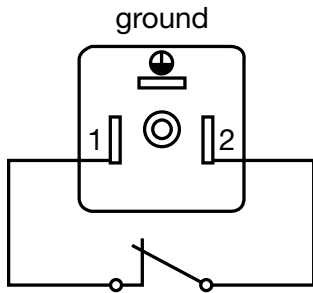
Notes:

1. Dimensions are in inches (mm).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

Fluid Level Indicators are compatible with water and mineral oils. Exposure to cleaners and rust inhibitors can cause cracking of the tube and leaks. Contact HYDAC if your application could be exposed to cleaners or rust inhibitors.

Options

Electric Thermo Switch / TS



Contacts **OPEN**
when fluid temperature rises
ABOVE switching temperature

Electrical Specifications

Maximum Voltage

- 50 VAC or DC

Minimum Current

- 50 mA

Contact

- Normally Closed

Switching Tolerance

- $\pm 10^\circ\text{F}$

Hysteresis

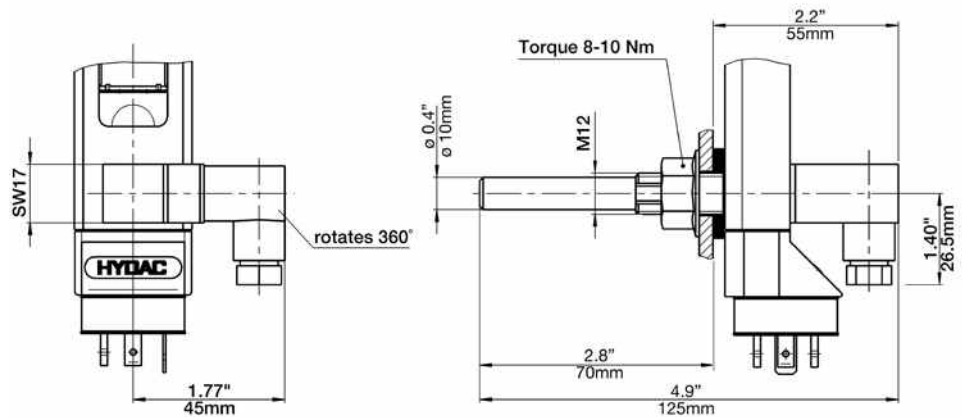
- TS 60/70 27°F (15°C)
- TS 80 36°F (20°C)

Expected Life Cycle

- at 25 A / 50 V 10,000 cycles
- at 0.5 A / 50 V 100,000 cycles

Thermo Switch - TS...

Detail of Lower Connection
for Probe Thermometer (FT...) see chart below



Thermo Switches (Normally Closed Contact)

Thermo Switch Code	Model Code	Part Number	Switch Opens @	Switch Closes @	Mounting Thread
TS60	TS-L-60/X/12 THERMO-SWITCH	03252752	60°C/140°F	45°C/113°F	M 12
TS70	TS-L-70/X/12 THERMO-SWITCH	03252766	70°C/158°F	55°C/131°F	M 12
TS80	TS-L-80/X/12 THERMO-SWITCH	03252767	80°C/176°F	60°C/140°F	M 12

Probe Thermometer / FT Features

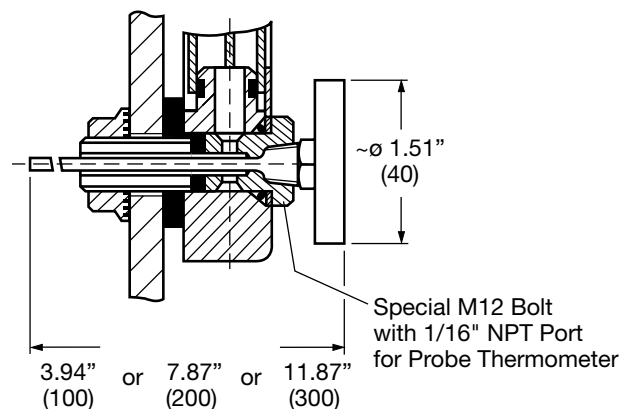
- Analog dial type thermometer for visual temperature indication

Temperature Range (Dual Scale)

- 0° to 212°F
- 0° to 100°C



Detail of Lower Connection



Probe Thermometers (Temperature Range 32° to 212°F (0° to 100°C))

Thermo Switch Code	Model Code	Part Number	Mounting Thread
FT100	FT-100 TEMP PROBE W/M12 BOLT	02067556	M 12
FT200	FT-200 TEMP PROBE W/M12 BOLT	00086740	M 12
FT300	FT-300 TEMP PROBE W/M12 BOLT	00086741	M 12

FLUID LEVEL INDICATORS

Technical Data

Material	
Housing	Anodized Aluminum or ABS Plastic
Sight Tube	Polyamide or Glass
Seals	Fluorocarbon, NBR
Nuts / Bolts	Steel, Zinc plated
Fluid Temperature	
-4° to 176°F (-20° to 80°C)	
Maximum Pressure	
14.5 PSI (1 BAR)	
Thermometer Range	
Type T (FSA only)	14° to 176°F (-10° to 80°C)
Type FT100	32° to 212°F (0° to 100°C)
Type FT200	32° to 212°F (0° to 100°C)
Type FT300	32° to 212°F (0° to 100°C)
Bolting Torque	
Max. 8 LB-FT+1 (10 Nm +2) see installation instructions below	

Recommended Installation Process

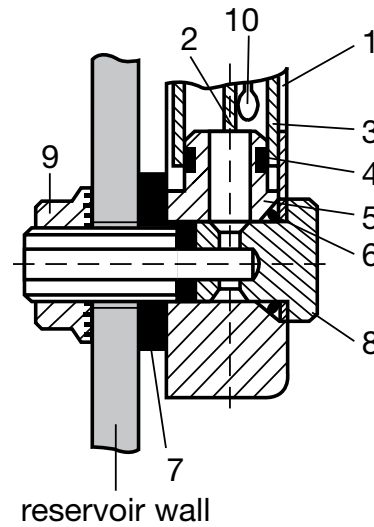
1. Drill mounting holes (13 mm) according to dimension L2.
2. Torque the Nut, item 9, to 8+ 1 LB-FT. If it is not possible to torque the nut, the bolt head must be torqued.
To avoid damaging the indicator a washer is recommended to be used under the bolt head.
This washer is available from HYDAC: Part Number 00001689.
Washer Dimensions: øD 18.8 mm, ID 13.10 mm, 0.5 mm thick

Component Parts

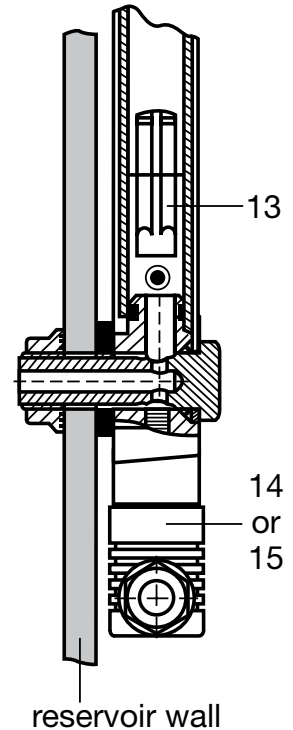
Item	Description	Part No.	Quantity	
			FSA	FSK
1	Housing	-	1	1
2	Name Plate	-	1	-
3	Tube	-	1	1
4*	O-ring 13X2.5	FPM-70 (Fluorocarbon)	00601916	2
		NBR-70 (Buna)	00601047	
5	Tube Connector	-	2	2
6*	O-ring 12.3X2.4	FPM-70 (Fluorocarbon)	00601531	2
		NBR-70 (Buna)	00601045	
7*	Washer FSA/FSK	FPM (Fluorocarbon)	22183158	2
		NBR (Buna)	00271948	
8*	Bolt M12 SW17 FSA	22183153	2	2
9*	Nut Hex M12 FSA	22183151	2	2
10	Thermometer (In Tube)	-	1	-
11*	Probe Thermometer	See pg. C2-11	1	1
12*	Bolt FSA/K M12 SW17 for FT Temp Probe	03126743	1	1
13	Magnetic Float	-	-	1
14	Base Assembly w/Type "C" Switch	-	-	1
15	Base Assembly w/Type "O" Switch	-	-	1
16*	Washer FSA/FSK Steel	00001689	2	2

* items may be purchased individually.

FSA & FSK



FSK Only



1620 Series

Test Points & Micro Bore Flex Hoses



Description

HYDAC series 1620, guided piston design, Test Points are compact, self sealing couplings that provide access to hydraulic and pneumatic systems for pressure measurement to 9000 psi. Mating adapters or hose connections can be connected without loss of fluid while the system is operating. Test Points can also be used to take oil samples or to bleed air from hydraulic systems. They are available in 1620 (M16x2.0) connection threads with a variety of screw-in port configurations.

Features

- Can be coupled and uncoupled under pressure without system shutdown or fluid loss
- Patented guided piston design for leak free performance at operating pressure to 9000 psi
- HYDAC guided piston design provides the following advantages over ball seal design:
 - Higher working Pressure
 - Better sealing characteristics particularly under high vibration
 - Less susceptible to fluid contamination
 - Can be used for gas as well as fluid
- Low temperature options available

Applications

- Pressure measurement with gauges or sensors
- Fluid sampling
- Air bleeding

Technical Data

Maximum Working Pressure

- 9000 psi (630 bar)
(see pressure utilization factor to adjust for operating temperature)

Fluid Compatibility

- Suitable for petroleum-based fluids and gaseous media

Materials

- Zinc plated steel body (*standard*)
- Zinc plated metal cap (*standard*)

Seals

- Buna-N (*standard*)
- Fluoroelastomer (*standard*)

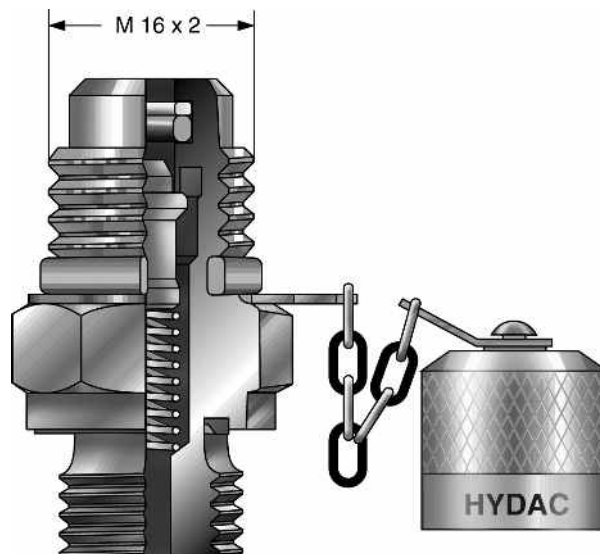
Temperature Range

- With metal cap and Buna-N seals:
-13° to 212°F (-25° to 100°C)

Options

- Anti-vibration seal for metal cap

Series 1620 Test Point



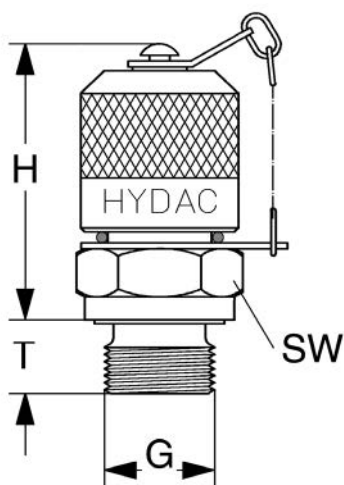
Guided Piston Design

TEST POINTS

1620 Series

Dimensions

Standard 1620 Test Point Connection with Cap



Select desired connection in the chart to the right

Note: All Test Points have a male connection thread (G)

Carbon Steel Test Points (Zinc-Plated, Buna N Seals)

Thread G	P max	H (mm)	T (mm)	SW (mm)	Part No.
1/8 NPTF	5800 psi (400)	33	13	17	06003734
1/4 NPTF	5800 psi (400)	33	16.5	17	00639645
7/16-20 UNF	9000 psi (630)	37	9	17	06003735
9/16-18 UNF	9000 psi (630)	36	10	19	06003737
M 8x1	3600 psi (250)	41	8.5	17	06003731
M 10x1	3600 psi (250)	37.5	8.5	17	00629237
M 12x1.5	9000 psi (630)	36	10	17	00632615
M 14x1.5	9000 psi (630)	36	10	19	00632248
M 16x1.5	9000 psi (630)	36	10	22	06003732
ISO 228-G 1/8	5800 psi (400)	38	8	17	00689901
ISO 228-G 1/4	9000 psi (630)	36	10	19	00680107
ISO 228-G 3/8	9000 psi (630)	36	10	22	06003733
ISO 7/I-R 1/8	5800 psi (400)	33	13	17	06003738
ISO 7/I-R 1/4	9000 psi (630)	33	13	17	06003739

Carbon Steel Test Points (Zinc-Plated, Fluoroelastomer Seals)

Thread G	P max	H (mm)	T (mm)	SW (mm)	Part No.
1/8 NPTF	5800 psi (400)	33	13	17	06007199
1/4 NPTF	5800 psi (400)	33	13	17	06007200
7/16-20 UNF	9000 psi (630)	37	9	17	06007029
9/16-18 UNF	9000 psi (630)	36	10	19	06007030
ISO 228-G 1/4	9000 psi (630)	36	10	19	00606304

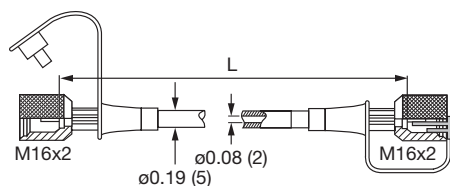
Stainless Steel Test Points (Fluoroelastomer Seals)

Thread G	P max	H (mm)	T (mm)	SW (mm)	Part No.
1/4 NPTF	5800 psi (400)	33	13	17	02701487
7/16-20 UNF	5800 psi (400)	33	16.5	17	02701486

Notes:

- Dimensions are in mm and psi (bar).
- Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
- For port configuration drawings contact HYDAC.

Micro Bore Flexible Hoses



L (inches)	L (mm)	Part No.
8	200	06003723
12	300	06003724
16	400	00632633
20	500	06003725
25	630	06003726
31	800	00682857
39	1000	00632634
49	1250	06003727
59	1500	00682858
79	2000	00682859
98	2500	00682860
126	3200	06003728
157	4000	06003729
197	5000	06003730
236	6000	02701721
394	10,000	02701722

Pressure Utilization Factor for Hoses

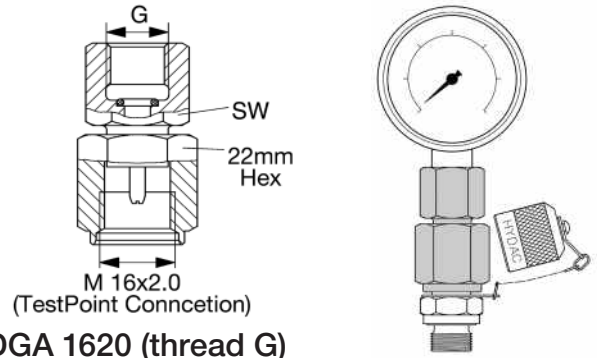
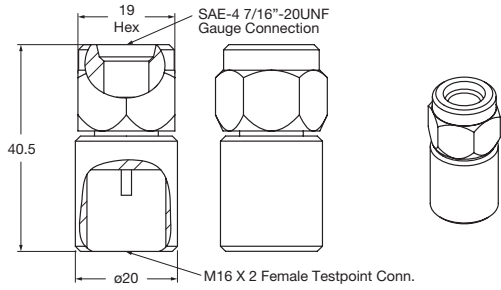
Operating Temp.	Factor	Max. Pressure
122°F (50°C)	100%	9000 psi
176°F (80°C)	86%	7740 psi
212°F (100°C)	77%	6930 psi

Specifications

- Maximum working pressure 9000 psi (630 bar) at 122°F (50°C) (see pressure utilization factor to adjust for higher temperatures)
- Suitable for petroleum-based fluids
- Temperature range -4° to 122°F (-20° to 50°C) at max. pressure
- Polyamid core with polyester braid reinforcement and polyamid jacket
- Plastic dust cap
- 1620 female connection at both ends
- Bending radius: min. 20mm
- Hose ID ø 2mm
- Custom Hose Assemblies Available:
NPT Male Thread, NPT Female Thread, JIC Male Hose, JIC Female swivel hose ends

1620 Series Adapters

Direct Gauge Adapter



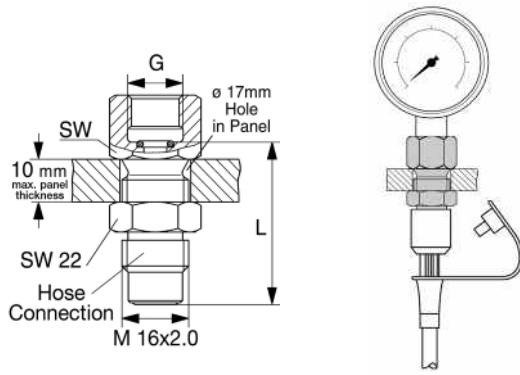
Test DGA 1620 (thread G)

Thread G	Pmax	Part No.
SAE-4 7/16-20 UNF	10,000 (680)	02083643

Thread G	Pmax	SW	Part No.
ISO 228-G 1/4	9000 (630)	19	06003824
ISO 228-G 1/2	9000 (630)	27	06003825
1/4 NPT	9000 (630)	19	06003769

Note: There is no check valve inside of this adapter. For permanent gauge installation only.

Hose to Gauge Bulkhead Adapter (with provisions for panel mounting)

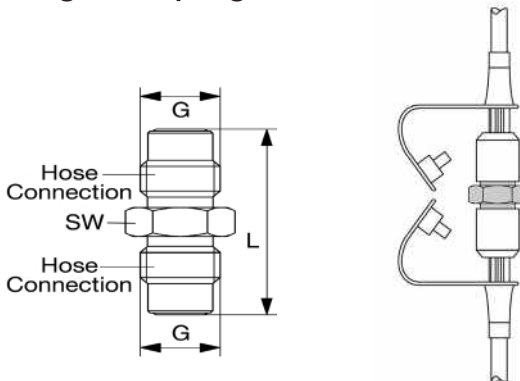


Test HGA Bulk 1620 (thread G)

Thread G	Pmax	L	SW	Part No.
ISO 228-G 1/4	9000 (630)	38.5	19	06003822
ISO 228-G 1/2	9000 (630)	39.5	27	06003823
1/4 NPT	9000 (630)	38.5	19	06003768

Note: There is no check valve inside of this adapter. For permanent gauge installation only.

Straight Coupling for Hose to Hose Connections

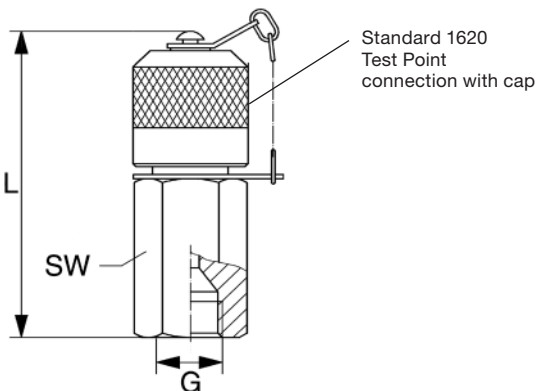


Test HHA 1620 (thread G)

Thread G	Pmax	L	SW	Part No.
M 16x2.0	9000 (630)	42	22	00687889

Note: There is no check valve inside of this adapter.

Standpipe Adapter 37° JIC Fitting



Test 37DEG 1620 (thread G)

Thread G	Pmax	L	SW	Part No.
7/16"-20 UNF	9000 (630)	55	17	06003792
1/2"-20 UNF	6000 (420)	56.5	17	06003793
9/16"-18 UNF	4500 (315)	57.5	19	06003794
3/4"-16 UNF	4500 (315)	60.5	22	06003795

NOTES:

1. Dimensions are in mm and psi (bar).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

TEST POINTS

1620 Series

Test Point Kits

3 Gauge Kit



5 Gauge Kit



Model Code	Part Number	3 Gauge Quantity	5 Gauge Quantity
Test Point Kit 1620 3 Gauge	02081635	-	-
Test Point Kit 1620 5 Gauge	02081636	-	-
HPG-63-1000-LM	02701547	1	1
HPG-63-1500-LM	02701548	0	1
HPG-63-2000-LM	02701549	1	1
HPG-63-3000-LM	02701550	0	1
HPG-63-5000-LM	02701551	1	1
TEST HOSE 1620 12"	06003724	1	2
TEST HOSE 1620 39"	00632634	1	2
TEST HOSE 1620 79"	00682859	1	2
Test Point 1620 (1/4 NPTF) MC/NBR	00639645	2	4
Test Point 1620 (7/16-20 UNF) MC/NBR	06003735	2	4
Test Point 1620 (9/16-18 NPTF) MC/NBR	06003737	2	4
TEST DGA 1620 (1/4 NPT)	06003769	1	3
TEST HGA BULK 1620 (1/4 NPT)	06003768	1	3
TEST HHA 1620	00687889	1	3

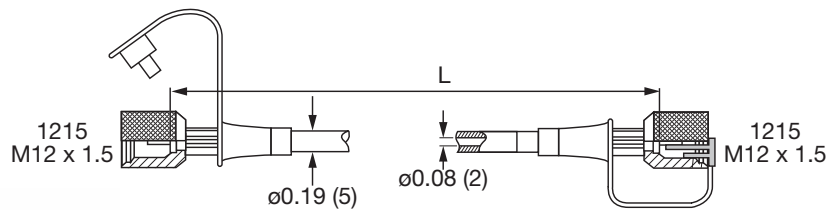
1215 Series

Test Points *(M12 x 1.5 Threads)*

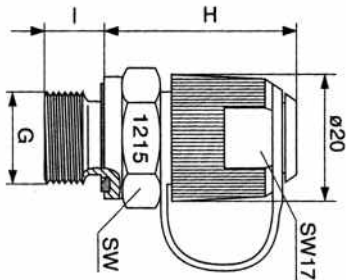
Standard design is zinc plated steel, buna seals, plastic cap and integrated safety device against vibration.

Test Hoses

L(in)	Model Code	Part No.
25	Test Hose 1215 25"	02701307
59	Test Hose 1215 59"	02701377



Dimensions



Thread (G)	p (max)	H	I	SW	Model Code	Part Number
ISO 228-G 1/8	5800 (400)	33	8	14	Test Point 1215 (G1/8) PC/NBR	-
ISO 228-G 1/4	9000 (630)	32	10	19	Test Point 1215 (G1/4) PC/NBR	-
1/8 NPTF	5800 (400)	29	12	14	Test Point 1215 (1/8 NPT) PC/NBR	-
1/4 NPTF	9000 (630)	29	15	14	Test Point 1215 (1/4 NPT) PC/NBR	02701305
7/16-20 UNF	9000 (630)	32	9	17	Test Point 1215 (7/16-20 UNF) PC/NBR	02701293
9/16-18 UNF	9000 (630)	32	10	19	Test Point 1215 (9/16-18 UNF) PC/NBR	02701335

Notes:

- Dimensions are in mm and psi (bar).
- Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

MA Series

Single Gauge Isolator



Description

- Gauge life is extended by using the MA 1 when reading pressure. When not reading pressure, the gauge is vented to tank to protect the gauge against pressure from the system.
- There are two ways to operate the MA 1:
 - Push to read (*spring return*)
 - Push and rotate clockwise to lock in for continuous pressure reading

Specifications

Mounting

- Panel installation maximum 0.39"

Connections

- 1/4" NPT, SAE-5, or G1/4 (Ports M, P, T)

Weight

- 0.88 lbs./0.4 kg

Mounting Position

- Horizontal or Vertical

Operating Fluid

- Mineral Oils

Hydraulic Data

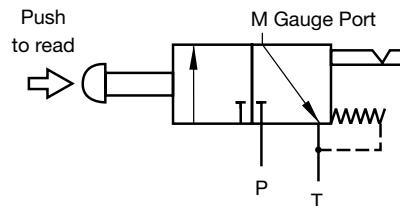
Operating Pressure

- P max. 5075 psi/350 bar (T-Port max. 145 psi/10 bar)

Temperature Range

- -4° to 176°F (-20° to 80°C)

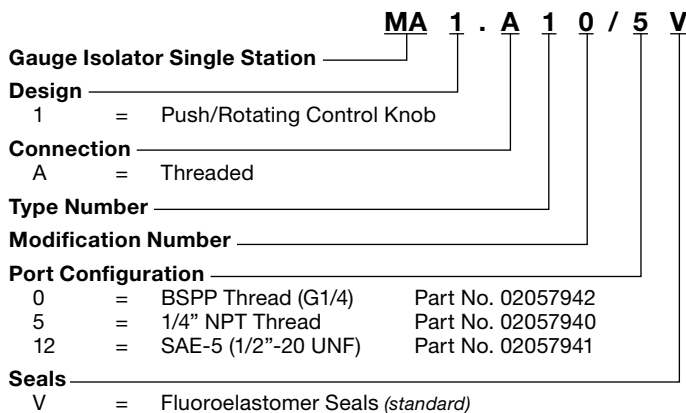
Hydraulic Symbol



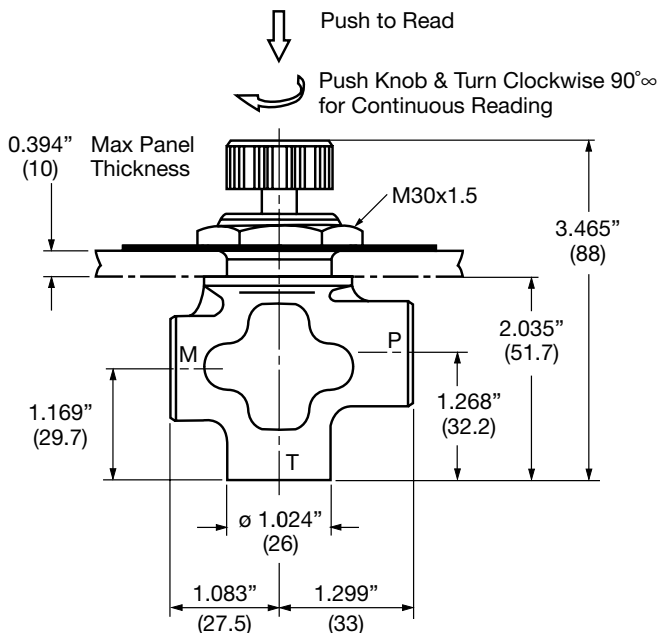
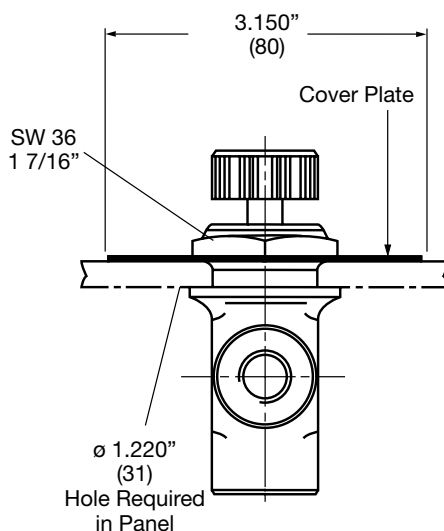
Push to Read

Push Knob & Turn Clockwise 90°∞
for Continuous Reading

Model Code



Dimensions



Notes:

1. Dimensions are in inches (mm).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

GAUGE ISOLATORS

MSL Series

Zero Leakage Multi-Station Gauge Isolators with Integral Gauge



Specifications

Mounting Method

- Flange mounting via four 1/4" bolts. It is recommended that the measuring points with pressures of over 1450 psi (100 bar) be arranged symmetrically. Ports not in use should be plugged.

Weight

- 3.8 lbs. / 1.7 kg.

Mounting Position

- Optional

Fluids

- General purpose hydraulic oil. For other fluids, contact **HYDAC** for information.

Type of Connections

- 6 measuring points
- 1 tank connection

Hydraulic Data

Operating Pressure Range

- Max. operating pressure at measuring points 1- 6 4500 psi (315 bar)
- Max. Tank connection pressure 145 psi (10 bar)

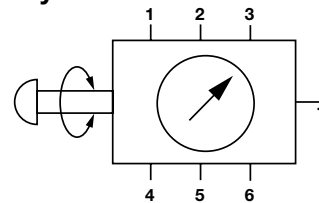
Fluid Temperature Range

- - 5° to 160°F (-20° to 70°C)

Gauge Accuracy

- Built-in gauge accuracy is $\pm 1.6\%$ of the max. scale value at 68°F (20°C). The error per additional 50°F (10°C) temperature increase is +0.3% and 50°F (10°C) temperature reduction is -0.3%. Values are based on red scale indication.

Hydraulic Symbol



Model Code

MSL 2 G 2 . 0 / 315 V

Multi-Station Gauge Isolator

MSL = Zero Leakage Model

Model

2 = with Built-in Pressure Gauge

Type and Size of Connection (All Ports)

G = 1/4" NPT

H = SAE-4 (7/16"-20 UNF)

A = BSPP (G1/4)

Type Number

Modification Number

Gauge Indication Range

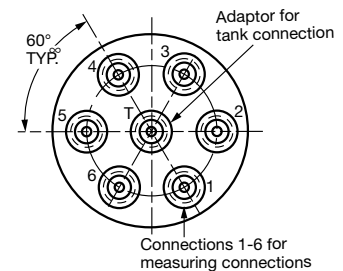
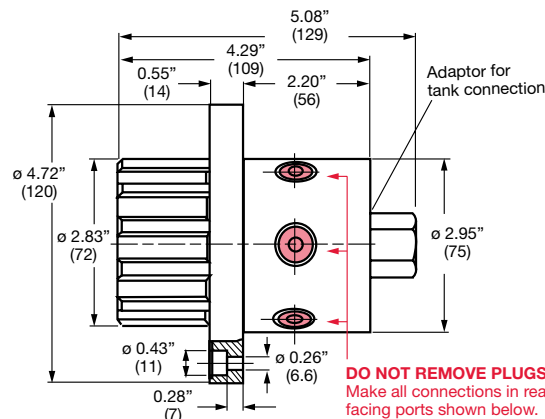
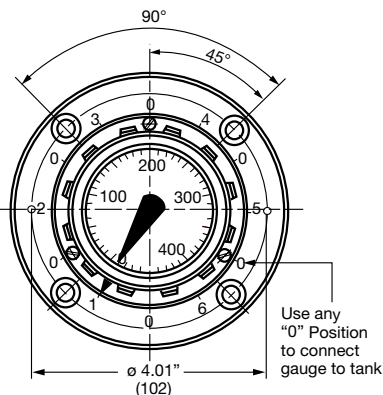
Size	Operating Pressure Zone (Black Scale)	Over Pressure Zone (Red Scale)
40	0 - 570 psi (0 - 40 bar)	570 - 900 psi (40 - 63 bar)
63	0 - 900 psi (0 - 63 bar)	900 - 1400 psi (63 - 100 bar)
100	0 - 1400 psi (0 - 100 bar)	1500 - 2300 psi (100 - 160 bar)
180	0 - 2600 psi (0 - 180 bar)	2600 - 3600 psi (180 - 250 bar)
315	0 - 4500 psi (0 - 315 bar)	4500 - 5700 psi (315 - 400 bar)

Supplementary Details

(omit) = Buna Seals

V = Viton Seals

Dimensions



Notes:

1. Dimensions are in inches (mm).

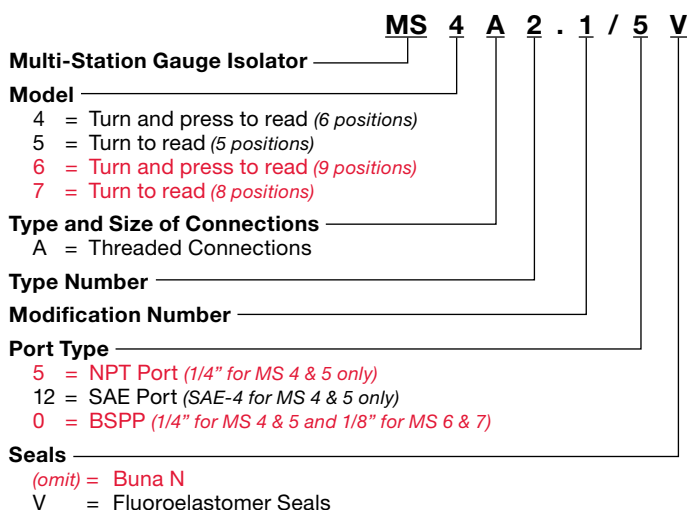
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

MS Series

Multi-Station Gauge Isolators



Model Code



Specifications

Mounting Method

- Flange mounting via four 1/4" bolts. It is recommended that the measuring points with pressures of over 1450 PSI / 100 Bar be arranged symmetrically. Ports not in use should be plugged.

Weights

- MS 4 & MS 5** 3.1 lbs. / 1.4 kg.
- MS 6 & MS 7** 4.2 lbs. / 1.9 kg.

Mounting Position

- Optional

Fluids

- General purpose hydraulic oil. For other fluids, contact the HYDAC office for information.

Types of Connections

- MS 4 / MS 6**
 1 gauge connection (M)
 1 tank connection (T)
- MS 5 / MS 7**
 1 gauge connection (M)
 1 tank connection (T)
 1 leakage connection (L)

Hydraulic Data

Operating Pressure Range

- MS 4 / MS 5 / MS 6 / MS 7**
 Max. operating pressure range at measuring points
 4500 psi (315 bar)
- Max. tank and leakage connection pressure 145 psi (10 bar)

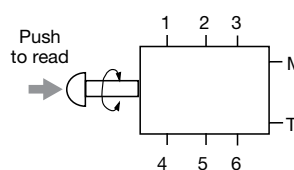
Fluid Temperature Range

- 5° to 160°F (-20° to 70°C)

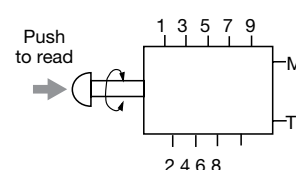
Hydraulic Symbol

M = Gauge (measuring) connection
 T = Tank connection
 L = Leakage connection

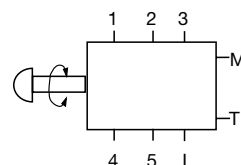
Type MS 4



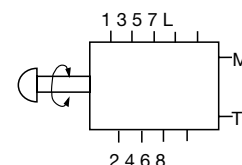
Type MS 6



Type MS 5



Type MS 7

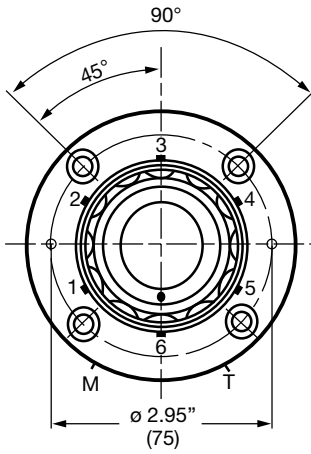


See dimensions next page.

GAUGE ISOLATORS

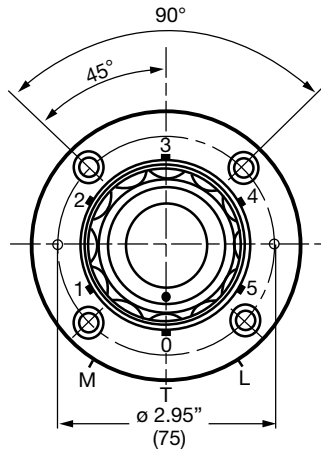
Dimensions

Type MS 4

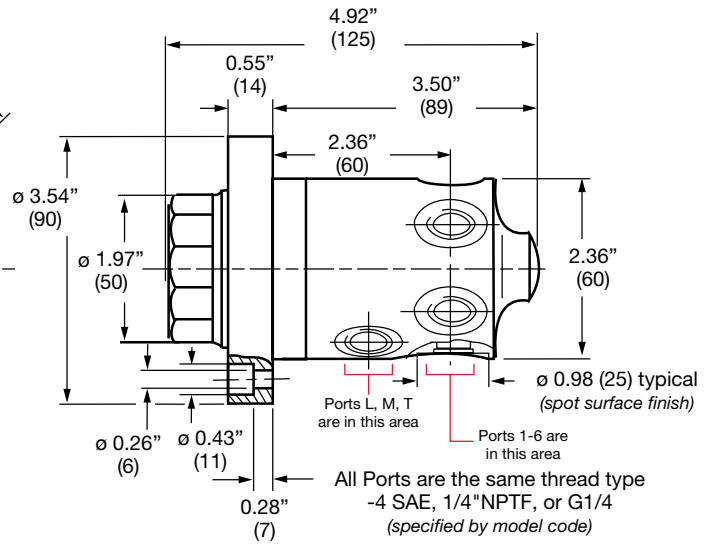


Push to read pressure,
release to connect
gauge back to tank

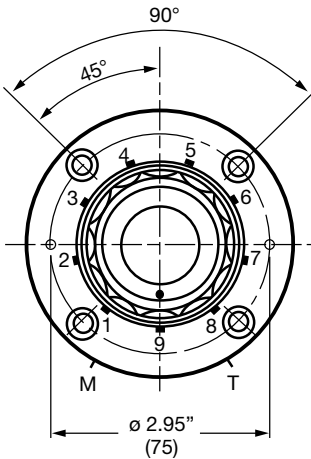
Type MS 5



Turn to "0" position
to connect
gauge back to tank

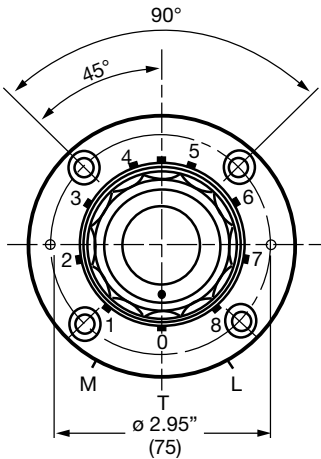


Type MS 6

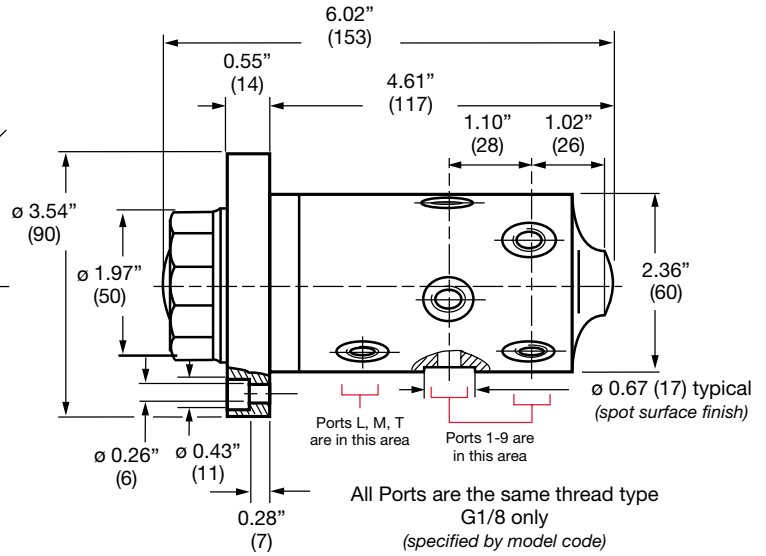


Push to read pressure,
release to connect
gauge back to tank

Type MS 7



Turn to "0" position
to connect
gauge back to tank



Notes:

1. Dimensions are in inches (mm) and lbs (kg).
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

Gauges

2 1/2" face - 1/4" NPT Connection



Specifications

Accuracy: ±1.5% of span
Scale: PSI outside in black
 BAR inside in red
Connection: 1/4" NPT male

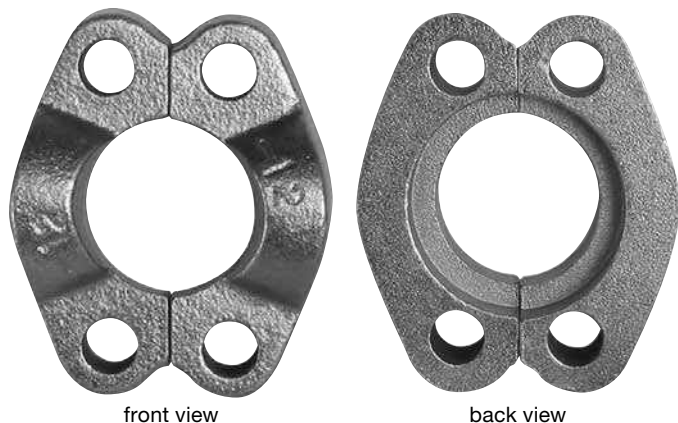
Materials

Case: Stainless Steel
Ring: Polished SS, crimped
Wetted Parts: Copper Alloy
Window: Polycarbonate
Dial: White ABS
Pointer: Black Aluminum
Liquid Filling: Glycerine

Model Code	Part Number	Pressure Range	Connection - 1/4" NPT
HPG-63-1000-LM	02701547	0 to 1000 psi	Lower Mount (LM)
HPG-63-1500-LM	02701548	0 to 1500 psi	Lower Mount (LM)
HPG-63-2000-LM	02701549	0 to 2000 psi	Lower Mount (LM)
HPG-63-3000-LM	02701550	0 to 3000 psi	Lower Mount (LM)
HPG-63-5000-LM	02701551	0 to 5000 psi	Lower Mount (LM)
HPG-63-2000-CBM	02701552	0 to 2000 psi	Center Back Mount (CBM)

Split Flanges

SAE Code 61 & 62



front view

back view

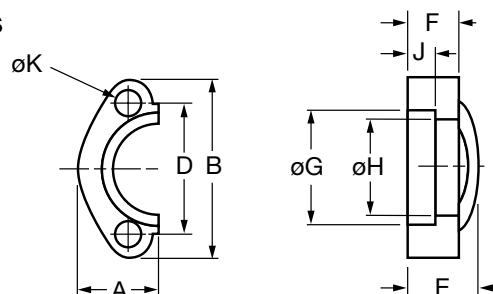
Materials

- Plated Carbon Steel
- Stainless Steel

Pressure Rating

- Code 61: 3000 psi
- Code 62: 5000 psi

Dimensions



Code 61 Split Flanges (sold in pairs - each pair makes a single connection)

Size	Part Number (Carbon Steel)	Part Number (Stainless Steel)	A	B	D	E	F	ØG	ØH	J	ØK
0.50	02701585	02701539	0.86	2.12	1.50	0.75	0.50	1.22	0.96	0.245	0.344
0.75	02055588	02701540	0.98	2.56	1.88	0.88	0.56	1.53	1.27	0.245	0.406
1.00	02055704	02700970	1.11	2.75	2.06	0.94	0.62	1.78	1.52	0.295	0.406
1.25	02055715	02701541	1.39	3.12	2.31	0.88	0.56	2.03	1.72	0.295	0.469
1.50	02055720	02700919	1.58	3.69	2.75	1.00	0.62	2.41	2.00	0.295	0.531
2.00	02055735	02701542	1.86	4.00	3.06	1.03	0.62	2.84	2.47	0.355	0.531

Code 62 Split Flanges (sold in pairs - each pair makes a single connection)

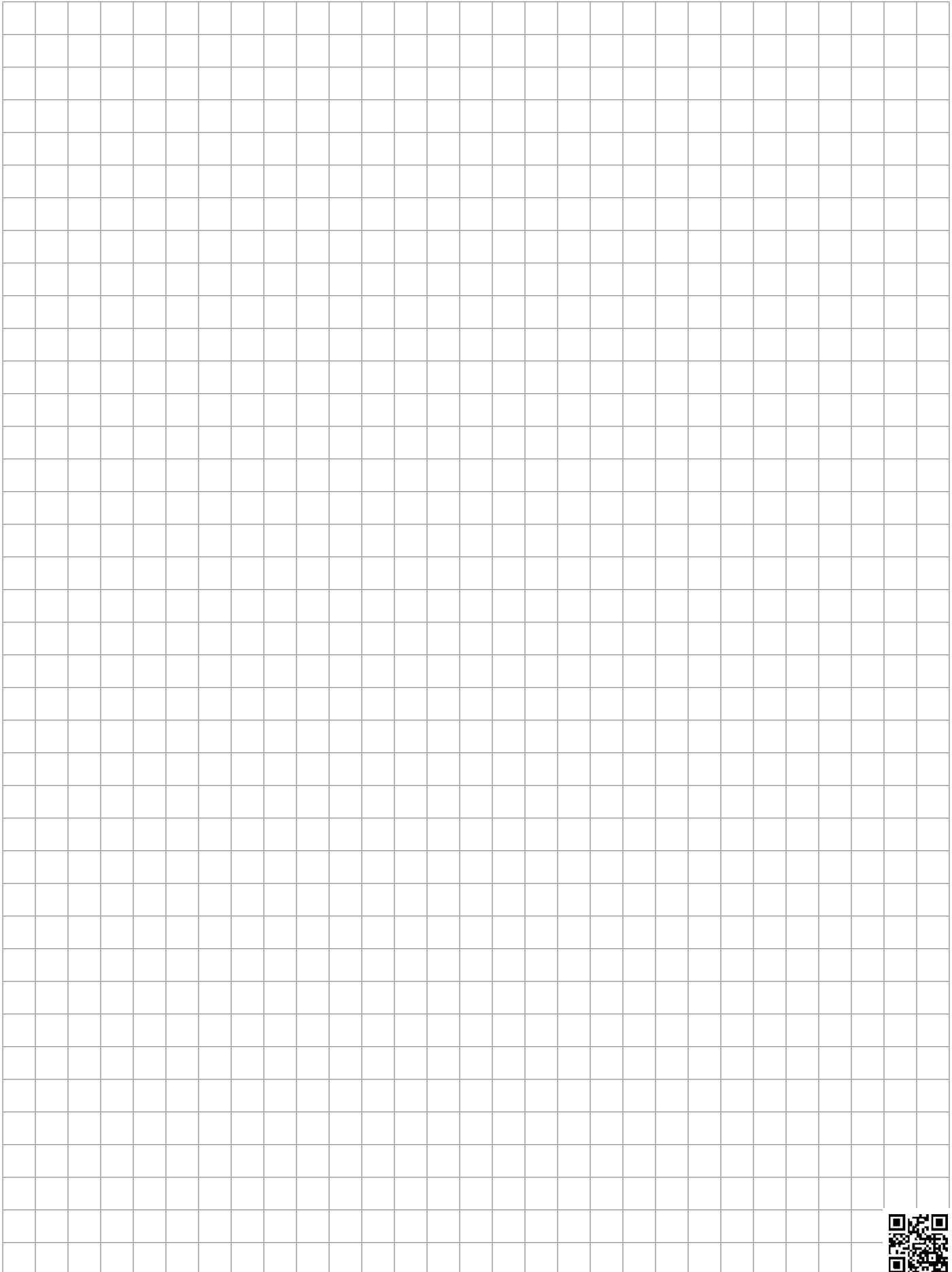
Size	Part Number (Carbon Steel)	Part Number (Stainless Steel)	A	B	D	E	F	ØG	ØH	J	ØK
0.50	02701585	02701537	0.89	2.22	1.59	0.88	0.62	1.28	0.97	0.285	0.344
0.75	02055882	02700540	1.14	2.81	2.00	1.12	0.75	1.66	1.28	0.325	0.406
1.00	02055883	02700916	1.33	3.19	2.25	1.31	0.94	1.91	1.53	0.355	0.469
1.25	02055889	02701538	1.48	3.75	2.63	1.50	1.06	2.16	1.75	0.385	0.531
1.50	02055890	02700544	1.83	4.44	3.13	1.69	1.19	2.53	2.03	0.475	0.656
2.00	02055891	02700847	2.20	5.25	3.81	2.06	1.44	3.16	2.66	0.475	0.781

Notes:

1. Dimensions are in inches.
2. Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

GAUGES & SPLIT FLANGES

Notes



Ordering HYDAC Literature...

HYDAC literature is available for ordering. Email us at HYD.catalog@hydac-na.com using the appropriate Part Number (PN) and name. Other brochures, manuals and technical documents are also available when ordering from our website.



Overview Brochure
PN02088157



Filters Catalog
PN02081318



Accumulators Catalog
PN02068195



Compact Hydraulics
Catalog* (online only)



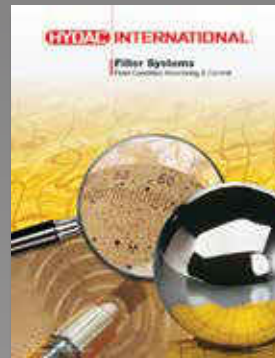
Elec. Sensors & Controls
Brochure PN2205620



Standard Coolers
Catalog - PN02085359



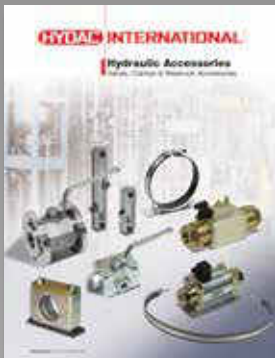
Filter Systems Catalog
PN02075860



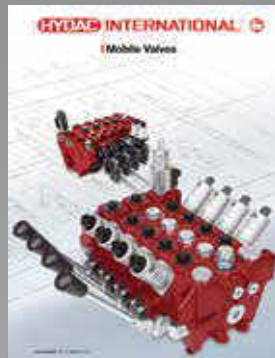
Control Technology*
Catalog (online only)



Accessories Catalog
PN02080105



Mobile Valves Brochure
PN02092408



Hydraulic Cylinders
Brochure PN2204454



Process Technology*
Catalog (online only)



*These catalogs are digital file versions only.

Various market and product brochures are also available for ordering.



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