Overview

Breather & Filler Breather Product Range

Model

Techical Details	BF10	ELF10	BF4	ELF4	BF30	ELF30	BF3	ELF3	BF7
GPM (cfm) (at Δp = 0.01 bar)	53 (7)	53 (7)	33 (4.4)	33 (4.4)	105 (14)	105 (14)	105 (14)	105 (14)	260 (35)
GPM (cfm) (at Δp = 0.04 bar)	100 (13)	100 (13)	90 (12)	90 (12)	230 (31)	230 (31)	230 (31)	230 (31)	475 (63)
Cap Material	Polyamide	Polyamide	Steel	Steel	Polyamide	Polyamide	Steel	Steel	Polyamide
Strainer Material	N/A	Polyamide	N/A	Polyamide	N/A	Polyamide	N/A	Polyamide	N/A
Replaceable Element	No	No	No	No	No	No	No	No	Yes
Connection Type	Threaded	Flanged	Threaded	Flanged	Threaded	Flanged	Threaded	Flanged	Threaded
Connection Size(s)	G 1/4, 1/2 NPT, M22, SAE-12	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	G 1, 3/4 NPT, SAE-16
Element Media	3 µm paper	3 µm paper	3 or 10 µm paper	3 or 10 µm paper	3 or 10 µm paper	3 or 10 µm paper	3 or 10 µm paper	3 or 10 µm paper	3 or 10 µm paper

Options

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

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

See other Breather options available on page 107.

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 or 10 µm paper	3 or 10 µm paper	3 or 10 µm paper

Techical 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 or 10 µm paper	3 or 10 µm paper	3 or 10 µm paper	3 or 10 µm paper	1 or 2 µm betamicron	2 µm betamicron

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/ELF 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 if you have any questions).

See other Breather options available on page 107.

BL Series (pages 119-120)

Specifications:

- Maximum flow rate: 110 SCFM/850 GPM
- 3 or 10 micron
- Steel Canister
- 10 micron Betamicron®
- Replaceable element

BD Series (pages 121-126)

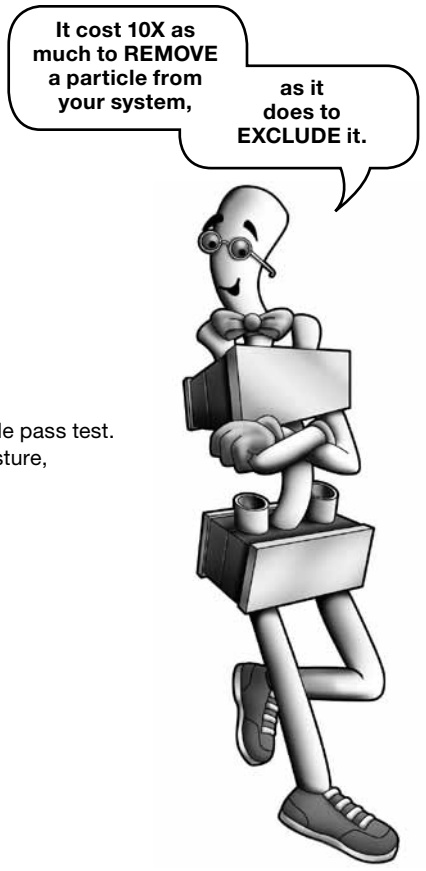
Specifications

- Durable ABS plastic and impact-modified Plexiglas
- 2 micron, 100% efficiency
- Airflow up to 100 scfm (750 gpm)

Breathers & Filler Breather Technical Overview

Importance of Breathers

Breathers are a 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 out-weigh 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 3µm breathers: d99.85 = 3 µm
- For 10µm breathers: d100 = 10 µm

The d100 rating means that 100% of 10 µm particles are captured by the breather during a standard ISO single pass test.

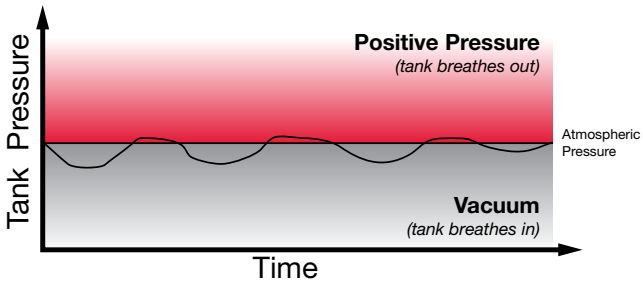
Standard elements are made of phenolic resin impregnated paper, which provides resistance to moisture, ensuring proper filtration over the operational service life of your breather.

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

Tank Pressure Using a Standard Breather

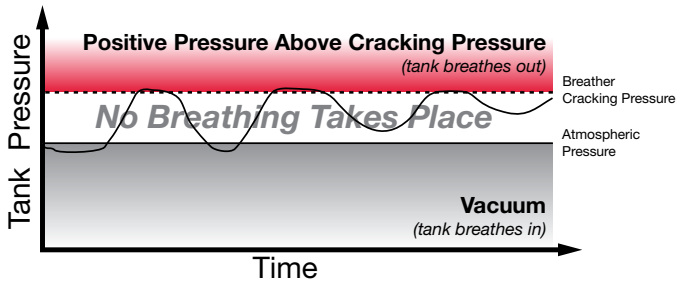


When fluid level rises, the tank pressure rises and air is immediately expelled through the breather whenever positive pressure exists.

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



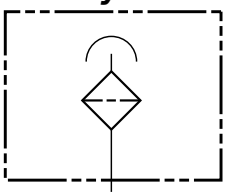
When fluid level rises, the existing air volume is compressed, and no air is expelled until the cracking pressure is surpassed.

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

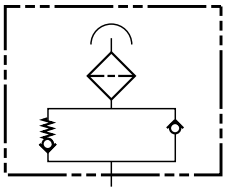
Air is only expelled when the tank pressure is *above the cracking pressure, and air is only drawn in below atmospheric pressure*. The majority of the operational cycle will take place between these two conditions.

BF...3 & BF...4 Series

Hydraulic Symbols



standard



with relief valve *(BF3 only)*

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

Model Code

BF P 3 G 10 W 1.0 / _

Filter Type
BF = Breather

Filter Element Material
P = Phenolic Resin Impregnated Paper

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

Type of Connection
G = Threaded

Filtration Rating *(micron)*
3 = 3µm Air Filtration
10 = 10µm Air Filtration

Gauge Options
W = Without Indicator

Modification Number

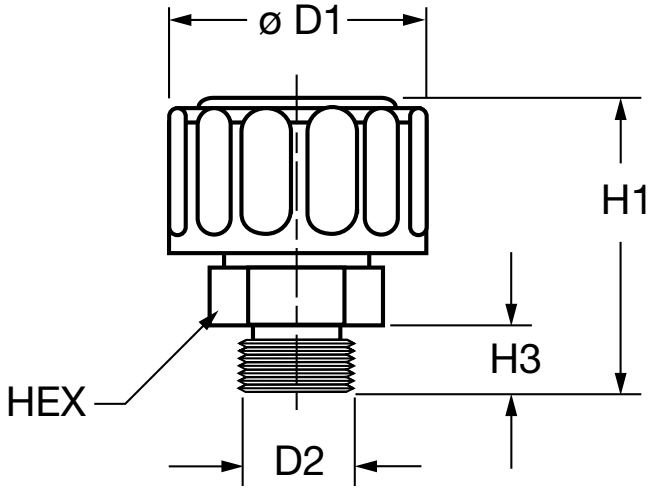
	Connection Type G (BSPP) Thread	Rel. Press.	N (NPT) Thread	Rel. Press.
BF 3…**1.0** =	G 3/4	–	3/4 NPT	–
BF 3…**2.0** =	G 3/8	–	–	–
BF 3…**3.0** =	G 1/2	–	–	–
BF 3…**4.0** =	G 3/4	0.4 bar	3/4 NPT	0.4 bar
BF 3…**5.0** =	G 3/4	0.7 bar	3/4 NPT	0.7 bar
BF 3…**6.0** =	G 3/4	0.2 bar	3/4 NPT	0.2 bar
BF 4…**1.0** =	G 1/4	–	–	–

Supplementary Details
(omit) = standard
RV = Relief Valve *(for use on pressurized tanks) (BF3 only)*

Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability

Not all combinations are available

Dimensions

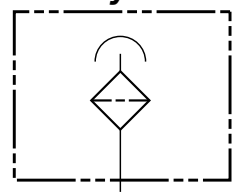


Size	ø D1	D2 (male)	H1	H3	HEX
BF 3...1.0 BF 3...RV	2.99” (76mm)	G 3/4 (ISO 228)	3.11” (79mm)	0.63” (16mm)	1 7/16” (36mm)
BF 3...2.0	2.99” (76mm)	G 3/8 (ISO 228)	2.83” (72mm)	0.47” (12mm)	7/8” (22mm)
BF 3...3.0	2.99” (76mm)	G 1/2 (ISO 228)	2.99” (76mm)	0.55” (14mm)	1 1/16” (27mm)
BF 4...1.0	1.73” (44mm)	G 1/4 (ISO 228)	2.44” (62mm)	0.53” (13.5mm)	11/16” (17mm)

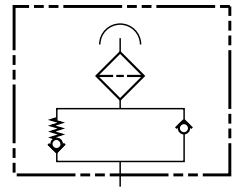
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

BF...10 Series

Hydraulic Symbols



standard



with relief valve

Specifications

- Maximum Flow Rate 13 scfm / 100 gpm at 0.04 bar
- Durable synthetic material (PA6)
- Filtration Rating 3 µm
- 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

Model Code

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

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 = 3µm Air Filtration

Gauge Option
W = Without Indicator

Modification Number

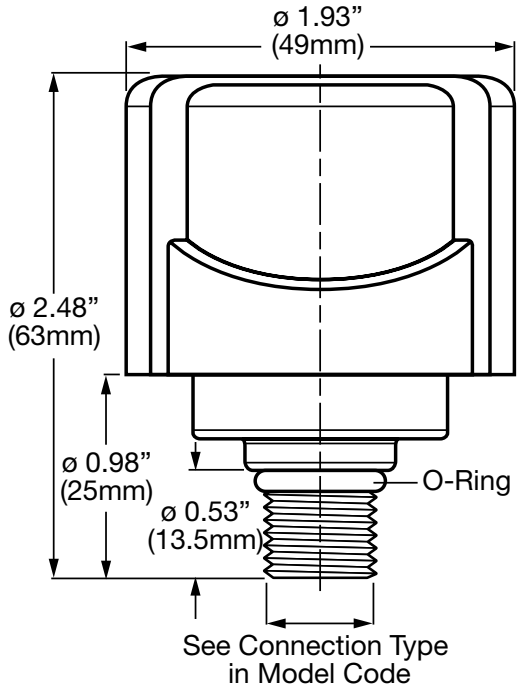
	Connection Type			
	G (BSPP)	N (NPT)	U (SAE)	M (Metric)
1.0	G 1/4	1/2 NPT	–	M22x1.5
2.0	*G 1/2*	–	–	*M18x1.5*
3.0	–	–	SAE-12	–

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)*

Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability

Not all combinations are available

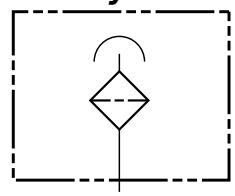
Dimensions



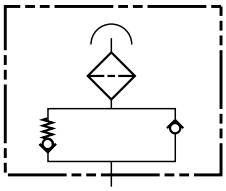
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

BF...30 Series

Hydraulic Symbols



standard



with relief valve

Specifications

- Maximum flow rate - 31 scfm / 230 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 or 10 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

Model Code

BF P 30 G 3 W 1.0 / _

Filter Type
BF = Breather

Filter Element Material
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
10 = 10µm Air Filtration

Gauge Options
W = Without Indicator

Modification Number

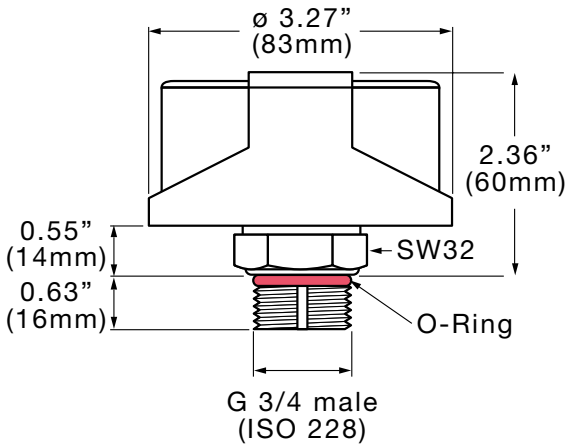
	Connection Type			
	G (BSPP)	N (NPT)	U (SAE)	M (Metric)
1.0 =	G 3/4	3/4 NPT	SAE-12	M42x2
2.0 =	–	1 NPT	–	M30x1.5

Options
(omit) = none
RV0.4 = Relief Pressure 6 psi (0.4 bar)
AS = Anti-Splash protection *(only for version without RV)*

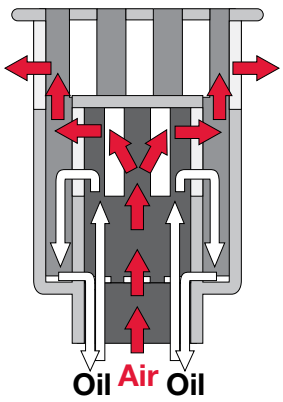
Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability

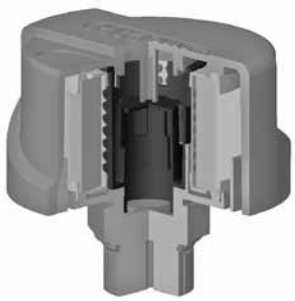
Not all combinations are available

Dimensions



Anti-Splash

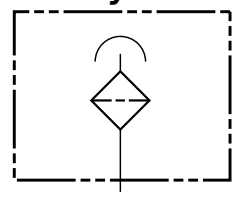




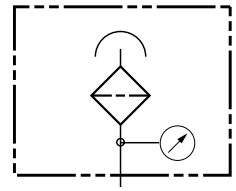
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

BF...7 Series

Hydraulic Symbols



standard



with indicator

Specifications

- Maximum flow rate - 63 scfm / 475 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 or 10 micron
- Replaceable element Phenolic resin impregnated paper
- Threaded breather cap connection
- Differential gauge *(optional)*
- -22° to 212°F (-30° to 100°C)

Model Code

BF P 7 G 3 K 1.0 / __

Filter Type
BF = Breather

Filter Element Material
P = Phenolic Resin Impregnated Paper

Size
7

Type of Connection
G = Threaded BSPP
N = Threaded NPT *(consult factory)*
U = Threaded SAE *(consult factory)*

Filtration Rating *(micron)*
3 = 3µm Air Filtration
10 = 10µm Air Filtration

Gauge Options
W = Without Indicator
K = With Indicator - Range: -14.5 to 9 psi (-1 to 0.6 bar)

Modification Number

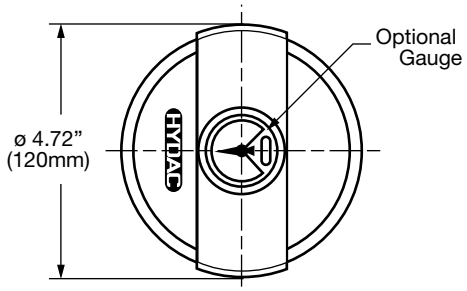
	Connection Type		
	G (BSPP)	N (NPT)	U (SAE)
1.0 =	G 1	3/4 NPT	SAE-16

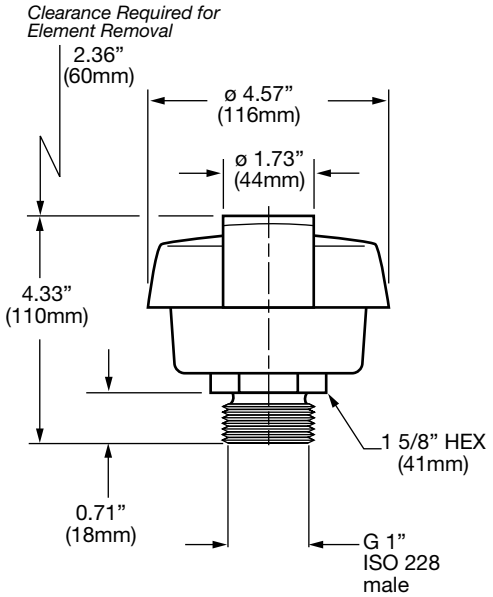
Options
AS = Anti-Splash protection

Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability

Not all combinations are available

Dimensions





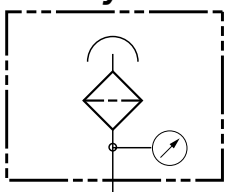
Replacement Elements

Micron	Model Code	Part No.
3	0007L003P	00310948
10	0007L010P	00310485

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

BF...7/72 Series
Breathers with Visual Indicator

Hydraulic Symbols



with indicator

Specifications

- Maximum flow rate - up to 74 scfm / 555 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 or 10 micron
- Replaceable element
- Phenolic resin impregnated paper
- Threaded or flanged breather connection
- Visual indicator *(see below)*
- -22° to 212°F (-30° to 100°C)

Model Code

BF P 7 F 3 UBM 0 . 0

Filter Type
BF = Breather

Filter Element Material
P = Phenolic Resin Impregnated Paper

Size
7 (63 scfm / 475 gpm)
72 (74 scfm / 555 gpm)

Type of Connection
F = Flanged
G = Threaded

Filtration Rating *(micron)*
3 = 3µm Air Filtration
10 = 10µm Air Filtration

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

Tank Connection
0 = with 6 hole flange to DIN 24557/2 *(F connection)*
2 = 3/4" BSPP male *(G connection)*
3 = 1 1/2-16 UN-2B female *(G connection)*
(use with BL 160 adapters - see page 118)

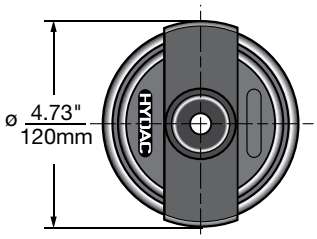
Modification Number
0 = Standard

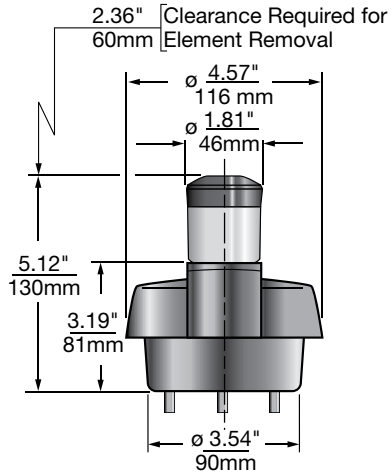
Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability

Not all combinations are available

Dimensions

BFP7F...0.0 version shown with 6 hole flange





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

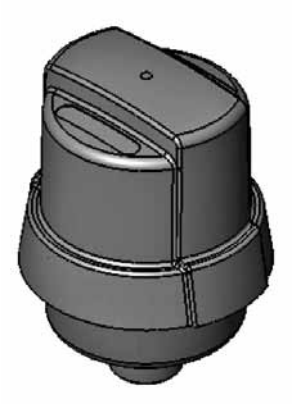
01279244

Replacement Elements

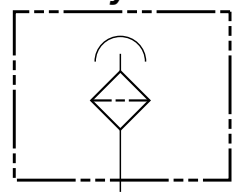
Micron	Model Code	Part No.
3	0072L003P	03269023
10	0072L010P	03190037
3	0007L003P	00310948
10	0007L010P	00310485

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

BF...72 Series



Hydraulic Symbols



standard

Specifications

- Maximum flow rate - 74 scfm / 555 gpm at 0.04 bar
- Durable synthetic material (PA6)
- 3 or 10 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)

Model Code

BF P 72 G 3 W 1 . 0

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
10 = 10µm Air Filtration

Gauge Options
W = Without Indicator

Tank Thread Connection (ISO 228)
1 = G 1 (1" BSPP)

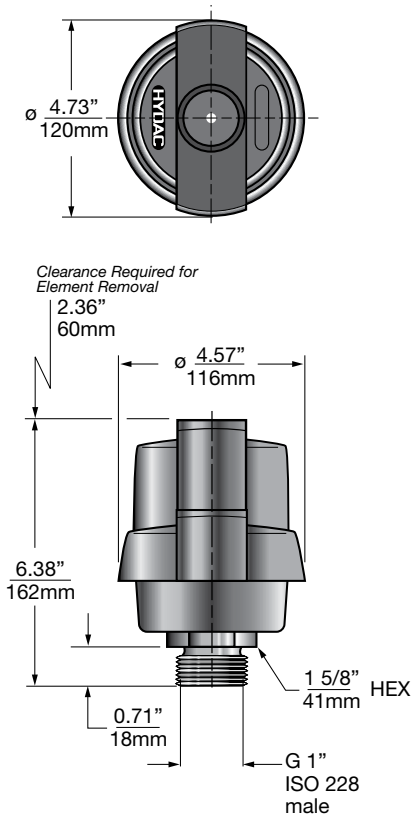
Modification Number
0 = Standard

Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability

Not all combinations are available

Dimensions

BFP7G...1.0 version shown



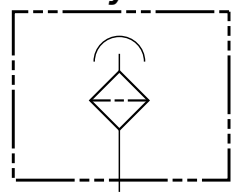
Replacement Elements

Micron	Model Code	Part No.
3	0072L003P	03269023
10	0072L010P	03190037

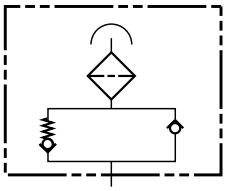
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

BF...5 Series

Hydraulic Symbols



standard



with relief valve

Specifications

- Maximum flow rate - 105 scfm / 790 gpm at 0.01 bar
- Steel housing
- 3 or 10 micron
- Replaceable element
- G2 1/2 female threaded connection
- Phenolic resin impregnated filter element

Model Code

BF P 5 G 3 W 1 . 0 /

Filter Type
BF = Breather

Filter Element Material
P = Phenolic Resin Impregnated Paper

Size
5

Type of Connection
G = Threaded

Filtration Rating *(micron)*
3 = 3µm Air Filtration
10 = 10µm Air Filtration

Gauge Options
W = Without Indicator

Tank Thread Connection *(ISO 228)*
1 = G 2 1/2 (standard)

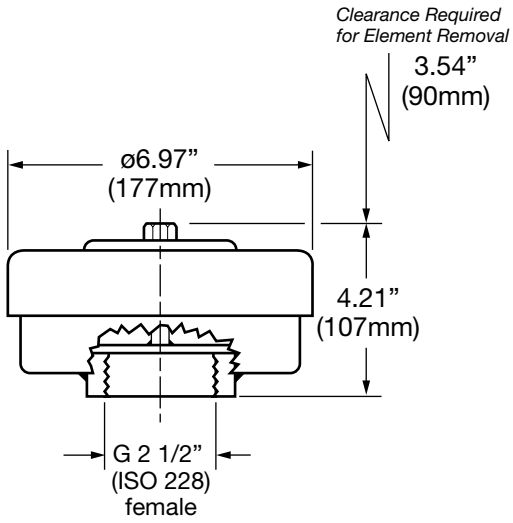
Modification Number
0 = Standard

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

Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability

Not all combinations are available

Dimensions



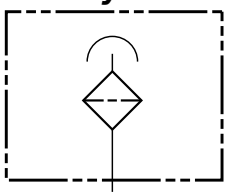
Replacement Elements

Micron	Model Code	Part No.
3	0005L003P	00309450
10	0005L010P	00306097

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

BF...52 Series

Hydraulic Symbols



Specifications

- Maximum flow rate - 176 scfm / 1320 gpm at 0.01 bar
- Steel housing
- 3 or 10 micron
- Replaceable element
  (uses 2 of the standard size 5 elements)
- Phenolic resin impregnated paper
- G 2 1/2" female threaded connection

Model Code

BF P 52 G 3 W 1 . 0

Filter Type
BF = Breather

Filter Element Material
P = Phenolic Resin Impregnated Paper

Size
52

Type of Connection
G = Threaded

Filtration Rating *(micron)*
3 = 3µm Air Filtration
10 = 10µm Air Filtration

Gauge Options
W = Without Indicator

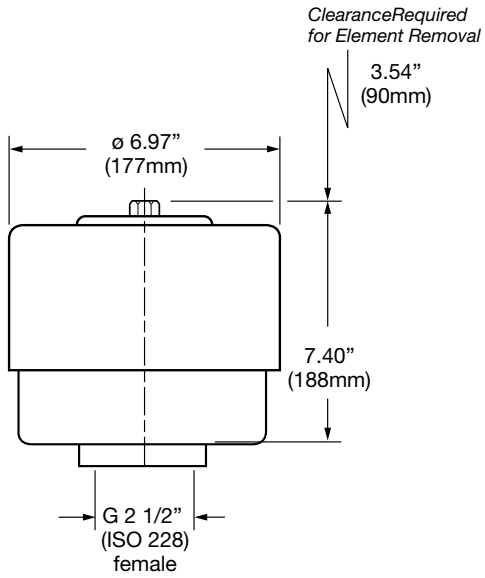
Connection Type
1 = G 2 1/2 (standard)

Modification Number
0 = Standard

Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability

Not all combinations are available

Dimensions



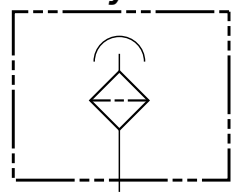
Replacement Elements

Micron	Model Code	Part No.	Qty Req.
3	0005L003P	00309450	2
10	0005L010P	00306097	2

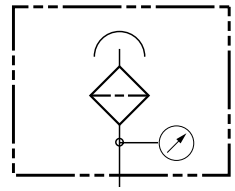
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

BF...8 Series

Hydraulic Symbols



standard



with indicator

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

Model Code

BF BN 8 F 1 A 1.0

Filter Type
BF = Breather

Filter Element Material
BN = Betamicron®

Size
8

Type of Connection
F = Flanged (DN 93, 4 bolt)

Filtration Rating *(micron)*
1 = 1µm Air Filtration
2 = 2µm Air Filtration

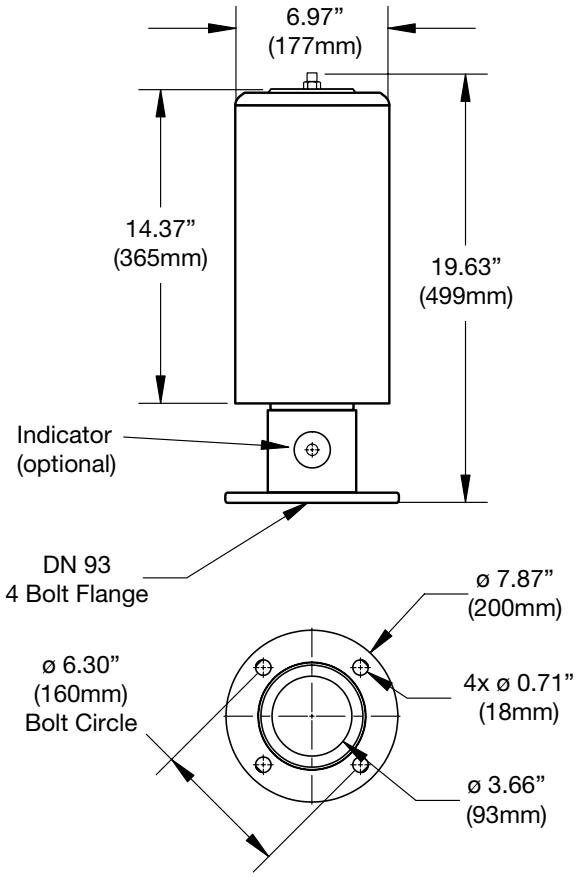
Gauge Options
A = Without Indicator
K = With Indicator Gauge (-1 bar to 0.6 bar)

Modification Number
1.0 = Standard

Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability

Not all combinations are available

Dimensions



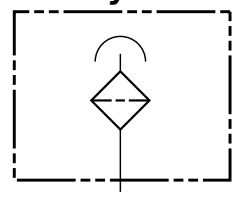
Replacement Elements

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

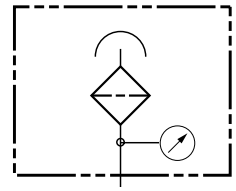
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm) and lbs./(kg.)

BF...9 Series
Breathers with Oil Mist Trap

Hydraulic Symbols



standard



with indicator

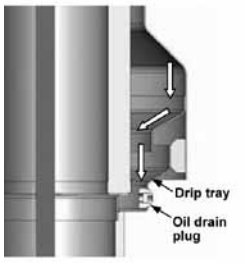
Specifications

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

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.



Model Code

BF BN 9 F 2 A 1.0

Filter Type
BF = Breather

Filter Element Material
BN = Betamicron® Element

Size
9

Type of Connection
F = Flanged

Filtration Rating *(micron)*
2 = 2µm Air Filtration

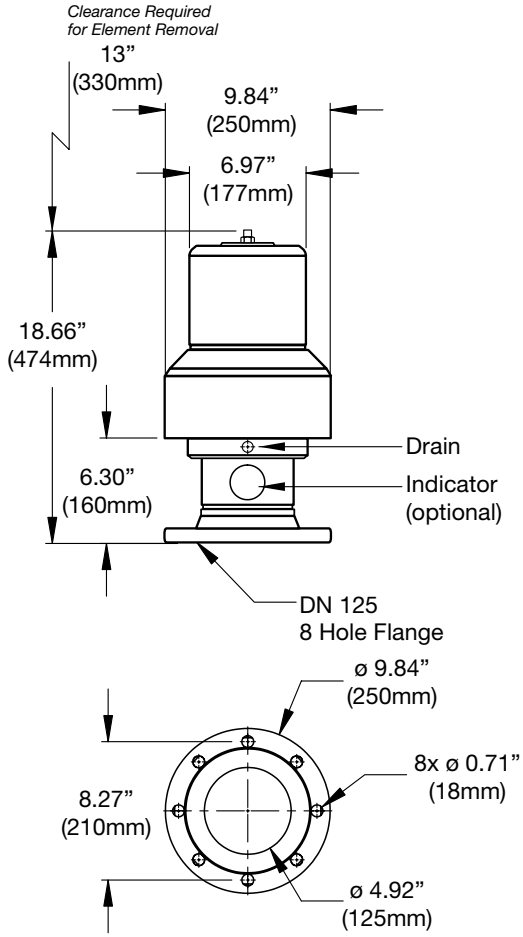
Gauge Options
A = Without Indicator
K = With Indicator - Range: -14.5 to 9 psi (-1 to 0.6 bar)

Modification Number
1.0 = Standard

Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability

Not all combinations are available

Dimensions



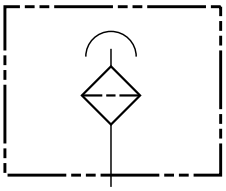
Replacement Elements

Micron	Model Code	Part No.
2	0009L002BN	01287471

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

BL Series
Spin-on Breathers

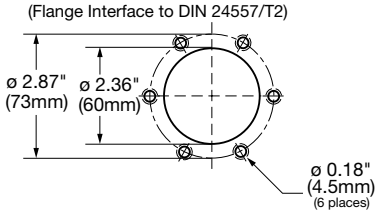
Hydraulic Symbols



Specifications:

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

Mounting Hole Pattern for Flange Connection (F)
(Flange Interface to DIN 24557/T2)



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 = Betamicron®
- 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 *(gasket included, does not include mounting hardware)*
- S = Weld Fitting

Available in sizes BL 160 and BL 180 Only

Filtration Rating *(micron)*
- 3 = 3µm Air Filtration *(paper only)*
- 10 = 10µm Air Filtration

Gauge Options
- W = Without Indicator

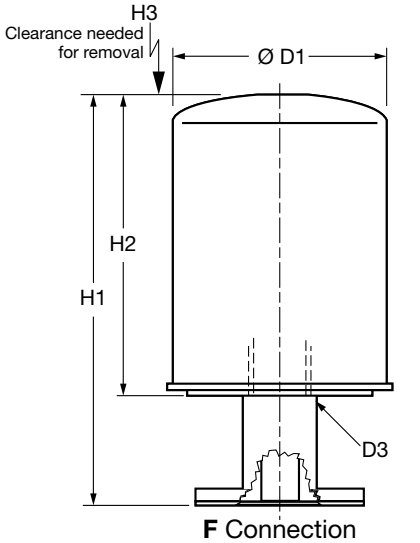
Type Number

	Size	Tank Connection
1 =	BLT 160	1 1/4" NPT Thread, Flange, or Weld Fitting
2 =	160/180	1 1/4" NPT Thread, Flange, or Weld Fitting
3 =	080	3/4" NPT Thread

Modification Number *(standard)*

Model Codes containing selections listed in RED italics are non-standard items – Minimum quantities will apply
Contact HYDAC for information and availability
Not all combinations are available

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)

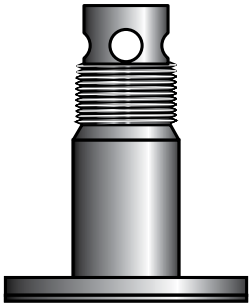
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches/(mm)

Breather Components

Replacement Elements

Size	10 micron Paper	3 micron Paper	10 micron Betamicron®	3 micron BLT Desiccant
80	0080MA010P 02058058	0080MA003P 02058079	0080MA010BN 02059424	N/A
160	0160MA010P 02058116	0160MA003P 02058114	0160MA010BN 02059436	0160MU003M 01265765
180	0180MA010P 02058121	0180MA003P 02057912	0180MA010BN 02059440	N/A

Adapters



Fiber Gasket Sold Separately
Order Part Number 00247102

Size	G Threaded Adapter	F Flanged Adapter	S Welded Adapter
80	ADAPTER BL 080G 3/4" NPT NBR 02064393	N/A	N/A
160 180	ADAPTER BL 160/180 G 1 1/4" NPT NBR 02064394	ADAPTER BL 160/180 F (PHOS) 00407646 *(w/out Gasket)* 02073864 *(w/ Gasket)*	ADAPTER BL 160/180 S (PHOS) 00416311

Weights

Model	lbs.	kg.
ELF 3	0.55	0.25
ELF E RV	0.66	0.30
ELF 4	0.44	0.20
ELF 5 (type no. 2)	5.95	2.70
ELF 5 (type no. 3)	6.83	3.10
ELF 7	0.84	0.38
BF 3	0.62	0.28
BF 3 RV	0.73	0.33
BF 4	0.18	0.08
BF 5	4.41	2.00
BF 7	0.88	0.40
BL 160	4.63	2.10
BL 80G	1.40	0.60
BL 160G	2.60	1.20
BL 180G	3.48	1.58
BL 160S	3.86	1.75
BL 180S	4.22	1.91
BLT 160	5.31	2.41

Spin-on BL80,
BL160 and BL180

Adapter Spin-on to Bayonet
Part Number 02701342

Bayonet Flange shown
on page 128.
Part Number 00002680

Engineering Data for Breathers *(Models ELF, BF & BL)*

Mounting Position:	ELF & BF BL *(spin-ons)*	Vertical *(max. 30° off vertical axis)* Vertical or Horizontal
Air Filter Material:		Phenolic Resin Impregnated Paper Note: None of the air filter elements can be cleaned.
Temperature Range:		-22° to 212°F (-30° to 100°C) Please contact HYDAC for information on extreme low or high temperature applications
Fluid Compatibility: (ISO 2943)		Compatible with all petroleum oils. Contact HYDAC office for information on other fluids.

BD Series
Drymicron

Operational Features

Bi-directional Air Flow

- Air entering is cleaned and dried. Expelled air partially regenerates the silica gel and “backflushes” the particulate filter to prolong the life of the breather.

Durable Construction

- DRYMICRON is manufactured from rugged ABS plastic and impact-modified Plexiglas.

Water Vapor Adsorbent

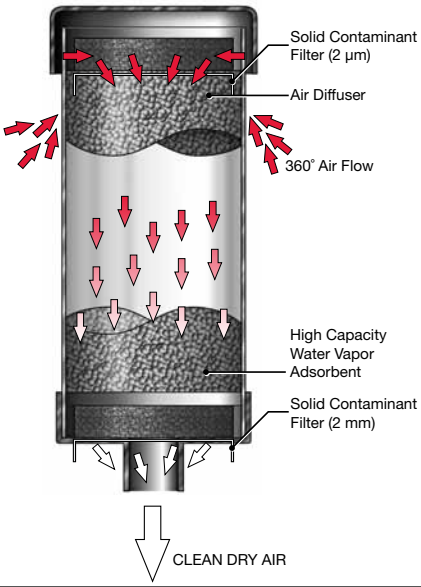
- Silica gel is chemically inert, non-toxic, and non-corrosive. The internal structure is composed of interconnected microscopic pores that adsorb up to 40% of its weight.

Color Indicator

- When maximum adsorption is reached, the silica gel turns from gold to green to indicate that replacement of the breather is required.

Safety Sealed

- Seals keep moisture from entering the units until they are placed in service. They are easily removed without tools or sharp instruments.



Description

Drymicron breathers use a three-stage filtration design to ensure optimum protection by removing water vapor and solid contaminant before they enter the fluid system.

Drymicron Breathers replace the standard breather cap or vent tube on a tank or reservoir. They are easy to install using one of several adapters designed for different applications.

When the fluid in the system is lowered, or pressure changes occur, air is drawn in through openings under the breather cap. First, air passes through a fine, 2 micron solid particle filter. The air then passes through a diffuser to ensure maximum effectiveness within the silica gel chamber.

Next, water vapor is removed as the air travels through a bed of silica gel — the highest capacity adsorbent available. After being dried, the air passes through a second 2 micron solid particle filter and enters the reservoir clean and dry!

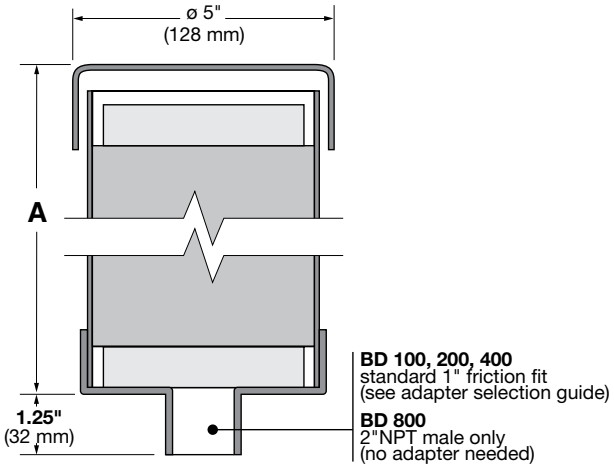
Advantages

Drymicron Breathers protect expensive equipment, increase operation efficiency, and reduce maintenance costs by:

- Eliminating corrosion
- Extending life of hydraulic, lubrication, and process fluids
- Minimizing component wear, downtime, and repairs
- Eliminating oil oxidation, additive depletion, and freezing
- Extending oil filter life

Applications

- Hydraulic Reservoirs
- Gear Boxes
- Storage Tanks



Unit Selection Guide *(adapters sold separately)*

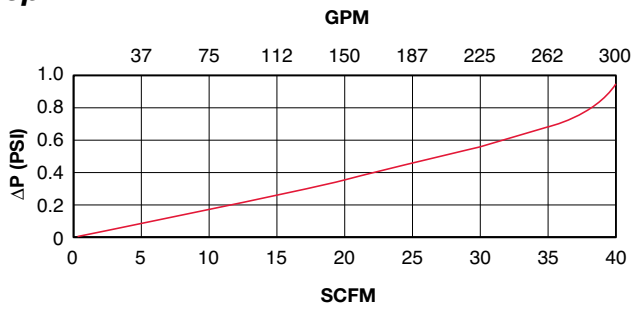
Model Code	Part No.	Height (A)	Weight	Max. H2O Capacity lbs (ltr)
BD 100 X 2 W 0.0	02074253	3.5 (90)	1.3 (0.6)	0.2 (0.1)
BD 200 X 2 W 0.0	02074254	5 (128)	1.9 (0.9)	0.4 (0.2)
BD 400 X 2 W 0.0	02074465	8 (205)	3.3 (1.5)	0.9 (0.4)
BD 800 X 2 W 0.0	02075158	10 (254)	4.9 (2.2)	1.3 (0.6)

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

Product Specifications

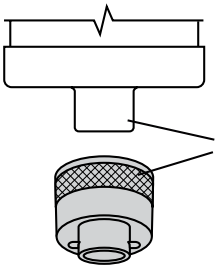
Performance		Specification
Nominal Air Flow Rate	BD 100-400	35 scfm (990 l/min) Equivalent of 260 gpm of fluid volume change
	BD 800	100 scfm (2850 l/min) Equivalent of 750 gpm of fluid volume change
Solid Contamination Filtration Level		2 micron, 100% efficiency @ 35 scfm air flow
Solid Contamination Filtration Surface area		20.6 in^2 / 133 cm^2
Operating Temperature Range		-26˚ to 200˚F (-32˚ to 93˚C)
Silica Gel:	Adsorption	Up to 40% of its weight of water
Chemical Resistance acids, salt water, and mineral or synthetic oils		Resistant to alkalis, hydrocarbons, non-oxidizing

Flow Rate vs Pressure Drop

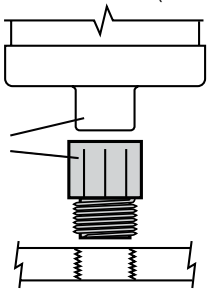


Adapters Selection Guide *(adapters sold separately - Note: no adapter needed for BD 800)*

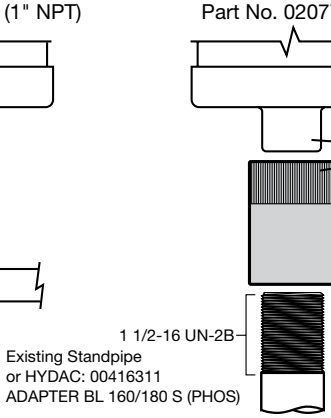
Bayonet Adapter
Part No. 02074251



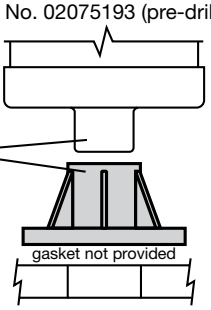
Plastic Threaded Adapter
Part No. 02074248 (3/4" NPT)
Part No. 02074249 (1" NPT)



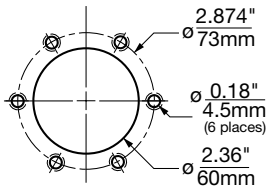
Plastic Threaded Standpipe Adapter
Part No. 02077124



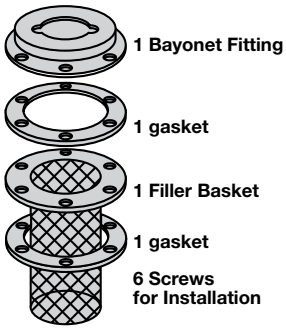
Plastic Flange Adapter
Part No. 02074250 (not drilled)
Part No. 02075193 (pre-drilled)



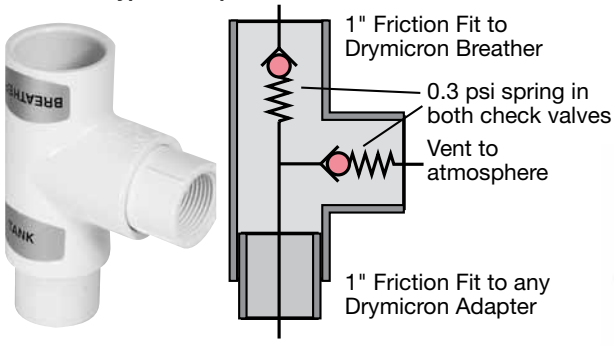
Mounting Hole Pattern for Pre-drilled Adapter
(Flange Interface to DIN 24557/T2)

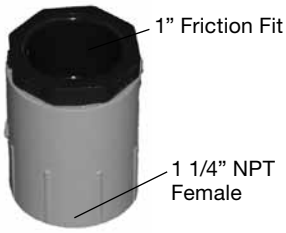


Bayonet Flange Kit with 3.5" Steel Basket
Part No. 02079076



Plastic Bypass Adapter Part No. 01278016





Plastic Adapter
Part No. 02081637

BD 900 Series

Designed for high airflow requirements

DRYMICRONS help stop oil contamination and protect your expensive equipment!

Description

A disposable desiccant cartridge screws into the top cap assembly for economical replacement when the breather has reached the end of its useful life. The BD 900 is designed for applications with airflow requirements up to 250 scfm (1875 gpm). Operating at this flow rate produces a pressure drop of less than 1 psi. Water and abrasive particles are removed before the air enters the system.

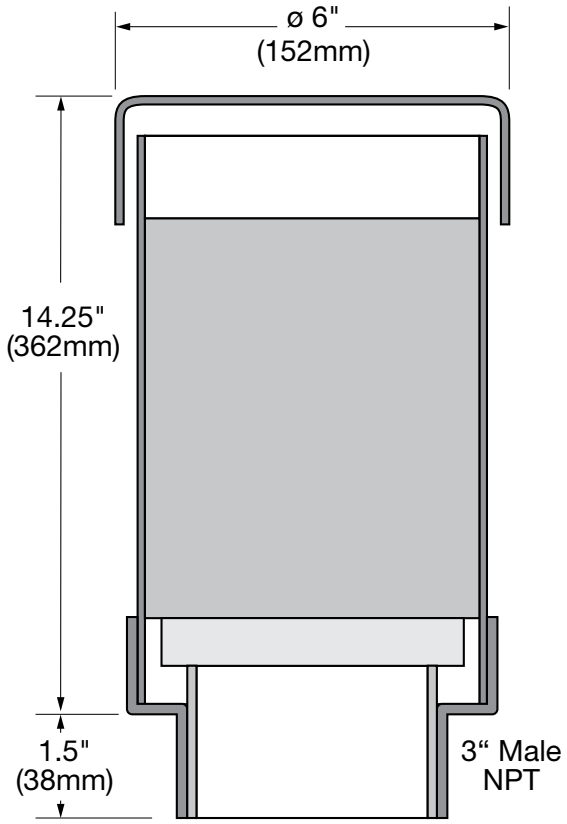
Replacement Cartridge *(top cap not included)*

BD 900 G 2W 1.0 / Cartridge

Part Number

02081633

Cap *(not included)* Replacement Cartridge



Model Code	Part Number	Rated Airflow	H2O Capacity	Mounting	Weight
BD 900 G 2 W 1.0	02080979	250 cfm / 1875 gpm	1.2 lbs / 0.54 liter	3” Male NPT	6.5 (2.9)

BDR Series
Mobile DRYMICRON

DRYMICRONS help stop oil contamination and protect your expensive equipment!

Description

HYDAC BDR Series breathers are designed for applications where gearboxes and reservoirs are subjected to continuous vibration such as railroad maintenance equipment, off-road vehicles, mining equipment, and many more.

The units are easily attached to the equipment by rugged steel pipe threads.

Features

The metal reinforced base of the unit remains on the gearbox or reservoir, and a replacement cartridge is threaded into the base.

Benefits

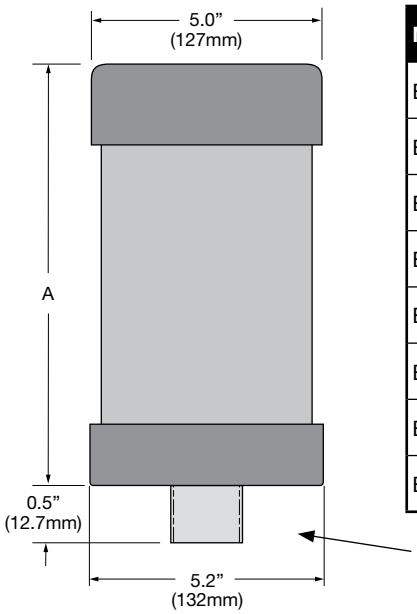
- Minimize rust & acid corrosion
- Reduce component wear
- Reduce maintenance cost
- Prolong fluid life
- Reduce oil oxidation
- Enhance lubrication

Components

Replacement Cartridge

Re-usable Bottom Cap

Dimensions



Model	Part No.	A	B	C	D	Air Flow	H_2O lbs (ltr)	Wt.
BDR 100 G 2 W 1.0	02080971	5.0"	5.2"	4.0"	5.0"	260 gpm 35 scfm	0.2 (0.1)	2.5
BDR 200 G 2 W 1.0	02080972	5.0"	5.2"	5.5"	6.5"	260 gpm 35 scfm	0.4 (0.2)	3.2
BDR 400 G 2 W 1.0	02080973	5.0"	5.2"	8.5"	9.5"	260 gpm 35 scfm	0.9 (0.4)	4.5
BDR 800 G 2 W 1.0	02080974	5.0"	5.2"	10.5	12.0"	750 gpm 100 scfm	1.3 (0.6)	5.5
BDR 100 X 2 W 0.0/Cartridge	02080975	5.0"	–	3.75"	–	260 gpm 35 scfm	0.2 (0.1)	1.8
BDR 200 X 2 W 0.0/Cartridge	02080976	5.0"	–	5.0"	–	260 gpm 35 scfm	0.4 (0.2)	2.0
BDR 400 X 2 W 0.0/Cartridge	02080977	5.0"	–	8.0"	–	260 gpm 35 scfm	0.9 (0.4)	3.3
BDR 800 X 2 W 0.0/Cartridge	02080978	5.0"	–	10.0"	–	750 gpm 100 scfm	1.3 (0.6)	4.6

BDR Series breathers are attached to the reservoir, gearbox, or tank by 1" male NPT(Models BDR 100, BDR 200, & BDR 400), and by a 2" male NPT (Models BDR 800).
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print. Dimensions are in inches and lbs

BDX Series

Extreme Operating Environment Drymicron

Complete Assembly | Cartridge | Cap

DRYMICRONS help stop oil contamination and protect your expensive equipment!

Description

The BDX Series is ideal for certain extreme operating environments such as paper mill, steam cleaning rooms, etc. The humidity level far exceeds that which is experienced in normal industrial applications. In these situations, lubricants and other fluids stored in tanks and reservoirs need the protection of a desiccant breather even more. However, small temperature variations draw in the humid air and unnecessarily reduce the life of the breather.

Features

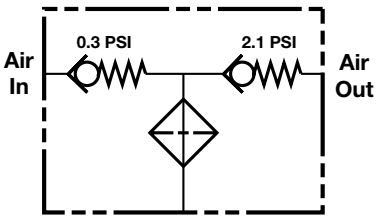
Two check valves

- One to control airflow into the protected reservoir
- One to control airflow out
- These valves establish thresholds of vacuum and pressure.

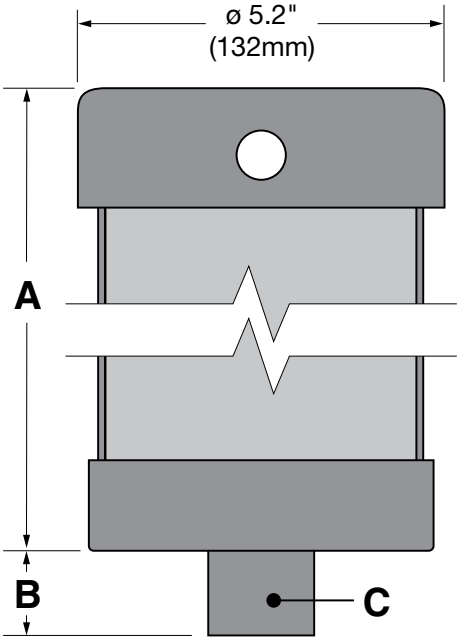
Benefits

- Reduced breathing cycles extend product life span, air to flow through the breather only when needed to protect the integrity of the tank
- The rugged design includes a reusable top cap which allows the economic replacement of the desiccant cartridge

Hydraulic Symbols



Dimensions



Model Code	Part No.	Connection (C)	Height (A)	Clearance (B)	Rated Airflow	H20 Capacity (lbs)	In (psi)	Out (psi)
BDX 200 X 2 W 0.0/RV 0.3/2.1	02084491	1” press fit	7 (178)	1.25 (32)	35 scfm / (260 gpm)	0.4	0.3	2.1
BDX 400 X 2 W 0.0/RV 0.3/2.1	02084492	1” press fit	10 (254)	1.25 (32)	35 scfm / (260 gpm)	0.9	0.3	2.1
BDX 200 G 2 W 1.0/RV 0.3/2.1	02084493	2” male NPT	7 (178)	1.5 (38)	35 scfm / (260 gpm)	0.4	0.3	2.1
BDX 400 G 2 W 1.0/RV 0.3/2.1	02084494	2” male NPT	10 (254)	1.5 (38)	35 scfm / (260 gpm)	0.9	0.3	2.1
BDX 200 X 2 W 0.0/Cartridge	02084495	1” press fit	5 (127)	1.25 (32)	35 scfm / (260 gpm)	0.4	0.3	2.1
BDX 400 X 2 W 0.0/Cartridge	02084496	1” press fit	8 (203)	1.25 (32)	35 scfm / (260 gpm)	0.9	0.3	2.1
BDX 200 G 2 W 1.0/Cartridge	02084497	2” male NPT	5 (127)	1.5 (38)	35 scfm / (260 gpm)	0.4	0.3	2.1
BDX 400 G 2 W 1.0/Cartridge	02084498	2” male NPT	8 (203)	1.5 (38)	35 scfm / (260 gpm)	0.9	0.3	2.1

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Dimensions are in inches/(mm)

BDZ Series
Mini DRYMICRON

Description

HYDAC BDZ Series breathers are designed for applications when space is limited. They can replace all standard breather caps.

HYDAC BDZ Series breathers prevent dirt and water vapor from entering the gearbox or hydraulic system.

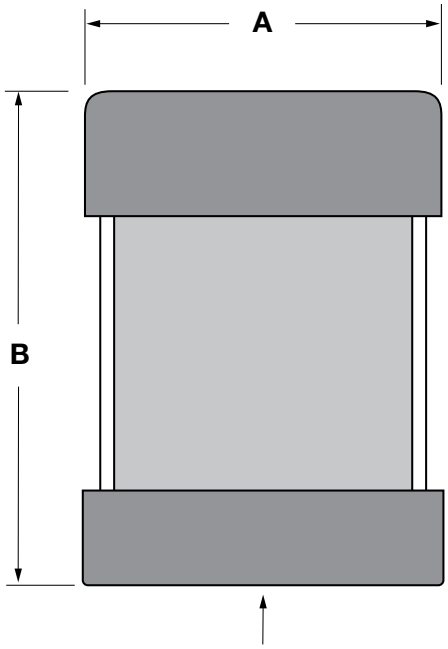
Features

- 1/2” NPT female threaded mounting hole *(1.0 models only)*
- 3/4” NPT male fitting *(2.0 model only)*
- All models are rated for 10 scfm airflow.

Benefits

- Minimize rust & acid corrosion
- Reduce component wear
- Reduce maintenance cost
- Prolong fluid life
- Reduce oil oxidation
- Enhance lubrication
- Rated Airflow - 75 gpm / 10 scfm

Dimensions



1/2” NPT Female Connection
02082356 has 3/4” male connection

Model	H2O Capacity lbs (ltr)	Part Number	A	B	Weight (lbs)
BDZ 015 G 2 W 1.0	0.032 (0.015)	02080980	2.00”	2.25”	0.19
BDZ 025 G 2 W 1.0	0.056 (0.025)	02080981	2.00”	3.50”	0.27
BDZ 045 G 2 W 1.0	0.104 (0.047)	02080982	3.25”	2.25”	0.50
BDZ 085 G 2 W 1.0	0.180 (0.082)	02080983	3.25”	3.50”	0.75
BDZ 085 G 2 W 2.0	0.180 (0.082)	02082356	3.25”	3.50”	0.75

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