

Breathers

Breathers are available in a variety of styles, materials and sizes. Breathers provide clean airflow into reservoirs and other storage containers where there is an exchange of air during changing fluid levels. In high moisture

environments or applications with large changes in machine attitudes, breather caps with pressure relief and vacuum breakers limit air exchange and provide a positive suction head at the pump inlet.

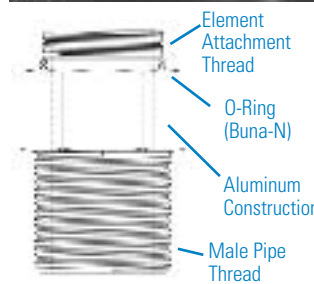
Threaded Adapters for Creating Tank Breathers

Application

Adapting your hydraulic reservoir with a Donaldson breather filter...

- Reduces your parts inventory;
- Improves your filtration to extend equipment life;
- Lengthens filter service intervals.

To create a tank breather, choose either of the two threaded adapters below, then select a breather spin-on filter based on your desired efficiency level, filter dimensions and the maximum rate of reservoir drawdown or air exchange rate. As a rule of thumb, clean pressure drop should be limited to 0.18 *psi* / 5" H₂O.



Installation Tips

A pipe flange, weld collar, or half coupling may be used to connect the breather adapter to the reservoir. Make sure that air cannot leak around the adapter. When mounting on the side of the reservoir, make sure the installation is as high as possible to stay above the surface of the fluid.

Maintenance Tips

Change the filter after each 500 hours of operation. More frequent replacement may be required when operating in heavily contaminated areas such as grinding operations, primary metal mills, and on mobile equipment. Under such conditions, Donaldson recommends replacement every 250 hours.

Donaldson Part No.	LHA Part No.	Male Pipe Thread	Element Attachment Thread	Length (in./mm)	Material
P173544	GBF-15	3/4" NPT	1"-12 UN	2.50/64	Aluminum
P173545	GBF-50/60	1-1/4" NPT	1-1/2"-16 UN	3.00/76	Aluminum
P562627	GBF-10	3/4" NPT	1-1/8"-16 UN	1.65/42	Steel
P562628	ABGBA	Bayonet Fitting	1-1/8"-16 UN	1.36/35	Technopolymer

Direct Replacements for Schroeder Breathers

A replacement for Schroeder part ABF-3/10 is available as a breather+adapter set. For other Schroeder replacements and as an alternative on the ABF-3/10, you may purchase adapters and spin-on filters as separate items.

Schroeder Part No.	Donaldson Spin-On Breather + Adapter Set	Adapter	Spin-On Breather
ABF-3/10	P564425	P562627	P564424
ABF-3/10-F	-	P562628	P564424
MBF-3-M-P20	-	P173545	P550386
MBF-10-M-P20	-	P173545	P550388

Replacement for Schroeder ABF3/10

- P564425 Spin-On Breather & Adapter
- P564424 Spin-On Breather only

Specifications:

- Diameter: 3.69" / 93.7mm
- Height: 3.6" / 91mm
- Threads on adaptor: 3/4-14 NPT





NEW T.R.A.P.™ Breather Part Number P564669

Eliminates Water & Dirt from Hydraulic Reservoirs Faster Than Silica Gel Breathers!



Features and Benefits

- Patented Media**
 Reduces dewpoint temperatures to prevent condensation inside tanks and reservoirs to help prevent corrosion, maintain fluid quality, and extend fluid life.
- Highly Efficient**
 Stops particle sizes down to 3µm @ 97%.
- Easy To Install**
 Lightweight....simply hand tighten.
- Reversible Flow**
 Reversible flow through media allows moisture to exit the tank or reservoir.
- Rugged Design**
 Effective to -40°F. Robust housing protects media. Because it withstands high vibration, T.R.A.P. is suitable for both stationary and mobile applications.
- Visual Indicator**
 Actuated by pressure differential, flashes red to indicate change out is needed. Indicator setting, 1 PSID

- Rated Airflow: 75 SCFM Max.
- Operating temperature range -40°F to +150°F / -40°C to 66°C

NEW! Donaldson Breathers with Thermally Reactive Advanced Protection (T.R.A.P.) provide fast-acting protection for hydraulic reservoirs against airborne moisture and particulate contamination.

Patented Donaldson T.R.A.P. technology eliminates moisture condensation in hydraulic system reservoirs. Moisture is prevented from entering and is actually “pumped” out with each flow cycle.

For more detailed specifications see page 191.

Spin-On Breather Filters

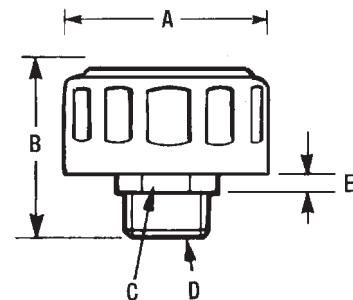
Donaldson Part No.	Use with Adapter	Micron Rating	Length (in./mm)	Diameter (in./mm)	Flow (scfm/gpm)
P564424	P562627 or P562628	10 micron nom.	3.6/91	3.7/94	15/112
P556005	P562627 or P562628	10 micron nom.	5.4/137	3.7/94	23/172
P562198	P173544	10 micron nom.	5.4/137	3.7/94	23/172
P565069	P173544	10 micron nom.	7.9/200	3.7/94	28/216
P560693	P173544	10 micron abs.	5.4/137	3.7/94	23/172
P564357	P173544	5 micron abs.	7.9/200	3.7/94	28/216
P179089	P173544	10 micron abs.	7.9/200	3.7/94	28/216
P169430	P173545	3 micron abs.	6.7/170	5.0/127	35/262
P167832	P173545	3 micron abs.	10.7/272	5.0/127	42/314
P550386	P173545	3 micron nom.	6.7/170	5.0/127	35/262
P550250	P173545	3 micron nom.	10.7/272	5.0/127	42/314
P167162	P173545	5 micron abs.	6.7/170	5.0/127	59/440
P165762	P173545	5 micron abs.	10.7/272	5.0/127	64/479
P550388	P173545	10 micron nom.	6.7/170	5.0/127	59/440
P550251	P173545	10 micron nom.	10.7/272	5.0/127	64/479
P165875	P173545	10 micron abs.	6.7/170	5.0/127	59/440
P165876	P173545	10 micron abs.	10.7/272	5.0/127	64/479

ABS, MBS Series

Description:

Chrome plated, epoxy coated or zinc plated steel cap
 Air flow to 30 CFM
 Compatible with petroleum based fluids
 Temperature to 212°F / 100°C
 1/2", 3/4" and 1" NPT on ABS
 1/4" and 3/8" NPT on MBS

Options: 3, 10 and 40 micron (ABS),
 10 and 40 micron (MBS)
 Dipstick available on some
 ABS models
 Zinc and epoxy coated
 weather-proof cap versions



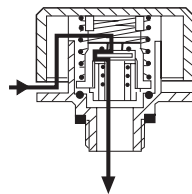
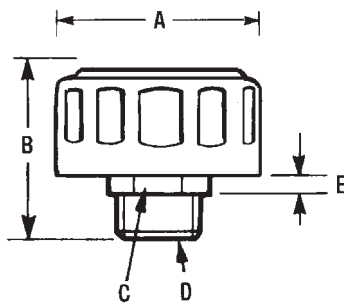
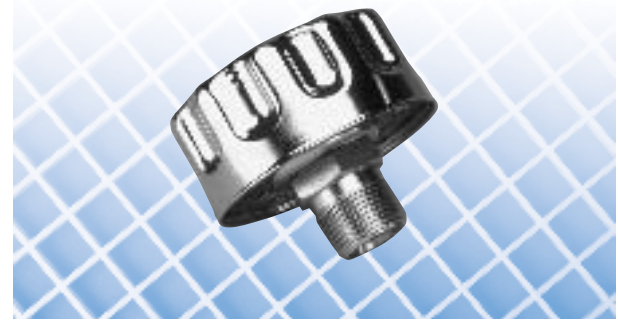
Donaldson Part No.	Description	Micron Rating	Airflow Capacity (CFM) *	A (in./mm)	B (in./mm)	C (in./mm)	D	E (in./mm)	Finish
P562510	MBS-10-N04	10	10	1.85/47	2.0/51	.75/19	1/4" NPT	.2/5	Chrome Plated
P562511	MBS-10-N06	10	10	1.85/47	2.0/51	.75/19	3/8" NPT	.2/5	Chrome Plated
P562512	MBS-40-N04	40	10	1.85/47	2.0/51	.75/19	1/4" NPT	.2/5	Chrome Plated
P562514	MBS-40-N06	40	10	1.85/47	2.0/51	.75/19	3/8" NPT	.2/5	Chrome Plated
P562515	MBS-Z-10-N04	10	10	1.85/47	2.0/51	.75/19	1/4" NPT	.2/5	Zinc Plated
P562516	MBS-Z-10-N06	10	10	1.85/47	2.0/51	.75/19	3/8" NPT	.2/5	Zinc Plated
P562517	ABS-03-N12	3	30	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Chrome Plated
P562518	ABS-10-B12	10	30	3.15/80	2.8/71	1.18/30	3/4" BSP	.5/13	Chrome Plated
P562519	ABS-10-N08	10	30	3.15/80	2.8/71	1.18/30	1/2" NPT	.5/13	Chrome Plated
P562520	ABS-10-N12	10	30	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Chrome Plated
P562521	ABS-10-N16	10	30	3.15/80	2.8/71	1.18/30	1" NPT	.5/13	Chrome Plated
P562522	ABS-40-N08	40	30	3.15/80	2.8/71	1.18/30	1/2" NPT	.5/13	Chrome Plated
P562523	ABS-40-N12	40	30	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Chrome Plated
P562524	ABS-40-N16	40	30	3.15/80	2.8/71	1.18/30	1" NPT	.5/13	Chrome Plated
P562525	ABS-W-03-N12	3	30	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Epoxy Coated Black
P562526	ABS-W-10-N08	10	30	3.15/80	2.8/71	1.18/30	1/2" NPT	.5/13	Epoxy Coated Black
P562527	ABS-W-10-N12	10	30	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Epoxy Coated Black
P562528	ABS-W-10-N16	10	30	3.15/80	2.8/71	1.18/30	1" NPT	.5/13	Epoxy Coated Black
P563901	ABS-W-40-B12	40	30	3.15/80	2.8/71	1.18/30	3/4" BSP	.5/13	Epoxy Coated Black
P563902	ABS-W-40-N08	40	30	3.15/80	2.8/71	1.18/30	1/2" NPT	.5/13	Epoxy Coated Black
P562529	ABS-W-40-N12	40	30	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Epoxy Coated Black
P562530	ABS-W-40-N16	40	30	3.15/80	2.8/71	1.18/30	1" NPT	.5/13	Epoxy Coated Black
P562531	ABS-Z-10-N16	10	30	3.15/80	2.8/71	1.18/30	1" NPT	.5/13	Zinc Plated
P562532	ABS-Z-40-N08	40	30	3.15/80	2.8/71	1.18/30	1/2" NPT	.5/13	Zinc Plated
P562533	ABS-Z-40-N12	40	30	3.15/80	2.8/71	1.18/30	3/4" NPT	.5/13	Zinc Plated



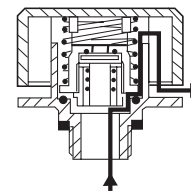
PBS Series Pressure Filler Breather Cap - Screw In Style

Description:

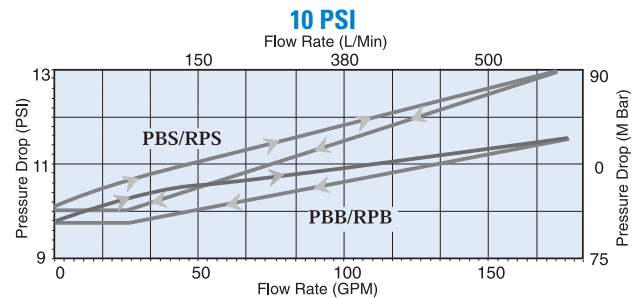
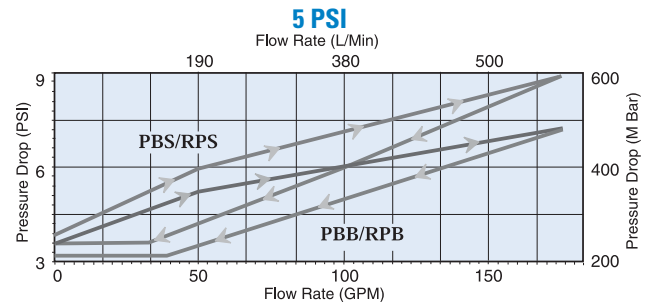
Chrome plated or epoxy coated steel cap
Air intake valve opens at 0.435 *psi*
Compatible with petroleum based fluids
Temperature range
-22°F to +240°F / -30°C to 115°C
Buna gaskets standard
10 and 40 micron available
Relief valve settings at 5 or 10 *psi*
full rate flow



*Air intake in the reservoir
through vacuum breaker
when pressure decreases
(.435 psi)*



*Venting to atmosphere
through relief valve to
maintain a 5 or 10 psi
full rated flow*



Donaldson Part No.	Description	Micron Rating	Airflow Capacity (CFM) *	Relief Valve Setting (psi)	Dim. A (in./mm)	Dim. B (in./mm)	Dim. C (in./mm)	Dim. D (in./mm)	Dim. E (in./mm)	Finish
P563362	PBS-10-10-N12	10	30	10	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Chrome Plated
P563363	PBS-10-10-N16	10	30	10	3.15 / 80	2.8 / 71	1.18 / 30	1" NPT	.5 / 13	Chrome Plated
P563364	PBS-10-5-B12	10	30	5	3.15 / 80	2.8 / 71	1.18 / 30	3/4" BSP	.5 / 13	Chrome Plated
P563365	PBS-10-5-N12	10	30	5	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Chrome Plated
P563366	PBS-10-5-N16	10	30	5	3.15 / 80	2.8 / 71	1.18 / 30	1" NPT	.5 / 13	Chrome Plated
P563367	PBS-40-10-N12	40	30	10	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Chrome Plated
P563867	PBS-40-5-B12	40	30	5	3.15 / 80	2.8 / 71	1.18 / 30	3/4" BSP	.5 / 13	Chrome Plated
P563368	PBS-40-5-N12	40	30	5	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Chrome Plated
P563369	PBS-40-5-N16	40	30	5	3.15 / 80	2.8 / 71	1.18 / 30	1" NPT	.5 / 13	Chrome Plated
P563370	PBS-W-10-5-N12	10	30	5	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Epoxy Coated Black
P563371	PBS-W-40-10-N12	40	30	10	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Epoxy Coated Black
P563372	PBS-W-40-5-N12	40	30	5	3.15 / 80	2.8 / 71	1.18 / 30	3/4" NPT	.5 / 13	Epoxy Coated Black

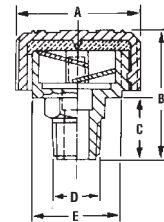
Filler Breather Caps

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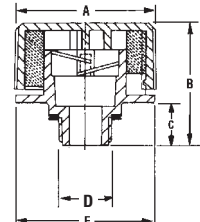
High impact-resistant technopolymer construction
 Cap diameters 1.22", 1.65", 2.25" and 2.75"
 Compatible with petroleum and water based fluids
 Temperature range
 -22°F to +240°F / -30°C to +115°C
 Displacements to 250 GPM without baffle
 Displacements to 144 GPM with anti-splash baffle
 Dipstick option available



CPS / DPS / LPS



BPS / RPS

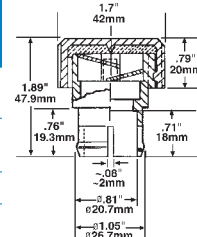


Donaldson Part No.	Description	Micron Rating	Airflow Capacity (CFM) *	Relief Valve Setting (psi)	Dim. A (in./mm)	Dim. B (in./mm)	Dim. C (in./mm)	Dim. D (in./mm)	Dim. E (in./mm)
P562486	LPS-40-N04	40	4.9	n/a	1.22/31	1.18/30	.39/10	1/4" NPT	1.14/29
P562487	LPS-40-N04-A	40	2.1	n/a	1.22/31	1.18/30	.39/10	1/4" NPT	1.14/29
P562494	DPS-40-N04	40	4.9	n/a	1.65/42	2.05/52	.71/18	1/4" NPT	1.2/30
P562495	DPS-40-N04-A	40	2.1	n/a	1.65/42	2.05/52	.71/18	1/4" NPT	1.2/30
P562496	DPS-40-N06	40	11.7	n/a	1.65/42	2.05/52	.71/18	3/8" NPT	1.2/30
P562497	DPS-40-N06-A	40	5	n/a	1.65/42	2.05/52	.71/18	3/8" NPT	1.2/30
P562500	DPS-40-N08-A	40	5.3	n/a	1.65/42	2.05/52	.71/18	1/2" NPT	1.2/30
P562502	DPS-40-N12	40	12.5	n/a	1.65/42	2.05/52	.71/18	3/4" NPT	1.2/30
P562503	DPS-40-N12-A	40	5.4	n/a	1.65/42	2.05/52	.71/18	3/4" NPT	1.2/30
P562483	CPS-40-N12	40	27	n/a	2.24/57	1.85/47	.87/22	3/4" NPT	1.53/39
P562484	CPS-40-N12-A	40	13.5	n/a	2.24/57	1.85/47	.87/22	3/4" NPT	1.53/39
P562479	BPS-10-N12	10	33.4	n/a	2.75/70	2.6/66	1.02/21	3/4" NPT	2.68/68
P562480	BPS-10-N12-A	10	19.3	n/a	2.75/70	2.6/66	1.02/21	3/4" NPT	2.68/68
P562481	BPS-40-N12	40	33.4	n/a	2.75/70	2.6/66	1.02/21	3/4" NPT	2.68/68
P562482	BPS-40-N12-A	40	19.3	n/a	2.75/70	2.6/66	1.02/21	3/4" NPT	2.68/68
P562489	RPS-10-5-N12	10	30	5	2.75/70	2.6/66	1.02/21	3/4" NPT	2.68/68
P562491	RPS-40-2-N12	40	30	2	2.75/70	2.6/66	1.02/21	3/4" NPT	2.68/68
P562492	RPS-40-5-N12	40	30	5	2.75/70	2.6/66	1.02/21	3/4" NPT	2.68/68

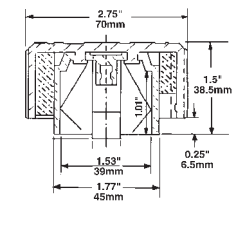
Accessories

Donaldson Part No.	Desc.	Micron Rating	Airflow Capacity (CFM) *	Dim. A (in./mm)	Dim. B (in./mm)	Dim. C (in./mm)	Dim. D (in./mm)	Comment
P562476	ABO-10	10	30	2.75/70	1.5/39	.25/7	1.77/45	Fits over 1.50" OD tube
P562477	ABO-40	40	30	2.75/70	1.5/39	.25/7	1.77/45	Fits over 1.50" OD tube
P562493	DPO-40-A	40	5	1.7/42	1.89/48	.76/19	1.05/27	Fits 1" ID tube

DPO



ABO



Filler Breather Assemblies

Features

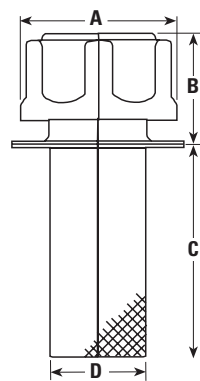
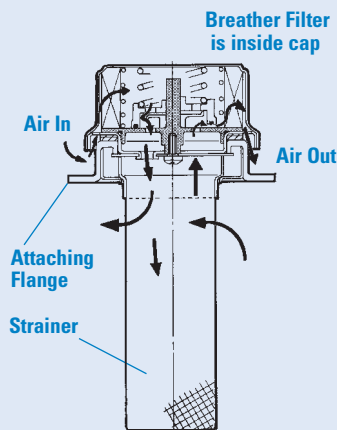
Removable 500µm mesh strainer.
(Except model P171848, which has a non-removable strainer.)

10µm air breather/filter.

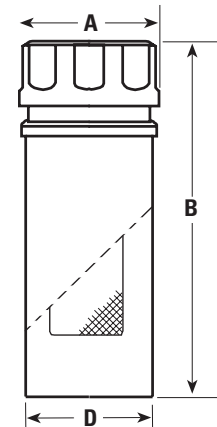
Models P171855 & P171848 include drilled flanges with attaching screws.

How They Work

As fluid levels rise and fall inside the reservoir, air flows in and out through the strainer and breather as shown below. The breather filter inside the cap removes contaminants as small as 10µm from the air to keep airborne contaminant from entering the fluid. The strainer removes large particles from fluid as it is added to the reservoir.



P171848
P171855
P171856



P171859
P171860

Filler Breather Specifications

Part No.	FLANGE SPECIFICATIONS				FILLER BREATHER SPECIFICATIONS				
	Outer Dia. (in./mm)	No. of Holes	Hole Dia. (in./mm)	Bolt Circle	Flow (gpm/lpm)	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)
P171848	2.01/51	3	.22/5.5	2.00/51	70/270	1.81/45	1.38/35	2.48/63	1.1/28
P171855	3.31/84	6	.22/5.5	2.88/73	124/470	2.76/70	1.81/46	3.94/100	1.5/38
P171856	3.31/84	n/a	n/a		124/470	2.76/70	1.81/46	3.94/100	1.15/38
P171859		n/a - weldable			124/470	2.76/70	7.09/180	2.50/64	
P171860 *		n/a - weldable			124/470	2.76/70	7.09/180	2.50/64	

* For pressurized reservoirs

Filler Cap Only (Replacement)

P173292 – fits P171855, P171856, P171859

P173364 for pressurized reservoir – fits P171860

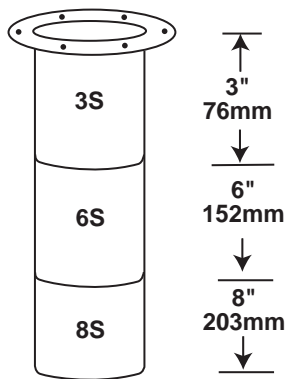
ABB Series Filler Breathers - Bayonet Style

Description:

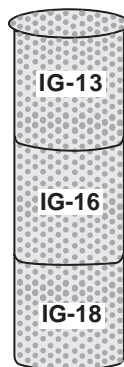
Chrome plated, epoxy coated or zinc plated steel caps
 Air flow to 30 CFM
 Compatible with petroleum based fluids
 30 mesh technopolymer basket
 Self tapping screws for flange mount
 Cork gaskets
 3, 10, or 40 micron



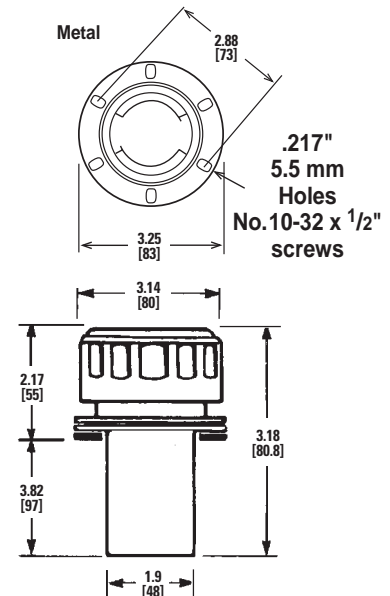
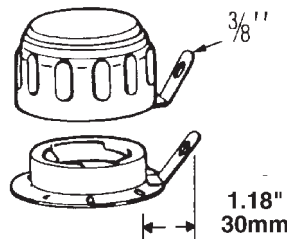
30 MESH STAINLESS STEEL BASKETS



INNER GUARDS



LOCKING TABS (AB ONLY)

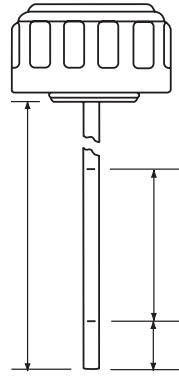
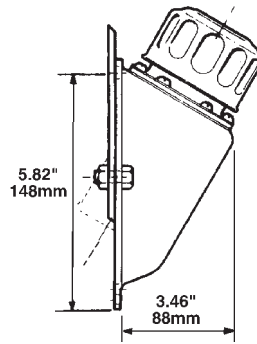


Accessories

Donaldson Part No.	Description	Features	Micron Rating	Airflow Capacity (CFM)	Finish
P562610	ABB-W-03-8S-IG	8" STAINLESS BASKET, INNER GUARD	3	30	Epoxy Coated, Black
P562611	ABB-W-10-3S	3" STAINLESS BASKET	10	30	Epoxy Coated, Black
P562612	ABB-W-10-3S-LT	3" STAINLESS BASKET, LOCK TAB	10	30	Epoxy Coated, Black
P562613	ABB-W-10-3S-R	3" STAINLESS BASKET, BUNA GASKET	10	30	Epoxy Coated, Black
P562614	ABB-W-10-N	NYLON BASKET	10	30	Epoxy Coated, Black
P562615	ABB-W-10-N-LT	NYLON BASKET, LOCK TAB	10	30	Epoxy Coated, Black
P562616	ABB-W-10-N-R	NYLON BASKET, BUNA GASKET	10	30	Epoxy Coated, Black
P562617	ABB-W-10-N-SMB	NYLON BASKET, SIDE MOUNT KIT	10	30	Epoxy Coated, Black
P562618	ABB-W-40-3S	3" STAINLESS BASKET	40	30	Epoxy Coated, Black
P562619	ABB-W-40-6S	6" STAINLESS BASKET	40	30	Epoxy Coated, Black
P562620	ABB-W-40-N	NYLON BASKET	40	30	Epoxy Coated, Black
P562623	ABB-Z-40-3S	3" STAINLESS BASKET	40	30	Zinc Plated
P562624	ABB-Z-40-3S-LT	3" STAINLESS BASKET, LOCK TAB	40	30	Zinc Plated
P562625	ABB-Z-40-N	NYLON BASKET	40	30	Zinc Plated
P562626	ABB-Z-40-N-R	NYLON BASKET, BUNA GASKET	40	30	Zinc Plated

SIDE MOUNT

Can be used with all Bayonet and Threaded Flange Breathers (except MBB & Pressurized Breathers). Maximum torque for fastening 112 in. lbs. with washers.

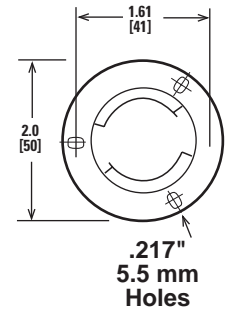
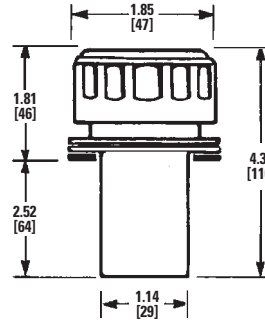


Dipsticks available for some models. See Features section on assembly tables.

Donaldson Part No.	Description	Features	Micron Rating	Airflow Capacity (CFM)	Finish
P562573	ABB-03-N	NYLON BASKET	3	30	Chrome
P562574	ABB-10	FLANGE, SCREWS & GASKET, NO BASKET	10	30	Chrome
P562575	ABB-10-3S	3" STAINLESS BASKET	10	30	Chrome
P562576	ABB-10-3S-LT	3" STAINLESS BASKET, LOCK TAB	10	30	Chrome
P562577	ABB-10-3S-R	3" STAINLESS BASKET, BUNA GASKET	10	30	Chrome
P562578	ABB-10-3S-SMB	3" STAINLESS BASKET, SIDE MOUNT KIT	10	30	Chrome
P562579	ABB-10-6S	6" STAINLESS BASKET	10	30	Chrome
P562580	ABB-10-6S-LT	6" STAINLESS BASKET, LOCK TAB	10	30	Chrome
P562581	ABB-10-6S-R	6" STAINLESS BASKET, BUNA GASKET	10	30	Chrome
P562582	ABB-10-8S	8" STAINLESS BASKET	10	30	Chrome
P562583	ABB-10-8S-D-IG	8" STAINLESS BASKET, DIPSTICK, INNER GUARD	10	30	Chrome
P562584	ABB-10-N	NYLON BASKET	10	30	Chrome
P562585	ABB-10-N-LT	NYLON BASKET, LOCK TAB	10	30	Chrome
P562587	ABB-10-N-R	NYLON BASKET, BUNA GASKET	10	30	Chrome
P562589	ABB-40	FLANGE, SCREWS & GASKET, NO BASKET	40	30	Chrome
P562590	ABB-40-3S	3" STAINLESS BASKET	40	30	Chrome
P562591	ABB-40-3S-LT	3" STAINLESS BASKET, LOCK TAB	40	30	Chrome
P562592	ABB-40-3S-R	3" STAINLESS BASKET, BUNA GASKET	40	30	Chrome
P562593	ABB-40-3S-SMB	3" STAINLESS BASKET, SIDE MOUNT KIT	40	30	Chrome
P562594	ABB-40-6S	6" STAINLESS BASKET	40	30	Chrome
P562595	ABB-40-6S-D	6" STAINLESS BASKET, DIPSTICK	40	30	Chrome
P562596	ABB-40-6S-LT	6" STAINLESS BASKET, LOCK TAB	40	30	Chrome
P562598	ABB-40-8S	8" STAINLESS BASKET	40	30	Chrome
P562599	ABB-40-8S-D	8" STAINLESS BASKET, DIPSTICK	40	30	Chrome
P562600	ABB-40-8S-LT	8" STAINLESS BASKET, LOCK TAB	40	30	Chrome
P562601	ABB-40-CWOF	CAP ONLY	40	30	Chrome
P562602	ABB-40-LT	LOCK TAB, NO BASKET	40	30	Chrome
P562603	ABB-40-N	NYLON BASKET	40	30	Chrome
P562605	ABB-40-N-LT	NYLON BASKET, LOCK TAB	40	30	Chrome
P562608	ABB-40-N-R	NYLON BASKET, BUNA GASKET	40	30	Chrome
P562609	ABB-40-N-SMB	NYLON BASKET, SIDE MOUNT KIT	40	30	Chrome

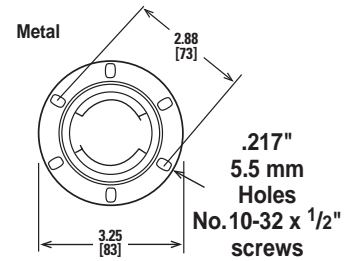
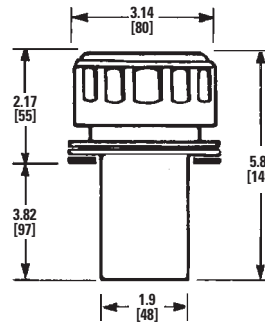
Mini Filler Breather

Donaldson Part No.	Description	Micron Rating	Airflow Capacity (CFM)	Finish
P562561	MBB-10-N	10	10	Chrome
P562562	MBB-40-N	40	10	Chrome



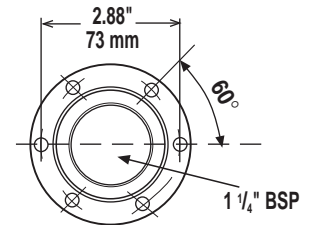
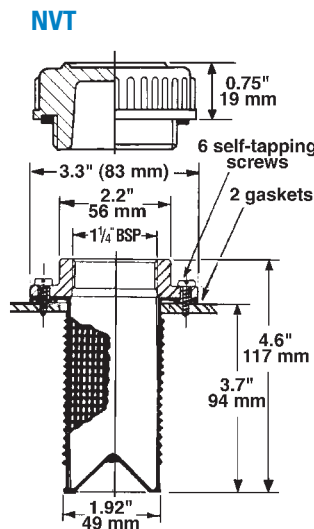
Non-Vent Filler Breather, Bayonet

Donaldson Part No.	Description	Feature	Finish
P562563	NVB-00-3S	FILLER CAP ASSY W/3" STAINLESS BASKET	Chrome
P562564	NVB-00-N	FILLER CAP ASSY W/ NYLON BASKET	Chrome
P562565	NVB-W-00-8S	FILLER CAP ASSY W/8" STAINLESS BASKET	Epoxy coated, Black



Non-vent Filler Breather, Threaded

Donaldson Part No.	Description	Feature	Finish
P562549	NVT-00-3S-R	FILLER CAP ASSY W/3" STAINLESS BASKET, BUNA GASKET	Black Technopolymer
P562550	NVT-00-N	FILLER CAP ASSY W/ NYLON BASKET	Black Technopolymer



Filler Breathers



Description:

High impact technopolymer
 Temperature range
 -22°F to +240°F / -30°C to +115 °C
 2.75" diameter cap
 Available with bayonet or threaded flange
 Airflow to 30 CFM
 Compatible with petroleum and
 water based fluids
 30 mesh technopolymer basket

Options: Dipstick
 3", 6" and 8" stainless steel baskets

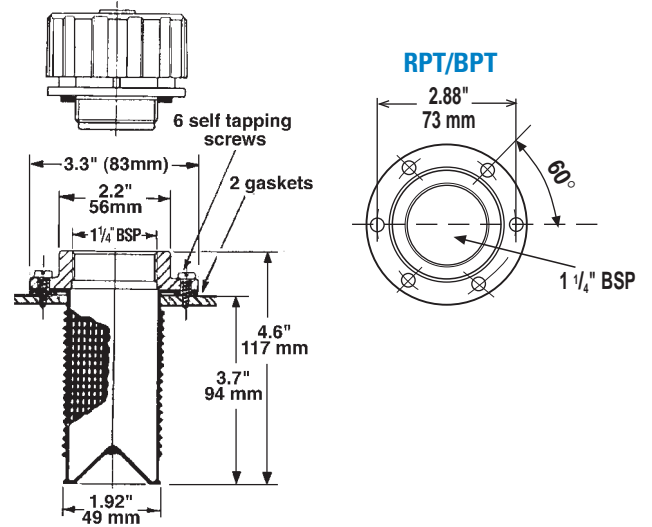
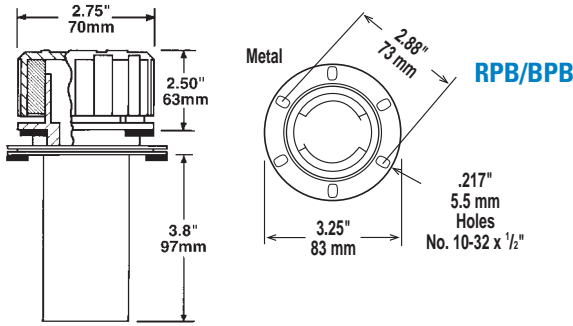


Bayonet Style (RPB) (BPB)

Donaldson Part No.	Description	Feature	Micron Rating	Airflow Capacity (CFM)	Relief Valve Setting (psi)	Finish
P562552	RPB-10-5-N	NYLON BASKET	10	30	5	Black Technopolymer
P562553	RPB-10-5-N-D-TAD	NYLON BASKET, DIPSTICK	10	30	5	Black Technopolymer
P562554	RPB-40-5-3S	3" STAINLESS BASKET	40	30	5	Black Technopolymer
P562555	RPB-40-5-6S	6" STAINLESS BASKET	40	30	5	Black Technopolymer
P562556	RPB-40-5-N	NYLON BASKET	40	30	5	Black Technopolymer
P562534	BPB-10-A CAP ONLY	BREATHER CAP	10	30	N/A	Black Technopolymer
P562535	BPB-10-N	BREATHER	10	30	N/A	Black Technopolymer
P562536	BPB-10-N-A	BREATHER	10	30	N/A	Black Technopolymer
P563813	BPB-40 CAP ONLY	BREATHER CAP	40	30	N/A	Black Technopolymer
P562537	BPB-40-3S	BREATHER W/3" STEEL BASKET	40	30	N/A	Black Technopolymer
P562538	BPB-40-3S-A	BREATHER	40	30	N/A	Black Technopolymer
P562539	BPB-40-6S-D	FILLER BREATHER W/DIP STICK	40	30	N/A	Black Technopolymer
P562540	BPB-40-A CAP ONLY	BREATHER CAP	40	30	N/A	Black Technopolymer
P562541	BPB-40-N	BREATHER	40	30	N/A	Black Technopolymer
P562542	BPB-40-N-A	BREATHER	40	30	N/A	Black Technopolymer
P562544	BPB-40-N-SMB	BREATHER W/SIDE MOUNT KIT	40	30	N/A	Black Technopolymer

Threaded Flange Style (RPT) (BPT)

Donaldson Part No.	Description	Feature	Micron Rating	Airflow Capacity (CFM)	Relief Valve Setting (psi)	Finish
P562557	RPT-40-5-6S	6" STAINLESS BASKET	40	30	5	Black Technopolymer
P562558	RPT-40-5-8S	8" STAINLESS BASKET	40	30	5	Black Technopolymer
P562560	RPT-40-5-N	NYLON BASKET	40	30	5	Black Technopolymer
P562559	RPT-40-5-CAP ONLY	CAP ONLY	40	30	5	Black Technopolymer
P563817	BPT-40-CAP-ONLY	THREADED BREATHER CAP	40	30	N/A	Black Technopolymer
P562548	BPT-40-N	THREADED BREATHER	40	30	N/A	Black Technopolymer

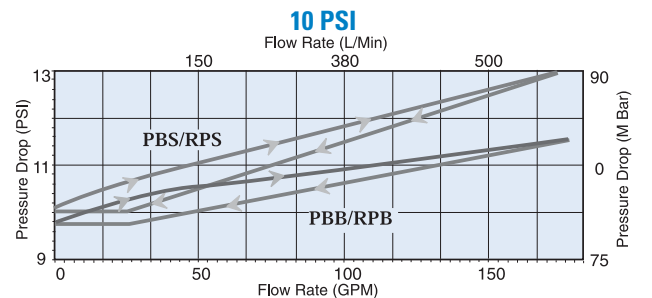
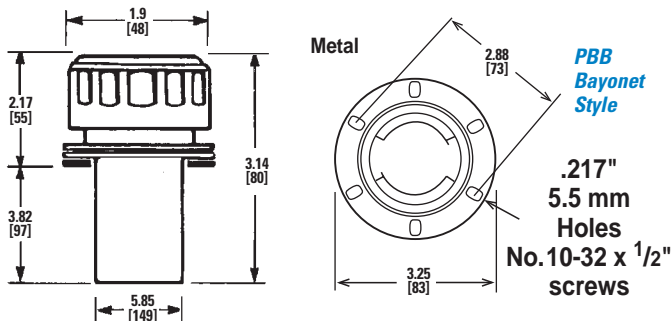
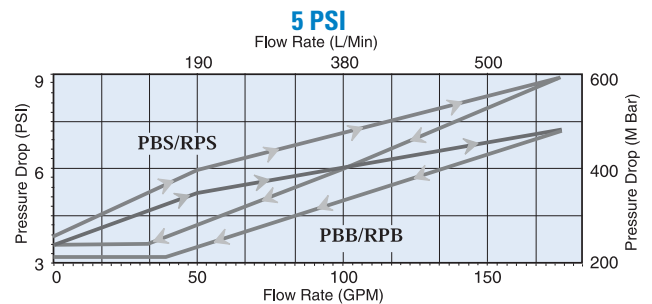


PBB Series Pressure Filler Breather Cap - Bayonet Style



Description:

- Chrome plated, epoxy coated or zinc plated steel cap
- Air intake valve opens at 0.435 *psi*
- Compatible with petroleum based fluids
- Temperature range
-22°F to +240°F / -30°C to 115°C
- Buna gaskets standard
- 10 and 40 micron available
- Relief valve settings at 5 or 10 *psi* full rate flow

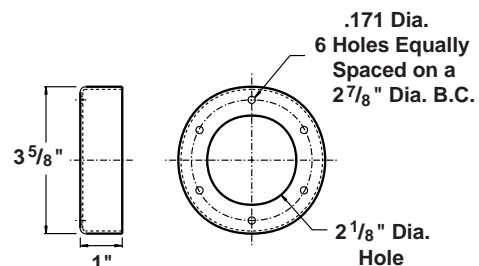


Donaldson Part No.	Description	Feature	Micron Rating	Airflow Capacity (CFM) *	Relief Valve Setting (psi)	Finish
P562631	PBB-10-10-6S	6" STAINLESS BASKET	10	30	10	Chrome
P562632	PBB-10-10-N	NYLON BASKET	10	30	10	Chrome
P562633	PBB-10-10-N-LT	NYLON BASKET, LOCK TAB	10	30	10	Chrome
P563862	PBB-10-5	FLANGE, SCREWS & GASKET, NO BASKET	10	30	5	Chrome
P563346	PBB-10-5-3S	3" STAINLESS BASKET	10	30	5	Chrome
P563347	PBB-10-5-6S	6" STAINLESS BASKET	10	30	5	Chrome
P563348	PBB-10-5-N	NYLON BASKET	10	30	5	Chrome
P563349	PBB-10-5-N-LT	NYLON BASKET, LOCK TAB	10	30	5	Chrome
P563350	PBB-40-10-N	NYLON BASKET	40	30	10	Chrome
P563351	PBB-40-5	FLANGE, SCREWS & GASKET, NO BASKET	40	30	5	Chrome
P563352	PBB-40-5-3S	3" STAINLESS BASKET	40	30	5	Chrome
P563353	PBB-40-5-6S	6" STAINLESS BASKET	40	30	5	Chrome
P563354	PBB-40-5-8S	8" STAINLESS BASKET	40	30	5	Chrome
P563863	PBB-40-5-8S-LT-D	8" STAINLESS BASKET, LOCK TAB & DIPSTICK	40	30	5	Chrome
P563355	PBB-40-5-N	NYLON BASKET	40	30	5	Chrome
P563356	PBB-W-10-5-N	NYLON BASKET	10	30	5	Epoxy Coated, Black
P563357	PBB-W-10-5-N-LT	NYLON BASKET, LOCK TAB	10	30	5	Epoxy Coated, Black
P563864	PBB-W-40-10-N	NYLON BASKET	40	30	10	Epoxy Coated, Black
P563358	PBB-W-40-5-3S	3" STAINLESS BASKET	40	30	5	Epoxy Coated, Black
P563359	PBB-W-40-5-N	NYLON BASKET	40	30	5	Epoxy Coated, Black
P563360	PBB-Z-10-10-N	NYLON BASKET	10	30	10	Zinc Plated
P563361	PBB-Z-10-5-N	NYLON BASKET	10	30	5	Zinc Plated

Weld Risers For Filler Breathers

Donaldson Part No.	Description	Length
P562668	WR-5565	1.13"

Steel stamped construction
Predrilled holes align
with standard breather
tank flanges
Provides for easy installation
of filler breathers





Caps, Plugs, Vents

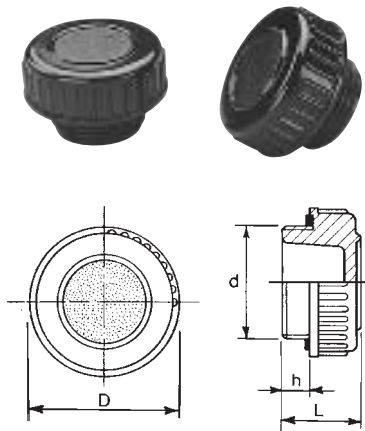
Features

Caps, plugs and vents are used to prevent oil spills, seal reservoirs, tanks and crankcases. They are available in plastic resins and a variety of thread configurations. Vents keep positive pressure in crankcases and eliminate air exchange, which can cause condensation in the lubrication fluids. Lubrication oil contaminated with moisture from condensation has a reduced life and poor lubrication quality. Pressurized vents allow for thermal expansion of the fluids during machine operation.



T-240 Caps

Donaldson Part No.	Description	d Size	h (in./mm)	D (in./mm)	L (in./mm)
P562466	T-240-06	3/8" BSP	.35/9	1.02/26	.83/21
P562467	T-240-08	1/2" BSP	.39/10	1.26/32	.94/24
P562468	T-240-12	3/4" BSP	.39/10	1.53/39	.98/25
P562469	T-240-16	1" BSP	.47/12	1.77/45	1.10/28
P562470	T-240-20	1-1/4" BSP	.47/12	2.16/55	1.22/31
P562471	T-240-24	1-1/2" BSP	.47/12	2.40/61	1.34/34

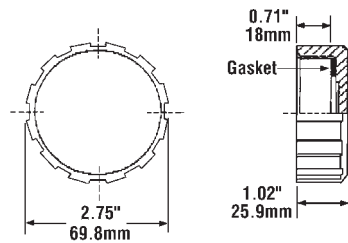


Black duroplast, resistant to solvents, oils, grease and other chemical agents
 Square cut BunaN synthetic rubber seal ring
 Maximum continuous working temperature: 250°F / 120°C
 Can be supplied with dipstick option

FC Cap

Donaldson Part No.	Description	Feature
P562475	FC-32-N	2" NPT/BSP Cap

Special black matte finish glass fiber reinforced technopolymer
 Maximum operating temperature: 212°F / 100°C

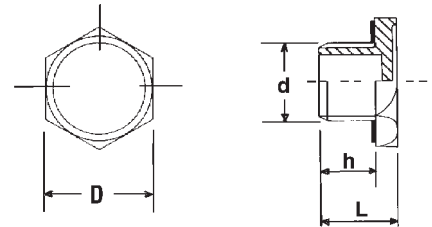


Accessories



TN Plugs

Donaldson Part No.	Description	d Size	h (in./mm)	D (in./mm)	L (in./mm)
P562459	TN-04	1/4" NPT	.35/9	.75/19	.63/16
P562460	TN-06	3/8" NPT	.35/9	.87/22	.63/16
P562464	TN-08	1/2" NPT	.43/11	1.02/26	.71/18
P562465	TN-12	3/4" NPT	.47/12	1.25/32	.79/20

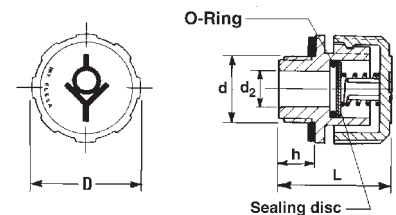


Special black matte finish glass fiber reinforced technopolymer
Resistant to solvents, oils, grease and other chemical agents

Square cut BunaN seal ring
Maximum continuous working temperatures: 266°F / 130°C

SFV Vents

Donaldson Part No.	Description	d Size	h (in./mm)	D (in./mm)	L (in./mm)	d ₂ (in./mm)	Valve Setting mb
P562472	SFV-06-N	3/8" NPT	.39/10	1.22/31	1.18/30	.39/10	100
P562473	SFV-08-N	1/2" NPT	.39/10	1.22/31	1.18/30	.39/10	100



Unidirectional gaseous venting
Special polyamide technopolymer, RAL 2004 orange cover with graphic symbol "valve", and black threaded connector
Resistant to solvents, oils, greases and other chemical agents

Square cut BunaN synthetic rubber seal ring
Aluminum valve covered with adhesion-resistant material sealing against an O-Ring
Stainless steel spring
Valve setting 100mb: valve opens when pressure exceeds 1.4 PSI / 0.100 bar

How Donaldson Derives Filter Performance Data

Donaldson Testing Procedures

The numbers on the performance curves refer to specific Donaldson media formulations such as #1, #6, #20, etc. Beta ratings and part numbers specific to each media can be found in the filter model specifications in our Data Library on this website.

All flow measurements were made with 32cSt [150 SSU] hydraulic oil at 100°F (37.7°C), fluid specific gravity of 0.9.

Pressure Drop Calculation

Clean Filter Assembly = head ΔP + element ΔP

Calculation Definitions

ΔP_E = Element pressure drop from curve

ΔP_M = Corrected element pressure drop

S.G. = New specific gravity

SSU = New SSU viscosity (Saybolt Seconds Universal)

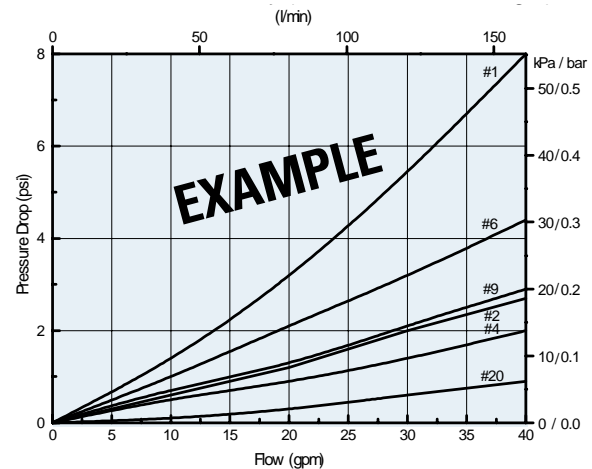
cSt = New cSt viscosity (centistokes)

cP = New cP viscosity (centipoise)

Corrections

To correct element drops for viscosity and/or specific gravity, use one of these formulae:

- $\Delta P_M = \Delta P_E \times (SSU/150) \times (S.G./0.9)$
- or -
- $\Delta P_M = \Delta P_E \times (cSt/32) \times (S.G./0.9)$
- or -
- $\Delta P_M = \Delta P_E \times (cP/29)$



Electrical Service Indicators

All electric models have a maximum operating temperature of 250°F/ 114°C.

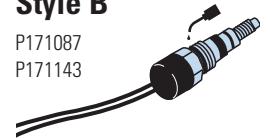
Part No.	Use with Bypass Valve Pressure of:	Description	Where Used	Illustration
P162400	25 psi/ 172 kPa	DC/single post. Normally open.	HBK04, HBK05, HMK04/24, HMK05/25	Style A
P163601	15 psi/ 103 kPa	DC/single post. Normally open.	HBK04, HBK05, HMK04/24, HMK05/25	Style A
P163642	5 psi/ 34 kPa	DC/single post. Normally open.	HBK04, HBK05, HMK04/24, HMK05/25	Style A
P163839	25 psi/ 172 kPa	DC/single post. Normally closed.	HBK04, HBK05, HMK04/24, HMK05/25	Style A
P165194	50 psi/ 345 kPa	DC/single post. Normally open.	HMK03, HMK04/24, HMK05/25	Style A
P166298	50 psi/ 345 kPa	AC/DC 3-wire. Red: normally open; blue: normally closed; white: common.	HPK02, HPK03, HPK04, HPK05	pg 79
P167455	50 psi/ 345 kPa	DC/single post. Normally closed.	HMK04/24, HMK05/25	Style A
P170926	50 psi/ 345 kPa	DC 2-wire. Normally closed. Gold contacts. Microprocessor compatible.	HMK04/24, HMK05/25	Style E
P171087	50 psi/ 345 kPa	DC 2-wire. Packard Weatherpack connector. Normally open.	HMK03, HMK04/24, HMK05/25	Style B
P171143	25 psi/ 172 kPa	DC 2-wire. Cannon connector. Normally open.	HBK04, HBK05, HMK03, HMK04/24, HMK05/25	Style B
P171966	22 psi/ 150 kPa	AC/DC. 0.5A resistive, 0.2A inductive	FIK	at right
P173893	50 psi/ 345 kPa	DC 3-wire. Gold alloy contacts. Microprocessor compatible. White: normally open; red: normally closed; black: common.	HMK04/24, HMK05/25	Style F
P173944	25 psi/ 172 kPa	AC/DC 3-wire. Silver alloy contacts. White: normally open; red: normally closed; black: common.	HBK04, HBK05, HMK03, HMK04/24, HMK05/25	Style C
P174396	50 psi/ 345 kPa	AC/DC 3-wire. Silver alloy contacts. White: normally open; red: normally closed; black: common.	HMK03, HMK04/24, HMK05/25	Style C
P761056	87 psi/ 592 kPa	AC/DC Normally open or closed. 250 VAC or 30 VDC max. 0.5A resistive, 0.2A inductive.	FPK02	pg 83

Style A



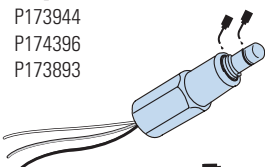
- P162400
- P163601
- P163642
- P163839
- P165194
- P167455

Style B



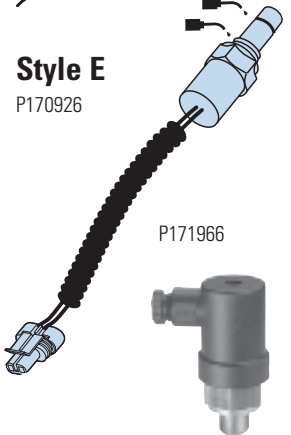
- P171087
- P171143

Styles C & F



- P173944
- P174396
- P173893

Style E



- P170926

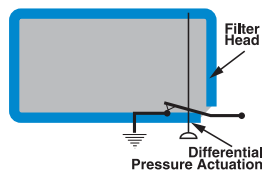
P171966



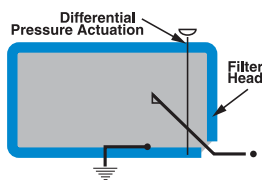
Electrical Schematics

Style A: Single Post DC Indicator (Maximum: 200 mA DC @ 30 VDC)

- P167455
- P163839

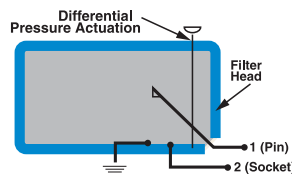


- P162400
- P163601
- P163642
- P165194

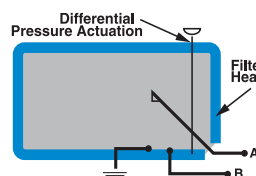


Style B: DC 2-Wire Indicator (Maximum: 200 mA DC @ 30 VDC)

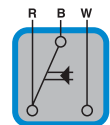
- P171143



- P171087

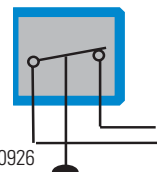


Style C, F: AC/DC 3-Wire Indicator (Maximums: 2 amps @ 24 VDC or 2 amps @ 110 VAC)



P173944

Style E: DC 2-Wire Indicator (Maximum: 100 mA DC @ 30 VDC)

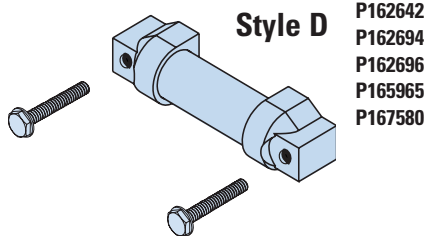


P170926

Visual Indicators & Pressure Gauges

Visual Indicators (non-Electric)

All non-electric models have a maximum operating temperature of 180°F/ 82°C.

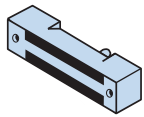


Style D

- P162642
- P162694
- P162696
- P165965
- P167580

NOTE on Style D Indicators:

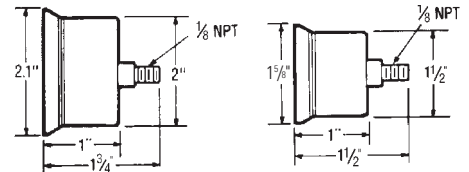
Our old square-style visual indicator has been improved in a design revision. If you have this style and order a replacement, you will receive the new rounded Style D shown above. **Exception:** P162694 is still made per the old style.



Part No.	Use with Bypass Valve Pressure of:	Where Used	Illustration
P162642	15 psi / 103 kPa	HBK04, HBK05, HMK04/24, HMK05/25	Style D
P162694	5 psi / 34 kPa	HBK04, HBK05	Style D (old style)
P162696	25 psi / 172 kPa	HBK04, HBK05, HMK04/24, HMK05/25	Style D
P164315	50 psi / 345 kPa	HPK02, HPK03, HPK04, HPK05	page 79
P165965	50 psi / 345 kPa	HMK03	Style D
P166603	50 psi / 345 kPa (reverse flow)	HPK04	page 91
P167580	50 psi / 345 kPa	HMK04/24, HMK05/25	Style D
P171958	17 psi / 116 kPa	FIK	at left
P171945	72 psi / 493 kPa	FPK02	page 83

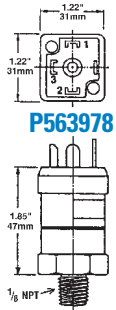


Part No.	Pressure Range	Function
P563296	0 to 100 PSI Numeric Scale	Return
P563297	0 to 100 PSI Color Coded (15 PSI)	Return
P563298	0 to 100 PSI Color Coded (25 PSI)	Return
P563299	0 to -20 Hg	Suction
P563300	0 to 30 PSI Color Coded (15 PSI)	Return

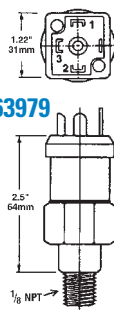


Pressure Gauges

#1 Common; #2 Normally Closed; #3 Normally Open



P563978



P563979



Instructions

1. Remove DIN adaptor
2. Remove small brass screw
3. Using 1/8" allen wrench adjust clockwise to increase set point/counter-clockwise to decrease set point
4. NO / NC

Adjustment screw located in center of elec. prongs

Part No.	Pressure Range	Function
P563978	5 to 30 PSI Field Adj.	Return
P563979	-5 to 15 in. Hg Field Adj.	Suction



P171956
for FIK series

-1 to +5 bar
14.5 to 72.5 psi
-100 to +500 kPa



P171953

G 1/8 →

Fluid Level Gauges

Description:

- Steel frame
- Acrylic lens
- Steel zinc plated bolts
- 5" mounting bolt centers
- Maximum wall thickness: 1/2"
- Maximum temperature:
SLT 225°F / 107°C; SLG 180°F / 80°C

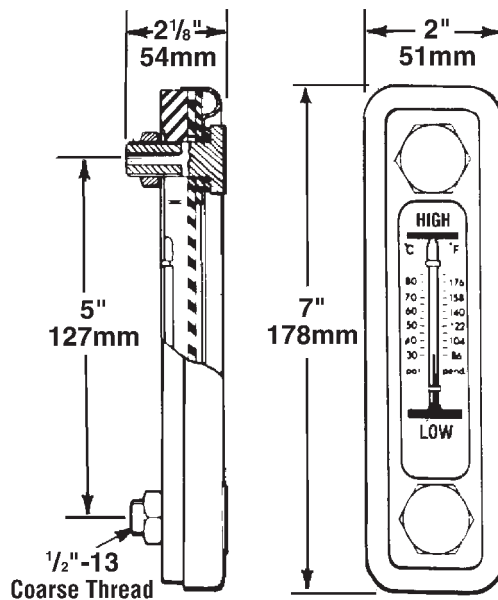


SLT-1214
P562433

SLG-5
P562432

Features

Donaldson offers a wide variety of fluid level gauges that let you accurately measure fluid levels in your tanks and reservoirs. Gauges are made with transparent lens material and are suitable for lubricants, mineral, petroleum and water based fluids. They offer 180° visibility of fluid level.



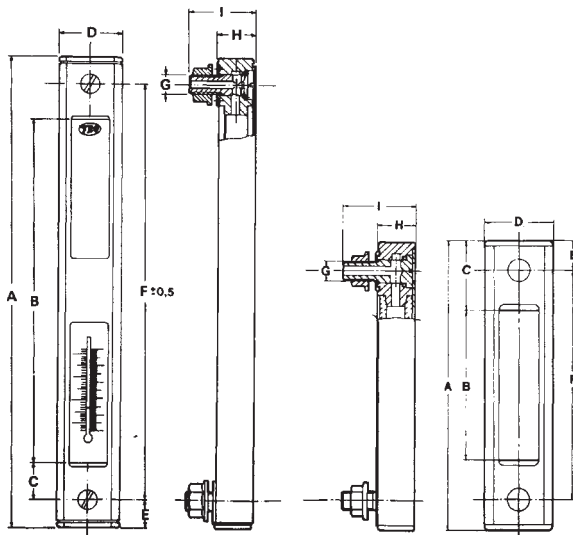
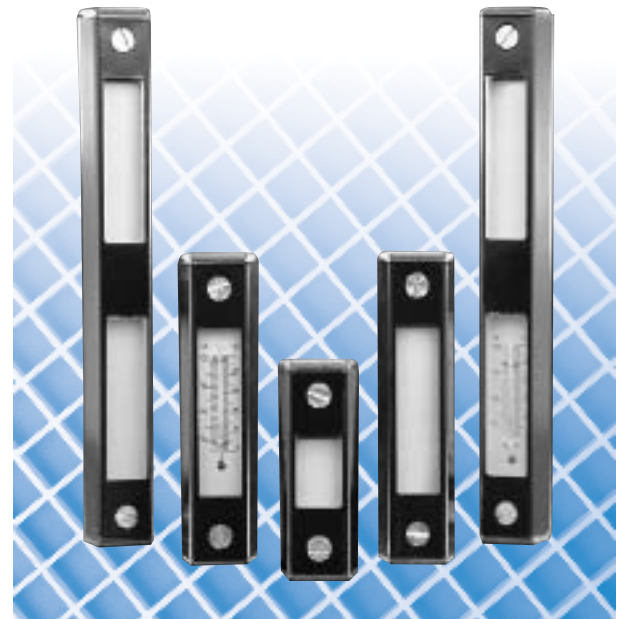
Accessories

Donaldson Part No.	Desc.	Feature	Seals
P562432	SLG-5	5" Level Gauge w/ Red Thermometer, Black Steel Frame	BunaN
P562433	SLT-1214	5" Level Gauge w/ Red Thermometer, Chrome Steel Frame	Neoprene

Bolt torque: 15 ft./lbs. Do not exceed 20 ft./lbs.

Description:

Transparent lens material
 BunaN seals
 Maximum working pressure
 for pressurized tanks:
 14.5 *psi* / 1 bar / 100 kPa.
 Oil level and temperature or oil level only
 Temperature scale:
 35° to 210°F / 30° to 90°C.



Bolt torque: 10 ft. lbs.
 Inside nut for tightening
 directly on the tank.
 Suggested mounting hole
 diameter: 11mm or 13mm.

Oil Level/Temperature Gauge Specifications (35° - 210°F / 30° - 90°C)

(shown above left)

Part No.	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G	H (in./mm)	I (in./mm)
P171920	6.22/158	3.22/82	.89/22.5	1.57/40	.61/15.5	5/127	m12	.78/20	1.57/40
P171922	11.22/285	8.23/209	.89/22.5	1.57/40	.61/15.5	10/254	m12	.78/20	1.57/40

Oil Level Gauge Specifications

(shown above right)

Part No.	A (in./mm)	B (in./mm)	C (n./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G	H (in./mm)	I (in./mm)
P171918	6.22/1.58	3.23/82	.89/22.5	1.57/40	.61/15.5	5/127	m12	.78/20	1.57/40
P171913	4.21/107	1.22/31	.89/22.5	1.57/40	.61/15.5	3/76	m10	.78/20	1.57/40

Description:

Ultrasonically welded polyamide
 Suitable for pressurized reservoirs
 (260 *psi* max.)
 Maximum operating temperature:
 212°F / 100°C
 Scale: 32°F to 212°F / 0°C to 100°C
 Maximum wall thickness:
 LG-3 - 1/2", LG-5/LG-10 - 3/8"
 BunaN O-Ring seals
 Zinc plated bolts

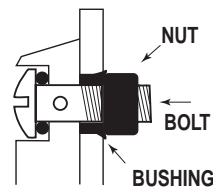
Note: Any contact with alcohol, alcohol-based washing fluids, or petroleum distillates must be avoided. Do not chamfer tank mounting holes.



Options:

- 1/2-13 bolts (LG-5)
- Protective guard (LG-5)
- Viton seals
- Red and blue thermometers
- Alcohol resistant version
- Fast mount kit (requires no internal access or threads to mount)

Fast Mount Assembly Instructions



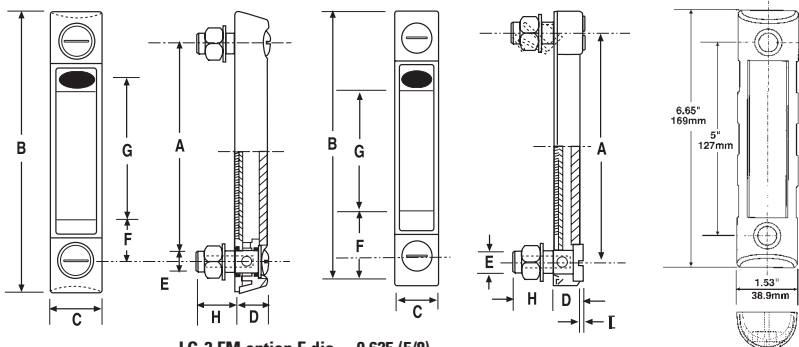
Installation: Tighten nuts on bolts to the point where nuts are snug against bushings. Apply one drop of thread lock to last exposed thread at end of bolts. Mount on tank and tighten to 7 ft. lbs. (DO NOT OVER-TIGHTEN).

Removal: Loosen bolts and remove. (IMPORTANT: THREAD LOCK PREVENTS OVER-LOOSENING OF BOLTS TO POINT WHERE NUTS DROP OFF INTO TANK.)

LG Series

LGZ Series

LG-5G Guard



LG-3 FM option E dia. = 0.625 (5/8)
 LG-5, 10 FM option E dia. = 0.688 (11/16)

Bolt torque: 9 ft./lbs.
 (7 ft./lbs. fast mount)

Fluid Level Gauge Guard (LG-5 Series only)

Donaldson Part No.	Description	Feature	Bolt Center Dim. A	Dim. B	Dim. C	Dim. D
P562453	LG-G	5" Level Gauge Guard	5.00/127	6.65/169	1.53/39	.98/25



Transparent Polyamide Fluid Level Gauges

Donaldson Part No.	Description	Feature	Bolt Center				Hole Dia.		Bolt Size	Dim. F	Dim. G	Dim. H	Dim. I
			Dim. A	Dim. B	Dim. C	Dim. D	Dim. E						
P562438	LG-3	3" Level Gauge	3.00/76	4.17/106	1.06/27	.63/16	.42/10	M10 x 1.5	.71/18	1.31/33	.83/21		
P562440	LG-3-FM	3" Level Gauge w/ Fast Mount kit	3.00/76	4.17/106	1.06/27	.63/16	.625/16	M10 x 1.5	.71/18	1.31/33	.83/21		
P562441	LG-3-T	3" Level Gauge w/ Red Thermometer	3.00/76	4.17/106	1.06/27	.63/16	.42/10	M10 x 1.5	.71/18	1.31/33	.83/21		
P562442	LG-3-TB	3" Level Gauge w/ Blue Thermometer	3.00/76	4.17/106	1.06/27	.63/16	.42/10	M10 x 1.5	.71/18	1.31/33	.83/21		
P562454	LG-Z-3	3" Level Gauge	3.00/76	3.90/99	.90/22	.57/14.5	.42/10	M10 x 1.5	.70/18	1.30/33.6	.90/23	0.06/1.5	
P562455	LG-Z-3-T	3" Level Gauge w/ Red Thermometer	3.00/76	3.90/99	.90/22	.57/14.5	.42/10	M10 x 1.5	.70/18	1.30/33.6	.90/23	0.06/1.5	
P562444	LG-5	5" Level Gauge	5.00/127	6.34/161	1.22/31	.71/18	.47/12	M12 x 1.75	.90/23	2.91/74	.90/23		
P562445	LG-5-13	5" Level Gauge w/ 1/2" -13 bolt kit	5.00/127	6.34/161	1.22/31	.71/18	.50/13	1/2 - 13 UNC	.90/23	2.91/74	.90/23		
P563910	LG-5-AR	5" Level Gauge, Alcohol resistant	5.00/127	6.34/161	1.22/31	.71/18	.47/12	M12 x 1.75	.90/23	2.91/74	.90/23		
P562447	LG-5-FM	5" Level Gauge w/ Fast Mount kit	5.00/127	6.34/161	1.22/31	.71/18	.688/17.5	M12 x 1.75	.90/23	2.91/74	.90/23		
P562448	LG-5-T	5" Level Gauge w/ Red Thermometer	5.00/127	6.34/161	1.22/31	.71/18	.47/12	M12 x 1.75	.90/23	2.91/74	.90/23		
P562449	LG-5-T-13	5" Level Gauge w/ Red Thermometer & 1/2"-13 bolt kit	5.00/127	6.34/161	1.22/31	.71/18	.50/13	1/2 - 13 UNC	.90/23	2.91/74	.90/23		
P562450	LG-5-TB	5" Level Gauge w/ Blue Thermometer	5.00/127	6.34/161	1.22/31	.71/18	.47/12	M12 x 1.75	.90/23	2.91/74	.90/23		
P562451	LG-5-T-FM	5" Level Gauge w/ Red Thermometer & Fast Mount kit	5.00/127	6.34/161	1.22/31	.71/18	.688/17.5	M12 x 1.75	.90/23	2.91/74	.90/23		
P563913	LG-5-T-G	5" Level Gauge w/ Red Thermometer & Guard	5.00/127	6.34/161	1.22/31	.71/18	.47/12	M12 x 1.75	.90/23	2.91/74	.90/23		
P562452	LG-5-T-SS	5" Level Gauge w/ Red Thermometer, Stainless Bolt kit	5.00/127	6.34/161	1.22/31	.71/18	.47/12	M12 x 1.75	.90/23	2.91/74	.90/23		
P562456	LG-Z-5	5" Level Gauge	5.00/127	5.9/150	.90/22	.57/14.5	.47/12	M12 x 1.75	.93/23.5	2.90/73.7	.90/23	0.06/1.5	
P562457	LG-Z-5-T	5" Level Gauge w/ Red Thermometer	5.00/127	5.9/150	.90/22	.57/14.5	.47/12	M12 x 1.75	.93/23.5	2.90/73.7	.90/23	0.06/1.5	
P562458	LG-Z-5-V	5" Level Gauge w/ Viton seals	5.00/127	5.9/150	.90/22	.57/14.5	.47/12	M12 x 1.75	.93/23.5	2.90/73.7	.90/23	0.06/1.5	
P562434	LG-10	10" Level Gauge	10.00/254	11.42/290	1.38/35	.71/18	.47/12	M12 x 1.75	1.02/26	7.60/193	.90/23		
P562435	LG-10-LF	10" Level Gauge w/ Level Float	10.00/254	11.42/290	1.38/35	.71/18	.47/12	M12 x 1.75	1.02/26	7.60/193	.90/23		
P562436	LG-10-T	10" Level Gauge w/ Red Thermometer	10.00/254	11.42/290	1.38/35	.71/18	.47/12	M12 x 1.75	1.02/26	7.60/193	.90/23		
P562437	LG-10-TB	10" Level Gauge w/ Blue Thermometer	10.00/254	11.42/290	1.38/35	.71/18	.47/12	M12 x 1.75	1.02/26	7.60/193	.90/23		
P563909	LG-10-TB-SS	10" Level Gauge w/ Blue Thermometer & Stainless Bolt kit	10.00/254	11.42/290	1.38/35	.71/18	.47/12	M12 x 1.75	1.02/26	7.60/193	.90/23		



Preventing Water Contamination Problems

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By Dave Webb and Bill Needelman

Although necessary for life, water is a problem for most machines. Problems include corrosion, loss of lubricity, accelerated fatigue cracking, microbial growth, gels, oil oxidation, and acidity. Water creates special trouble in transformers - loss of dielectric strength and deterioration of winding insulation.



Summary

For minimum protection we recommend keeping water below the saturation level, generally 200-500 ppm for many oils and 10 ppm for transformer oils. For optimum protection we recommend maintaining water levels at or below 30% saturation, generally 75-150 ppm for most machines and 3 ppm for transformers. Maintaining water levels at or below 30% saturation alleviates the problems related to water as well as provides a safety margin against accidental spikes of contamination.

The best cure is prevention. Whenever possible *keep the water out* of the system. This includes good design (such as splash guards), good maintenance (including avoiding water leaks), and good contamination control. Preventing water contamination will preserve the fluid, which reduces costs and insures the integrity of the machinery.

Introduction

We live on a watery planet. Water covers 70% of the Earth's surface: largely in oceans, lakes, and rivers. Water is necessary for life. Before the Industrial Revolution water kept the prime movers going in manufacturing, transportation, and agriculture, from water wheels to beasts of burden. Things have changed. We now rely on high performance machinery. Most of these machines rely on oil for lubrication, heat removal, and power transmission. Modern essential oil-wetted systems include: hydraulics, steam and gas turbines, engines, motors, gearboxes, and electrical transformers.

Paradoxically, as essential as water is for biological life, it is bad for machine life. Along with particles from dirt and wear, water is one of the two most harmful contaminants. Water problems range from corrosion to oil degradation and from plugging gels to the flourishing of microbial colonies. Minimizing water contamination maximizes the performance, fuel efficiency, productivity, and machine life.

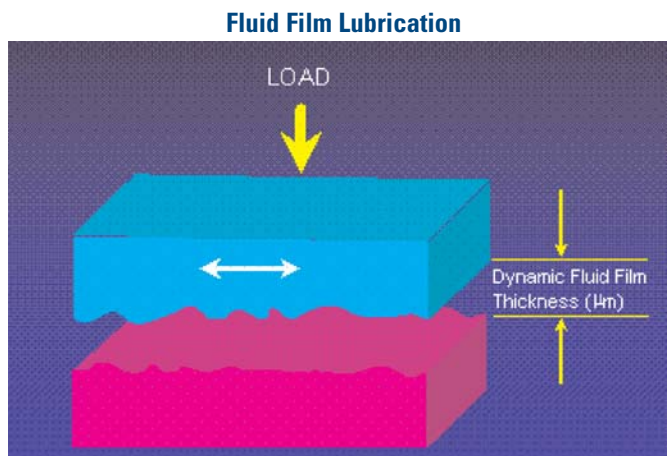
Water Problems

Below is a description of problems caused and/or aggravated by water.

Corrosion: Corrosion is the most obvious problem with free water in oil. It starts with an electromechanical action: pits are formed by the removal of surface metal, resulting in rough surfaces being produced by weaker material and friction. Corrosion also produces abrasive oxides, such as iron rust, that abrade surfaces, occlude clearances, and break off to damage moving parts.

Loss of Lubricity: Films of oil separate moving surfaces and when water contaminates these films it displaces the oil. Water cannot keep the surfaces apart, resulting in high friction, adhesive wear, and even seizure.

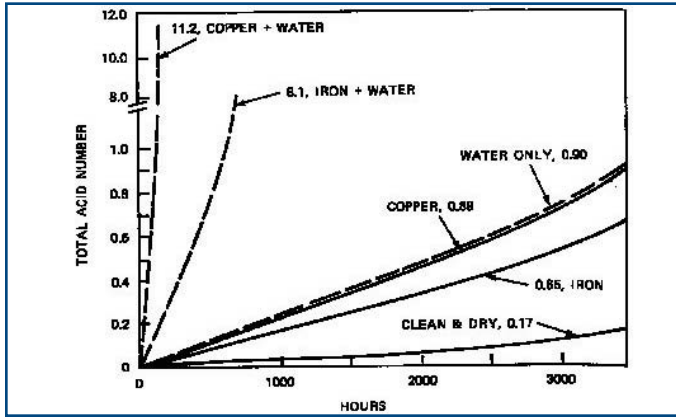
Figure 1: Lubricant Film Supports The Load & Separates Opposing Surfaces



Oil Oxidation: This phenomena produces long-chain polymers that form when oil and water combine. These polymers act as thickeners, increasing oil viscosity. Water accelerates this primary path for oil breakdown. Negative consequences include excessive viscosity, acidity, and insoluble resins.

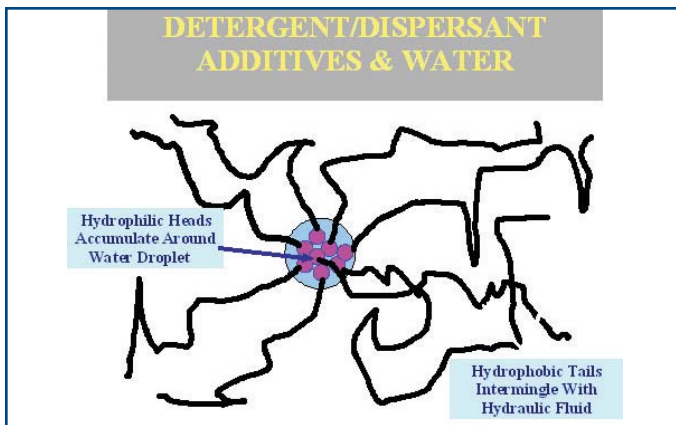


Figure 2: Water Accelerates Lubricant Oxidation As Measured By TAN



Additive Depletion: Most commercial oil-based fluids contain additives. Water ingress will negatively impact these additives. When additives migrate into free water, the oil concentration of some additives falls below effective levels.

Figure 3

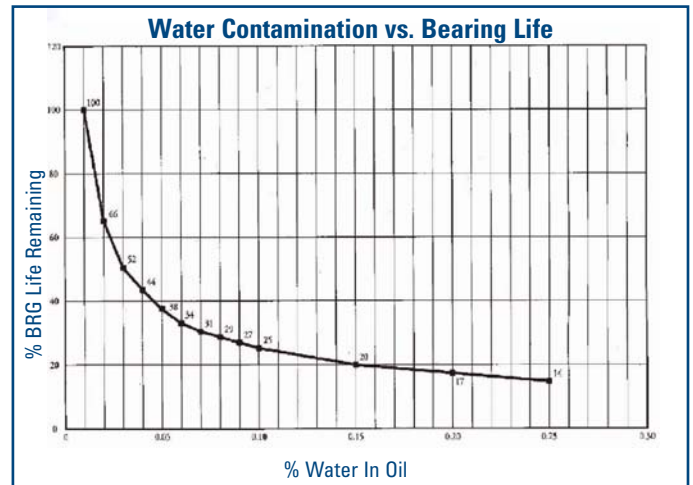


Hydrolysis: Esters are used where low flammability and/or high temperature resistance is important. But the problem is that ester linkage is hydrophilic, or “water-loving.” Unfortunately, that feeling is not reciprocated: water reacts with the very same ester linkage and breaks it apart in a process called *hydrolysis*. In the presence of water, ester-based additives and synthetic fluids (such as phosphate esters and

polyol esters) decompose into alcohols and acids. Additives are lost and, for ester-based synthetics, oils become acidic. In some cases the acids combine with metals, forming tenacious plugging gels.

Reduced Fatigue Life: Rolling bearings and many types of gears are rated by their contact fatigue life. Contact fatigue life depends on such parameters as bearing steel, load, temperature, and oil viscosity. Contact fatigue life also depends on contamination. As shown in Figure 4, increasing the concentration of water in oil significantly diminishes fatigue life. Dissolved water enters microcracks in rolling contacts, dissociates into hydrogen gas, and weakens steel by hydrogen embrittlement. This process can cut rolling contact fatigue life by seven.

Figure 4: Reduced Rolling Contact Fatigue With Increasing Water Concentration



Microbe Colonies: Some microbes consider oil to be highly nutritious food. But they also need free water to grow and multiply. Negative consequences of microbial growth include rancid foul odors, human health problems, biomass slimes, foaming, and acidic oil. Preventing the water ingress is a far easier way of treating this problem than treating the symptoms.



Gels: Some additives interact with water to form gels. These gels foul flow passages, reduce heat rejection, and plug filters. An example is paper machine oils (PMO). Although PMO are now formulated to be more filterable in the presence of water, high water contamination leads to more gel formation, increasing the likelihood of fouling and short filter life. Some oil additives combine with water to form gels that foul oil passageways, flow meters, and filters.

Transformers: Most conductor windings are insulated by cellulose, which deteriorates in the presence of water. Water also diminishes the dielectric strength of transformer oils. Even minute amounts of water contamination will reduce the life and efficiency of the transformer.

Water-in-oil Concentrations

As an experiment, start with completely dry oil and slowly add water. At first, all the water is dissolved and/or solubilized in the oil. As long as the concentration of water remains below saturation, no free water forms. Keep adding water until the saturation level is reached. At that point any additional water added forms free water. Since many water-associated problems start with free water, saturation is of an essential value. However, different oils hold widely differing amounts of water before reaching saturation.

Contamination Control

Unfortunately many contamination control methods assume water has already entered the system and has to be removed after the fact.

Table B: Keeping Water Out
Oil Fill Caps With Seals
Check for Heat Exchanger & Hose Leaks
Splash Guards
Store Fluid in Dry Areas Sheltered From Rain
Avoid Inlets When Hosing
Check New Oil for High Water Levels (>Saturation)

Adsorbents: One approach uses filters containing water adsorbing materials. This approach is helpful when controlling relatively small amounts of free water (up to 100 ppm above saturation). It doesn't dry the oil below the saturation level and therefore doesn't alleviate dissolved water problems. In addition, if the oil dries slightly, the adsorbent material releases water back into the oil!

Vacuum Dehydration: Another method for taking water out of oil is vacuum dehydration. A vacuum reduces the water vapor pressure (the number of water molecules) in the air contacting the oil, so more water molecules hop out of the oil than enter into the oil from the gas phase. The net effect is reduced concentration of water in the oil. This process takes time as water has to first migrate to the surface and then escape. The process is typically accelerated by increasing the *air:oil* surface area and by heating the oil. Unfortunately vacuum dehydration has limitations. The process consumes high amounts of energy, which is costly due to capital equipment and labor. Some tightly bound water is not removed and lighter fractions of the base oil along with volatile additives evaporate with the majority of water. This leads to hydrocarbon emissions and may adversely change the composition of the oil. Basically, vacuum dehydration attempts to fix the water contamination problem after the fact.

Desiccant Breathers: One method that attempts to prevent humid air from entering fluid systems is the desiccant breather. Cartridges are mounted at the breather cap so that ingressing air passes through a bed of desiccant granule (typically silica gel or activated alumina) that removes water vapor from the incoming air stream. This reduces the number of water molecules in the air. Dry air – typically less than 30% RH - continuously contacts the oil surface and over time the water concentration in the oil reaches a similar low level. Since the overall air pressure is not reduced (only the water vapor pressure is reduced) volatile fractions of oil are not lost, as may happen during vacuum de-hydration. Although useful, desiccant breathers have serious drawbacks. Tightly packed granules restrict air flow which can





impede fluid movement in and out of the reservoir. Although effective when new, as desiccant breathers collect water their ability to remove additional water diminishes. They also have limited water holding capacity. When the granules become saturated with water, about 30% by weight, the desiccant is spent and the unit must be replaced (often indicated by a colored dye). Silica gel and alumina cannot be regenerated unless exposed to temperatures in excess of 360°F. Since they are impractical to regenerate, desiccant breathers have restricted service life.

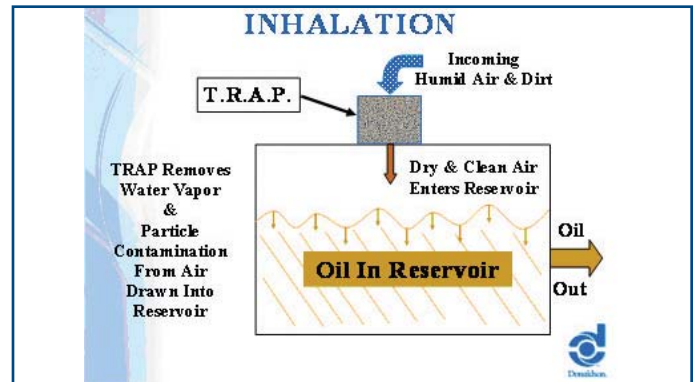
Deliquescent Breathers: Using patented technology, Donaldson has developed a new and superior method for preventing the ingress of humid air. It is based on thin film technology and the fact that air leaving a reservoir (exhalation) has lower relative humidity than air entering a reservoir (inhalation).

The T.R.A.P.™ (*Thermally Reactive Advanced Protection*) is manufactured by uniformly coating the walls of a porous network with a thin film of water-absorbing chemicals. The resulting high surface area of absorbent provides rapid removal of water vapor from air while keeping down size and weight. Unlike desiccant breathers the open porous structure presents minimal air flow restriction, so fluid flow into and out of the reservoir is not impeded. In addition, the proprietary absorbents are not sensitive to oil mists entrained in the air leaving the reservoir.

As a bonus, the T.R.A.P.™ unit includes a pleated 3 mm filter to protect against ingress of hard abrasive contaminant particles that contribute to the wear of mechanical components. T.R.A.P.™ is manufactured from materials that can be safely disposed or recycled.

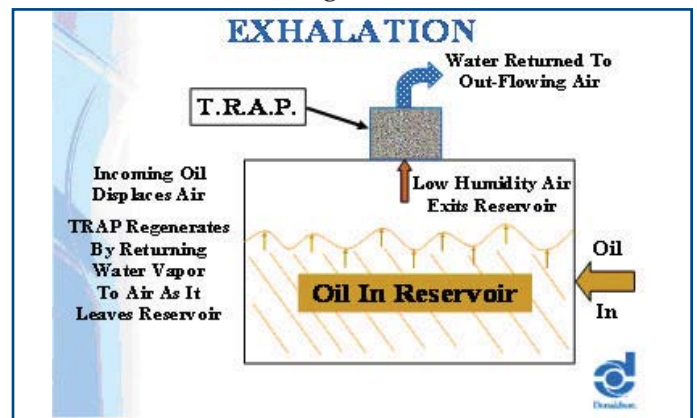
As illustrated in Figure 5A, during “inhalation” humid outside air attempting to enter the system is drawn over a large absorbent surface area inside T.R.A.P.™. High humidity drives water into the absorbent and most of the water vapor is removed. This dry air maintains the water concentration below 30% saturation. Once inside the system the air contacts warm fluid and metal surfaces, which increases air temperature and further reduces relative humidity.

Figure 5A



During exhalation, Figure 5B, this very low humidity air passes over the same T.R.A.P.™ absorbent. Low humidity air pulls water out of the thin films of absorbent. The rehumidified air exits the unit and is exhausted into the surroundings.

Figure 5B



It is the difference in relative humidity - high during inhalation and low during exhalation - that drives the T.R.A.P.™ process. The result is dry oil and regeneration of the T.R.A.P.™ absorbent during each cycle.





Figure 6



INFORMATION

For more information contact:
Donaldson Industrial Hydraulics
hydraulicfilters@mail.donaldson.com

For Technical Support
and
Ordering Information call:
1-800-846-1846

Visit our website:
www.donaldson.com

Conclusion

Water contamination causes major problems in oil-wetted machinery. Water can invade a system in many different ways and it may be present without our knowledge. **Prevention** of water ingress to an oil reservoir is **the best cure**. Conventional water control methods have serious limitations. Absorbent filters may help with free water in small systems, but have low capacity, cannot control dissolved water, and may even re-entrain previously captured water. Vacuum dehydrators are expensive and may adversely change the oil. Desiccant breathers are limited by low water holding capacity and need frequent replacement. An innovative, self-regenerating breather, the T.R.A.P.™, effectively maintains water in oil well below saturation levels. It is small, lightweight, doesn't harm the oil, and possesses unlimited water removing capacity.



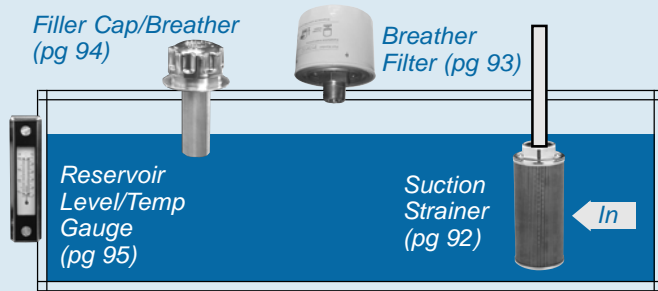
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Hydraulic System Accessories



- ☑ Hydraulic Filter Service Indicators
- ☑ Tank Breathers for hydraulic reservoirs
- ☑ Suction Strainers
- ☑ Filler Breather Caps
- ☑ Tank/Reservoir Level Gauges



Find service indicators for filter assemblies on pgs 96-97.

Suction Strainers for Filtering Hydraulic Reservoirs

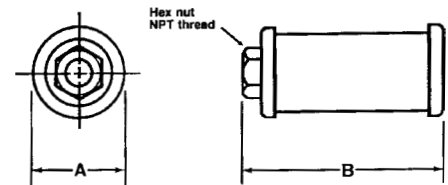


Features

- Flow Range: 0-100 gpm / 0-389.5 l/min
- 1/2" NPTF to 3" NPTF
- Meets J.I.C. Standards
- One piece construction
- Available with or without relief valve
- Stainless steel pleated 100 mesh/140µm screen
- Plated perforated steel center core epoxy bonded to heavy gauge connector and end caps
- Reusable! Clean by swishing in non-caustic solvent, then blow from inner diameter to outer diameter with compressed air.

Application

The Donaldson Suction Strainer filters petroleum-based hydraulic fluids, phosphate esters, water glycols, lubricating oils, coolants, fuels and water in fluid reservoirs, sumps, and similar applications.



Suction Strainer Dimensional Specifications & Performance

with NO relief valve	with 3 psi relief valve	NPTF Pipe Size	A (Diameter)		B (Length)		Screen Area (sq. in.)	Weight		Flow ¹	
			in	mm	in	mm		lbs	kg	gpm	l/min
P169012		1/2"	2.63	66	3.10	79	62	0.4	.88	5	19
P169013	P173910	3/4"	2.63	66	3.55	80	68	0.5	1.1	8	30
P169014	P173911	1"	2.63	66	5.35	136	110	0.7	1.5	10	38
P169015	P173912	1 1/4"	3.38	86	6.85	174	162	1.0	2.2	20	76
P169016	P173913	1 1/2"	3.38	86	8.01	203	225	1.2	2.6	30	114
P169017	P173914	1 1/2"	3.94	100	9.8	250	340	1.4	3.1	50	189
P169018	P173915	2"	3.94	100	9.8	250	340	1.8	4.0	50	189
P169019	P173916	2 1/2"	5.12	130	10.1	256	400	2.3	5.0	75	284
P169020	P173917	3"	5.12	130	11.78	299	500	3.0	6.6	100	379

¹ On suction lines in hydraulic systems, the recommended flow velocity is 5 ft./sec. maximum. A clean filter with 225 SSU oil @ 100°F and a flow velocity of 5 ft./sec. will not exceed a pressure drop of 0.35 psi.

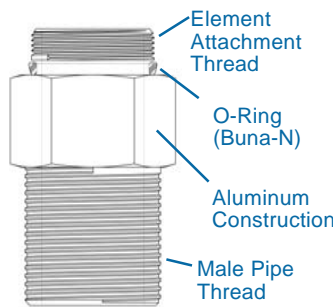
Threaded Adapters for Creating Tank Breather Requirement

Application

Adapting your hydraulic reservoir with a Donaldson breather filter...

- Reduces your parts inventory;
- Improves your filtration to extend equipment life;
- Lengthens filter service intervals.

To create a tank breather, choose either of the two threaded adapters below, then select a breather spin-on filter based on your desired efficiency level, filter dimensions and the maximum rate of reservoir drawdown or air exchange rate. As a rule of thumb, clean pressure drop should be limited to 0.18 *psi*/ 5" H₂O.



Installation Tips

A pipe flange, weld collar, or half coupling may be used to connect the breather adapter to the reservoir. Make sure that air cannot leak around the adapter. When mounting on the side of the reservoir, make sure the installation is as high as possible to stay above the surface of the fluid.

Maintenance Tips

Change the filter after each 500 hours of operation. More frequent replacement may be required when operating in heavily contaminated areas such as grinding operations, primary metal mills, and on mobile equipment. Under such conditions, Donaldson recommends replacement every 250 hours.

Breather Adapters

Part Number	Length in mm	Male Pipe Thread	Element Attachment Thread
P173544	2½ 57	¾" NPT	1"-12 UNF-2A
P173545	3 76	1¼" NPT	1½"-16 UN-2A

Breather Spin-on Filters

Efficiency & Media Type	Part Number	Filter Series	Length in mm	Outer Dia. in mm	Flow ¹ scfm gpm
for P173545 Adapter					
3µ Nominal, Cellulose	P550386	LPS05	7 178	5 172	35 262
	P550250	LPS05	11 279	5 172	42 314
3µ Absolute, Synteq®	P169430	HBK05	7 178	5 172	35 262
	P167832	HBK05	11 279	5 172	42 314
5µ Absolute, Synteq®	P167162	HBK05	7 178	5 172	59 440
	P165762	HBK05	11 279	5 172	64 479
10µ Nominal, Cellulose	P550388	LPS05	7 178	5 172	59 440
	P550251	LPS05	11 279	5 172	64 479
	P550253 ²	LPS05	11 279	5 172	43 321
13µ Absolute, Synteq	P165875	HBK05	7 178	5 172	59 440
	P165876	HBK05	11 279	5 172	64 479
for P173544 Adapter					
3µ Nominal, Cellulose	P551550	LPS04	5 172	3.7 96	15 112
10µ Nominal, Cellulose	P551551	LPS04	5 172	3.7 96	23 172
	P550255	LPS04	9 229	3.7 96	28 216
25µ Nominal, Cellulose	P551554 ²	LPS04	5 172	3.7 96	10 77

Notes:

- (1) Based on a maximum pressure drop of 5" H₂O/ 0.18 *psi* through a clean filter.
- (2) Water Absorbing Filter. Absorbs approximately 6.6 oz/198 *ml* of water @ 5 *gpm* to 10 *psi*.

Replacement for Schroeder ABF3/10

P538455 Spin-on Breather & Adapter
P538532 Spin-on Breather only

Specifications:

- Diameter: 3.69" / 93.7 mm
- Height: 3.2" / 81.3 mm
- Threads on adaptor: 3/4-14 NPT

Accessories

Filler Breather Assemblies



Features

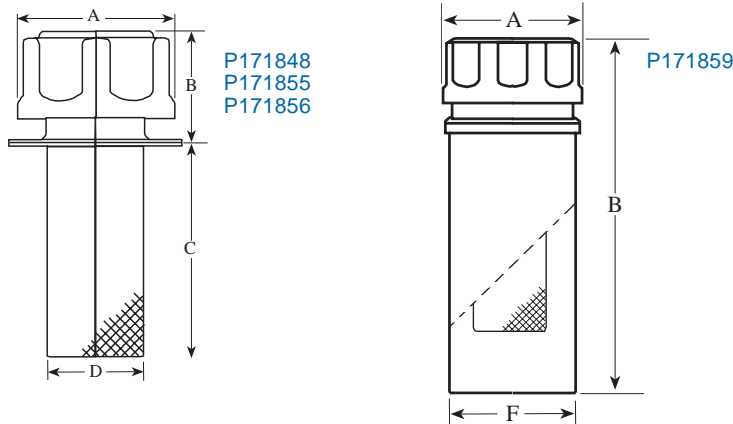
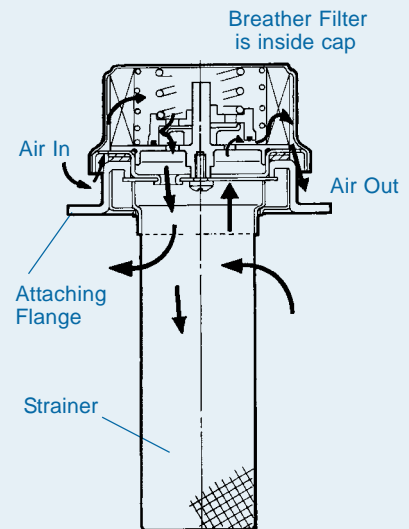
Removable 500µm mesh strainer. (Except model P171848, which has a non-removable strainer.)

10µm air breather/filter.

Models P171855 & P171848 include drilled flanges with attaching screws.

How They Work

As fluid levels rise and fall inside the reservoir, air flows in and out through the strainer and breather as shown below. The breather filter inside the cap removes contaminants as small as 10µm from the air to keep airborne contaminant from entering the fluid. The strainer removes large particles from fluid as it is added to the reservoir.



Filler Breather Specifications

Part Number	FLANGE SPECIFICATIONS				FILLER BREATHER SPECIFICATIONS									
	Outer Dia. in	mm	No. of Holes	Hole Dia. in mm	Flow gpm	lpm	A in mm		B in mm		C in mm		D in mm	
P171848	2.01	51	3	.22 6	70	270	1.81	45	1.38	35	2.48	63	1.1	28
P171855	3.31	84	6	.22 6	124	470	2.76	70	1.81	46	3.94	100	1.5	38
P171856	3.31	84	n/a	n/a	124	470	2.76	70	1.81	46	3.94	100	1.15	38
P171859			n/a - weldable		124	470	2.76	70	n/a		7.09	180	2.50	64
P171860 *			n/a - weldable		124	470	2.76	70	n/a		7.09	180	2.50	64

* For pressurized reservoirs

Filler Cap Only (Replacement)

P173292 --- fits P171855, P171856, P171859

P173364 for pressurized reservoir --- fits P171860

Tank/Reservoir Level Gauges



Applications

To accurately monitor the oil level in your tanks and reservoirs, choose Donaldson level gauges. Three models indicate oil level and temperature, 35° to 210°F (30° to 90°C). Two models indicate oil level only.

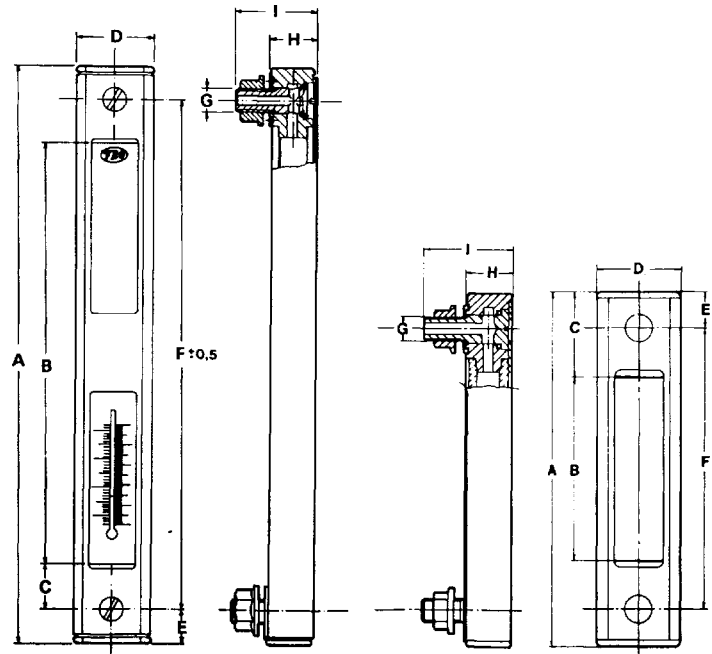
Features

Transparent lens material is protected by metal bar with BunaN seals.

Maximum working pressure for all models is 14.5 *psi* / 1 bar / 100 kPa for pressurized tanks.

Recommended bolt tightening torque is 10 lbs-ft, with inside nut for tightening directly on the tank.

Suggested mounting hole diameter: 11mm or 13mm.



Oil Level/Temperature Gauge Specifications (35° - 210°F/ 30° - 90°C) (shown above left)

Part Number	A		B		C		D		E		F		G	H		I	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		in	mm	in	mm
P171920	6.22	158	3.22	82	.89	22.5	1.57	40	.61	15.5	5	127	m12	.78	20	1.57	40
P171922	11.22	285	8.23	209	.89	22.5	1.57	40	.61	15.5	10	254	m12	.78	20	1.57	40

Oil Level Gauge Specifications (shown above right)

Part Number	A		B		C		D		E		F		G	H		I	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		in	mm	in	mm
P171918	6.22	158	3.23	82	.89	22.5	1.57	40	.61	15.5	5	127	m12	.78	20	1.57	40
P171913	4.21	107	1.22	31	.89	22.5	1.57	40	.61	15.5	3	76	m10	.78	20	1.57	40

Electrical Service Indicators

All electric models have a maximum operating temperature of 250°F/ 114°C.

Part No.	Use with Bypass Valve Pressure of:	Description	Where Used	Illustration
P160077	All	DC. Normally open.	HAK05, HDK06, HFK08	pg 47
P160089	All	DC 3 amps. Normally open.	HEK11	pg 51
P161059	All	AC 3 amps. Normally open.	HAK05, HDK06, HFK08	at right
P162400	25 psi/ 172 kPa	DC/single post. Normally open.	HBK04, HBK05, HMK04/24, HMK05/25	Style A
P163601	15 psi/ 103 kPa	DC/single post. Normally open.	HBK04, HBK05, HMK04/24, HMK05/25	Style A
P163642	5 psi/ 34 kPa	DC/single post. Normally open.	HBK04, HBK05, HMK04/24, HMK05/25	Style A
P163839	25 psi/ 172 kPa	DC/single post. Normally closed.	HBK04, HBK05, HMK04/24, HMK05/25	Style A
P165194	50 psi/ 345 kPa	DC/single post. Normally open.	HMK03, HMK04/24, HMK05/25	Style A
P166298	50 psi/ 345 kPa	AC/DC 3-wire. Red: normally open; blue: normally closed; white: common.	HPK02, HPK03, HPK04, HPK05	pg 89
P167455	50 psi/ 345 kPa	DC/single post. Normally closed.	HMK04/24, HMK05/25	Style A
P170926	50 psi/ 345 kPa	DC 2-wire. Normally closed. Gold contacts. Microprocessor compatible.	HMK04/24, HMK05/25	Style E
P171087	50 psi/ 345 kPa	DC 2-wire. Packard Weatherpack connector. Normally open.	HMK03, HMK04/24, HMK05/25	Style B
P171143	25 psi/ 172 kPa	DC 2-wire. Cannon connector. Normally open.	HBK04, HBK05, HMK03, HMK04/24, HMK05/25	Style B
P171966	22 psi/ 150 kPa	AC/DC. 0.5A resistive, 0.2A inductive	FIK	at right
P173893	50 psi/ 345 kPa	DC 3-wire. Microprocessor compatible. White: normally open; red: normally closed; black: common.	HMK04/24, HMK05/25	Style F
P173944	25 psi/ 172 kPa	AC/DC 3-wire. White: normally open; red: normally closed; black: common.	HBK04, HBK05, HMK03, HMK04/24, HMK05/25	Style C
P174396	50 psi/ 345 kPa	AC/DC 3-wire. White: normally open; red: normally closed; black: common.	HMK03, HMK04/24, HMK05/25	Style C
P761056	87 psi/ 592 kPa	AC/DC Normally open or closed. 250 VAC or 30 VDC max. 0.5A resistive, 0.2A inductive.	FPK02	pg 77

Style A

P162400
P163601
P163642
P163839
P165194
P167455

Style B

P171087
P171143

Styles C & F

P173944
P174396
P173893

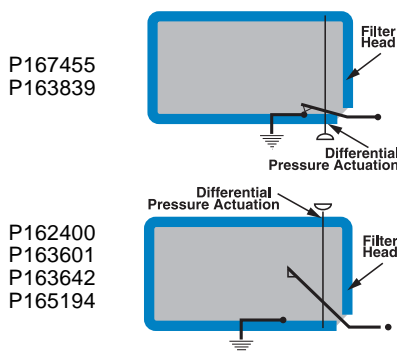
Style E

P170926
P171966

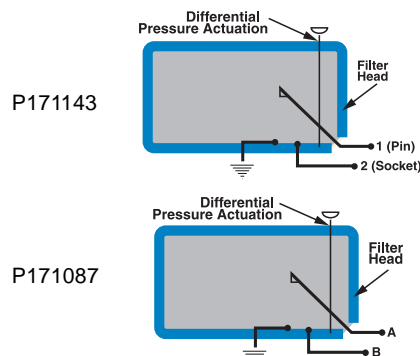
P161059

Electrical Schematics

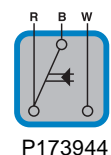
Style A: Single Post DC Indicator
(Maximum: 200 mA DC @ 30 VDC)



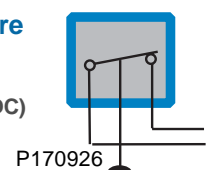
Style B: DC 2-Wire Indicator
(Maximum: 200 mA DC @ 30 VDC)



Style C, F: AC/DC 3-Wire Indicator
(Maximums:
2 amps @ 24 VDC or
2 amps @ 110 VAC)



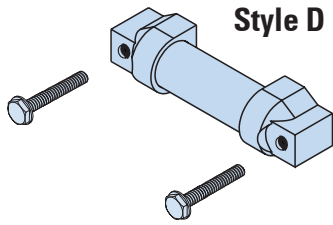
Style E: DC 2-Wire Indicator
(Maximum:
100 mA DC @ 30 VDC)



Visual Indicators & Pressure Gauges

Visual Indicators (non-Electric)

All non-electric models have a maximum operating temperature of 180°F/ 82°C.



Style D

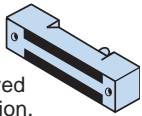
P162642
P162694
P162696
P165965
P167580

P171958



NOTE on Style D Indicators:

Our old square-style visual indicator has been improved in a design revision. If you have this style and order a replacement, you will receive the new rounded Style D shown above.



Part No.	Use with Bypass Valve Pressure of:	Where Used	Illustration
P162642	15 psi / 103 kPa	HBK04, HBK05, HMK04/24, HMK05/25	Style D
P162694	5 psi / 34 kPa	HBK04, HBK05	Style D
P162696	25 psi / 172 kPa	HBK04, HBK05, HMK04/24, HMK05/25	Style D
P164315	50 psi / 345 kPa	HPK02, HPK03, HPK04, HPK05	page 68
P165965	50 psi / 345 kPa	HMK03	Style D
P166603	50 psi / 345 kPa (reverse flow)	HPK04	page 82
P167580	50 psi / 345 kPa	HMK04/24, HMK05/25	Style D
P171958	17 psi / 116 kPa	FIK	at left
P171945	72 psi / 493 kPa	FPK02	page 74

Pressure Gauges



P174772
for LPS04 and LPS05 series

25 *psi*
172 kPa
1.7 bar



P171956
for FIK series

-1 to +5 bar
14.5 to 72.5 *psi*
-100 to +500 kPa

Remote Mount Differential Gauge

Use in Low or Medium Pressure Assemblies!

- Easy 'quick-glance' check zones:
Green = filter is clean ; Red = time to change filter
- Maximum working pressure:
500 *psi* / 3450 kPa / 34.5 bar
- Burst pressure: Exceeds 2000 *psi* / 13,795 kPa / 137.9 bar



Filter Bypass Rating	Part No.
25 <i>psi</i> / 172.5 kPa / 1.7 bar	P162037

Mini Breathers

Features & Benefits

- Moisture Removal - keeps moisture out
- Particulate Removal - highly efficient 3 µm filter keeps out dirt
- Oil Splash and Mist Containment - keeps oil inside reservoir
- Durable Glass-Filled Nylon Construction - compatible with many fluids, operating temperature +200°F (93°C)
- Multiple Connection Sizes Available - fits many applications

NEW
PRODUCT



Applications

Use mini breather versions for:

- Gearboxes
- Reservoirs with minimal air exchange
- Where solids ingress is the main concern

Use mini breather with T.R.A.P.™ technology for:

Hydraulic systems with breathing due to changes in reservoir liquid volume.

Operating requirements: Operating temperature must be at least 30°F (17°C) greater than ambient temperature.

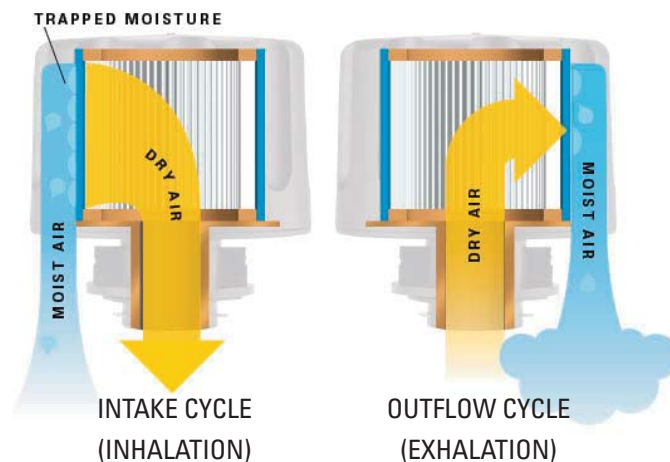
Lubrication systems that have ON/OFF cycles with at least 30 minutes continuous operation during each cycle.

Operating requirements: Operating temperature must be at least 40°F (22°C) greater than ambient temperature.

- Gearboxes turned off overnight
- Recirculating systems periodically turned off
- Any system with breathing due to thermal cycling

HOW IT WORKS

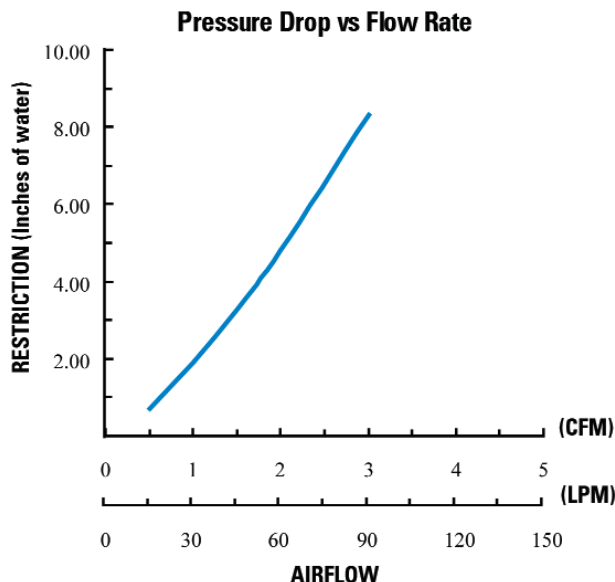
Patented T.R.A.P. media regenerates its water-holding capacity, which leads to longer service life.



Donaldson®

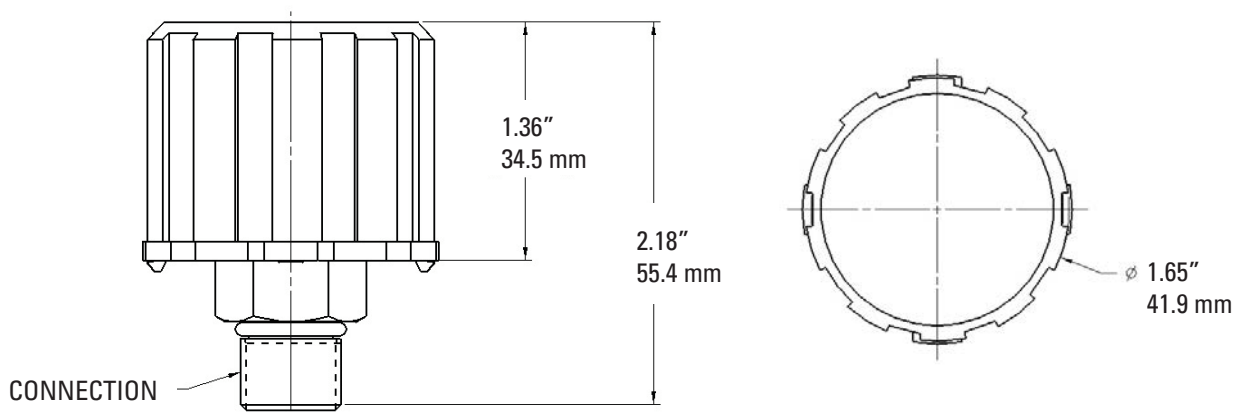
Technical Specifications

- Continuous operating temperature range
-40°F to 200°F / -40°C to 93°C
- Intermittent operation to 250°F / 121°C
- Compatible with hydraulic and lubrication fluids



Part Number	Moisture Removal	Particle Removal	Connection	Airflow	Oil Splash/Mist Mist Containment
P566174	Yes	Yes	9/16-18 UNF	3 CFM (90 LPM)	Yes
P567390	Yes	Yes	3/8" NPT	3 CFM (90 LPM)	Yes
P567392	Yes	Yes	1/4" NPT	3 CFM (90 LPM)	Yes
P567931	No	Yes	9/16-18 UNF	3 CFM (90 LPM)	Yes
P567932	No	Yes	3/8" NPT	3 CFM (90 LPM)	Yes
P567933	No	Yes	1/4" NPT	3 CFM (90 LPM)	Yes

Change or service every 6 months.



T.R.A.P. Breather... Moisture meets its match.™



Donaldson Company, Inc.
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P.O. Box 1299
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55440-1299 U.S.A.

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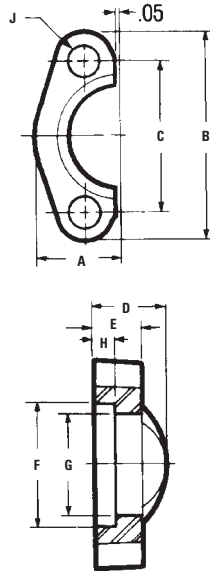
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Split Flanges

Description:

Code 61 and Code 62
BunaN O-Ring

Each kit includes:
2 split flange halves
4 hex head mounting bolts
and lockwashers
1 BunaN O-Ring



Code 61

Donaldson Part No.	Desc.	Flange Size (in./mm)	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J (Dia.) (in./mm)	Mounting Hardware		Maximum Working Pressure
												O-Ring	Hex Head Cap Screw	
P563042	L-12SF-3	0.75 19	0.98 25	2.56 65	1.875 48	0.88 22	0.56 14	1.531 39	1.265 32	0.245 6	0.406 10	214	3/8-16x11/4	5000 psi 34500kPa
P563044	L-16SF-3	1.00 25	1.11 28	2.75 70	2.062 52	0.94 24	0.62 16	1.781 45	1.515 38	0.295 7	0.406 10	219	3/8-16x11/4	5000 psi 34500kPa
P563047	L-20SF-3	1.25 32	1.39 35	3.12 79	2.312 59	0.88 22	0.56 14	2.031 52	1.720 44	0.295 7	0.469 12	222	7/16-14x11/2	4000 psi 27580 kPa
P563050	L-24SF-3	1.50 38	1.58 40	3.69 94	2.750 70	1.00 25	0.62 16	2.406 61	2.000 51	0.295 8	0.531 13	225	1/2-13x11/2	3000 psi 20685 kPa
P563053	L-32SF-3	2.00 51	1.86 47	4.00 102	3.062 78	1.03 26	0.62 16	2.844 72	2.470 63	0.355 9	0.531 13	228	1/2-13x11/2	3000 psi 20685 kPa
P563056	L-40SF-3	2.50 64	2.09 53	4.50 114	3.500 89	1.50 38	0.75 19	3.344 85	2.950 75	0.355 9	0.531 13	232	1/2-13x13/4	2500 psi 17240 kPa
P563057	L-48SF-3	3.00 76	2.53 64	5.31 135	4.188 106	1.62 41	0.88 22	4.031 102	3.580 91	0.355 9	0.656 17	237	5/8-11x13/4	2000 psi 13790 kPa

Code 62

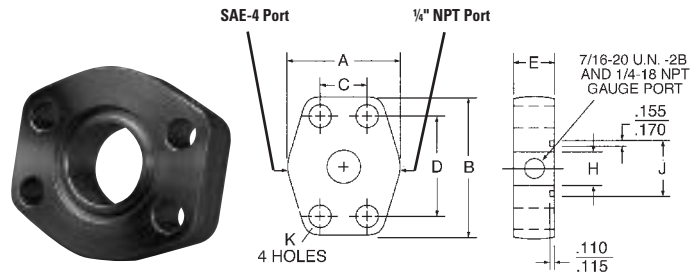
Donaldson Part No.	Desc.	Flange Size (in./mm)	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J (Dia.) (in./mm)	Mounting Hardware		Maximum Working Pressure
												O-Ring	Hex Head Cap Screw	
P563043	L-12SFX-6	0.75 19	1.14 29	2.81 71	2.000 51	1.12 28	0.75 19	1.656 42	1.280 33	0.325 8	0.406 10	214	3/8-16x11/2	6000 psi 41370kPa
P563046	L-16SFX-6	1.00 25	1.33 34	3.19 81	2.250 57	1.31 33	0.94 24	1.906 48	1.530 39	0.355 9	0.469 12	219	7/16-14x13/4	6000 psi 41370kPa
P563049	L-20SFX-6	1.25 32	1.48 38	3.75 95	2.625 67	1.50 38	1.06 27	2.156 55	1.750 44	0.385 10	0.531 13	222	1/2-13x13/4	6000 psi 41370kPa
P563051	L-24SFX-6	1.50 38	1.83 46	4.44 113	3.125 79	1.69 43	1.19 30	2.531 64	2.030 52	0.475 12	0.656 17	225	5/8-11x21/4	6000 psi 41370kPa
P563054	L-32SFX-6	2.00 51	2.20 56	5.25 133	3.812 97	2.06 52	1.44 37	3.156 80	2.660 68	0.475 12	0.781 20	228	3/4-10x23/4	6000 psi 41370kPa



Gage Port Spacer

Description:

Code 61 and 62
 Spacer block has 1/4" NPT gauge port
 and SAE-4 gauge port

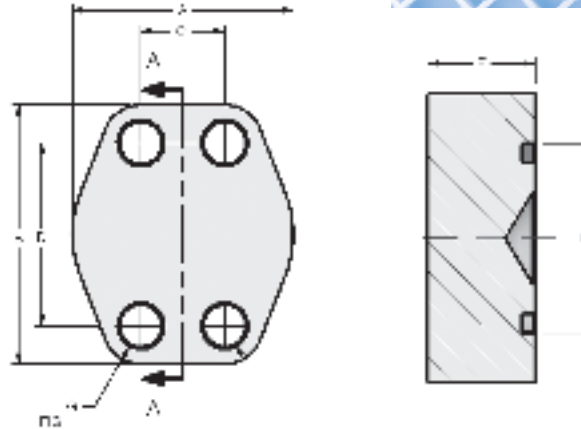
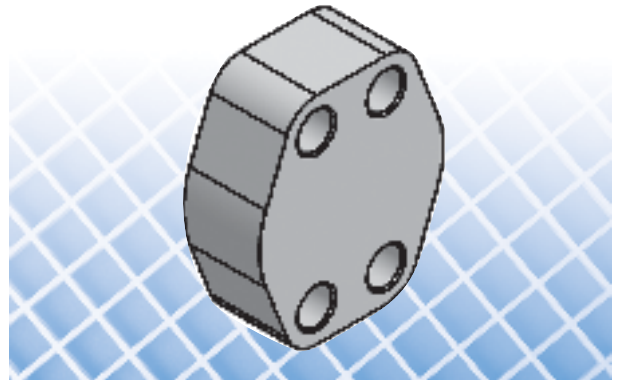


Donaldson Part No.	Desc.	Type	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	H (in./mm)	J (in./mm)	K (in./mm)
P563188	SB-16-30	Code 61	1"/25mm	2.31/59	2.75/70	1.031/26	2.062/52	0.88/22	1.002/25	1.56/40	0.406/10
P563189	SB-20-30	Code 61	1.25"/32mm	2.87/73	3.12/79	1.188/30	2.312/59	0.94/24	1.252/32	1.75/44	0.469/12
P563191	SB-24-30	Code 61	1.5"/38mm	3.25/83	3.68/93	1.406/36	2.750/70	1.19/30	1.502/38	2.115/54	0.531/13
P563190	SB-20-60	Code 62	1.25"/32mm	3.06/78	3.75/95	1.250/32	2.625/67	1.50/38	1.252/32	1.75/44	0.531/13

Blanking Flanges

Description:

Code 61 and 62
O-Ring



Blanking Flanges, Code 61

Donaldson Part No.	Desc.	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	Mounting O-Ring	Hardware SHCS
P563059	LIB-08-08-30	1/2"/13mm	1.813/46	2.125/54	0.688/17	1.500/38	0.75/19	1.000/25	0.344/9	210	5/16-18x1.50
P563060	LIB-12-12-30	3/4"/19mm	2.063/52	2.563/65	0.875/22	1.875/48	0.75/19	1.280/33	0.406/10	214	3/8-16x1.50
P563061	LIB-16-16-30	1"/25mm	2.313/59	2.750/70	1.031/26	2.063/52	0.88/22	1.560/40	0.406/10	219	3/8-16x1.75
P563063	LIB-20-20-30	1-1/4"/32mm	2.875/73	3.125/79	1.188/30	2.313/59	0.94/24	1.750/44	0.469/12	222	7/16-14x1.75
P563065	LIB-24-24-30	1-1/2"/38mm	3.250/83	3.688/94	1.406/36	2.750/70	1.19/30	2.115/54	0.531/13	225	1/2-13x2.25
P563067	LIB-32-32-30	2"/51mm	3.813/97	4.000/102	1.688/43	3.063/78	1.44/37	2.490/63	0.531/13	228	1/2-13x2.50

Blanking Flanges, Code 62

Donaldson Part No.	Desc.	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	Mounting O-Ring	Hardware SHCS
P563062	LIB-16-16-60	1"/25mm	2.750/70	3.190/81	1.093/28	2.250/57	1.50/38	1.560/40	0.492/12	219	7/16-14x2.50
P563064	LIB-20-20-60	1-1/4"/32mm	3.060/78	3.750/95	1.250/32	2.625/67	1.43/36	1.750/44	0.531/13	222	1/2-13x2.50
P563066	LIB-24-24-60	1-1/2"/38mm	3.750/95	4.440/113	1.437/36	3.125/79	1.82/46	2.115/54	0.656/17	225	5/8-11x3.00
P563068	LIB-32-32-60	2"/51mm	4.500/114	5.250/133	1.750/44	3.812/97	1.82/46	2.490/63	0.781/20	228	3/4-10x3.00

4-Bolt NPTF Threaded Flange

Description:

Code 61 and 62
 NPT Thread
 BunaN O-Ring
 Mounting hardware and O-Ring included
 on O-Ring models
 Maximum temperature with O-Ring
 250°F / 121°C

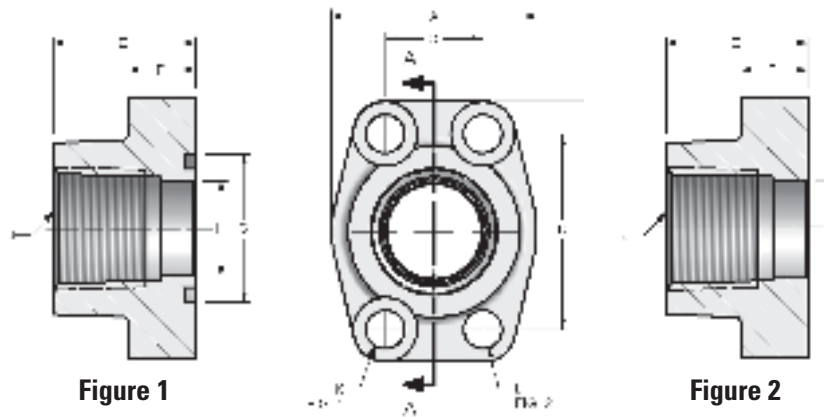
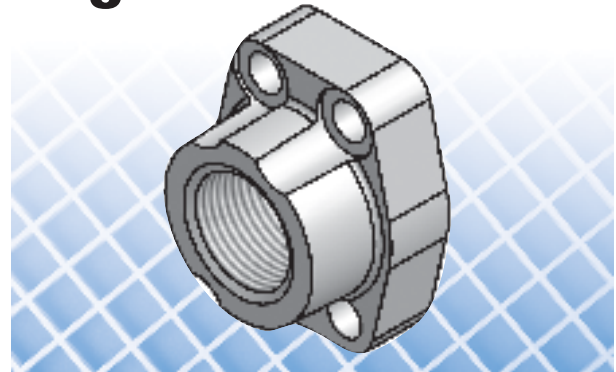


Figure 1

Figure 2

4 Bolt Threaded Flanges

Code 61 NPTF Thread, O-Ring (Figure 1)

Donaldson Part No.	Desc.	Port Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J NPTF	K (dia.) Drill	Mounting Hardware O-Ring	SHCS
P563088	LI-12-12P-30	0.75 19	0.75 19	1.97 50	2.56 65	0.875 22	1.875 48	1.42 36	0.71 18	1.250 32	0.752 19	3/4-14	0.406 10	214	3/8-16 x 1.25
P563093	LI-16-16P-30	1.00 25	1.00 25	2.17 55	2.75 70	1.031 26	2.062 52	1.50 38	0.71 18	1.560 40	1.002 25	1-11.5	0.406 10	219	3/8-16 x 1.50
P563100	LI-20-20P-30	1.25 32	1.25 32	2.68 68	3.12 79	1.188 30	2.312 59	1.61 41	0.83 21	1.750 44	1.252 32	1-1/4-11.5	0.469 12	222	7/16-14 x 1.50
P563107	LI-24-24P-30	1.50 38	1.50 38	3.07 78	3.66 93	1.406 36	2.750 70	1.77 45	0.98 25	2.115 54	1.502 38	1-1/2-11.5	0.531 13	225	1/2-13 x 1.75
P563113	LI-32-32P-30	2.00 51	2.00 51	3.54 90	4.00 102	1.688 43	3.062 78	1.77 45	0.98 25	2.490 63	2.002 51	2-11.5	0.531 13	228	1/2-13 x 1.75
P563117	LI-40-40P-30	2.50 64	2.50 64	4.09 104	4.49 114	2.000 51	3.500 89	1.97 50	0.98 25	2.995 76	2.502 64	2-1/2-8	0.531 13	232	1/2-13 x 2.25
P563118	LI-48-48P-30	3.00 76	3.00 76	4.88 124	5.28 134	2.438 62	4.188 106	1.97 50	1.06 27	3.615 92	3.002 76	3-8	0.656 17	237	5/8-11 x 2.50

Code 61 NPTF Thread, Flat Face (Figure 2)

Donaldson Part No.	Description	Port Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J NPTF	L Tap UNC-2B
P563161	LIC-12-12P-30	0.75 19	0.75 19	1.97 50	2.56 65	0.875 22	1.875 48	1.42 36	0.71 18	1.250 32	0.752 19	3/4-14	3/8-16
P563163	LIC-16-16P-30	1.00 25	1.00 25	2.17 55	2.75 70	1.031 26	2.062 52	1.50 38	0.71 18	1.560 40	1.002 25	1-11.5	3/8-16
P563166	LIC-20-20P-30	1.25 32	1.25 32	2.68 68	3.12 79	1.188 30	2.312 59	1.61 41	0.83 21	1.750 44	1.252 32	1-1/4-11.5	7/16-14
P563169	LIC-24-24P-30	1.50 38	1.50 38	3.07 78	3.66 93	1.406 36	2.750 70	1.77 45	0.98 25	2.115 54	1.502 38	1-1/2-11.5	1/2-13
P563171	LIC-32-32P-30	2.00 51	2.00 51	3.54 90	4.00 102	1.688 43	3.062 78	1.77 45	0.98 25	2.490 63	2.002 51	2-11.5	1/2-13

4 Bolt Threaded Flanges

Code 62 NPTF Thread, O-Ring (Figure 1)

Donaldson Part No.	Description	Port Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J NPTF	K (Dia.) Drill	Mounting Hardware O-Ring SHCS
P563089	LI-12-12P-60	0.75 19	0.75 19	2.17 55	2.80 71	0.937 24	2.000 51	1.38 35	0.83 21	1.250 32	0.752 19	3/4-14	0.406 10	214 3/8-16 x 1.25
P563094	LI-16-16P-60	1.00 25	1.00 25	2.56 65	3.19 81	1.093 28	2.250 57	1.65 42	0.98 25	1.560 40	1.002 25	1-11.5	0.492 12	219 7/16-14 x 1.50
P563101	LI-20-20P-60	1.25 32	1.25 32	3.07 78	3.75 95	1.250 32	2.625 67	1.77 45	1.06 27	1.750 44	1.252 32	1-1/4-11.5	0.531 13	222 1/2-13 x 1.50
P563108	LI-24-24P-60	1.50 38	1.50 38	3.70 94	4.41 112	1.437 36	3.125 79	1.97 50	1.18 30	2.115 54	1.502 38	1-1/2-11.5	0.656 17	225 5/8-11 x 1.75
P563114	LI-32-32P-60	2.00 51	2.00 51	4.50 114	5.28 134	1.750 44	3.812 97	2.56 65	1.46 37	2.490 63	2.002 51	2-11.5	0.781 20	228 3/4-10 x 1.75

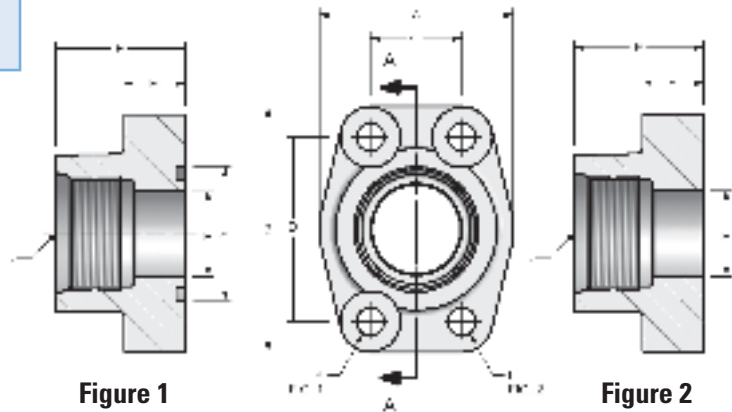
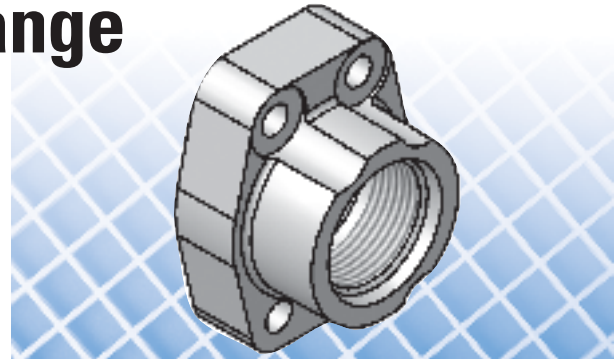
Code 62 NPTF Thread, Flat Face (Figure 2)

Donaldson Part No.	Description	Port Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J NPTF	L Tap UNC-2B
P563164	LIC-16-16P-60	1.00 25	1.00 25	2.56 65	3.19 81	1.093 28	2.250 57	1.65 42	0.98 25	1.560 40	1.002 25	1-11.5	7/16-14
P563167	LIC-20-20P-60	1.25 32	1.25 32	3.07 78	3.75 95	1.250 32	2.625 67	1.77 45	1.06 27	1.750 44	1.252 32	1-1/4-11.5	1/2-13
P563172	LIC-32-32P-60	2.00 51	2.00 51	4.50 114	5.25 133	1.750 44	3.812 97	2.56 65	1.46 37	2.490 63	2.002 51	2-11.5	3/4-10

4-Bolt SAE Threaded Flange

Description:

Code 61 and 62
 SAE Straight Thread
 BunaN O-Ring
 Mounting hardware and O-Ring included
 on O-Ring models
 Maximum temperature with O-Ring
 250°F/ 21°C



4 Bolt Threaded Flanges

Code 61 Straight Thread, O-Ring (Figure 1)

Donaldson Part No.	Desc.	Port Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J UN/UNF-2B	K (Dia.) Drill	Mounting Hardware O-Ring	SHCS
P563090	LI-12-12S-30	0.75/19	0.75/19	1.97/50	2.56/65	0.875/22	1.875/48	1.42/36	0.71/18	1.250/32	0.752/19	1 1/16-12	0.406/10	214	3/8-16 x 1.25
P563095	LI-16-16S-30	1.00/25	1.0/25	2.17/55	2.75/70	1.031/26	2.062/52	1.50/38	0.71/18	1.560/40	1.002/25	1 5/16-12	0.406/10	219	3/8-16 x 1.50
P563102	LI-20-20S-30	1.25/32	1.25/32	2.68/68	3.12/79	1.188/30	2.312/59	1.61/41	0.83/21	1.750/44	1.252/32	1 5/8-12	0.469/12	222	7/16-14 x 1.50
P563109	LI-24-24S-30	1.50/38	1.50/38	3.07/78	3.66/93	1.406/36	2.750/70	1.77/45	0.98/25	2.115/54	1.502/38	1 7/8-12	0.531/13	225	1/2-13 x 1.75
P563115	LI-32-32S-30	2.00/51	2.00/51	3.54/90	4.00/102	1.688/43	3.062/78	1.77/45	0.98/25	2.490/63	2.002/51	2 1/2-12	0.531/13	228	1/2-13 x 1.75

Code 61 Straight Thread, Flat Face (Figure 2)

Donaldson Part No.	Desc.	Port Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J UN/UNF-2B	L Tap UNC-2B
P563162	LIC-12-12S-30	0.75/19	0.75/19	1.97/50	2.56/65	0.875/22	1.875/48	1.42/36	0.71/18	1.250/32	0.752/19	1 1/16-12	3/8-16
P563165	LIC-16-16S-30	1.00/25	1.00/25	2.17/55	2.75/70	1.031/26	2.062/52	1.50/38	0.71/18	1.560/40	1.002/25	1 5/16-12	3/8-16
P563168	LIC-20-20S-30	1.25/32	1.25/32	2.68/68	3.12/79	1.188/30	2.312/59	1.61/41	0.83/21	1.750/44	1.252/32	1 5/8-12	7/16-14
P563170	LIC-24-24S-30	1.50/38	1.50/38	3.07/78	3.66/93	1.406/36	2.750/70	1.77/45	0.98/25	2.115/54	1.502/38	1 7/8-12	1/2-13
P563173	LIC-32-32S-30	2.00/51	2.00/51	3.54/90	4.00/102	1.688/43	3.062/78	1.77/45	0.98/25	2.490/63	2.002/51	2 1/2-12	1/2-13

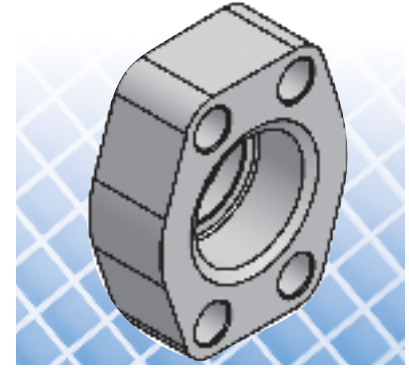
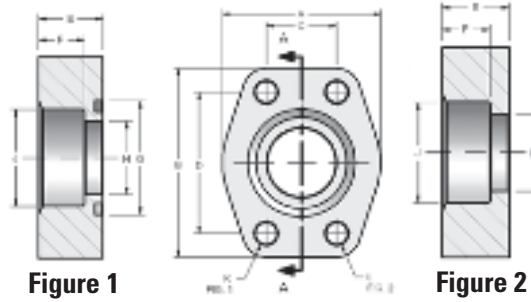
Code 62 Straight Thread, O-Ring (Figure 1)

Donaldson Part No.	Desc.	Port Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J UN/UNF-2B	K (Dia.) Drill	Mounting Hardware O-Ring	SHCS
P563091	LI-12-12S-60	0.75/19	0.75/19	2.17/55	2.80/71	0.937/24	2.000/51	1.38/35	0.83/21	1.250/32	0.752/19	1 1/16-12	0.406/10	214	3/8-16 x 1.25
P563096	LI-16-16S-60	1.00/25	1.00/25	2.56/65	3.19/81	1.093/28	2.250/57	1.65/42	0.98/25	1.560/40	1.002/25	1 5/16-12	0.492/12	219	7/16-14 x 1.50
P563103	LI-20-20S-60	1.25/32	1.25/32	3.07/78	3.75/95	1.250/32	2.625/67	1.77/45	1.06/27	1.750/44	1.252/32	1 5/8-12	0.531/13	222	1/2-13 x 1.75
P563110	LI-24-24S-60	1.50/38	1.50/38	3.70/94	4.41/112	1.437/36	3.125/79	1.97/50	1.18/30	2.115/54	1.502/38	1 7/8-12	0.656/17	225	5/8-11 x 2.25
P563116	LI-32-32S-60	2.00/51	2.00/51	4.50/114	5.28/134	1.750/44	3.812/97	2.56/65	1.46/37	2.490/63	2.002/51	2 1/2-12	0.781/20	228	3/4-10 x 2.75

Flat Socket Weld Flange

Description:

Code 61 and 62



Code 61, O-Ring (Figure 1)

Donaldson Part No.	Desc.	Pipe Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J (in./mm)	K (in./mm)	Mounting Hardware O-Ring	SHCS
P563119	LI-08-08W-30	0.50/13	0.50/13	1.813/46	2.125/54	0.688/17	1.500/38	0.75/19	0.560/14	1.000/25	0.502/13	0.855/22	0.344/9	210	5/16-18x1.5
P563120	LI-12-12W-30	0.75/19	0.75/19	2.063/52	2.563/65	0.875/22	1.875/48	0.75/19	0.560/14	1.250/32	0.752/19	1.062/27	0.406/10	214	3/8-16x1.5
P563121	LI-16-16W-30	1.00/25	1.00/25	2.313/59	2.750/70	1.031/26	2.063/52	0.88/22	0.630/16	1.560/40	1.002/25	1.328/34	0.406/10	219	3/8-16x1.75
P563122	LI-20-20W-30	1.25/32	1.25/32	2.875/73	3.125/79	1.188/30	2.313/59	0.94/24	0.690/18	1.750/44	1.252/32	1.672/42	0.469/12	222	7/16-14x1.75
P563123	LI-24-24W-30	1.50/38	1.50/38	3.250/83	3.688/94	1.406/36	2.750/70	1.19/30	0.750/19	2.115/54	1.502/38	1.922/49	0.531/13	225	1/2-13x2.25
P563124	LI-32-32W-30	2.00/51	2.00/51	3.813/97	4.000/102	1.688/43	3.063/78	1.38/35	0.875/22	2.495/63	2.002/51	2.406/61	0.531/13	228	1/2-13x2.5
P563126	LI-40-40W-30	2.50/64	2.50/64	4.281/109	4.500/114	2.000/51	3.500/89	1.75/44	1.000/25	2.995/76	2.502/64	2.906/74	0.531/13	232	1/2-13x2.75
P563127	LI-48-48W-30	3.00/76	3.00/76	5.156/131	5.313/135	2.438/62	4.188/106	2.12/54	1.250/32	3.615/92	3.002/76	3.547/90	0.656/17	237	5/8-11x3.5
*P563077	WS-48-48-5	3.00/76	3.00/76	5.120/130	5.310/135	2.438/62	4.188/106	1.38/35	1.120/28	3.615/92	3.002/76	3.547/90	0.656/17	237	5/8-11x2.50
P563078	WS-56-56-5	3.50/89	3.50/89	5.500/140	6.000/152	2.750/70	4.750/121	1.44/37	1.190/30	4.095/104	3.502/89	4.047/103	0.656/17	241	5/8-11x2.75
P563079	WS-64-64-5	4.00/102	4.00/102	6.000/152	6.380/162	3.062/78	5.125/130	1.5/38	1.250/32	4.595/117	4.002/102	4.578/116	0.656/17	245	5/8-11x2.75

Note: *500 PSI max of P563077

Code 61, Flat Face (Figure 2)

Donaldson Part No.	Desc.	Pipe Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J (in./mm)	L (in./mm)	UNC-2B
P563176	LIC-12-12W-30	0.75/19	0.75/19	2.063/52	2.563/65	0.875/22	1.875/48	0.75/19	0.560/14	1.250/32	0.752/19	1.062/27	3/8-16	
P563177	LIC-16-16W-30	1.00/25	1.00/25	2.313/59	2.750/70	1.031/26	2.063/52	0.88/22	0.630/16	1.560/40	1.002/25	1.328/34	3/8-16	
P563178	LIC-20-20W-30	1.25/32	1.25/32	2.875/73	3.125/79	1.188/30	2.313/59	0.94/24	0.690/18	1.750/44	1.252/32	1.672/42	7/16-14	
P563179	LIC-24-24W-30	1.50/38	1.50/38	3.250/83	3.688/94	1.406/36	2.750/70	1.19/30	0.750/19	2.115/54	1.502/38	1.922/49	1/2-13	
P563180	LIC-32-32W-30	2.00/51	2.00/51	3.813/97	4.000/102	1.688/43	3.063/78	1.38/35	0.875/22	2.490/63	2.002/51	2.406/61	1/2-13	
P563181	LIC-40-40W-30	2.50/64	2.50/64	4.281/109	4.500/114	2.000/51	3.500/89	1.75/44	1.000/25	2.995/76	2.502/64	2.906/74	1/2-13	

Code 62, O-Ring (Figure 1)

Donaldson Part No.	Desc.	Pipe Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J (in./mm)	K (in./mm)	Mounting Hardware O-Ring	SHCS
P563073	WS-16-16-60	1.00/25	1.00/25	2.750/70	3.190/81	1.093/28	2.250/57	1.5/38	0.630/16	1.560/40	1.002/25	1.328/34	0.492/12	219	7/16-14x2.50
P563074	WS-20-20-60	1.25/32	1.25/32	3.060/78	3.750/95	1.250/32	2.625/67	1.5/38	0.690/18	1.750/44	1.252/32	1.672/42	0.531/13	222	1/2-13x2.50
P563075	WS-24-24-60	1.50/38	1.50/38	3.750/95	4.440/113	1.437/36	3.125/79	1.75/44	0.750/19	2.115/54	1.502/38	1.922/49	0.656/17	225	5/8-11x3.00
P563076	WS-32-32-60	2.00/51	2.00/51	4.500/114	5.250/133	1.750/44	3.812/97	1.75/44	0.875/22	2.490/63	2.002/51	2.406/61	0.781/20	228	3/4-10x3.00

Code 62, Flat Face (Figure 2)

Donaldson Part No.	Desc.	Pipe Size	Pad Size	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J (in./mm)	L (in./mm)	UNC-2B
P563080	WSC-20-20-60	1.25/32	1.25/32	3.060/78	3.750/95	1.250/32	2.625/67	1.5/38	0.690/18	1.750/44	1.252/32	1.672/42	1/2-13	

New! Hydraulic Line Accessories!

More of the hydraulic components you need are now available from the fluid power experts at Donaldson. Pressure gauges for monitoring system pressure. Hoses and test points for sampling oil and determining ISO cleanliness levels. Flanges to connect components. Valves for system control. All available from Donaldson, your one stop shop.

We have new reservoir accessories, too! See page 119 for our expanded line of breathers, vents, diffusers, level gauges and much more.



Pressure gauges

Description:

Stainless steel (304SS)
Phosphor bronze bourdon tube
Acrylic lenses
Built-in snubber
Glycerin Filled



Features

Donaldson PGL series gauges are mechanical bourdon tube pressure gauges. Each gauge has a glycerin filled stainless steel bezel and case that is robust and will not discolor or rust. The bourdon tube and movement is constructed from brass and bronze alloys. PGL series gauges are easy to install for continuous readings with face diameters of 2½" (63mm) and 4" (100mm).

Operating Temperature

- 30°F to 160°F

Accuracy

- +/- 3% of full scale

Scale

- *psi*
- bar

Dial Sizes

- 2½" and 4"

Mounting

- Stem, Panel, Front Flange

Thread Type

- 2½" size ¼" NPT, ¼" SAE, ¼" BSP
- 4" ¼" NPT



Pressure Range Options

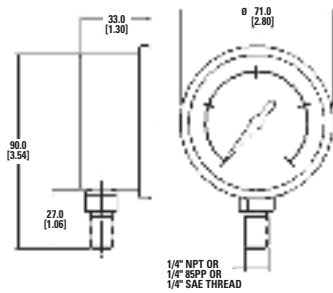
PGL-A	30 Hg-20 psi	0-30 in. Hg	0-30 psi	0-60 psi	0-100 psi	0-160 psi	0-300 psi	0-500 psi	0-600 psi	0-1000 psi	0-1500 psi	0-2000 psi	0-3000 psi	0-4000 psi	0-5000 psi	0-6000 psi	0-10000 psi
2½" Stem	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
2½" SAE Stem								•	•	•	•	•	•	•	•	•	•
2½" Panel	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
4" Stem								•	•	•	•	•	•	•	•	•	•
4" Panel								•	•	•	•	•	•	•	•	•	•

Front Flange Option

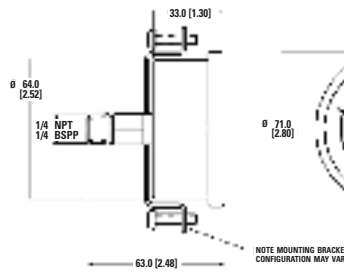
Donaldson Part No.	Description	Dial Size
P562699	PGL-A-63-FF	2-1/2"
P562671	PGL-A-100-FF	4"

2½" Gauges

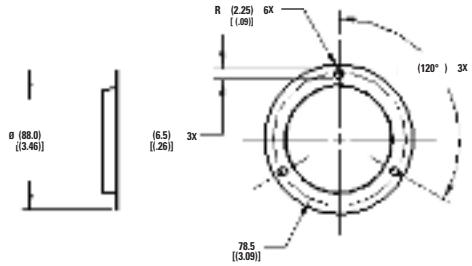
Stem Mount



Panel Mount



With Front Flange



2½" Dial, Stem Mount

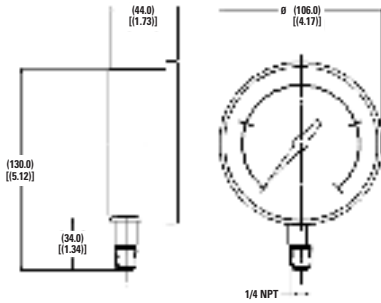
Donaldson Part No.	Description	Pressure Range	Thread Type
P562718	PGL-A-63-N-B-30-CS	30" Hg + 20 psi	1/4" NPT
P562719	PGL-A-63-N-B-30-S	0 - 30 psi	1/4" NPT
P562721	PGL-A-63-N-B-30-VS	0 - 30" Hg	1/4" NPT
P562733	PGL-A-63-N-B-60-S	0 - 60 psi	1/4" NPT
P562705	PGL-A-63-N-B-100-S	0 - 100 psi	1/4" NPT
P562709	PGL-A-63-N-B-160-S	0 - 160 psi	1/4" NPT
P562717	PGL-A-63-N-B-300-S	0 - 300 psi	1/4" NPT
P562727	PGL-A-63-N-B-500-S	0 - 500 psi	1/4" NPT
P562731	PGL-A-63-N-B-600-S	0 - 600 psi	1/4" NPT
P562703	PGL-A-63-N-B-1000-S	0 - 1,000 psi	1/4" NPT
P562707	PGL-A-63-N-B-1500-S	0 - 1,500 psi	1/4" NPT
P562711	PGL-A-63-N-B-2000-S	0 - 2,000 psi	1/4" NPT
P562713	PGL-A-63-N-B-3000-S	0 - 3,000 psi	1/4" NPT
P562723	PGL-A-63-N-B-4000-S	0 - 4,000 psi	1/4" NPT
P562725	PGL-A-63-N-B-5000-S	0 - 5,000 psi	1/4" NPT
P562729	PGL-A-63-N-B-6000-S	0 - 6,000 psi	1/4" NPT
P562701	PGL-A-63-N-B-10,000-S	0 - 10,000 psi	1/4" NPT
P562696	PGL-A-63-B-B-1500-S	0 - 1,500 psi	1/4" BSP
P562739	PGL-A-63-S-B-500-S	0 - 500 psi	1/4" SAE
P562734	PGL-A-63-S-B-1000-S	0 - 1,000 psi	1/4" SAE
P562735	PGL-A-63-S-B-1500-S	0 - 1,500 psi	1/4" SAE
P562736	PGL-A-63-S-B-2000-S	0 - 2,000 psi	1/4" SAE
P562737	PGL-A-63-S-B-3000-S	0 - 3,000 psi	1/4" SAE
P562738	PGL-A-63-S-B-5000-S	0 - 5,000 psi	1/4" SAE
P562740	PGL-A-63-S-B-6000-S	0 - 6,000 psi	1/4" SAE

2½" Dial, Panel Mount

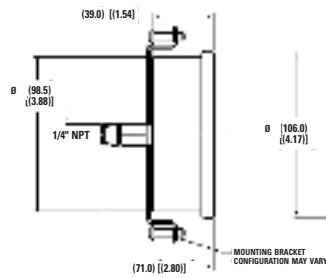
Donaldson Part No.	Description	Pressure Range	Thread Type
P562720	PGL-A-63-N-B-30-VP	0 - 30" Hg	1/4" NPT
P562732	PGL-A-63-N-B-60-P	0 - 60 psi	1/4" NPT
P562704	PGL-A-63-N-B-100-P	0 - 100 psi	1/4" NPT
P562708	PGL-A-63-N-B-160-P	0 - 160 psi	1/4" NPT
P562716	PGL-A-63-N-B-300-P	0 - 300 psi	1/4" NPT
P562726	PGL-A-63-N-B-500-P	0 - 500 psi	1/4" NPT
P562730	PGL-A-63-N-B-600-P	0 - 600 psi	1/4" NPT
P562702	PGL-A-63-N-B-1000-P	0 - 1,000 psi	1/4" NPT
P562706	PGL-A-63-N-B-1500-P	0 - 1,500 psi	1/4" NPT
P562710	PGL-A-63-N-B-2000-P	0 - 2,000 psi	1/4" NPT
P562712	PGL-A-63-N-B-3000-P	0 - 3,000 psi	1/4" NPT
P562722	PGL-A-63-N-B-4000-P	0 - 4,000 psi	1/4" NPT
P562724	PGL-A-63-N-B-5000-P	0 - 5,000 psi	1/4" NPT
P562728	PGL-A-63-N-B-6000-P	0 - 6,000 psi	1/4" NPT
P562700	PGL-A-63-N-B-10,000-P	0 - 10,000 psi	1/4" NPT
P562697	PGL-A-63-B-B-3000-P	0 - 3,000 psi	1/4" BSP
P562698	PGL-A-63-B-B-4000-P	0 - 4,000 psi	1/4" BSP

4" Gauges

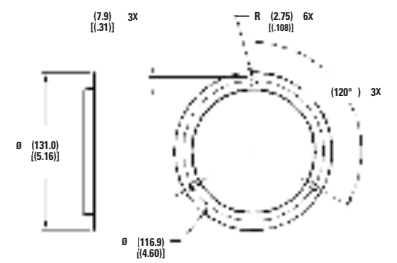
Stem Mount



Panel Mount



With Front Flange



4" Dial, Stem Mount

Donaldson Part No.	Description	Pressure Range	Thread Type
P562683	PGL-A-100-N-B-300-S	0 - 300 psi	1/4" NPT
P562688	PGL-A-100-N-B-600-S	0 - 600 psi	1/4" NPT
P562675	PGL-A-100-N-B-1000-S	0 - 1,000 psi	1/4" NPT
P562677	PGL-A-100-N-B-1500-S	0 - 1,500 psi	1/4" NPT
P562679	PGL-A-100-N-B-2000-S	0 - 2,000 psi	1/4" NPT
P562681	PGL-A-100-N-B-3000-S	0 - 3,000 psi	1/4" NPT
P562685	PGL-A-100-N-B-5000-S	0 - 5,000 psi	1/4" NPT
P562686	PGL-A-100-N-B-6000-S	0 - 6,000 psi	1/4" NPT
P562673	PGL-A-100-N-B-10,000-S	0 - 10,000 psi	1/4" NPT

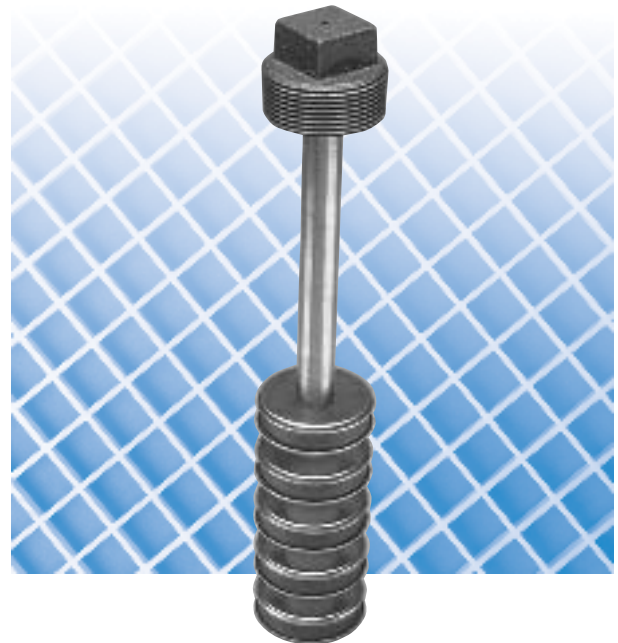
4" Dial, Panel Mount

Donaldson Part No.	Description	Pressure Range	Thread Type
P562682	PGL-A-100-N-B-300-P	0 - 300 psi	1/4" NPT
P562687	PGL-A-100-N-B-600-P	0 - 600 psi	1/4" NPT
P562674	PGL-A-100-N-B-1000-P	0 - 1,000 psi	1/4" NPT
P562676	PGL-A-100-N-B-1500-P	0 - 1,500 psi	1/4" NPT
P562678	PGL-A-100-N-B-2000-P	0 - 2,000 psi	1/4" NPT
P562680	PGL-A-100-N-B-3000-P	0 - 3,000 psi	1/4" NPT
P562684	PGL-A-100-N-B-5000-P	0 - 5,000 psi	1/4" NPT
P562672	PGL-A-100-N-B-10,000-P	0 - 10,000 psi	1/4" NPT

Reservoir Magnets

Description:

- Removable
- Easily Cleaned
- Catch ferrous contaminants
- Selection of lengths available



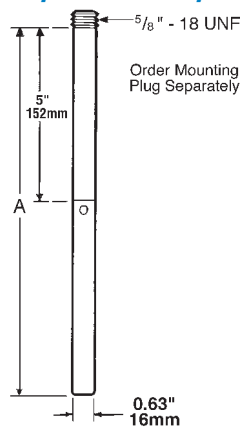
Features

Reservoir magnets trap and hold ferrous metals. If not contained these particulars will cause collateral damage to significant components. Magnets are typically located in a reservoir or at another point in the system with low fluid velocity. Magnets should be positioned in the tank at a point where all flow returning from the system intersects.

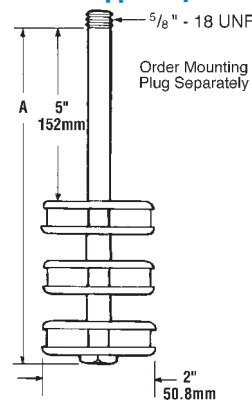
Easy Clean Rod Style

Donaldson Part No.	Description	Length (A) (in./mm)
P562649	M-11	10.8 / 273
P562650	M-13	13.3 / 337
P562651	M-16	15.8 / 400
P562652	M-18	18.3 / 464
P562653	M-21	20.8 / 527
P562654	M-23	23.8 / 605
P562655	M-26	25.8 / 655
P562656	M-28	28.3 / 719
P562657	M-31	30.8 / 782

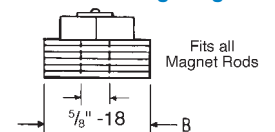
Easy Clean Rod Style



Tank Trapper Style



NPT Mounting Plug



Allow 1" minimum clearance between magnet and reservoir bottom.

NPT Mounting Plug

Donaldson Part No.	Description	Size	Series
P562666	PM-6	3/4" NPT	M
P562667	PM-8	1" NPT	M
P562662	PM-10	1-1/4" NPT	M
P562663	PM-12	1-1/2" NPT	M
P562664	PM-16	2" NPT	M, MT
P562665	PM-20	2-1/2" NPT	M, MT

Tank Trapper Style

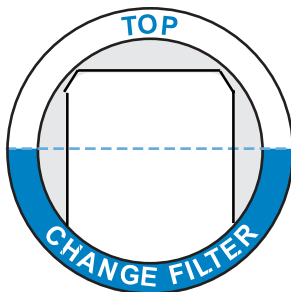
Donaldson Part No.	Description	Length (A) (in./mm)	Comment
P562658	MT-10	10.1 / 256	5 Magnets
P562659	MT-13	13.3 / 338	

How to read the Donaldson Visual Indicator

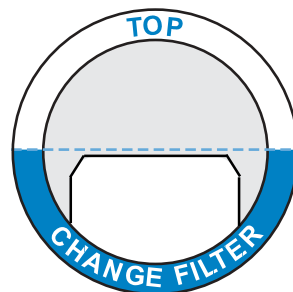
Visual indicators are shipped on these Donaldson filter assembly models: HAK05, HDK06, HFK08 & HEK11.

This simple device will tell you when the filter needs to be changed. Always check when the fluid is at operating temperature and the system is at normal operating flow.

If the top of the white panel is below the lower half of the window, the filter needs servicing.



Filter OK



Filter Needs Service

Sight Glasses

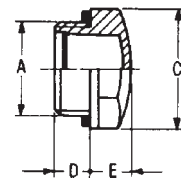
Features

Leak-free sight glasses come in plastic or metal with a variety of threads, seals and lenses. In low visibility areas, prism lens sight glasses are a good solution for quick and accurate readings. In applications involving high pressure or temperatures, steel sight glasses are preferred. Locking nuts provide mounting into sheet metal with minimum thickness and without welding.



Description:

- Transparent polyamid lens
- Shock resistant
- Anodized aluminum reflector
- Operating temperature 210°F / 100°C
- BunaN seal
- For use with mineral, petroleum and water-based fluids
- Any contact with alcohol or solvents must be avoided
- Design HFTX



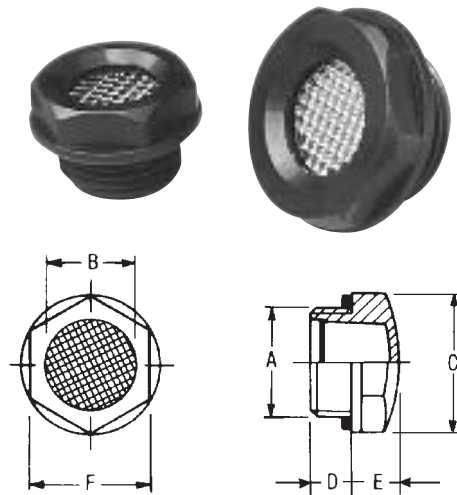
Accessories

Donaldson Part No.	Description	Thread Size Dim. A (in./mm)	Dim. B (in./mm)	Dim. C (in./mm)	Dim. D (in./mm)	Dim. E (in./mm)	Dim. F (in./mm)
P562419	SG-04	1/4" BSP	.35/9	.71/18	.28/7	.24/6	.59/15
P562420	SG-06	3/8" BSP	.43/11	.87/22	.32/8	.28/7	.75/19
P562421	SG-08	1/2" BSP	.55/14	1.02/26	.32/8	.32/8	.87/22
P562423	SG-08-S	3/4" - 16 UN	.51/13	1.02/26	.59/15	.32/8	.87/22
P562426	SG-12	3/4" BSP	.79/20	1.22/31	.35/9	.39/10	1.06/27
P562427	SG-12-S	1-1/16 - 12 UN	.75/19	1.38/35	.59/15	.39/10	1.18/30
P562428	SG-16	1" BSP	1.00/25	1.58/40	.43/11	.39/10	1.34/34
P562430	SG-20	1-1/4" BSP	1.18/30	1.85/47	.47/12	.51/13	1.61/41

Prism Sight Glasses

Description:

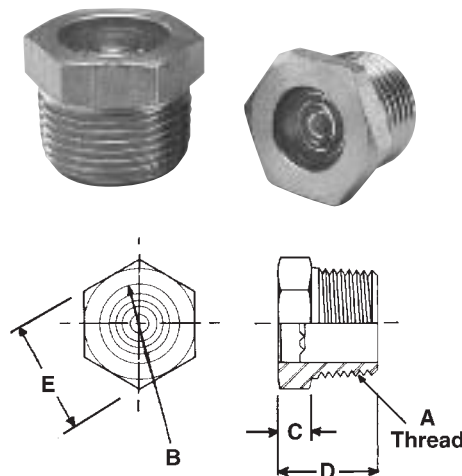
Prism lenses: special translucent polyamide technopolymer
 For low light applications
 Body: special black polyamide technopolymer
 Available in 1/2", 3/4" and 1" NPT sizes
 Resistant to solvents, oils, greases, alkaline acids
 Avoid alcohol and detergents containing alcohol
 Flat BunaN seal

Donaldson Part No.	Description	Thread Size Dim. A (in./mm)	Dim. B (in./mm)	Dim. C (in./mm)	Dim. D (in./mm)	Dim. E (in./mm)	Dim. F (in./mm)
P562416	PSG-08	1/2" NPT	0.55/14	1.10/28	0.40/10	0.31/8	0.95/24
P562417	PSG-12	3/4" NPT	0.70/18	1.38/35	0.40/10	0.33/8.5	1.26/32
P562418	PSG-16	1" NPT	0.90/23	1.70/43	0.43/11	0.36/9	1.50/38

Description:

All nickel-plated steel construction
 Glass prism lenses hermetically sealed
 Leak-proof service
 Greater mechanical strength
 Easy installation
 Reflects light in the presence of any liquid
 Maximum operating temp. 500°F / 260°C
 Suitable for petroleum and water based fluids



Donaldson Part No.	Description	Thread Size Dim. A (in./mm)	Dim. B (in./mm)	Dim. C (in./mm)	Dim. D (in./mm)	Dim. E (in./mm)
P562408	SVM-04	1/4" NPT	0.34/8	0.19/5	0.44/11	0.63/16
P562409	SVM-06	3/8" NPT	0.44/11	0.22/6	0.5/13	0.75/19
P562410	SVM-08	1/2" NPT	0.56/14	0.22/6	0.56/14	0.94/24
P562411	SVM-12	3/4" NPT	0.75/19	0.31/8	0.63/16	1.06/27
P562412	SVM-16	1" NPT	0.94/24	0.31/8	0.94/24	1.38/35
P562413	SVM-20	1-1/4" NPT	1.19/30	0.41/10	0.81/21	1.75/44
P562414	SVM-24	1-1/2" NPT	1.44/37	0.41/10	0.81/21	2.00/51
P562415	SVM-32	2" NPT	1.88/48	0.41/10	0.88/22	2.50/64

Suction Strainers

Flow Range: 0-300 gpm / 0-1,140 l/min

Outlet Port Size: 3/8" NPT to 4" NPT

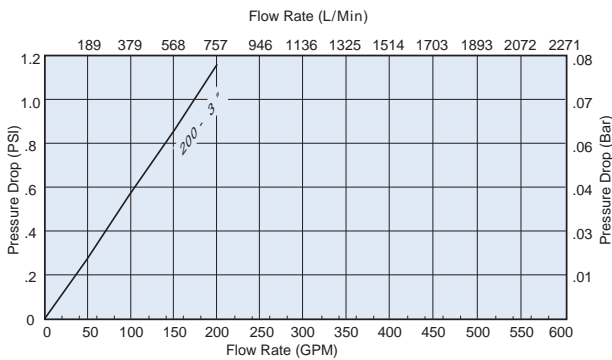
Stainless Steel Mesh
 Steel or nylon fittings
 Operating temperatures:
 Steel fitting to 250°F / 121°C
 Nylon fitting to 210°F / 100°C
 Relief valve available



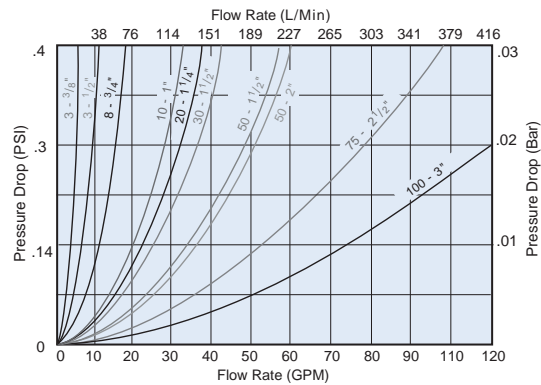
Features

Donaldson suction strainers are zinc-plated, with stainless steel mesh screens and rugged steel core centers epoxy bonded to heavy gauge connector and end caps. Suction strainers filter petroleum-based hydraulic fluids, phosphate esters, water glycols, lubricating oils, coolants, fuels and water in fluid reservoirs, sumps and similar applications. They are cleanable and reusable. Clean by swishing in non-caustic solvent, then blow dry from inner diameter to outer diameter with compressed air.

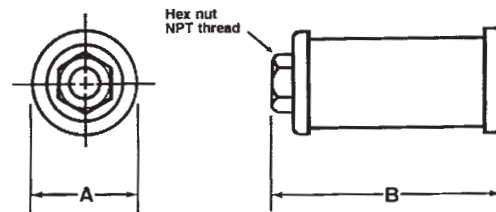
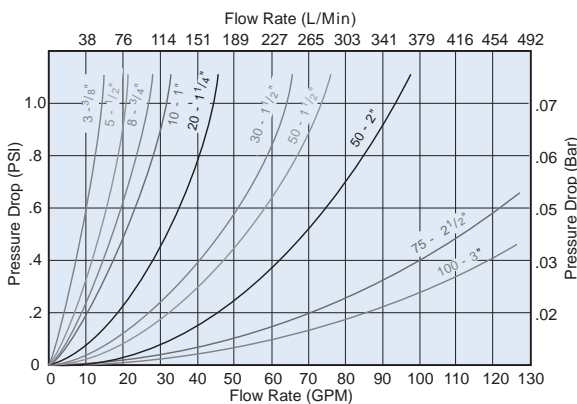
SEC 200-300



PEC 3-100



SEH/SEC 3-100



Note: PEC and SEH model strainers have hex nut style outlet fittings (pictured at top of page). SEC model strainers have pipe coupling style (round) outlet fittings. All styles have NPT threads inside.



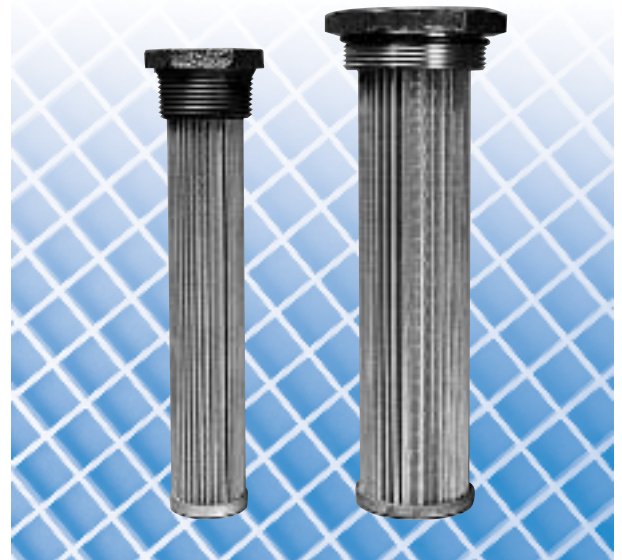
	Donaldson Part No.	Description	Relief Valve Setting	Outlet Pipe Size	Wire Mesh Size	Dim. A	Dim. B	Screen Area (sq.in.)	Max. Flow (gpm)
NYLON FITTING	P562235	PEC-3-3/8-100	n/a	3/8" NPT	100	1.9	2.7	20	3
	P562240	PEC-5-1/2-100	n/a	1/2" NPT	100	1.9	4.3	25	5
	P562245	PEC-8-3/4-100	n/a	3/4" NPT	100	2.7	4.3	40	8
	P562246	PEC-8-3/4-100-RV3	3 psid	3/4" NPT	100	2.7	4.3	40	8
	P562244	PEC-8-1-100	n/a	1" NPT	100	2.7	4.3	40	8
	P562226	PEC-10-1-100	n/a	1" NPT	100	2.7	5.6	70	10
	P562227	PEC-10-1-100-RV3	3 psid	1" NPT	100	2.7	5.6	70	10
	P562228	PEC-20-1.1/4-100	n/a	1-1/4" NPT	100	3.4	5.6	128	20
	P562229	PEC-20-1.1/4-100-RV3	3 psid	1-1/4" NPT	100	3.4	5.6	128	20
	P562231	PEC-20-1.1/4-200	n/a	1-1/4" NPT	200	3.4	5.6	128	20
	P562232	PEC-30-1.1/2-100	n/a	1-1/2" NPT	100	3.4	5.6	128	30
	P562233	PEC-30-1.1/2-100-RV3	3 psid	1-1/2" NPT	100	3.4	5.6	128	30
	P562236	PEC-50-1.1/2-100	n/a	1-1/2" NPT	100	4	8	200	50
	P562237	PEC-50-1.1/2-100-RV3	3 psid	1-1/2" NPT	100	4	8	200	50
	P562238	PEC-50-2-100	n/a	2" NPT	100	4	10.4	200	50
	P562239	PEC-50-2-100-RV3	3 psid	2" NPT	100	4	10.4	200	50
	P562242	PEC-75-2.1/2-100	n/a	2-1/2" NPT	100	5.2	8.5	316	75
	P562243	PEC-75-2.1/2-100-RV3	3 psid	2-1/2" NPT	100	5.2	8.5	316	75
	P562223	PEC-100-3-100	n/a	3" NPT	100	5.2	10.9	379	100
	P562224	PEC-100-3-100-RV3	3 psid	3" NPT	100	5.2	10.9	379	100
P562225	PEC-100-3-100-SST	n/a	3" NPT	100	5.2	10.9	379	100	
STEEL FITTING	P562221	SEH-3-3/8-100	n/a	3/8" NPT	100	1.9	2.5	34	3
	P169012	SEH-5-1/2-100	n/a	1/2" NPT	100	2.63	3.1	62	5
	P563305	SEH-5-1/2-100-RV3	3 psid	1/2" NPT	100	2.7	3.1	62	5
	P169013	SEH-8-3/4-100	n/a	3/4" NPT	100	2.63	3.55	68	8
	P173910	SEH-8-3/4-100-RV3	3 psid	3/4" NPT	100	2.63	3.55	68	8
	P169014	SEH-10-1-100	n/a	1" NPT	100	2.63	5.35	110	10
	P173911	SEH-10-1-100-RV3	3 psid	1" NPT	100	2.63	5.35	110	10
	P169015	SEH-20-1.1/4-100	n/a	1-1/4" NPT	100	3.38	6.85	162	20
	P173912	SEH-20-1.1/4-100-RV3	3 psid	1-1/4" NPT	100	3.38	6.85	162	20
	P169016	SEH-30-1.1/2-100	n/a	1-1/2" NPT	100	3.38	8.01	225	30
	P173913	SEH-30-1.1/2-100-RV3	3 psid	1-1/2" NPT	100	3.38	8.01	225	30
	P169017	SEH-50-1.1/2-100	n/a	1-1/2" NPT	100	3.94	9.8	340	50
	P173914	SEH-50-1.1/2-100-RV3	3 psid	1-1/2" NPT	100	3.94	9.8	340	50
	P562222	SEH-50-1.1/2-60	n/a	1-1/2" NPT	60	3.94	9.8	340	50
	P169018	SEH-50-2-100	n/a	2" NPT	100	3.94	9.8	340	50
	P173915	SEH-50-2-100-RV3	3 psid	2" NPT	100	3.94	9.8	340	50
	P169019	SEC-75-2.1/2-100	n/a	2-1/2" NPT	100	5.12	10.1	400	75
	P173916	SEC-75-2.1/2-100-RV3	3 psid	2-1/2" NPT	100	5.12	10.1	400	75
	P169020	SEC-100-3-100	n/a	3" NPT	100	5.12	11.78	500	100
	P173917	SEC-100-3-100-RV3	3 psid	3" NPT	100	5.12	11.78	500	100
	P562211	SEC-100-3-60	n/a	3" NPT	60	5.12	11.78	500	100
	P562212	SEC-100-3-60-RV3	3 psid	3" NPT	60	5.12	11.78	500	100
	P562213	SEC-200-3-100	n/a	3" NPT	100	8.1	11.3	965	200
	P563304	SEC-200-3-100-RV3	3 psid	3" NPT	100	8.1	11.3	965	200
	P562214	SEC-300-4-100	n/a	4" NPT	100	8.1	15	1370	300
P562215	SEC-300-4-100-RV3	3 psid	4" NPT	100	8.1	15	1370	300	

Tank Mounted Strainers

Flow Range: 0-100 gpm / 0-380 lpm

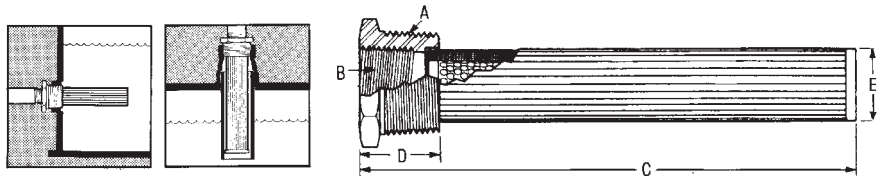
Outlet Port Size: 3/8" NPT to 1 1/4" NPT
or SAE-8 to SAE-20

140 Micron Stainless Steel Mesh
Steel SAE bushing
Cast iron NPT bushing
Operating temperatures to 250°F / 121°C
Relief valve available



Features

Tank mounted strainers offer easy installation. Access to reservoir interior is not needed. You can mount these units through a sidewall or through the tank top and into a standpipe.



Donaldson Part No.	Description	Relief Valve Setting	Wire Mesh Size	Dim. A	Dim. B	Dim. C	Dim. D	Dim. E	Screen Area (sq.in.)	Max. Flow (gpm)
P562270	TM-3-100	n/a	100	3/4" NPT	3/8" NPT	4	0.97	0.87	29	3
P562274	TM-5-100	n/a	100	1" NPT	1/2" NPT	5.34	1.06	1.17	35	5
P562275	TM-5-100-RV5	5 psid	100	1" NPT	1/2" NPT	5.34	1.06	1.17	35	5
P562256	TM-10-100	n/a	100	1-1/4" NPT	3/4" NPT	8.17	1.2	1.36	64	10
P562257	TM-10-100-RV5	5 psid	100	1-1/4" NPT	3/4" NPT	8.17	1.2	1.36	64	10
P562258	TM-10-60	n/a	60	1-1/4" NPT	3/4" NPT	8.17	1.2	1.36	64	10
P562259	TM-10-60-RV5	5 psid	60	1-1/4" NPT	3/4" NPT	8.17	1.2	1.36	64	10
P562260	TM-15-100	n/a	100	1-1/2" NPT	1" NPT	8.2	1.22	1.66	86	15
P562264	TM-15-100-RV5	5 psid	100	1-1/2" NPT	1" NPT	8.2	1.22	1.66	86	15
P562265	TM-15-200-RV5	5 psid	200	1-1/2" NPT	1" NPT	8.2	1.22	1.66	86	15
P562266	TM-25-100	n/a	100	2" NPT	1-1/4" NPT	9.04	1.35	2.12	125	25
P562267	TM-25-100-RV5	5 psid	100	2" NPT	1-1/4" NPT	9.04	1.35	2.12	125	25
P562268	TM-25-200-C=6.29"	n/a	200	2" NPT	1-1/4" NPT	6.29	1.35	2.12	80	15
P562269	TM-25-200-RV5	5 psid	200	2" NPT	1-1/4" NPT	9.04	1.35	2.12	125	25
P562271	TM-50-100	n/a	100	3" NPT	2" NPT	9.7	1.7	3	260	50
P562272	TM-50-100-RV3	3 psid	100	3" NPT	2" NPT	9.7	1.7	3	260	50
P562273	TM-50-100-RV5	5 psid	100	3" NPT	2" NPT	9.7	1.7	3	260	50
P563306	TM-100-100	n/a	100	4" NPT	3" NPT	11.3	1.8	4	315	100
P562255	TM-100-100-RV5	5 psid	100	4" NPT	3" NPT	11.3	1.8	4	315	100
P562253	STM-5-100	n/a	100	1-5/16" - 12 UN	3/4" - 16 UN	5.34	1.06	1.17	35	5
P562254	STM-5-100-RV5	5 psid	100	1-5/8" - 12 UN	3/4" - 16 UN	5.34	1.06	1.17	35	5
P562247	STM-10-100	n/a	100	1-5/8" - 12 UN	1-1/16" - 12 UN	8.17	1.2	1.36	64	10
P562248	STM-10-100-RV5	5 psid	100	1-5/8" - 12 UN	1-1/16" - 12 UN	8.17	1.2	1.36	64	10
P562249	STM-15-100	n/a	100	1-7/8" - 12 UN	1-5/16" - 12 UN	8.2	1.22	1.66	86	15
P562250	STM-15-100-RV5	5 psid	100	1-7/8" - 12 UN	1-5/16" - 12 UN	8.2	1.22	1.66	86	15
P562251	STM-25-100	n/a	100	2-1/2" - 12 UN	1-5/8" - 12 UN	9.04	1.35	2.12	125	25
P562252	STM-25-100-RV5	5 psid	100	2-1/2" - 12 UN	1-5/8" - 12 UN	9.04	1.35	2.12	125	25



Diffusers

Description:

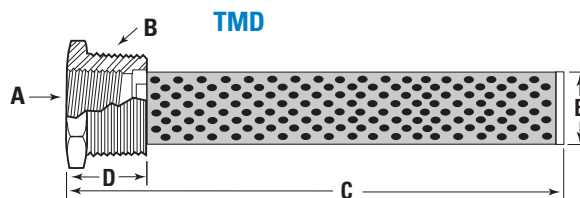
Perforated Steel
 Cast iron bushings (TMD-tank mount)
 Zinc-plated steel (DFD-return line)
 Operating temperatures to 250°F / 121°C

Flow Range: 0-450 *gpm* / 0-1,710 *lpm*



Features

Diffusers are highly effective in reducing aeration, foaming, turbulence and noise caused by return lines. Reservoir baffles can usually be eliminated, provided that the holes in the tube are positioned facing away from the pump suction inlet and below the reservoir oil level. Can be vertically or horizontally mounted with discharge side directed away from suction and preferably toward a tank wall or bottom.

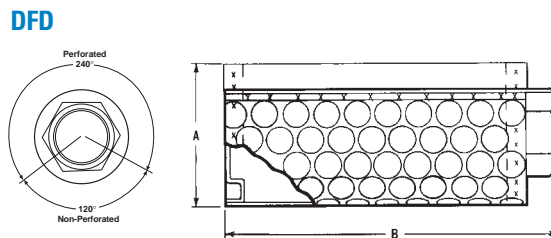


TMD - Tank Mount Diffusers

Donaldson Part No.	Desc.	Rated Flow <i>gpm/l/min</i>	Dim. A Pipe Size	Dim. B Pipe Size	C (in./mm)	D (in./mm)	E (in./mm)
P562281	TMD-5	5/19	1/2" NPT	1" NPT	5.34/135	1.06/28	1.17/29
P562282	TMD-10	10/38	3/4" NPT	1-1/4" NPT	8.17/207	1.2/30	1.36/34
P562283	TMD-15	15/59	1" NPT	1-1/2" NPT	8.2/208	1.22/31	1.66/42
P562284	TMD-25	25/95	1-1/4" NPT	2" NPT	9.04/229	1.35/34	2.12/53
P562285	TMD-50	50/189	2" NPT	3" NPT	9.7/246	1.7/43	3.0/76

DFD - Line Mount Diffusers

Donaldson Part No.	Desc.	Rated Flow <i>gpm/l/min</i>	Pipe Size	A (in./mm)	B (in./mm)
P562287	DFD-30	33/125	3/4" NPT	3.4/86.3	3.0/76
P562288	DFD-60	53/201	1" NPT	3.4/86.3	4.2/107
P562289	DFD-90	93/342	1-1/4" NPT	3.4/86.3	6.5/165
P562290	DFD-120	126/479	1-1/2" NPT	4.5/114.3	6.6/168
P562291	DFD-200	209/794	2" NPT	4.5/114.3	10.3/262
P562292	DFD-250	300/1140	2-1/2" NPT	5.25/133.4	13.0/330
P562293	DFD-300	450/1748	3" NPT	5.25/133.4	12.3/394



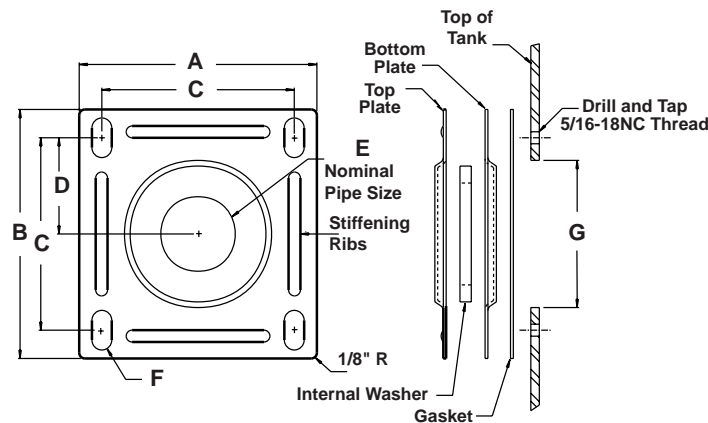
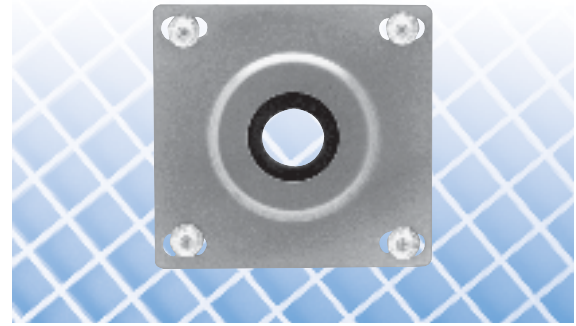
Accessories



Flanges

Features

These Suction and Return Flanges with zinc-plated steel stamping are designed for tank top mounting. Flanges provide a seal to the pipe and reservoir without welding. Each flange provides access to the inside of the reservoir to service in-tank immersed suction strainers and diffusers.



Suction Flanges

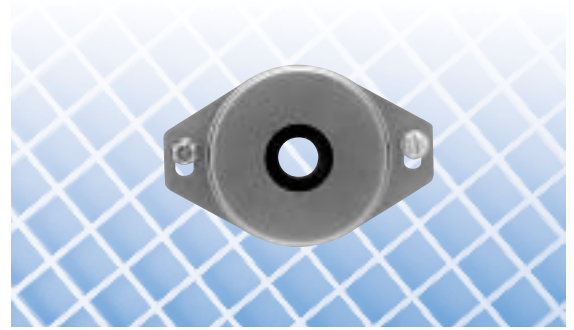
Donaldson Part No.	Nominal E Pipe Size	Dimensions A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	F SLOT (in./mm)	G (in./mm)
P562641	1/2"	5.25/133	5.50/140	4.25/108	2.125/54	.38x.62/10x16	4.0/102
P562642	3/4"	5.25/133	5.50/140	4.25/108	2.125/54	.38x.62/10x16	4.0/102
P562643	1"	5.25/133	5.50/140	4.25/108	2.125/54	.38x.62/10x16	4.0/102
P562644	1-1/4"	5.25/133	5.50/140	4.25/108	2.125/54	.38x.62/10x16	4.0/102
P562645	1-1/2"	5.25/133	5.50/140	4.25/108	2.125/54	.38x.62/10x16	4.0/102
P562646	2"	5.25/133	5.50/140	4.25/108	2.125/54	.38x.62/10x16	4.0/102
P562647	2-1/2"	7.50/190	7.50/190	6.25/159	3.125/79	.44x.88/11x22	6.62/168
P562648	3"	7.50/190	7.50/190	6.25/159	3.125/79	.44x.88/11x22	6.62/168

Seal suction lines passing through the top plate of a hydraulic reservoir or similar application

Includes:
 (1) top plate,
 (1) internal washer,
 (1) bottom plate,
 (1) gasket, and
 (4) 5/16-18 thread forming screws

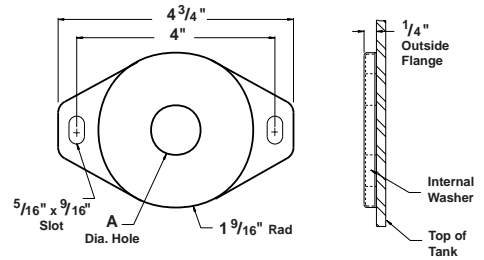
Return Flanges

Donaldson Part No.	Description	Hole Dia. A	Pipe Size
P562634	RF-1369	1-3/16	1/2
P562636	RF-1370	1-3/4	3/4
P562637	RF-1371	1-3/4	1
P562638	RF-1372	2-1/2	1-1/4
P562639	RF-1373	2-1/2	1-1/2
P562640	RF-1374	2-1/2	2



Zinc-plated steel stamping
 Designed to seal return lines passing through the top plate of a hydraulic reservoir or similar application

Includes:
 (1) flange,
 (1) internal washer, and
 (2) 1/4-20 thread forming screws



Test Points

Description:

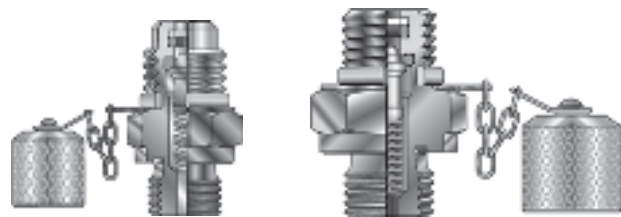
Working Pressure: 9000 *psi*
 Seals: Buna-N
 Caps: Plastic or metal
 Leak-free connection at full pressure

Features

Test points can be used as a connection into the hydraulic system on the suction side, pressure side or return. They allow connection for pressure and temperature transducers and provide ports for fluid sampling (so you can monitor cleanliness and keep your system operating optimally). If you have filters installed in hard-to-access locations, test points and hose assemblies can be used to plumb up a bulkhead to read pressure differentials.

For Test Point Adapters, see page 104.

For Test Point Hose Assemblies, see page 105.



Styles

- Pressure and/or Temperature

Applications

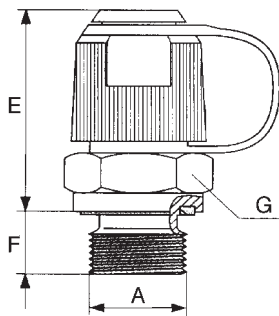
- Fluid or gas

Temperature Range

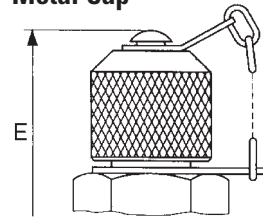
- Metal cap:
-22°F to 248°F / -30°C to 120°C
- Plastic cap:
-22°F to 212°F / 30°C to 100°C

TPM/TPP-1215 Assembly Views M12x1.5 Thread

Plastic Cap



Metal Cap

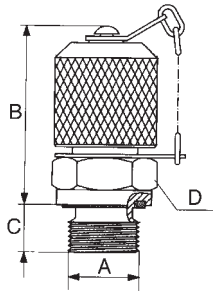


Donaldson Part No.	Description	Working Pressure psi/bar	A Thread Type	E (in./mm)	F (in./mm)	G (in./mm)	Cap	Comment
P563200	TPP-1215-04B	9000 / 630	ISO 228-G 1/4" BSPP	1.26/32	.39/10	0.75/19	Plastic	
P563192	TPM-1215-04G	9000 / 630	1/4" BSPP, Form G	1.30/33	.33/8.5	0.55/14	Metal	
P563202	TPP-1215-04J	9000 / 630	#4 37° JIC Female	2.17/55	n/a	0.67/17	Plastic	
P563197	TPP-1215-02N	5800 / 400	1/8" NPTF	1.14/29	.47/12	0.55/14	Plastic	
P563198	TPP-1215-02N-V	5800 / 400	1/8" NPTF	1.14/29	.47/12	0.55/14	Plastic	Viton seals
P563193	TPM-1215-04N	9000 / 630	1/4" NPTF	1.14/29	.59/15	0.55/14	Metal	
P563205	TPP-1215-04N-V	9000 / 630	1/4" NPTF	1.14/29	.59/15	0.55/14	Plastic	Viton seals
P563203	TPP-1215-04N	9000 / 630	1/4" NPTF	1.14/29	.59/15	0.55/14	Plastic	
P563199	TPP-1215-03S	9000 / 630	3/8"-24 UNF (#3 SAE)	1.42/36	.39/10	0.87/22		
P563206	TPP-1215-04S	9000 / 630	7/16"-20 UNF (#4 SAE)	1.26/32	.35/9	0.67/17	Plastic	
P563207	TPP-1215-06S	9000 / 630	9/16"-18 UNF (#6 SAE)	1.22/31	.39/10	0.75/19	Plastic	

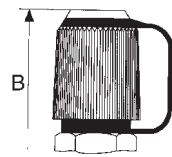


TPM/TPP-1620 Assembly Views M16x2 Thread

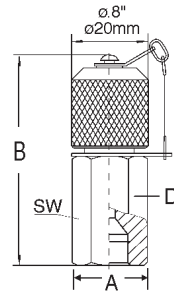
TPM Metal Cap



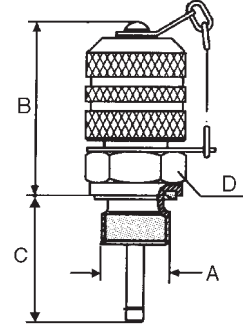
TPP Plastic Cap



JIC Style



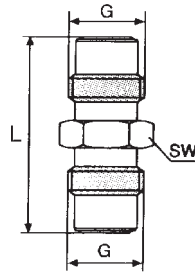
Pressure/Temperature



Donaldson Part No.	Description	Working Pressure psi/bar	A Thread Type	B (in./mm)	C (in./mm)	D (mm)	Cap	Comment
P563210	TPM-1620-02B	5800 / 400	ISO 228-G 1/8" BSPP	1.5/38	0.31/8	17	Metal	
P563215	TPM-1620-04B	9000 / 630	ISO 228-G 1/4" BSPP	1.42/36	0.39/10	19	Metal	
P563216	TPM-1620-04B-T	9000 / 630	ISO 228-G 1/4" BSPP	1.42/36	0.39/10	19	Metal	Temperature
P563987	TPM-1620-06B	9000 / 630	ISO 228-G 3/8" BSPP	1.42/36	0.39/10	22	Metal	
P563211	TPM-1620-02I	5800 / 400	ISO 7/I-R 1/8" BSPT	1.3/33	0.51/13	17	Metal	
P563219	TPM-1620-04J	8100 / 600	#4 37° JIC Female	2.17/55	-	17	Metal	
P563231	TPM-1620-06J	4500 / 315	#6 37° JIC Female	2.26/57.5	-	19	Metal	
P563212	TPM-1620-02N	5800 / 400	1/8" NPTF	1.3/33	0.51/13	17	Metal	
P563213	TPM-1620-02N-T	5800 / 400	1/8" NPTF	1.3/33	0.51/13	17	Metal	Temperature
P563214	TPM-1620-02N-V	5800 / 400	1/8" NPTF	1.3/33	0.51/13	17	Metal	Viton Seals
P563220	TPM-1620-04N	9000 / 630	1/4" NPTF	1.3/33	0.65/16.5	17	Metal	
P563222	TPM-1620-04N-T	9000 / 630	1/4" NPTF	1.3/33	0.65/16.5	17	Metal	Temperature
P563223	TPM-1620-04N-V	9000 / 630	1/4" NPTF	1.3/33	0.65/16.5	17	Metal	Viton Seals
P563238	TPP-1620-04S	9000 / 630	7/16"-20 UNF (#4 SAE)	1.46/37	0.35/9	17	Plastic	
P563224	TPM-1620-04S	9000 / 630	7/16"-20 UNF (#4 SAE)	1.46/37	0.35/9	17	Metal	
P563226	TPM-1620-04S-T	9000 / 630	7/16"-20 UNF (#4 SAE)	1.46/37	0.35/9	17	Metal	Temperature
P563228	TPM-1620-04S-V	9000 / 630	7/16"-20 UNF (#4 SAE)	1.46/37	0.35/9	17	Metal	Viton Seals
P563230	TPM-1620-05S	9000 / 630	1/2"-20 UNF (#5 SAE)	1.42/36	0.39/10	19	Metal	
P563232	TPM-1620-06S	9000 / 630	9/16"-18 UNF (#6 SAE)	1.42/36	0.39/10	19	Metal	
P563234	TPM-1620-06S-V	9000 / 630	9/16"-18 UNF (#6 SAE)	1.42/36	0.39/10	19	Metal	Viton Seals

Test Point Adapters

A variety of adapters to suit your application.

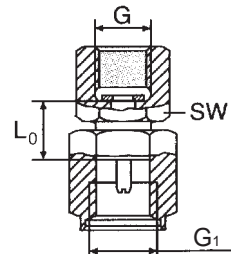


Hose Union Gauge

Donaldson Part No.	Description	G Thread	PSI	L (in./mm)	SW (in./mm)
P563263	AHU-1215	M12 x 1.5	9000	1.14/29	.55/14
P563264	AHU-1620	M16 x 2	9000	1.65/42	.67/17

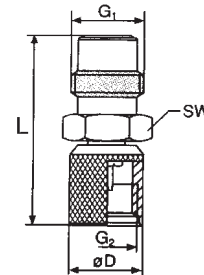
Direct Gauge Adapter

Donaldson Part No.	Description	G Int. Thread	G ₁ Thread	PSI	L ₀ (in./mm)	SW (in./mm)
P563808	ADG-1215-04N	1/4" NPT	M12 x 1.5	9000	1.14/29	.55/14
P563809	ADG-1620-04N	1/4" NPT	M16 x 2	9000	.55/14	.75/19



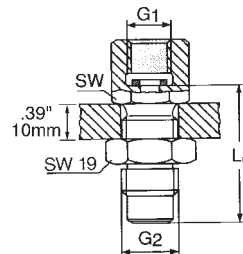
Series Converter

Donaldson Part No.	Description	G ₁ Thread	G ₂ Thread	ØD (in./mm)	L (in./mm)	SW (in./mm)
P563265	ASC-1215	M16 x 2	M12 x 1.5	.67/17	1.30/33	.67/17
P563266	ASC-1620	M12 x 1.5	M16 x 2	.79/20	1.04/26.5	.67/17



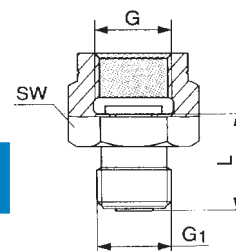
Bulkhead Gauge Adapter

Donaldson Part No.	Description	G ₁ Thread	G ₂ Thread	L (in./mm)	SW (in./mm)
P563800	ABH-1215-04N	1/4" NPT	1215M 12 x 1.5	1.52/39.5	.75/27
P563807	ASC-1620-04N	1/4" NPT	1620/M16 x 2	1.52/38.5	.75/19



Pressure Gauge Connection

Donaldson Part No.	Description	G Thread	G ₁ Thread	PSI	L (in./mm)	SW (in./mm)
P563262	AHG-1215-04N	1/4" NPT	M12 x 1.5	9000	.71/18	.74/19





Test Point Hose Assemblies

Description:

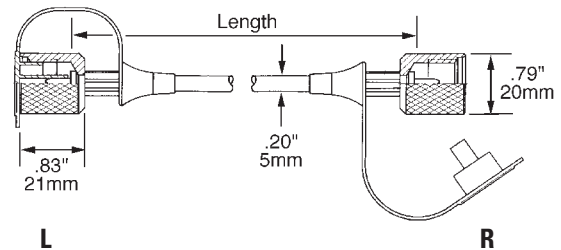
Working Pressure to 9000 *psi*



Features

Donaldson test point hoses are made of Polyamide II core with polyester braid reinforcement and Polyamid II cover. They are suitable for use with petroleum-based fluids. Hoses are standard straight on both ends and include plastic dust caps.

For hydraulic filters installed in hard-to-access locations, hose assemblies and test points can be used to plumb up a bulkhead to read pressure differentials.



1215 Series M12x1.5 Thread

Donaldson Part No.	Description	Hose PSI Rating	Length (inches)
P563240	H-1215-B-0101-012	9000	12
P563243	H-1215-B-0101-024	9000	24
P563244	H-1215-B-0101-036	9000	36
P563245	H-1215-B-0101-048	9000	48
P563246	H-1215-B-0101-072	9000	72
P563247	H-1215-B-0101-096	9000	96
P563248	H-1215-B-0101-120	9000	120
P563249	H-1215-B-0101-180	9000	180



1620 Series M16x2 Thread

Donaldson Part No.	Description	Hose PSI Rating	Length (inches)
P563250	H-1620-B-0101-012	9000	12
P563251	H-1620-B-0101-018	9000	18
P563252	H-1620-B-0101-024	9000	24
P563254	H-1620-B-0101-036	9000	36
P563255	H-1620-B-0101-048	9000	48
P563256	H-1620-B-0101-072	9000	72
P563257	H-1620-B-0101-096	9000	96
P563259	H-1620-B-0101-120	9000	120
P563260	H-1620-B-0101-144	9000	144
P563261	H-1620-B-0101-180	9000	180

Temperature Range

- -4°F to 212°F / -20°C to 100°C

Length

- 12" to 180"



Q: Does the TRAP have to be in a vertical position to function?

A: No! The TRAP breather can function properly **in any orientation** – sideways, upside down, on a slant, vertical, horizontal.....any way you need it.

Q: Can I use TRAP on construction vehicles?

A: Yes! The functions & features of TRAP suit both mobile and industrial applications.

Q: How do I install TRAP?

A: Simply insert the threaded stem into a threaded hole and tighten by hand.

Q: What happens when the silica gel fills up with moisture?

A: TRAP doesn't use silica gel. It is a **deliquescent** breather. The new, patented thermally reactive media used in our TRAP breather actually regenerates itself with every cycle. It doesn't fill up with moisture, but it does eventually load up with dirt/dust.

Q: So how long does TRAP last?

A: Our lab tests showed that, while silica gel breathers declined significantly in efficiency after 2000 cycles, the TRAP continued performing well even beyond 3000 cycles. (Our lab rats finally just stopped the testing....**the TRAP wouldn't quit.**)

Q: Does TRAP remove dirt?

A: Yes! TRAP prevents **moisture AND dirt** from entering your reservoir. It stops solid particulate down to 3 µm at 97% efficiency.

Q: I have oily mist near my reservoir and the desiccant breather I use now plugs up with it. Will TRAP?

A: No! TRAP has low sensitivity to oil mist. It also works well in environments that have high ambient humidity.

Questions? Call our technical hotline for answers! 800-846-1846

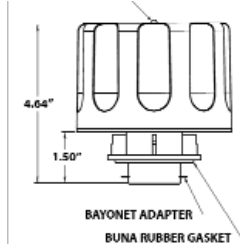
T.R.A.P.™ Breather Specifications

New breather technology eliminates moisture and dirt from hydraulic reservoirs

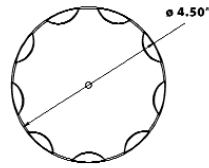


P565616
P566156 (no indicator version)

Available with or without electronic indicator

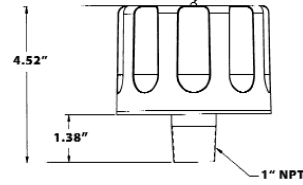


Top View



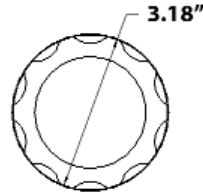
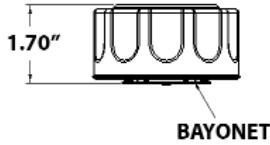
P564669
P566151 (no indicator version)

Available with or without electronic indicator

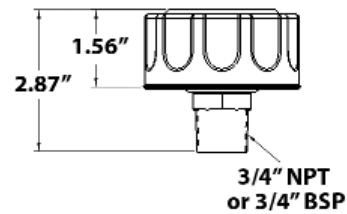


P565858

Top View



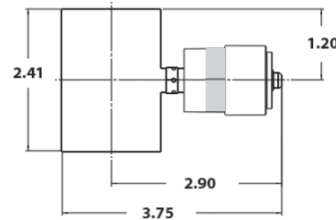
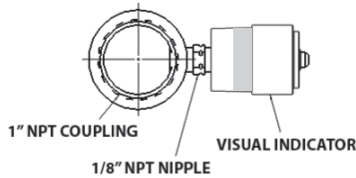
P565857 (3/4" NPT version)
P566037 (3/4" BSP version)



Mechanical Indicator Kit P566168

Suitable for use with P566151 and P565857*

*Requires additional 3/4" x 1" reducer bushing (supplied by customer)



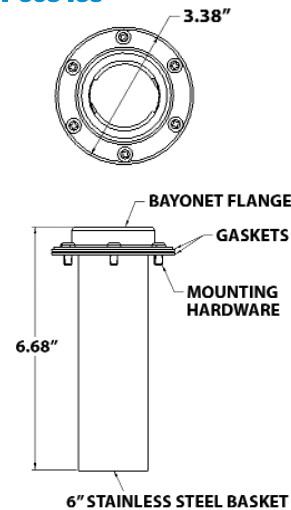
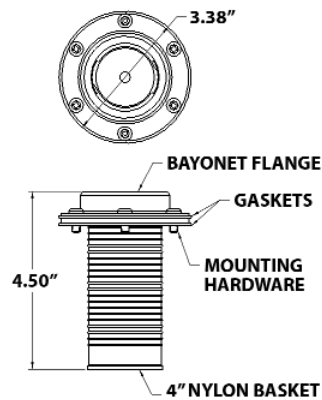
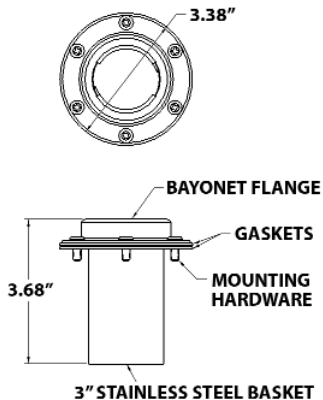
Bayonet Style Filler Basket/Flange Kits

Use with any bayonet style T.R.A.P. Breather

P566321

P563874

P563453



Donaldson®

Technical Features

- **Particulate Filter**

Highly efficient pleated particulate filter stops particle sizes down to 3 μm at 97%.

- **Operating Temperature Range**

-40°F to +200°F / -40°C to 66°C

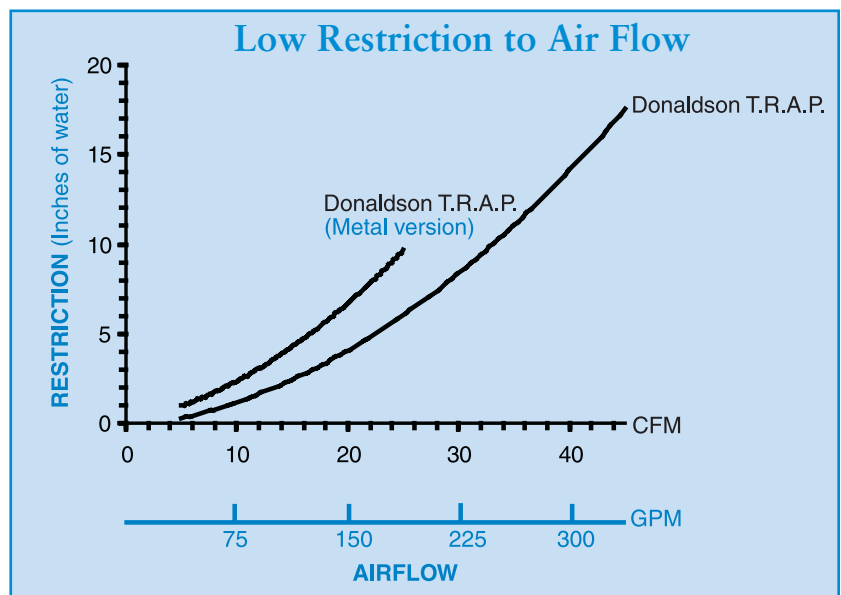
- **Electronic Indicator**

Actuated by pressure differential, flashes red to indicate change out is needed. Indicator setting, 1 PSID.

Indicator power source:
3V lithium battery CR2032

- **Mechanical Indicator Kit**

Install kit between reservoir and T.R.A.P. breather. Lock-up style indicator with manual reset. Highly visible, bright red band shows when restriction limit is reached. Indicator setting, 20" H₂O.



Apply T.R.A.P. based on fluid exchange rate, not reservoir size.

T.R.A.P. Breather... Moisture meets its match.

Part Number	Construction	Connection	Airflow	Indicator*
P566151	Glass-filled ABS	1" NPT	45 CFM Max.	Optional mechanical
P566156	Glass-filled ABS	Bayonet	45 CFM Max.	No
P564669	Glass-filled ABS	1" NPT	45 CFM Max.	Electronic
P565616	Glass-filled ABS	Bayonet	45 CFM Max.	Electronic
P565857	Epoxy Coated Steel	3/4" NPT	25 CFM Max.	Optional mechanical
P565858	Epoxy Coated Steel	Bayonet	25 CFM Max.	No
P566037	Epoxy Coated Steel	3/4" BSP	25 CFM Max.	No

*In environments with combustible dusts or fuel vapors, use non-electrical indicator T.R.A.P. models only.

Suggested service interval for models without indicator is 6 months.



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Brochure No. HYD-211



Donaldson®
Filtration Solutions

**WATER
MEANS
TROUBLE**



**T.R.A.P.™
STOPS
TROUBLE
BEFORE
IT GETS IN.**



T.R.A.P.™ Breathers arrest moisture and free your budget.

WATER MEANS TROUBLE

And it has a way of sneaking into your hydraulic circuits. Unless you have a Donaldson T.R.A.P.™ Breather standing guard over your system.

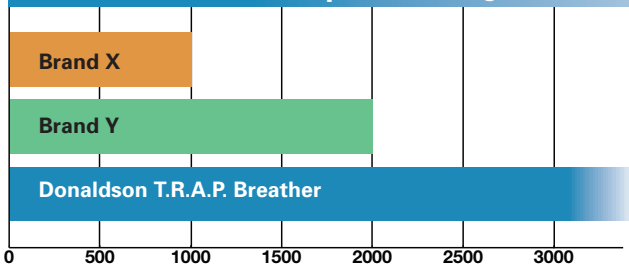
NO moisture slips by Donaldson's Thermally Reactive Advanced Protection (T.R.A.P.). In fact, it removes moisture at relative humidity levels as low as 15%! T.R.A.P. filtration technology reacts instantly to thermal conditions, blocking moisture completely.

T.R.A.P. Breathers from Donaldson are the **ONLY** breathers on the market that literally strip moisture vapor from intake air and exhale the moisture back to the atmosphere on the outflow cycle. The filter continuously regenerates its water holding capacity!

T.R.A.P. Breathers last longer. So will your budget.

As illustrated to the right, T.R.A.P. Breathers actually exhale the moisture back out, which means you won't need to change the breather due to water saturation ... unlike desiccant filters that require frequent change-out. **Like the name suggests, it TRAPS water before it gets in, yet doesn't restrict air flow, and lets your hydraulic reservoir BREATHE.**

T.R.A.P. Breathers last up to 50% longer!



The patented T.R.A.P. filtering material regenerates its water-holding capacity, leading to a much longer service life. In competitive testing, T.R.A.P. Breathers performed beyond 3,000 cycles, while silica gel breathers lost efficiency at less than 2,000 cycles.



"The T.R.A.P. Breathers last longer. They're more durable."

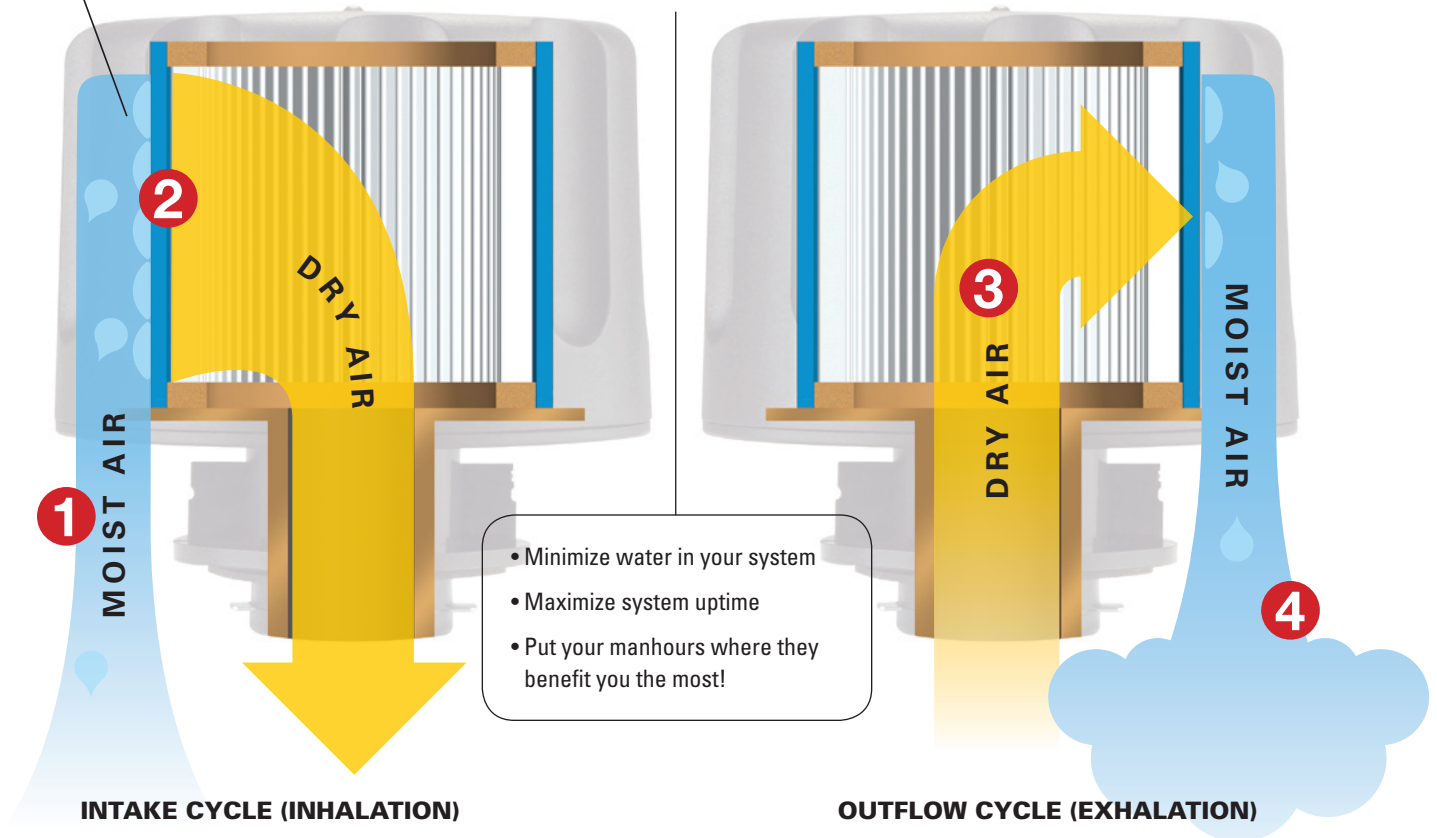
- Florida

Compare	T.R.A.P. Technology	Desiccant Filters
Service life	Extended Life (exhales moisture and refreshes its holding capacity on each cycle).	Shorter life (due to saturation of filtering material), leading to frequent replacement.
Effectiveness	Reacts instantly to conditions in the hydraulic circuit, creating a moisture barrier without impeding airflow.	Requires extended exposure to the air stream before absorption begins. Restricts airflow.
Maintenance costs	Reduced man-hours.	Increased man-hours.
Technology	Thermally reactive barrier that removes moisture at relative humidity levels as low as 15%.	Absorbent filtering material that loses holding capacity with each cycle.
Filtration	Superior moisture blocking and particulate filtration down to 3 microns at 97%.	Less effective moisture blocking and particulate filtration.
Other Advantages	Will not freeze in winter.	Subject to freezing in winter conditions.

Compare T.R.A.P. Breathers and you'll be impressed. Try T.R.A.P. Breathers and you'll be convinced!

HOW IT WORKS

TRAPPED MOISTURE



- 1** The circuit “breathes in” air containing moisture vapor.
- 2** The T.R.A.P. Breather strips moisture from the incoming air, allowing only dry air to enter the circuit.

- 3** During the “exhalation” cycle, The T.R.A.P. Breather allows unrestricted airflow outward.
- 4** The outflow of dry air picks up the moisture collected by the T.R.A.P. Breather during intake, and “blows it back out” – fully regenerating the T.R.A.P. Breather’s water-holding capacity.

“The T.R.A.P. Breathers have a longer service life. Desiccant filters seem to plug up quickly.”

– Illinois

“We test our oil every month. With the old desiccant filters, we always had free-standing water in the sample. With the T.R.A.P. Breathers, it’s nothing but pure oil.”

– Nebraska

T.R.A.P. Breather... Moisture meets its match.

It’s time to stop trouble from getting into your system!

All it takes to find your distributor is one simple phone call to Donaldson ... or, find your distributor by visiting our website.

1-800-846-1846



Donaldson[®]
Filtration Solutions

For more filtration solutions, visit our website:
www.donaldson.com/en/ih



Donaldson T.R.A.P. Breathers

Part Number	Construction	Connection	Airflow	Indicator	Oil Splash/ Mist Containment
P566151	Glass-filled ABS	1" NPT	45 CFM Max.	Optional Mechanical	No
P566156	Glass-filled ABS	Bayonet	45 CFM Max.	No	No
P564669	Glass-filled ABS	1" NPT	45 CFM Max.	Electronic	No
P565616	Glass-filled ABS	Bayonet	45 CFM Max.	Electronic	No
P565857	Epoxy Coated Steel	3/4" NPT	25 CFM Max.	Optional Mechanical	Yes
P565858	Epoxy Coated Steel	Bayonet	25 CFM Max.	No	Yes
P566037	Epoxy Coated Steel	3/4" BSP	25 CFM Max.	No	Yes
P566174	Glass-filled ABS	9/16"-18 UNF	3 CFM	No	Yes
P567390	Glass-filled ABS	3/8" NPT	3 CFM	No	Yes
P567392	Glass-filled ABS	1/4" NPT	3 CFM	No	Yes

T.R.A.P. Breather... Moisture meets its match.

For more filtration solutions, call:

1-800-846-1846

or visit our website:

www.donaldson.com/en/ih



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Tel.: 32-16-38-3811
Fax: 32-16-38-3939

South Africa
Tel.: 27-21-530-2900
Fax: 27-21-534-7708

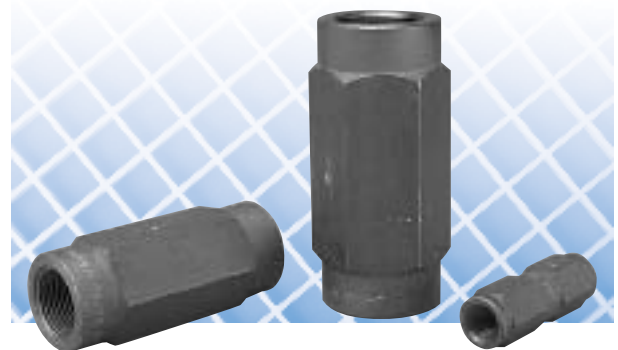
Latin America & Caribbean
Tel.: 01-449-910-6385
Fax: 01-449-910-6180

Distributed by:

In-Line Check Valves

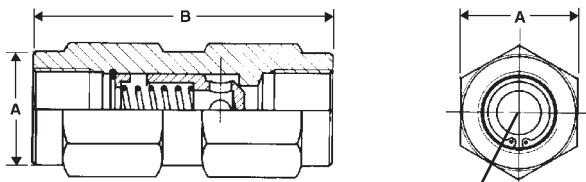
Working Pressures to: 4350 *psi*

Flow Ranges to: 200 *gpm*

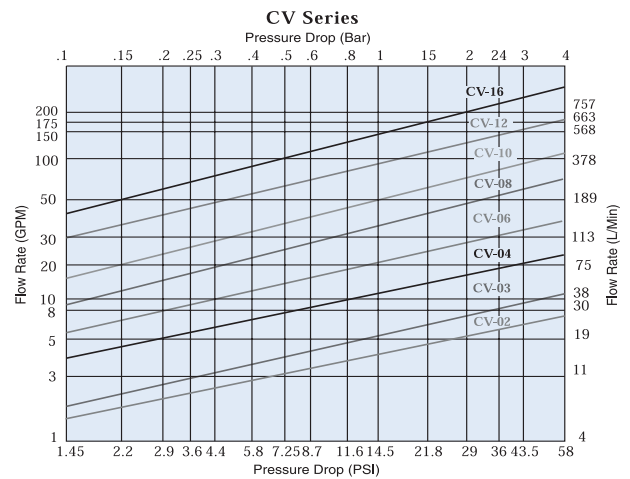


Features

Steel constructed check valves are compatible with all non-corrosive liquids. Valves contain no elastimeric seals. Restricted orifice (.062) option available on some models.



Optional Orifice



The above charts are based on Hydraulic Oil 100 SUS, S.G. = 0.86

Sizes

- 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2" and 2" NPT
- #4, #6, #8, #12, #16, #20, #24 and #32 SAE

Opening Pressure (Cracking)

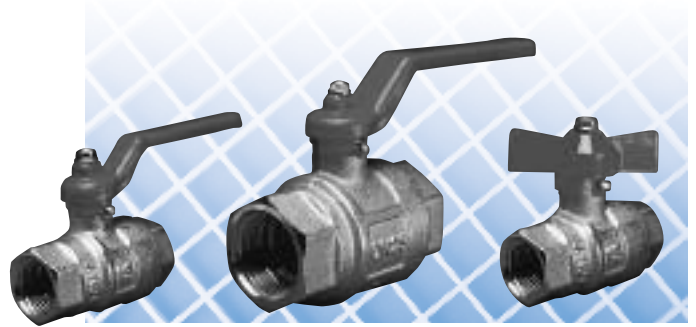
- 5 *psi* or 65 *psi*

Donaldson Part No.	Description	Max Working Pressure (PSI)	Max. Rated Flow (gpm)	Opening Pressure (PSI)	Port	A (in./mm)	B (in./mm)
P562297	CV-02P-5	4350	6	5	1/4" NPT	0.75/19	2.36/60
P562298	CV-02P-65	4350	6	65	1/4" NPT	0.75/19	2.36/60
P562299	CV-02S-5	4350	6	5	#4 SAE	0.75/19	2.36/60
P562300	CV-02S-65	4350	6	65	#4 SAE	0.75/19	2.36/60
P562301	CV-03P-5	4350	10	5	3/8" NPT	0.95/24	2.75/70
P562302	CV-03P-65	4350	10	65	3/8" NPT	0.95/24	2.75/70
P562303	CV-03S-5	4350	10	5	#6 SAE	0.95/24	2.75/70
P562304	CV-03S-65	4350	10	65	#6 SAE	0.95/24	2.75/70
P562305	CV-04P-5	4350	16	5	1/2" NPT	1.18/30	3.03/77
P562306	CV-04P-65	4350	16	65	1/2" NPT	1.18/30	3.03/77
P562307	CV-04S-5	4350	16	5	#8 SAE	1.18/30	3.03/77
P562308	CV-04S-65	4350	16	65	#8 SAE	1.18/30	3.03/77
P562309	CV-06P-5	4350	25	5	3/4" NPT	1.42/36	3.54/90
P562310	CV-06-P-5-.062-ORF	4350	25	5	3/4" NPT	1.42/36	3.54/90
P562311	CV-06P-65	4350	25	65	3/4" NPT	1.42/36	3.54/90
P562312	CV-06S-5	4350	25	5	#12 SAE	1.42/36	3.54/90
P562313	CV-06S-65	4350	25	65	#12 SAE	1.42/36	3.54/90
P562314	CV-08P-5	4350	45	5	1" NPT	1.77/45	4.17/106
P562316	CV-08P-65	4350	45	65	1" NPT	1.77/45	4.17/106
P562317	CV-08S-5	4350	45	5	#16 SAE	1.77/45	4.17/106
P562318	CV-08-S-5-.062-ORF	4350	45	5	#16 SAE	1.77/45	4.17/106
P563307	CV-08S-65	4350	45	65	#16 SAE	1.77/45	4.17/106
P562319	CV-10P-5	4350	95	5	1-1/4" NPT	2.16/55	4.92/125
P562320	CV-10P-65	4350	95	65	1-1/4" NPT	2.16/55	4.92/125
P562321	CV-10S-5	4350	95	5	#20 SAE	2.16/55	4.92/125
P562322	CV-10S-65	4350	95	65	#20 SAE	2.16/55	4.92/125
P562323	CV-12P-5	4350	130	5	1-1/2" NPT	2.56/65	5.51/140
P562324	CV-12P-65	4350	130	65	1-1/2" NPT	2.56/65	5.51/140
P562325	CV-12S-5	4350	130	5	#24 SAE	2.56/65	5.51/140
P562326	CV-12S-65	4350	130	65	#24 SAE	2.56/65	5.51/140
P562327	CV-16P-5	2900	200	5	2" NPT	2.95/75	6.30/160
P562328	CV-16P-65	2900	200	65	2" NPT	2.95/75	6.30/160
P562329	CV-16S-5	2900	200	5	#32 SAE	2.95/75	6.30/160

Ball Valves - Low Pressure

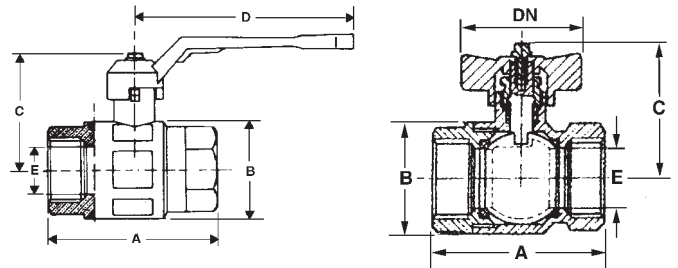
Description:

Hot pressed brass body and ball OT 58
Materials (ball and body): BV Series
chromium plated
Aluminum handle
Teflon seals (ball and stem)



Features

Low pressure ball valves are rated for water, oil or gas (WOG) applications. Two-way/two-position, quarter turn operation. Full-ported sizes from 1/4" to 2" NPT. T-handle available on some models. Suitable for temperatures from -22°F to 350°F (-30°C to 162°C).



Donaldson Part No.	Description	Max. Working Pressure (PSI)	Port Thread	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	DN (T-handle) (in./mm)
P562331	BV-04-N	710	1/4" NPT	1.89/48	0.98/25	1.69/43	3.15/80	0.40/10	-
P562333	BV-06-N	710	3/8" NPT	1.89/48	0.98/25	1.69/43	3.15/80	0.40/10	-
P562336	BV-08-N	710	1/2" NPT	2.00/51	1.22/31	1.77/45	3.15/80	0.60/15	-
P563311	BV-12-N	570	3/4" NPT	2.24/57	1.46/37	2.36/60	4.44/113	0.80/20	-
P562338	BV-16-N	570	1" NPT	2.75/70	1.81/46	2.48/63	4.44/113	1.00/25	-
P562339	BV-20-N	430	1-1/4" NPT	3.15/80	2.24/57	3.11/79	5.43/138	1.25/32	-
P562341	BV-24-N	430	1-1/2" NPT	3.66/93	2.75/70	3.27/83	5.43/138	1.57/40	-
P562343	BV-32-N	360	2" NPT	4.41/112	3.31/84	3.94/100	6.22/158	1.97/50	-
P562345	BV-40-N ¹	260	2-1/2" NPT	5.31/135	3.82/97	3.98/101	7.75/197	2.12/54	-
P562346	BV-48-N ¹	230	3" NPT	6.25/159	4.80/122	5.08/129	9.84/250	2.56/65	-

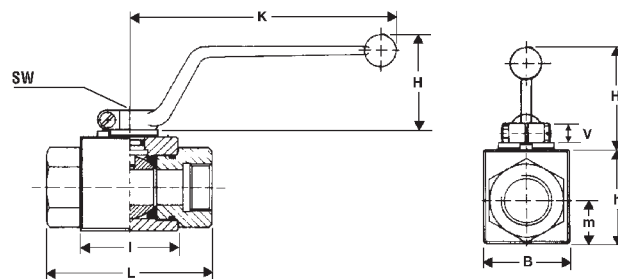
Replacement handles

Donaldson Part No.	Description	Handle Style	Fits Valve Size
P562353	BVH-468	Standard	04-N, 06-N, 08-N
P562354	BVH-468-T	T Handle	04-N, 06-N, 08-N
P562348	BVH-1216	Standard	12-N, 16-N
P562349	BVH-1216-T	T Handle	12-N, 16-N
P562350	BVH-20	Standard	20-N
P562351	BVH-2432	Standard	24-N, 32-N
P562352	BVH-40	Standard	40-N
P562355	BVH-4864	Standard	48-N, 64-N

Ball Valves - Medium/High Pressure

Description:

Steel body
 Brass ball with chrome plating
 (MBV-04 thru MBV-16)
 Steel ball with chrome plating
 (HBV, MBV-20 thru MBV-32)
 Steel zinc stem (MBV)
 Delrin ball seal
 Stem seal: Buna-N (MBV); Viton (HBV)
 Aluminum handles on HBV larger sizes



Features

Medium duty (MBV) and high pressure (HBV) ball valves are compatible with petroleum-based fluids. Two-way, two-position valves are suited for on/off control. Optional locking tabs provide added safety. Valves come standard with bent handles; straight handles are available for some models. Operating temperatures from -22°F to 212°F / -30°C to 100°C.

Medium Duty Ball Valves - MBV

Donaldson Part No.	Description	Port Thread	Pressure (PSI)	L (in./mm)	I (in./mm)	B (in./mm)	H (in./mm)	h (in./mm)	m (in./mm)	V (in./mm)	SW (in./mm)	K (in./mm)
P562387	MBV-04-N	1/4" NPT	7250	2.7/69	1.4/36	1.0/26	1.7/43	1.3/32	0.5/12.5	0.4/11	0.4/9	4.6/118
P562388	MBV-04-S	7/16-20 SAE	7250	2.7/69	1.4/36	1.0/26	1.7/43	1.3/32	0.5/12.5	0.4/11	0.4/9	4.6/118
P563308	MBV-06-N	3/8" NPT	7250	3.1/79	1.7/43	1.3/32	1.7/43	1.5/38	0.7/17.5	0.4/11	0.4/9	4.6/118
P562389	MBV-06-S	9/16-18 SAE	7250	3.1/79	1.7/43	1.3/32	1.7/43	1.5/38	0.7/17.5	0.4/11	0.4/9	4.6/118
P562390	MBV-08-N	1/2" NPT	7250	4.1/104	1.9/48	1.4/35	1.7/43	1.6/40	0.75/19	0.4/11	0.4/9	4.6/118
P563309	MBV-08-S	3/4-16 SAE	7250	4.1/104	1.9/48	1.4/35	1.7/43	1.6/40	0.75/19	0.4/11	0.4/9	4.6/118
P562391	MBV-12-N	3/4" NPT	4500	4.3/109	2.4/62	1.9/49	2.3/58	2.2/57	1.0/24.5	0.6/14	0.6/14	7.2/182
P562392	MBV-12-S	1-1/16-12 SAE	4500	4.3/109	2.4/62	1.9/49	2.3/58	2.2/57	1.0/24.5	0.6/14	0.6/14	7.2/182
P562394	MBV-16-N	1" NPT	4500	4.6/117	2.6/66	2.3/58	2.3/58	2.6/65	1.2/29.5	0.6/14	0.6/14	7.2/182
P562395	MBV-16-S	1-5/16-12 SAE	4500	4.6/117	2.6/66	2.3/58	2.3/58	2.6/65	1.2/29.5	0.6/14	0.6/14	7.2/182
P562396	MBV-20-N	1-1/4" NPT	5000	4.3/110	3.2/80	3.0/76	2.3/58	3.3/84	1.5/38	0.6/15	0.7/17	8.5/218
P562397	MBV-20-S	1-5/8-12 SAE	5000	4.3/110	3.2/80	3.0/76	2.3/58	3.3/84	1.5/38	0.6/15	0.7/17	8.5/218
P562398	MBV-24-N	1-1/2" NPT	5000	5.1/130	3.3/85	3.6/92	2.3/58	3.9/99	1.8/46	0.6/15	0.7/17	8.5/218
P563310	MBV-24-S	1-7/8-12 SAE	5000	5.1/130	3.3/85	3.6/92	2.3/58	3.9/99	1.8/46	0.6/15	0.7/17	8.5/218
P562399	MBV-32-N	2" NPT	5000	5.5/140	3.9/100	4.2/106	2.3/58	4.4/111	2.1/53	0.6/15	0.7/17	8.5/218

High Pressure Ball Valves - HBV

Donaldson Part No.	Description	Port Thread	Pressure (PSI)	L (in./mm)	I (in./mm)	B (in./mm)	H (in./mm)	h (in./mm)	m (in./mm)	V (in./mm)	SW (in./mm)	K (in./mm)
P562356	HBV-04-N	1/4" NPT	7250	2.7/69	1.4/36	1.0/26	1.7/43	1.3/32	0.5/12.5	0.4/11	0.4/9	4.6/118
P562357	HBV-04-S	7/16-20 SAE	7250	2.7/69	1.4/36	1.0/26	1.7/43	1.3/32	0.5/12.5	0.4/11	0.4/9	4.6/118
P562358	HBV-06-N	3/8" NPT	7250	3.1/79	1.7/43	1.3/32	1.7/43	1.5/38	0.7/17.5	0.4/11	0.4/9	4.6/118
P562359	HBV-06-S	9/16-18 SAE	7250	3.1/79	1.7/43	1.3/32	1.7/43	1.5/38	0.7/17.5	0.4/11	0.4/9	4.6/118
P562360	HBV-08-N	1/2" NPT	7250	4.1/104	1.9/48	1.4/35	1.7/43	1.6/40	0.75/19	0.4/11	0.4/9	4.6/118
P562361	HBV-08-S	3/4-16 SAE	7250	4.1/104	1.9/48	1.4/35	1.7/43	1.6/40	0.75/19	0.4/11	0.4/9	4.6/118
P562362	HBV-12-N	3/4" NPT	4500	4.3/109	2.4/62	1.9/49	2.3/58	2.2/57	1.0/24.5	0.6/14	0.6/14	7.2/182
P562363	HBV-12-S	1-1/16-12 SAE	4500	4.3/109	2.4/62	1.9/49	2.3/58	2.2/57	1.0/24.5	0.6/14	0.6/14	7.2/182
P562364	HBV-16-N	1" NPT	4500	4.6/117	2.6/66	2.3/58	2.3/58	2.6/65	1.2/29.5	0.6/14	0.6/14	7.2/182
P562365	HBV-16-S	1-5/16-12 SAE	4500	4.6/117	2.6/66	2.3/58	2.3/58	2.6/65	1.2/29.5	0.6/14	0.6/14	7.2/182
P562368	HBV-20-N	1-1/4" NPT	5000	4.3/110	3.2/80	3.0/76	2.3/58	3.3/84	1.5/38	0.6/15	0.7/17	8.5/218
P562369	HBV-20-S	1-5/8-12 SAE	5000	4.3/110	3.2/80	3.0/76	2.3/58	3.3/84	1.5/38	0.6/15	0.7/17	8.5/218
P562370	HBV-24-N	1-1/2" NPT	5000	5.1/130	3.3/85	3.6/92	2.3/58	3.9/99	1.8/46	0.6/15	0.7/17	8.5/218
P563315	HBV-24-S	1-7/8-12 SAE	5000	5.1/130	3.3/85	3.6/92	2.3/58	3.9/99	1.8/46	0.6/15	0.7/17	8.5/218

Replacement Parts

Handles

Donaldson Part No.	Description	Style	Valve Size
P562376	HBVH-040608	Bent Handle	04, 06, 08
P562377	HBVH-1216	Bent Handle	12, 16
P562378	HBVH-202432	Bent Handle	20, 24, 32

Lock Device Kits

Donaldson Part No.	Description	Valve Size
P562332	LD-1	04, 06, 08
P562335	LD-2	12, 16
P562340	LD-3	20, 24, 32

For use on MBV, HBV and 3W-HBV

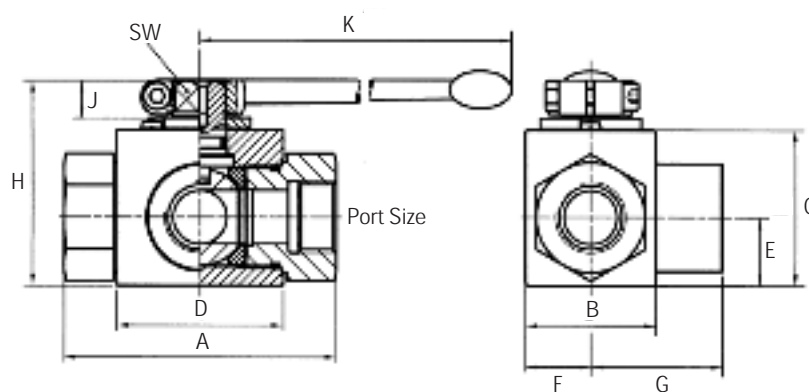
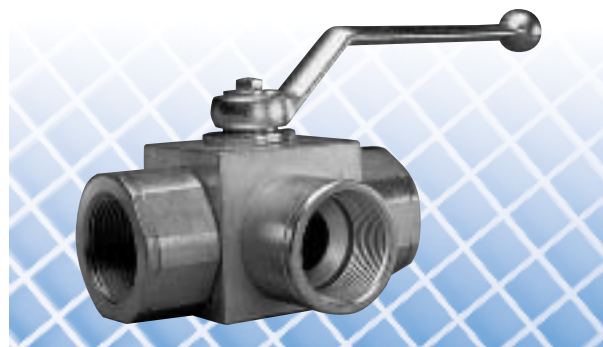
Seal Kit

Donaldson Part No.	Description	Valve Size
P562379	HBV-SK-04	04
P562380	HBV-SK-06	06
P562629	HBV-SK-08	08
P562630	HBV-SK-12	12
P562381	HBV-SK-16	16
P562382	HBV-SK-20	20
P562383	HBV-SK-24	24

Three-Way Selector Ball Valve

Description:

Maximum pressure 7250 *psi* / 500 bar
 Steel construction
 Operating temperature
 -22°F to 212°F / -30°C to 100°C



Donaldson Part No.	Description	Port Size	Max Pressure	A (in./mm)	B (in./mm)	C (in./mm)	D (in./mm)	E (in./mm)	F (in./mm)	G (in./mm)	H (in./mm)	J (in./mm)	K (in./mm)	SW (in./mm)
P562342	3W-HBV-08-N	1/2" NPT	7250 psi 50000 kPa	4.09 104	1.50 38	1.57 40	1.89 48	0.75 19	0.69 17.5	1.63 41.5	2.13 54	0.43 11	4.53 115	0.3 9
P562344	3W-HBV-12-N	3/4" NPT	4500 psi 31028 kPa	4.02 102	2.05 52	2.24 57	2.44 62	0.96 24.5	0.96 24.5	1.87 47.5	2.95 75	0.55 14	7.87 200	0.55 14
P562404	3W-HBV-16-N	1" NPT	4500 psi 31028 kPa	4.69 119	2.40 61	2.56 65	2.60 66	1.16 29.5	1.14 29	2.22 56.5	3.27 83	0.55 14	7.87 200	0.55 14
P562405	3W-HBV-16-S	SAE -16	4500 psi 31028 kPa	4.72 120	2.80 71	3.33 84.5	3.19 81	1.54 39	1.54 39	2.36 60	4.17 106	0.65 16.5	12.60 320	0.67 17
P562406	3W-HBV-20-N	1-1/4" NPT	5000 psi 34500kPa	4.72 120	2.80 71	3.33 84.5	3.19 81	1.54 39	1.54 39	2.36 60	4.17 106	0.65 16.5	12.60 320	0.67 17
P562407	3W-HBV-24-N	1-1/2" NPT	5000 psi 34500kPa	5.51 140	3.74 95	4.17 106	4.09 104	2.09 53	2.09 53	2.76 70	5.00 127	0.65 16.5	12.60 320	0.67 17

Operation:

Open cross-over (no zero position)

Pressure inlet only from port 2

