

PTFE Diaphragm Relief, By-Pass, Anti-Siphon and Back Pressure Valves Series RVDT & RVDTM

for Smooth, Sensitive Operation and the Ultimate in Corrosion Resistance
...with No Wetted Elastomers or Metals!

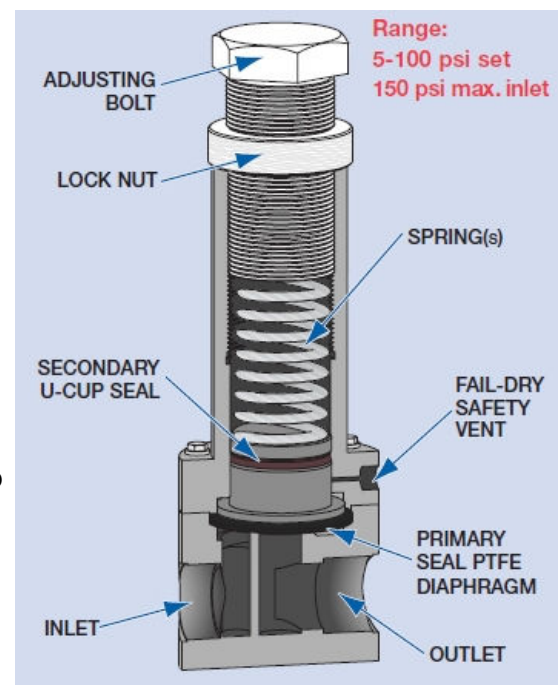
Applications:

One valve design functions as an all-purpose backpressure valve in many applications:

- **Relief:** protects systems and equipment from over-pressure/pressure surges.
- **By-Pass:** prevents pumps from "dead heading".
- **Back-Pressure Regulator:** maintains necessary reverse pressure in closed loop systems.
- **Back-Pressure Valve:** enhance pump performance by maintaining backpressure on the pump outlet
- **Anti-Siphon:** used on the outlet of a pump wherever gravity or other downstream conditions may create negative pressure (siphon) and drain a tank. The valve is pre-set to open under pump pressure, but closes bubble-tight when the pump is shut off. Because of the design of the RVDT, this valve *actually closes more tightly* when unwanted siphon occurs.

Materials, Sizes & Features:

- Geon® PVC, Corzan® CPVC, Natural Polypropylene, and Kynar® PVDF body materials in 1/4", 1/2", 3/4", 1", 1 1/2" and 2" sizes.
- PTFE body material offered in 1/4" - 1" sizes.
- Relief setting is infinitely adjustable from 5 psi to 100 psi.
- Maximum inlet pressure is 150 psi.
- Diaphragm material is PTFE for all sizes and body materials, and is excellent for use with highly aggressive liquids...provides the ultimate in contamination-free sealing.
- Rugged thermoplastic construction is ideal for a broad range of industrial applications.
- Large diaphragm area delivers more sensitivity and less pressure drop under flow conditions.
- Non-wetted u-cup seal provides a second isolation of the control spring; design includes patented [Fail-Dry](#) vent, a safety feature that provides visual warning of seal malfunction. This permits the valve to continue operation until a scheduled maintenance can be planned thereby avoiding a costly shutdown. Fail-Dry connection on Series RVDT is 1/8" FNPT.
- Non-leaching feature of fluoropolymer diaphragm makes it ideal for use with ultra-purewater and concentrated etchants, as in the semiconductor industry.



Materials of Construction, Manufacturing Process & Quality Assurance:

Series RVDT/RVDTM relief valves are available in Geon® PVC, Corzan® CPVC, Natural Polypropylene (virgin, unpigmented, unfilled PPL), Kynar® PVDF and PTFE body materials. The wetted diaphragm is PTFE energized by a non-wetted FKM diaphragm. Spring housing (not wetted) is PVC. Springs (not in wetted area) are zinc-plated steel, external fasteners are stainless steel. Lock nut and adjusting screw are HDPE on 1/4" - 1" sizes. Lock nut and adjusting screw are stainless steel on 1½" and 2" sizes. If your environment is incompatible with any of the external materials, or you are interested in some other type of body material, options are available on quantity or special orders.

Valve bodies are machined on state-of-the-art CNC lathes and machining centers. Parts are individually inspected prior to assembly. Valves are hand assembled, then inspected. Assembled valves are 100% individually tested (while pressurized) prior to shipment. All operations performed in our plant in Cedar Grove, NJ.

[Optional Class 100 cleanroom cleaning and packing](#) including wipe, rinse, Triton flush, nitrogen flush, DI rinse, nitrogen purge/dry, fluorescent inspection, capping & 6 mil PE bag and heat seal available upon request. Performed at a certified remote location; priced per valve.

Larger valve shown in photo ABOVE has a Natural Polypropylene body. Spring housing (completely non-wetted) is Geon PVC, but can be constructed of the wetted body material for a slightly higher cost. Cutaway example in photo is an all-PVC valve.

The standard valves are precision machined from the highest quality brand thermoplastic bar stock with female NPT connections. 1/2" sizes in Geon PVC, Corzan CPVC, Natural Polypro & Kynar PVDF, as well as 1" sizes in Natural Polypro & Kynar PVDF are molded with a choice of FNPT or socket connections. Spigot connections & flare fittings are also available on all sizes. For orders of 25 or more valves, connections can be provided with male threads, sockets, unions, etc. Please consult our Technical Group for more information, (973)256-3000.



Mounting

1/2" size in PVC, CPVC, Natural Polypro & Kynar PVDF, as well as 1" sizes in Natural Polypro & Kynar PVDF have integral mounting lugs on the base of the body, as shown at right. This is in addition to mounting holes in the base. These sizes and materials can be ordered optionally without the mounting lugs if desired.

All other sizes & materials have threaded mounting holes in the base.

Gauge Ports & Fail Dry Port

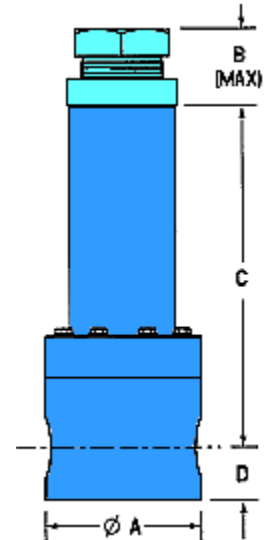
1/2" size in PVC, CPVC, Natural Polypro & Kynar PVDF have opposing 1/8" NPT gauge ports on the side of the body, on the same plane as the piping connections, as shown at right. 1" size in Natural Polypro & Kynar PVDF have opposing 1/4" NPT gauge ports on the side of the body, on the same plane as the piping connections, as shown at right. The gauge ports are not tapped unless so ordered; incurs small charge. On the standard body, the untapped port has no effect on flow or performance. Gauge ports are not readily available on other size/material combinations; please consult factory for alternatives.

The threaded port above the piping connection is the patented Fail-Dry early warning vent. Fail-Dry is standard on all sizes and materials.

Dimensions:

SERIES RVDT & RVDTM DIMENSIONS

PIPE SIZE NPT	A		B		C		D	
	in.	mm.	in.	mm.	in.	mm.	in.	mm.
1/4	2.0	50	1.38	35	4.30	109	.470	11
1/2 PTFE BODY	2.5	63	1.48	37	4.41	112	.687	17
1/2	2.47	62.7	1.48	37	3.66	93	.687	17
3/4	3.0	76	2.81	71	5.39	137	.780	19
1" RVDT	3.5	83	3.00	76	7.65	194	1.187	30
1" RVDTM	3.5	83	3.00	76	7.65	194	1.187	30
1 1/2	5.0	127	3.50	89	7.00	178	1.500	38
2	6.0	153	2.80	71	8.13	207	1.750	45



SERIES RVDT & RVDTM MODEL NUMBERS

PIPE SIZE	PVC Model No.	POLYPRO* Model No.	PVDF Model No.	PTFE Model No.	CPVC Model No.
1/4	RVDT025T-PV	RVDT025T-PP	RVDT025T-PF	RVDT025T-TF	RVDT025T-CP
1/2	RVDTM050T-PV	RVDTM050T-PP	RVDTM050T-PF	RVDT050T-TF	RVDTM050T-CP
3/4	RVDT075T-PV	RVDT075T-PP	RVDT075T-PF	RVDT075T-TF	RVDT075T-CP
1	RVDTM100T-PV	RVDTM100T-PP	RVDTM100T-PF	RVDT100T-TF	RVDTM100T-CP
1 1/2	RVDT150T-PV	RVDT150T-PP	RVDT150T-PF	Consult Factory	RVDT150T-CP
2	RVDT200T-PV	RVDT200T-PP	RVDT200T-PF		RVDT200T-CP

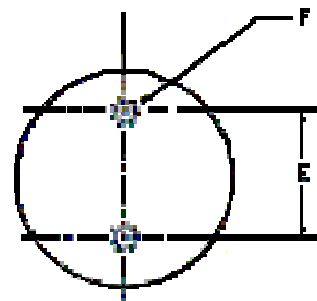
*Natural Polypropylene

CORZAN: For Corzan CPVC body, change suffix material to -CP.
For example, RVDTM050T-PV becomes RVDTM050T-CP.

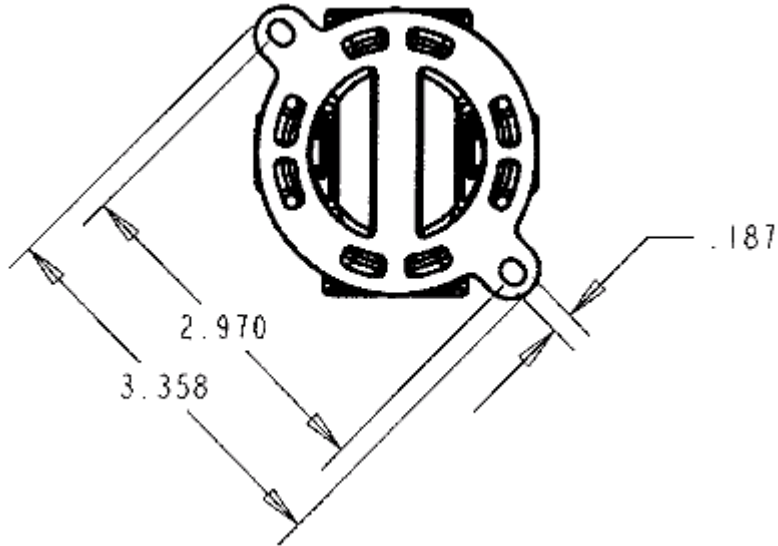
Note Concerning "V" Part Numbers: Previous part numbering of the RVDT Series had a second "V" in place of the second "T" -- for example, RVDT075T-PV was formerly RVDT075V-PV. The second "V" indicated the backing seal material, Viton, rather than the primary seal material, PTFE. In 2009 the nomenclature was changed to eliminate confusion. The valves are the same.

RVDT MOUNTING HOLE DIMENSIONS

Pipe Size	E		F	
	IN.	MM	Thread Size	Depth IN. MM
1/4"	1.625	41.3	8-32	.625 15.9
1/2" (PTFE only)	1.625	41.3	8-32	.625 15.9
3/4"	2.000	50.8	1/4-20	.750 19.1
1"	2.000	50.8	1/4-20	.750 19.1
1-1/2"	none			

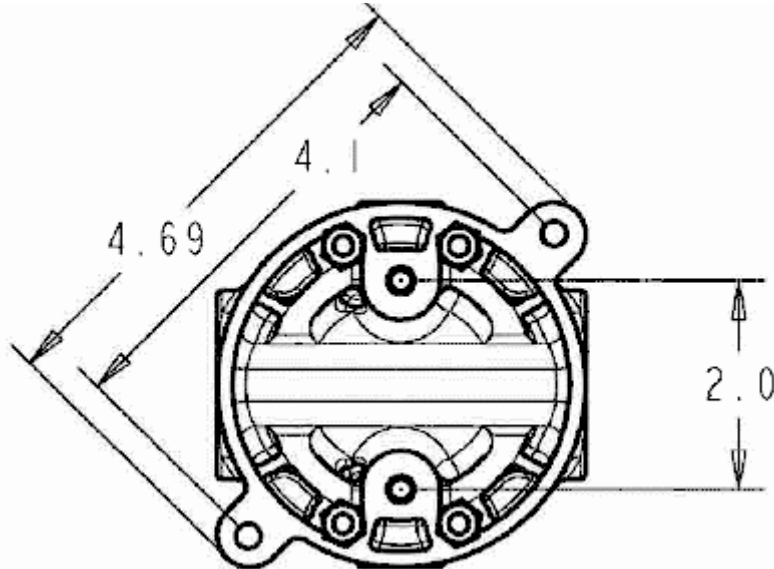


**1/2" RVDTM • PVC, CPVC, PP, PVDF
MOUNTING DIAGRAM (BOTTOM VIEW)**



Lug depth is .687" or 17.5 mm.

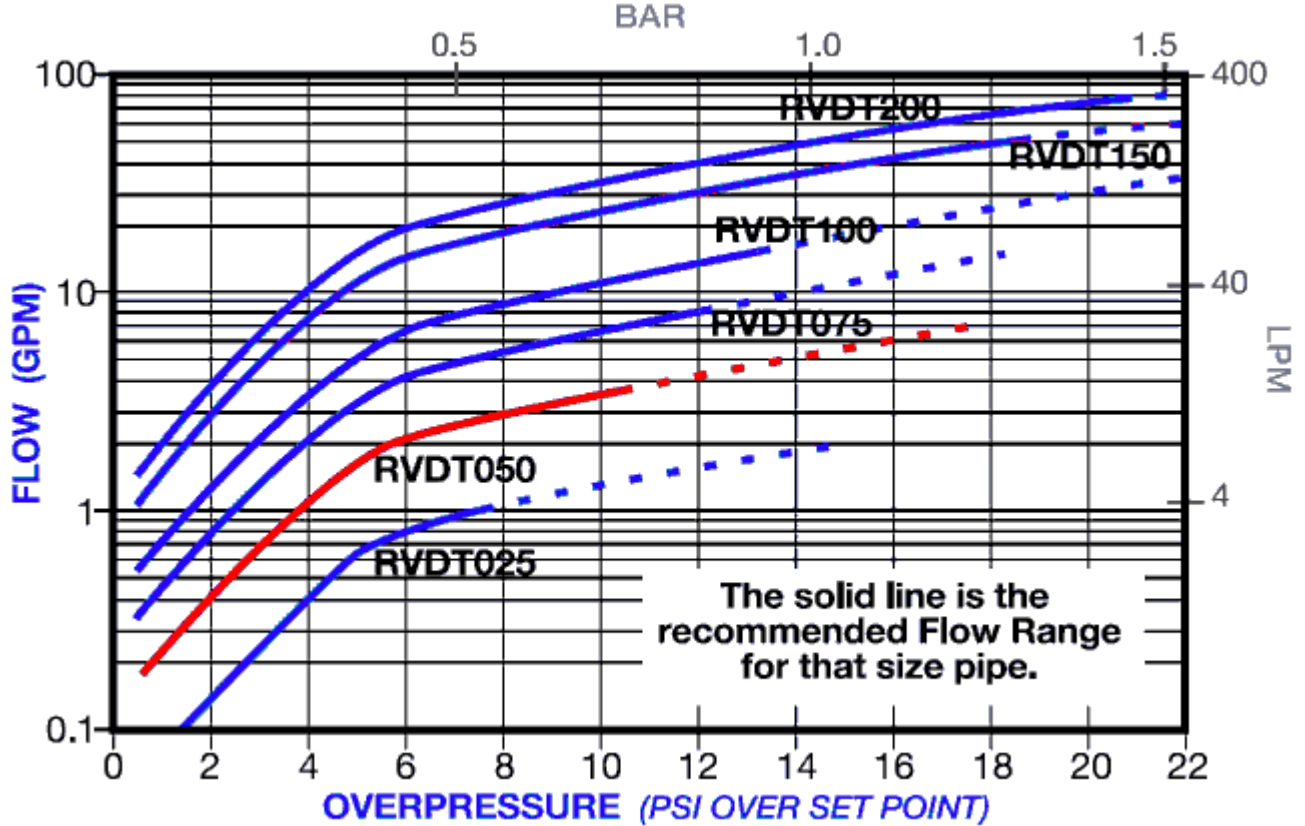
**1" RVDTM • PP, PVDF
MOUNTING DIAGRAM (BOTTOM VIEW)**



Lug depth is .687" or 17.5 mm.

Flow Reference Charts:

Performance Curve below is 1/4" - 2" all materials



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