PLAST-O-MATIC

PRODUCT DATA

CATALOG TRVDT

New! Series "TRVDT"

3-Way Bypass Valve with PTFE Diaphragm

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

Features:

High flow relief/by-pass valve with 3-port design, ideal for applications where minimal footprint is required or where use of a piping tee is impractical. Valve has a straight-through flow pattern when closed. When set point is exceeded, the diaphragm is lifted off the center port, and excess flows "down" and out through the third port at the bottom of the valve.

For applications where a tee can be accommodated, a 2-port valve such as Series RVDT is usually preferred. If you are unsure which is right for your application, please contact our Technical Services Group at 973-256-3000.

- **Relief:** protects systems and equipment from over-pressure/ pressure surges.
- **Bypass:** prevents pumps from "dead heading".
- Unique PTFE Diaphragm is excellent for use with highly aggressive liquids... and also provides the ultimate in contamination-free sealing.
- Rugged thermoplastic construction is ideal for a broad range of industrial applications.
- Relief setting is infinitely adjustable from 5 psi to 100 psi.
- Maximum inlet pressure is 150 psi.
- 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 and permits the valve to continue operation until a scheduled maintenance can be planned thereby avoiding a costly shutdown.
- Non-leaching feature of fluoropolymer diaphragm makes it ideal for use with ultra-pure water and concentrated etchants, as in the semiconductor industry.
- Available in 1/2", 3/4", 1" sizes. For other sizes consult factory.

Materials of Construction, Manufacturing Process & Quality Assurance:

Series TRVDT relief valves are available in Geon® PVC, Natural Polypropylene, Kynar® PVDF and PTFE body materials. The wetted diaphragm is PTFE energized by a non-wetted FKM diaphragm. Spring housing (completely non-wetted) is Geon PVC, but can be constructed of the wetted body material for a slightly higher cost. Springs (not in wetted area) are zinc-plated steel, external fasteners are stainless steel. Lock nut and adjusting screw are HDPE. 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.

PLAST-O-MATIC VALVES, INC.

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SERIES TRVDT– 3-WAY BYPASS VALVE WITH PTFE DIAPHRAGM

Flow Characteristics at Overpressure:

Curves show flow rate under laboratory conditions at various pressures exceeding the set point; i.e. flow characteristics with third port open. Dashed portion of curve indicates flow rate exceeds universally accepted safe flow velocity (5 ft./sec.) for that pipe size.

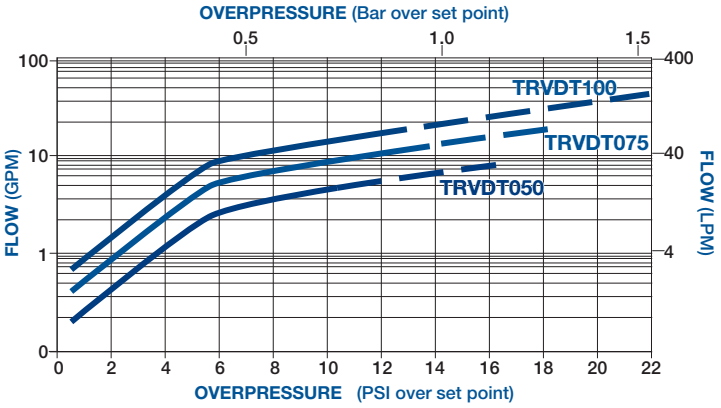
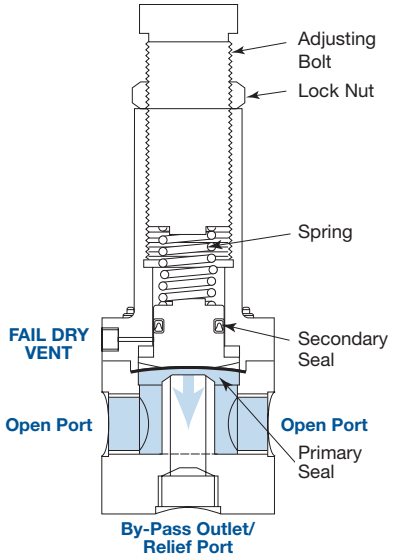


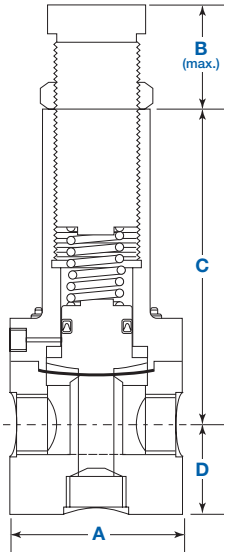
Illustration of Flow Path & Operation:

Right, liquid pressure has risen above the set pressure. The force of the liquid now exceeds the force of the spring; the pressure lifts the diaphragm off the relief port orifice, allowing liquid to flow down and through the relief port. In this way it "relieves" the pressure in the line.



Series TRVDT Dimensions

Size NPT	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
1/2"	2.5	63	1.48	37	4.40	112	1.38	35.1
3/4"	3.0	76	2.81	71	5.50	140	1.66	42.3
1"	3.5	87	3.00	76	7.65	195	1.94	49.4



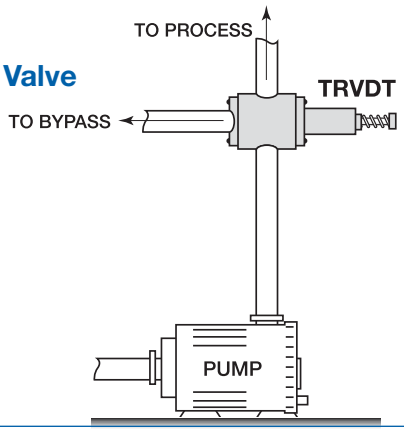
Series TRVDT Ordering Information

Pipe Size	Model Number				
	PVC	CPVC	Nat. Polypro	PTFE	PVDF
1/2"	TRVDT050V-PV	TRVDT050V-CP	TRVDT050V-PP	TRVDT050V-TF	TRVDT050V-PF
3/4"	TRVDT075V-PV	TRVDT075V-CP	TRVDT075V-PP	TRVDT075V-TF	TRVDT075V-PF
1"	TRVDT100V-PV	TRVDT100V-CP	TRVDT100V-PP	TRVDT100V-TF	TRVDT100V-PF

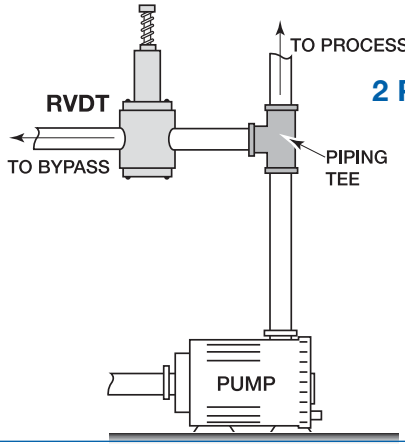
Primary seal is PTFE; part numbers above show backing seal of FKM. For EPDM backing seal, change "V" to "EP"; example: TRVDT050EP-PV.
Optional Class 100 Cleanroom CDB procedure available, consult factory

Difference Between 2-Port and 3-Port Relief Valves

3 Port Relief Valve



2 Port Relief Valve



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