D. MAINTENANCE

A. **Seal Kits:** Plast-O-matic recommends keeping a spare seal kit available for repairs. Seal life will vary on applications due to cycles, temperatures, pressures, chemicals and concentration, Based on the application, a periodic inspection and maintenance plan should be established. The part number for a seal kit is SK plus the valve part number less the material suffix. For example TRVDT050V-PV needs seal kit SKTRVDT050V.

B. **Changing Range of Adjustment:** Range of pressure adjustment can be changed by changing or combining springs. Unscrew the adjusting screw all the way and remove. Add or remove springs. Replace the adjusting screw.

E. SPRING SLECTION CHART

Part Number	Pipe Size	Adjsut Range	Springs
TRVDT050V	1/2"	5 - 50	LC135M-0
		51 - 100	LC135M-0 & LC112J-4
TRVDT075V	3/4"	5 - 50	LHC162N-0
		51 - 100	LHC112J-7& LHC162N-0
TRVDT100V	1"	5 - 100	LC135M-3 & LHC234T-2

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ASSEMBLY, INSTALLATION AND OPERATING INSTRUCTIONS FOR TRUE BLUE® PTFE DIAPHRAGM RELIEF VALVES TRVDT

A. BEFORE INSTALLING

1. Series TRVDT valve will open when the inlet pressure exceeds the set pressure when properly installed and used within the recommended ranges of pressure, temperature, and chemical compatibility. The ultimate determination of material compatibility is previous successful use in the same application. Call our Technical Support for information about your application.

Pressure and Temperature Ratings for Water*

Body Material	77°F (25°C)	105°F (40°C)	At Maximum Temperature
PVC	150 PSI (10 Bar)	100 PSI (7 Bar)	40 PSI @ 140°F ; 3 Bar @ 60°C
PP*	100 PSI (7 Bar)	70 PSI (5 Bar)	25 PSI @ 180°F ; 2 Bar @ 80°C
PVDF	150 PSI (10 Bar)	120 PSI (8 Bar)	30 PSI @ 280°F ; 3 Bar @ 140°C
PTFE	40 PSI (3 Bar)	30 PSI (2 Bar)	5PSI @ 280°F ; 35KPa @ 140°C

* or compatible chemical – ratings may be reduced for some applications.
Typical burst pressure is 4 times rating or more.

2. Minimum temperature 40°F (5°C).

B. INSTALLATION

1. The valve must be installed in the proper flow direction as indicated by the flow label. All orientations, horizontal and vertical, are suitable. Relief valves should be installed as close as possible to the vessel or pipe which it is protecting.

2. ***Caution:*** Series TRVDT is not a “pop safety” relief valve. It is not intended for air or gas service. It does not regulate pressure downstream of the valve.
Caution: Plastic materials can degrade in ultraviolet (UV) light or sunlight.

3. Visual Identification of Material:

Body Material	Color
“PV” (Geon®) (PVC)	Dark Gray
“PP” (Polypropylene)	Translucent White
“PF” (Kynar®) (PVDF)	Translucent White/Yellow
“TF” (PTFE)	Opaque White

Caution: Polypropylene and PVDF (Kynar®) often look similar and may be difficult to distinguish by color. Do not install in your system if you are not sure.

4. **Threaded Connections:** A suitable thread sealant (ex. PTFE tape) should be applied to male tapered threads to assure a "leak-tight" seal. The assembly need only be made hand-tight followed by a quarter (1/4) turn with a strap wrench. Do not over tighten or use a pipe wrench on plastic pipe and components.

   Caution: PTFE tape will "string" as pipe threads are joined. Loose "strings" could lay across the seating surface and prevent the valve from completely closing. To avoid this problem, clean out the old tape, and do not apply tape to the first threads. Connections should be made only to plastic fittings; metal pipe should only be installed with an intervening plastic nipple. Metal pipe and straight threads pipe tend to cut, stretch, and distort the plastic bodies, which could result in cracking or leaking over time.

5. **Non-Threaded Connections:** For solvent cementing or heat fusion, contact your distributor.

C. OPERATION AND SETTINGS

1. **Relief Valve Operation:** The function of a Relief Valve is to protect a pressurized pipeline, vessel, or other similar system from excessive pressure. When the inlet pressure exceeds the set point, the valve opens to bleed off the excess pressure

2. **Backpressure Operation:** A Backpressure Valve maintains pressure in a line or system. Excess pressure opens the valve, keeping the inlet pressure at the set point.

   Pressure Setting for Relief or Backpressure Valves

   1. Connect the valve inlet to a pressurized line which is at the desired set point and gaged.
   2. Where pressurized air is used for setting, run a line from the valve outlet into a container of water, or fill the outlet port with water. Otherwise run a line to a drain.
   3. If flow is detected, turn the adjusting screw in until flow stops.
   4. Slowly turn the adjusting screw out until a small flow is detected.

3. **By-Pass Operation:** A By-Pass Valve is installed in the outlet piping of a pump to prevent "dead-heading" and/or control the pump's outlet pressure. When pressure exceeds the set point, the valve opens to allow the liquid to recycle (by-pass) to the pump inlet.

   Caution: Line pressure at the valve outlet (The pump inlet) can open the valve, allowing reverse flow.

   Pressure Setting for Relief or Backpressure Valves

   1. Install the valve. Turn the adjusting screw all the way in.
   2. With the pump running normally at a pressure above the desired point, turn the adjusting screw out to reach the desired pressure.

D. PARTS AND ILLUSTRATION

#	Quantity	Description	Material
1.	1	Body	See B. 3. (page 1)
2.	1	Spring Housing	PVC
3.	1	Lock Ring	HDPE
4.	1	Adjusting Screw	HDPE
5.	1	Diaphragm Support	PVC
6.	1	U-Cup Seal	FKM
7.	4	Hex Head Screw	Stainless Steel
8.	4	Lock Washer	Stainless Steel
9.	X	Springs *(see table next page)*	Steel
10.	1	Sealing Diaphragm	PTFE
11.	1	Backup Diaphragm	FKM