

### Series CKM, CKS and CKD Check Valve Troubleshooting Guide

#### *Common Troubleshooting Questions:*

1. Valve will not allow flow from inlet to outlet.
2. Valve will not stop flow in the reverse direction.
3. Media leaking to atmosphere via the union nuts.
4. Flow reduced from inlet to outlet.

#### *Causes and solutions:*

##### 1. Valve will not allow flow from inlet to outlet.

- a. Plast-O-Matic CKM and CKS check valves require a minimum inlet and differential pressure of 1 ½ PSI. The inlet pressure must exceed the outlet pressure by more than 1 ½ PSI to open the valve. Series CKD requires ½ PSI reverse or differential pressure to seal.

##### 2. Valve will not stop flow in the reverse direction.

- a. Check to see if the valve diaphragm or poppet is obstructed by debris. This requires shutting down and depressurizing the system and draining the media according to good piping practices. (Caution: If the media is aggressive, precautions must be made to prevent harmful contact with personnel.) Unthread the valve unions (for CKD unthread the inlet and outlet bodies) to gain access to the valves internals. Clear debris and reassemble and test.
- b. If there is no debris obstructing the diaphragm or poppet check to see if the materials of construction, body and seals, have been chemically attacked. Chemical compatibility is critical to proper valve operation.
- c. Check to see if the pipe thread sealant, usually PTFE tape, has fallen across the orifice preventing proper contact of the seal and valve seat.
- d. Check the valve seat for impressions or gouges etc. that would also prevent proper contact of the seal and valve seat.

##### 3. Media is leaking to atmosphere via the union nuts.

- a. The CKM and CKS check valve union nuts must be hand tight plus a quarter turn with a strap wrench. Series CKD has an O-ring seal between the valve inlet and outlet bodies and should be hand tight with a quarter turn with a strap wrench.
- b. Check the series CKM/CKS union nuts for cracks or the body of the CKD. During installation it is possible to over tighten the unions or bodies and cause cracking. In particular, cracking of these components will occur if the installer used a metal pipe wrench.

##### 4. Flow reduced from inlet to outlet.

- a. Reduced flow will occur when the diaphragm or poppet movement is restricted. Causes are typical chemical attack, or damage to the diaphragm or poppet due to water hammer.