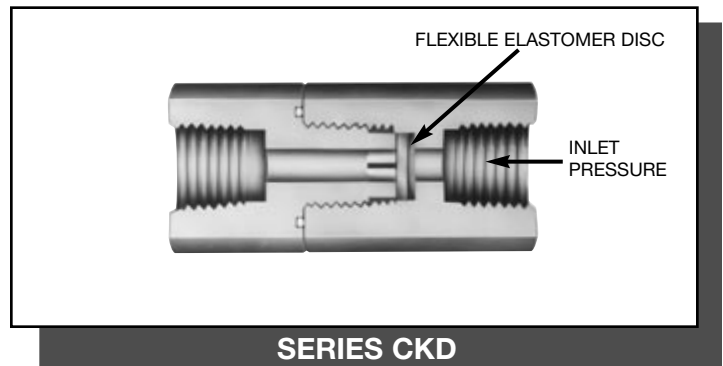
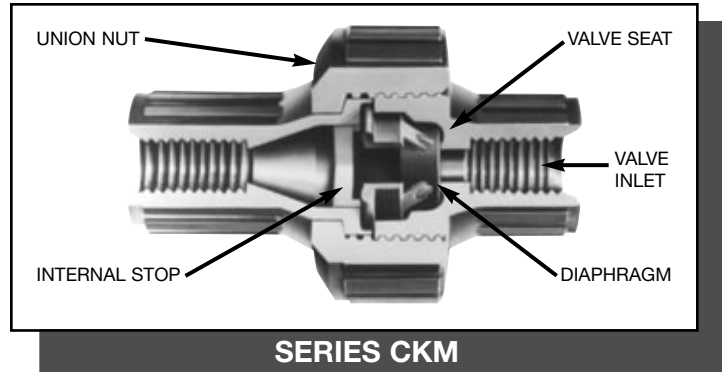
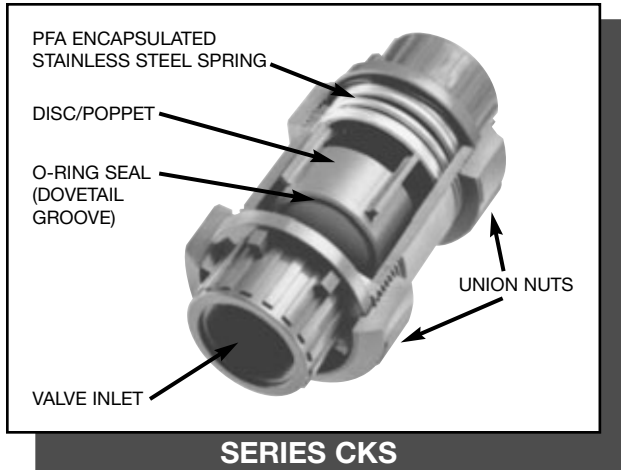


The What, How, Where and Why of Check Valves



I. WHAT styles are available?

- A. **Series CKM** Diaphragm Check (normally-closed)
- B. **Series CKS** Encapsulated Spring Check (normally-closed)
- C. **Series CKD** Disc Check

II. HOW do they operate?

Check valves (or one-way valves) typically come in two types; one that requires reverse pressure/flow to assure the valve seals or “checks,” and one that does not... referred to as normally-closed. Ball checks, for instance, are typical of those requiring reverse pressure, generally of 3 to 5 PSI. “Normally-closed” types typically involve the use of a spring which exerts its force onto a disc/seat that effects a positive seal. Although this style check valve does not require reverse pressure/flow for sealing and can be mounted in any position, it does require some minimum inlet or “cracking pressure” to open.

The diaphragm check (Series CKM) utilizes a uniquely molded, energized elastomer diaphragm that is deflected against the seat, thus creating the normally-closed design.

The PFA encapsulated spring style (Series CKS) utilizes the spring force to seal an elastomer O-ring on a poppet against the seat.

In the elastomer disc check (Series CKD), the sealing element is a flexible, sensitive elastomer disc. Although it requires extremely minimal reverse pressure to seal, it cannot be termed as normally-closed.

III. WHERE would I use a check valve?

Typically, check valves are specified wherever the possibility of reverse flow of the process fluid is

undesirable. Examples of such applications would be to protect against two incompatible solutions from mixing, as in a manifold, or “checking” against reverse flow back through the pump and overflowing the feed tank when the pump is turned off. Still another would be in dosing/chemical injection where you need to prevent the higher pressure main from flowing back through the smaller chemical feed line, or provide positive closure during the suction cycle.

Whatever the application is, however the critical factor is that the check valve only allow flow in one direction.

IV. WHY would I use a check versus some other comparable function valve?

Generally speaking, the popularity of check valves is based upon their being simple, low cost and self-contained. Other more elaborate and expensive methods such as pressure and/or flow switches, automatic shut-off valves, etc., can be employed, but are not necessary so long as the check valve selected meets the system requirements.

Probably the most important aspect in check valve selection is determining what, if any, reverse pressure is available for closing of the check valve. If there is any question, specifying a normally-closed style is the best course of action.