

TECHNICAL BULLETIN No. 8

USE OF SUPPLEMENTAL CHECK VALVES WITH MAZZEI INJECTORS

The use of supplemental check valves on the suction line of Mazzei Injectors is strongly recommended. The function of the internal check valve (present in all Mazzei Injectors up to 1-1/2") is to stop water spurting out the suction port during startup and shutdown of the injector. To accomplish this task, the internal spring which holds the check ball against the seat has a very low "cracking" pressure. This pressure is insufficient to hold the check ball against the seat when the system water pressure is only slightly above atmospheric pressure. As a consequence, "weeping" of motive water can occur under these conditions.

There are many suitable check valves available for protecting the injected liquid or gas against back flow. You should, however, make certain that the check valve meets the following requirements:

- (1) It is compatible with the injected liquid or gas. For instance, PVC or BUNA-N would not be compatible with concentrated ozone gas
- (2) The check valve offers only small resistance to flow. Any significant resistance in the injection line will decrease the suction capacity of a Mazzei Injector
- (3) It is sized at least as large as the suction line itself

Mazzei Injector Corporation offers several types of supplemental check valves. One is our Model C-83-P, available in polypropylene or PVDF (Kynar®). This valve has 1/2" MNPT threads on the down stream end and either 1/2" MNPT threads or a 3/8" ID tubing barb on the upstream end.

Another is our Model C-86 Check Valve, available in 1-1/4", 1-1/2" and 2" sizes. The end connections vary with the size. This check is recommended for air suction only. It is not recommended for liquids or for aggressive gases such as ozone or chlorine.

We also offer the complete line of Conbraco stainless steel, spring-loaded check valves. The valves are made from 316 stainless steel and have Teflon® soft parts. These check valves are ideal for ozone and chemicals which do not contain chlorine. These check valves have a "cracking pressure" of 0.5 psig and are available in sizes from 1/4" to 2". All have FNPT threaded connections on both ends. All of the above check valves are maintained in inventory at Mazzei Injector Corporation.