Type of common chemical injection equipment and their features.

TYPE OF INJECTOR	FUNCTION	REMARKS
Pressure Differential Tank	A pressure differential generated by a valve or other hydraulic restriction forces water into a tank containing the chemical. The chemical mixes with the incoming water, exits the tank and re-enters the water main downstream of the restriction	a. Relatively simple b. Requires a significant pressure drop in the main line c. May not mix water and chemicals properly unless baffles are installed in the tank d. Does not control injection rates and the initial concentration is higher than the final
Gravity Tank	A tank located above the canal or water storage drips the chemical into the water at a preset rate	a. Simple b. Allows some control over injection rates c. Requires a chemical resistant float valve and metering valve
Venturi	Water flowing through a narrowing pipe accelerates and creates a vacuum which pulls chemical into the water path (application of the Bernoulli principle)	a. Allows a relatively good control of the injection b. A 10-30% drop in pressure drop is caused by the friction in the venturi c. Can use a small pump to reduce the loss of pressure
Metering Pump	Many types of metering pumps are available; some require electrical power and others used water pressure	a.When maintained properly, allows accurate and precise control of injection rates. b. Some pumps are flow-proportional