

20-01 Series Blending Valve Design

**Another Cla-Val Product For The
Building Services Market**

Commercial Water Softening Market



Markets Served:

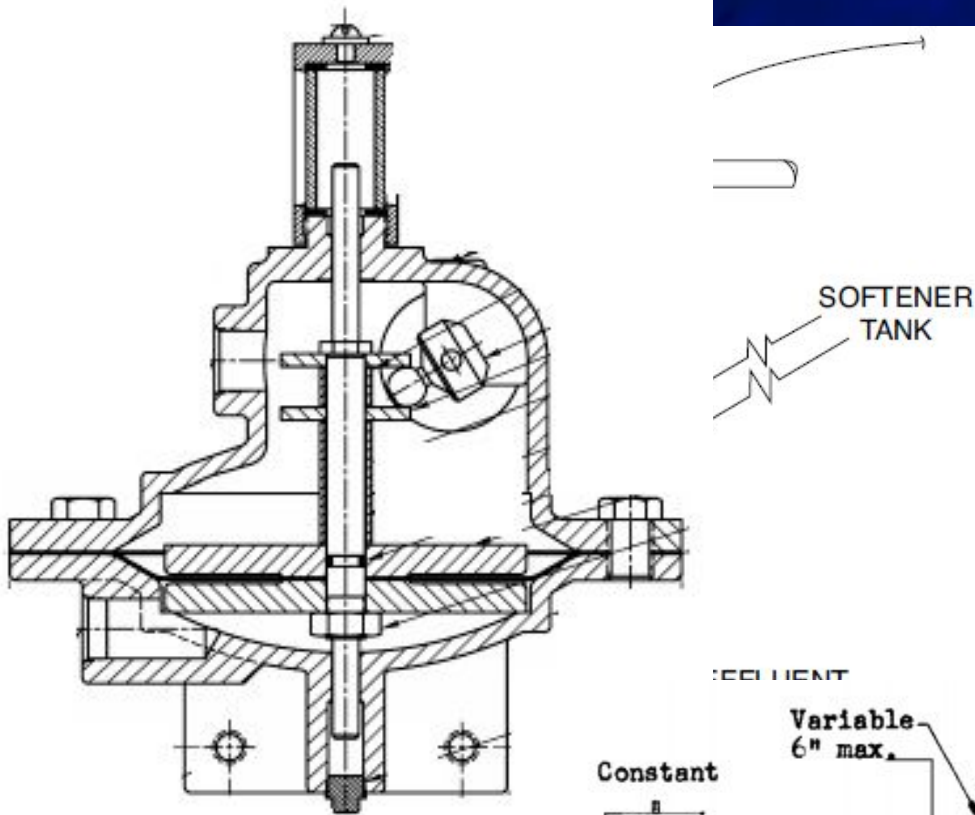
Clinics
Educational Facilities
Energy / Power
Food / Beverage Production
Food Service / Restaurants
Grocery
Healthcare / Hospitals / Bio-Pharmaceutical
Hospitality / Lodging
Manufacturing
Municipal Drinking Water
Oil / Gas

20-01 Blending Valve Installation

- Commercial Water Softening
- Target Hardness
 - “Grains per Gallon”
 - Requires % Blend
- Other Treatment Processes



20-01 Blending Valve

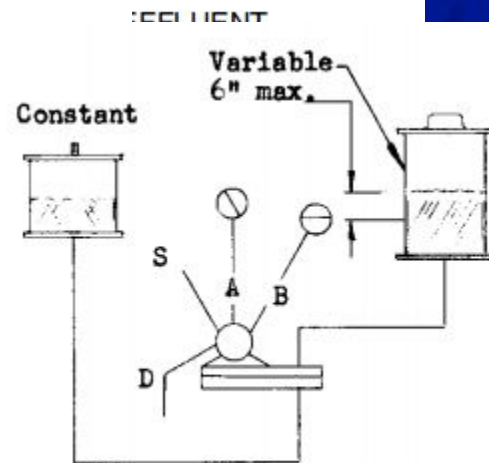


Principle of Operation

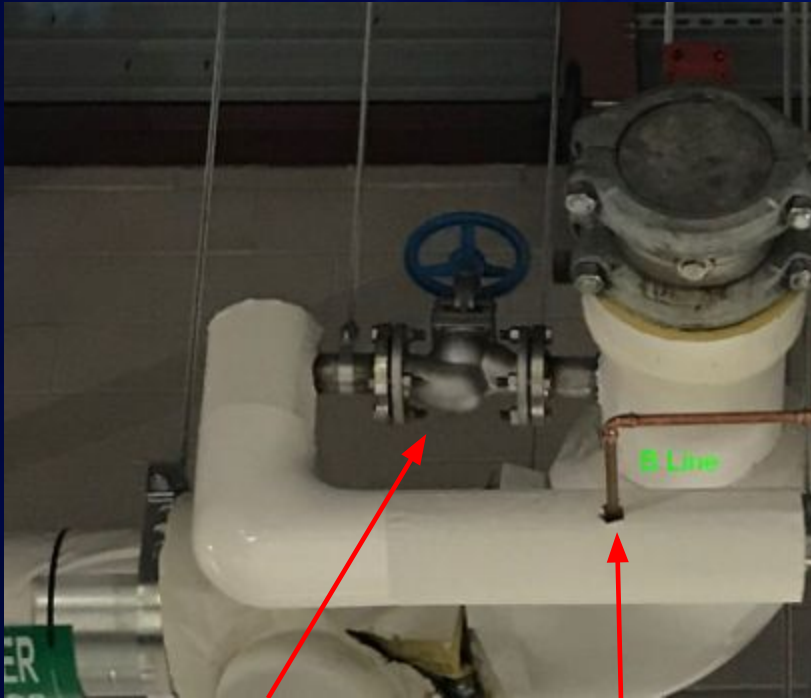
- Equal upstream restriction pressures
- Restriction downstream pressures are equal @ blend point
- Equal Pressure Drop = Constant Blend Ratio

CDH2 Pilot

- Hydraulic Balance Type
- Non-adjustable
- +/- 6" H₂O (.2 psi) tolerance



20-01 Design - Hospital



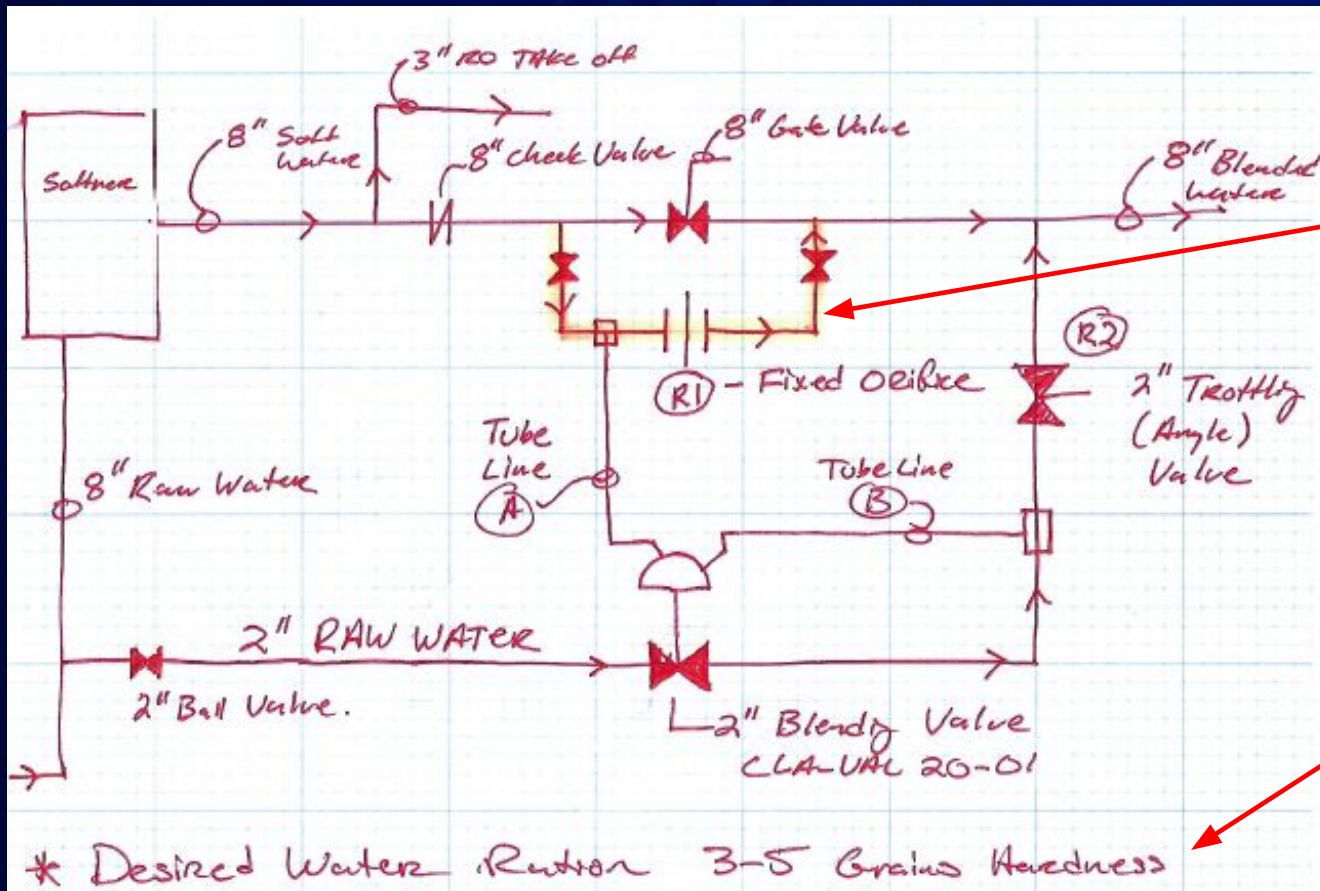
R2 Adjustable Valve

R1 Valve too large!

B Line Connection

A Line Connection

20-01 Design - Hospital



Added parallel 4" line with R1 Orifice

Cla-Blend Design Software

- No
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Cla-Blend 1.0

Mod Cla-Val 20-01 Blending Design

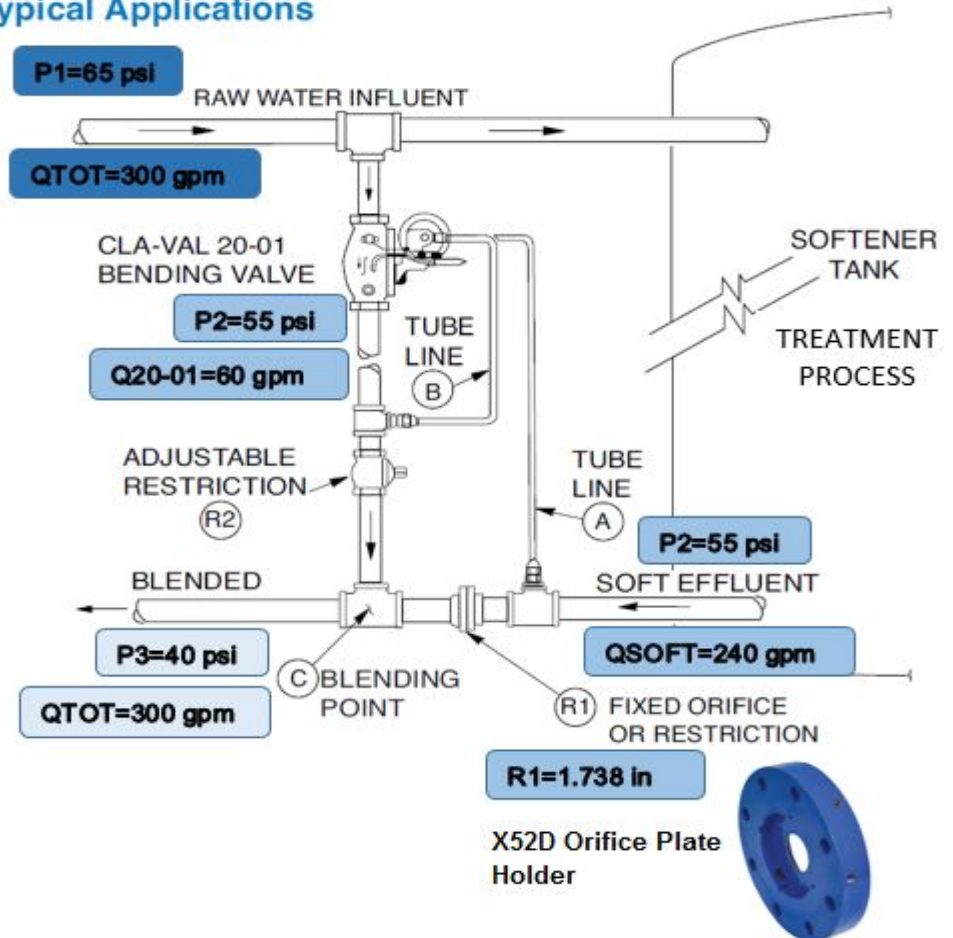
Inputs

System Inlet Pressure	65	psi
Minimum Blended Pressure	40	psi
Maximum Total Flow	300	gpm
Maximum Softener Flow	240	gpm
Softener Loss @ Max Flow	10	psi
R1 Restriction Pipe ID	4	in.

Outputs

20-01 Maximum Flow	60	gpm
Ratio 20-01 Flow:Total Flow	20.0%	
Total Available Loss	25	psi
R1 & R2 Restriction Loss	15	psi
Valve Loss	10	psi
Cv of Restriction R1	62.0	
Cv of Restriction R2	15.5	
Cv 20-01 Valve (Required)	19.0	
Flow @ 5% Accuracy	115	gpm
Flow @ 10% Accuracy	83	gpm
R1 Orifice Bore Diameter	1.738	in

Typical Applications



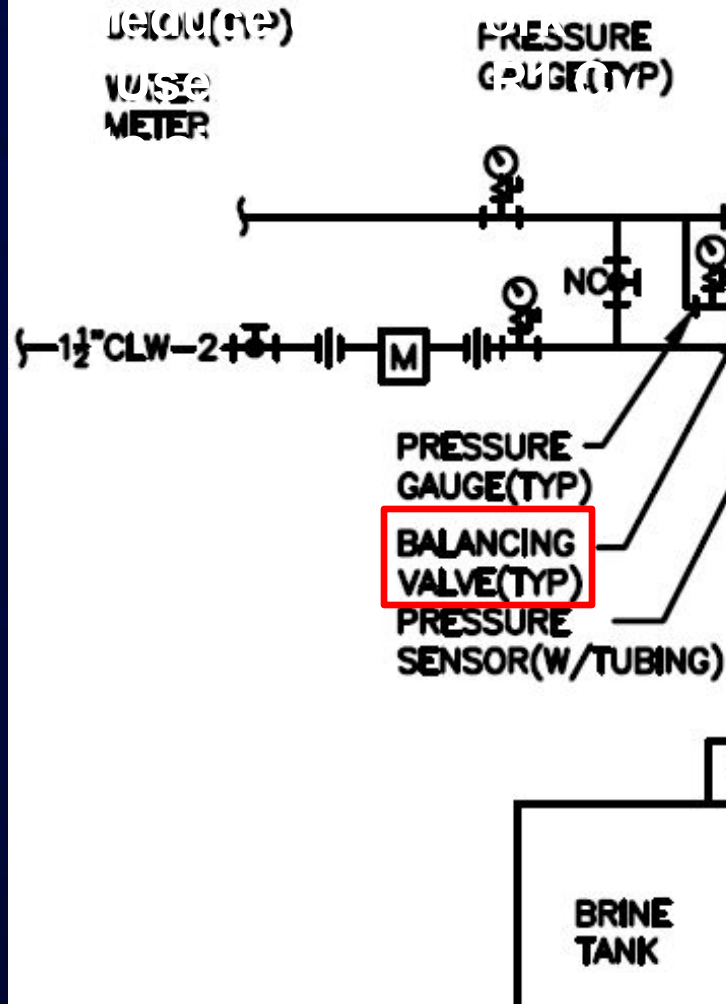
Adjustable Restrictions

MANUAL FLOW CONTROL

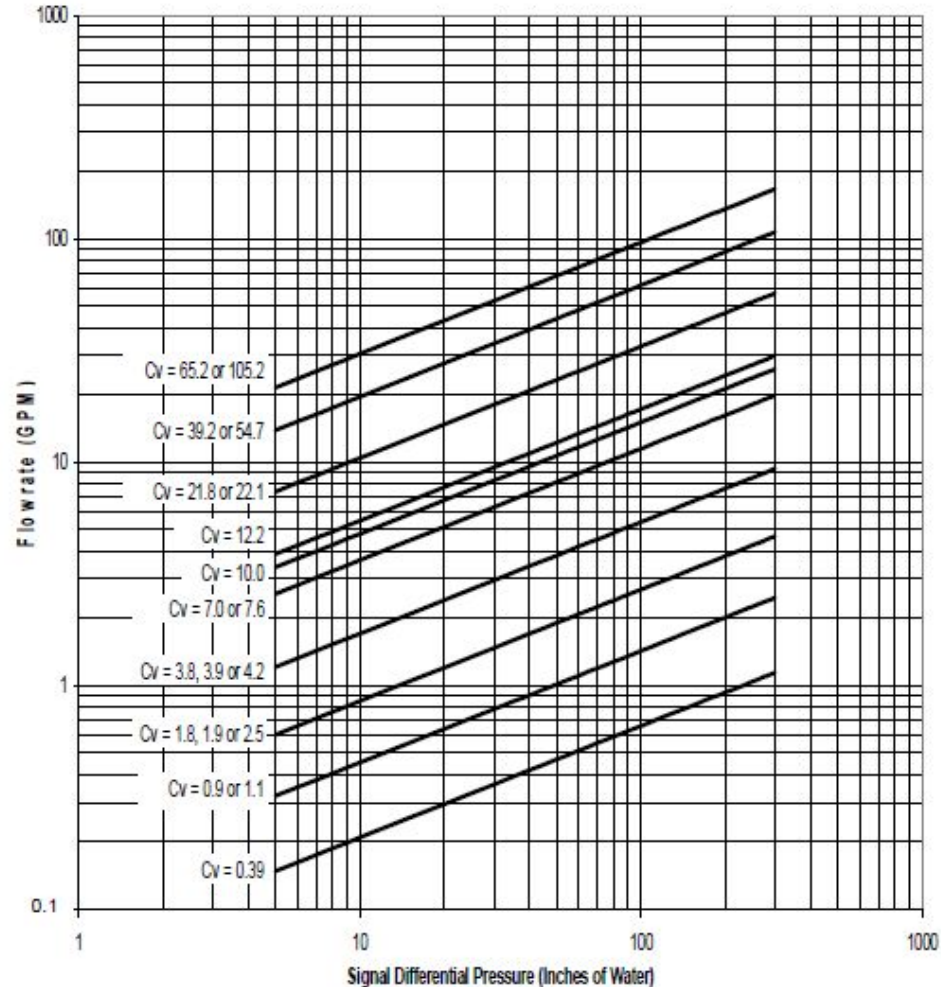
QUICKSET®

FLOWRATE GRAPH

QuickSet



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• Flange, weld or groove connections: 2-1/2" to 18"