

Lessons Learnt the Hard Way!

Confessions of an ICA

CxM Ltd

Commissioned To Perform



Introduction



Mark Crawford

- Involved with commissioning for ~ 35 years
- Director of CxM Ltd
- Passionate about quality outcomes
- Pushing for building commissioning to be understood
- And allowed for !

Lessons Learnt

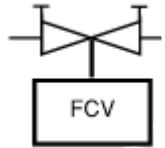
- Seen too many mistakes over the years
- This presentation will highlight a few common issues experienced on most projects
- Only a 10-minute presentation but happy to take questions afterwards

1. Hydronic Regulation

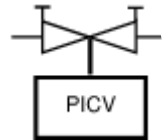
What valves to use and where



Isolating / Regulating Valve (IRV)



Flow Control Valve (FCV)

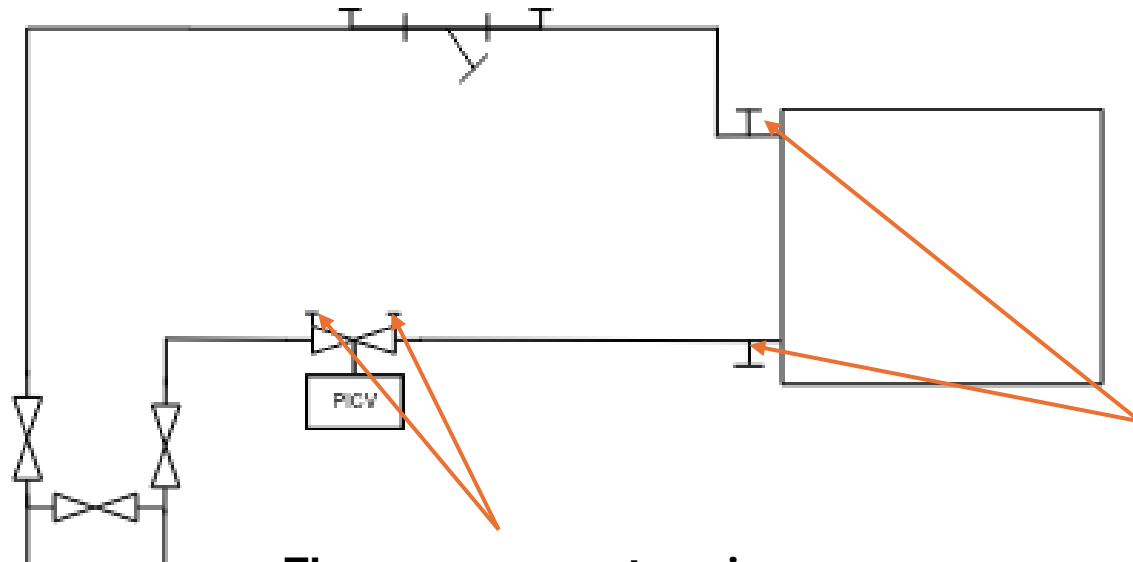


Pressure Independent Control Valve (PICV)

1. Hydronic Regulation

What valves to use and where

Only a PICV



PICV have no way to measure flow (typically)

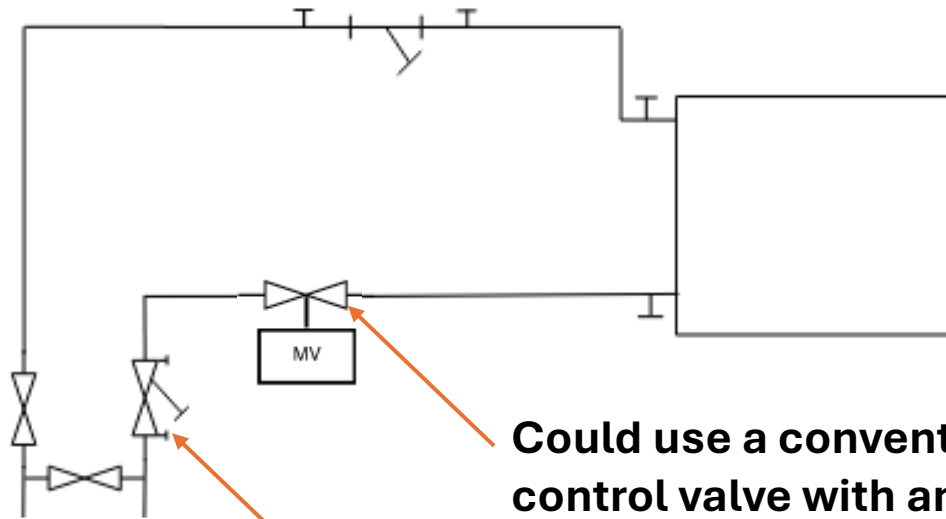
Could use press. drop across the coil if known

These pressure tappings are typically used to prove minimum pressure drop across the PICV

1. Hydronic Regulation

What valves to use and where

PICV with IRV



Realistically an IRV can be installed on each branch, rather than each terminal.

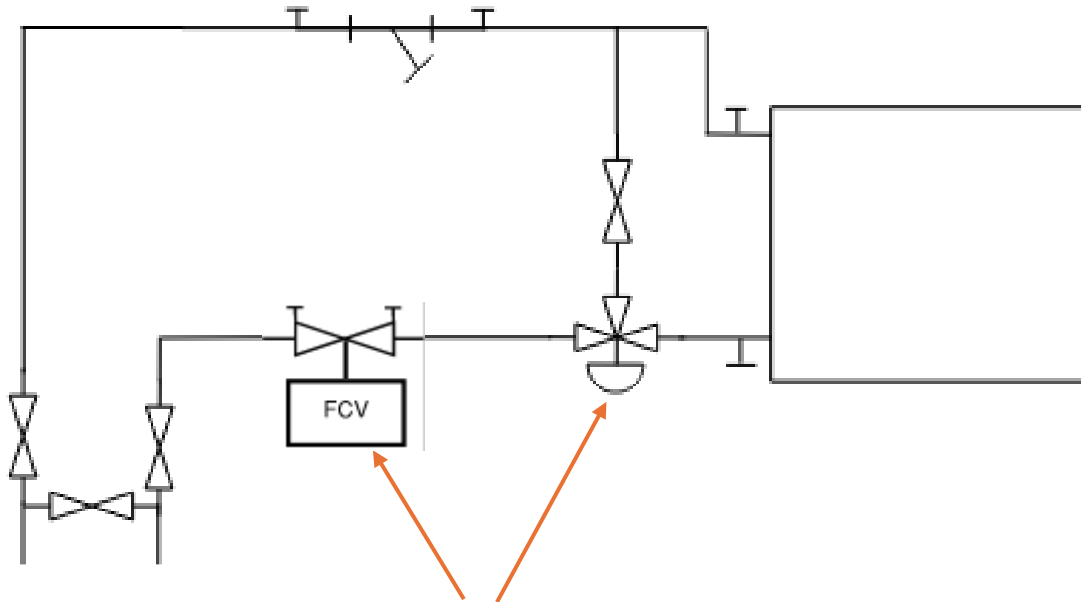
Could use a conventional 2-port control valve with an IRV

Flow can be measured using the IRV

1. Hydronic Regulation

What valves to use and where

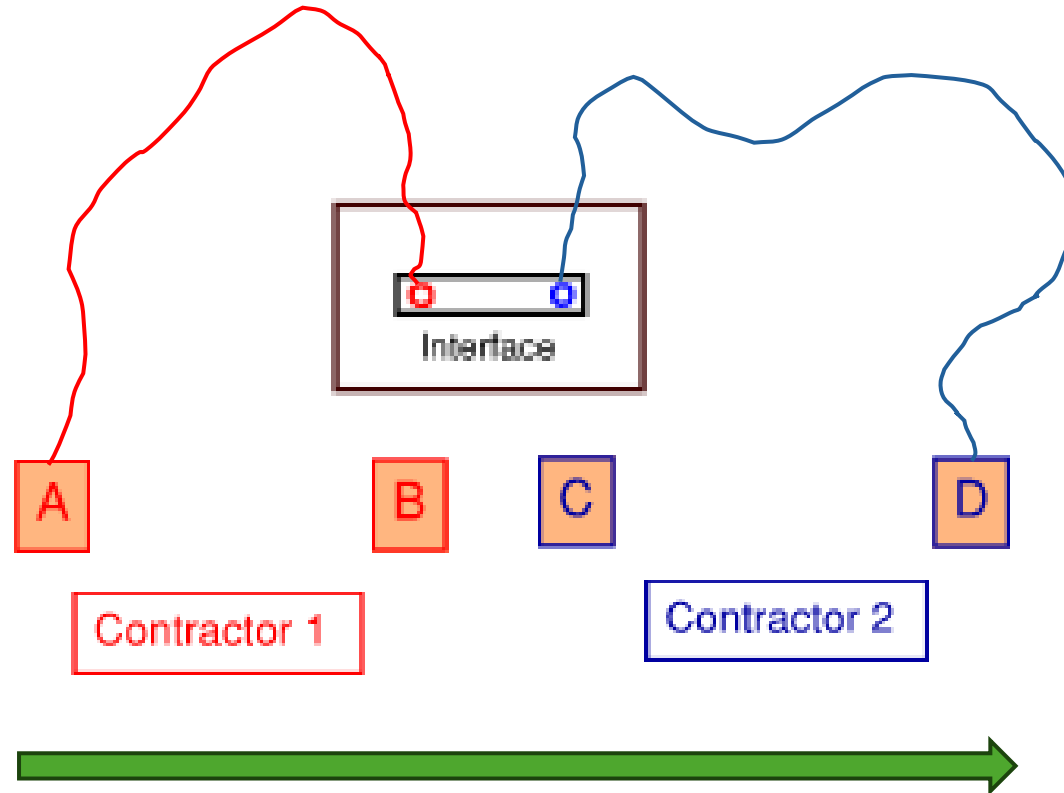
PICV with 3-port Control Valves



As before, an IRV can be installed on each branch to cross-check flow rates.

Replace with a Flow Control Valve
These devices are both controlling the water flow. They fight each other.
THIS IS NOT A GOOD INSTALLATION

2. Interfaces



Need to prove from end-to-end (A to D)

Requires all parties

Typical Systems

- Electrical
 - MSB to Generators
 - Metering
- BMS
 - Comms
 - Mech plant
 - Hydraulics
- Fire
 - Lifts
 - Security
 - BMS / HVAC

WEST
WARD
(ZONE 1)

Daystay Firecell							
Smoke detector (8)	X	Room name	Note 8	X		X	
2nd Smoke detector (8)	X	2x SD	X		X	X	
Duct smoke detector AHU-PACU (4)	X	AHU-PACU SD					
Manual call point	X	MCP Day Stay	X		X	X	
Comm's room fire cell							
Smoke detector (8)	X	SD Comm's	Note 8	X		X	
Day surgery corridor fire cell							
Smoke detector (8)	X	Room name	Note 8	X		X	
2nd Smoke detector (8)	X	2x SD	X		X	X	
Duct smoke detector AHU-PACU (4)	X	AHU-PACU SD					
Manual call point	X	MCP Surgery corr	X		X	X	

What Can Go Wrong?



What Can Go Wrong?

