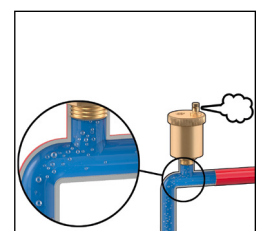
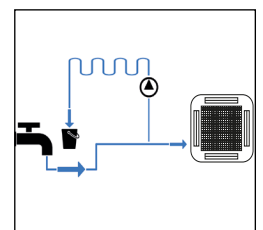
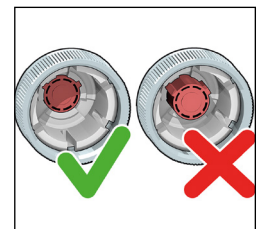
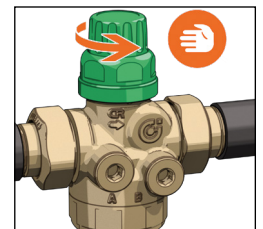
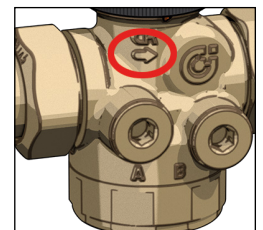
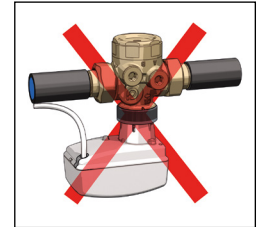


Pre-commissioning and commissioning

Pressure independent control valve (PICV) 145 series

Pre-commissioning recommended activities and checklist

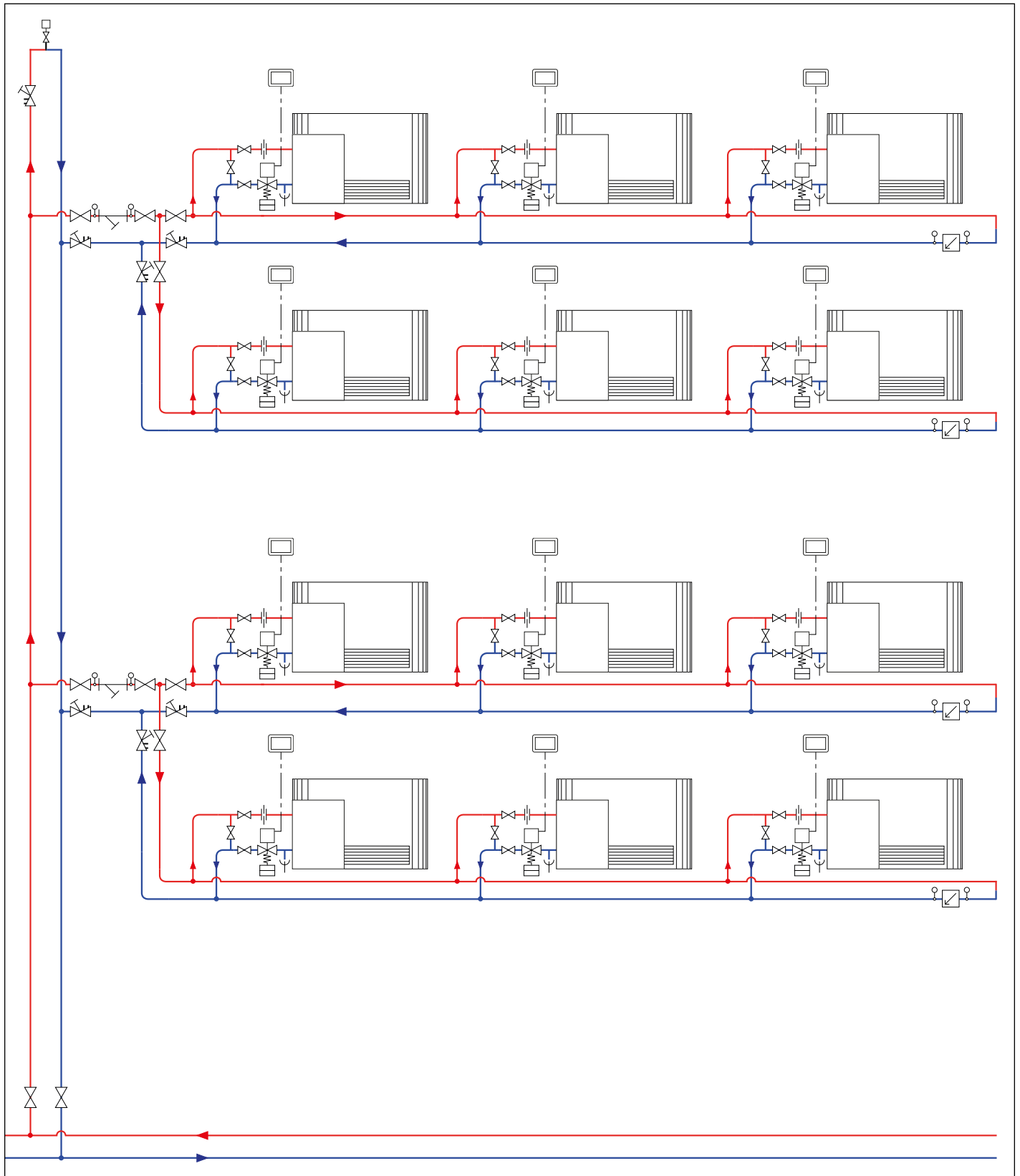
- Check the correct positioning of the valve (no upside-down if an actuator is installed).
- Check the correct flow direction of the valve.
- Make sure the cap is in open position.
- In case of modulating actuator, do not supply electrical energy before installing it on the valve (clearly indicated on the specific tag).
- The system has to be properly flushed (better if according to BSRIA BG29/2012).
- The system must be fully filled and the air completely vented.
- Refer to Caleffi instruction sheet 18195 (included in the package) for additional informations.



SCHEME

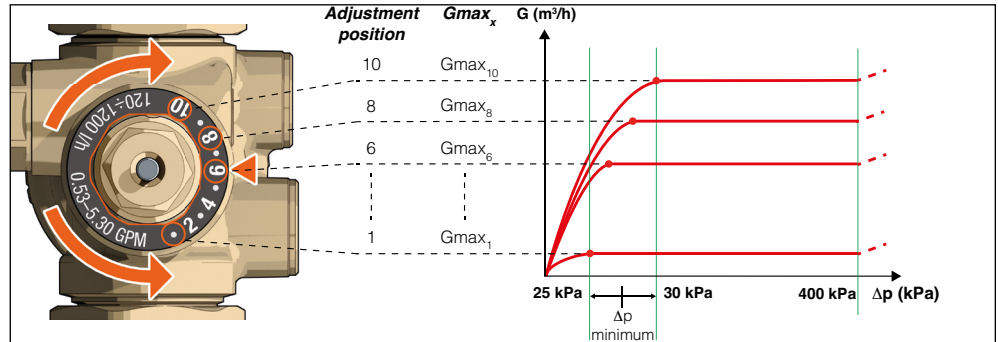
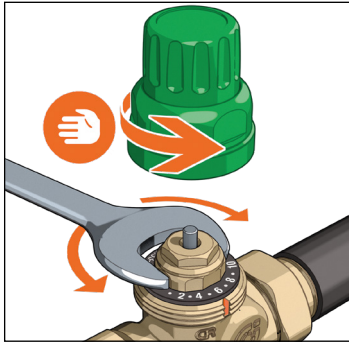
Commissioning according to CIBSE Commissioning Code W:2010

Pressure independent control valves (PICVs) are typically installed on branches serving terminal units. For the system shown, the regulating procedure should be as follows.

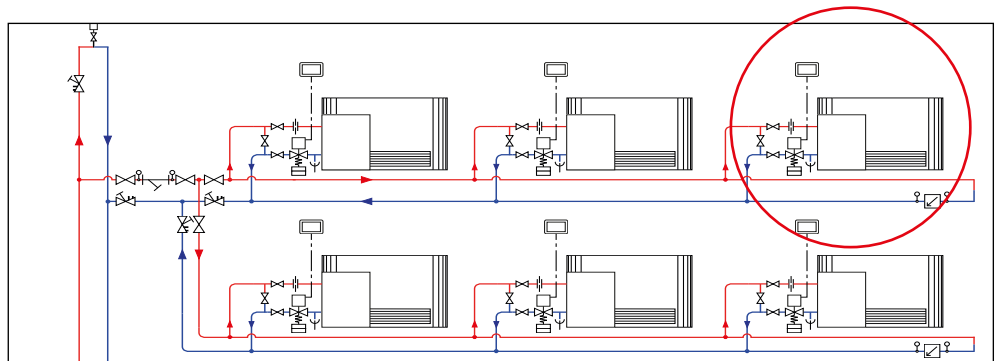
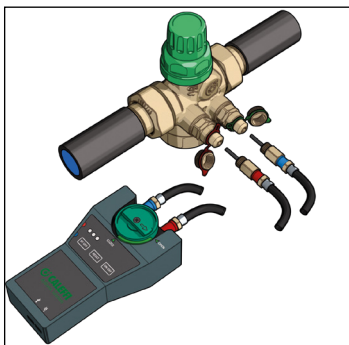


	Shut-off valve		Strainer		Drain cock		Pressure test port		PICV
	Balancing valve with flow meter		Flow meter		Flow rate regulator		Thermostat		

1. Open **all isolating valves** in the sub-branches (except flushing bypass valves which should remain closed).
2. For each PICV in any order, **adjust the flow to the specified design value** and record the setting. Refer to Flow Rate adjustment table reported in 18195 Caleffi instruction sheet.



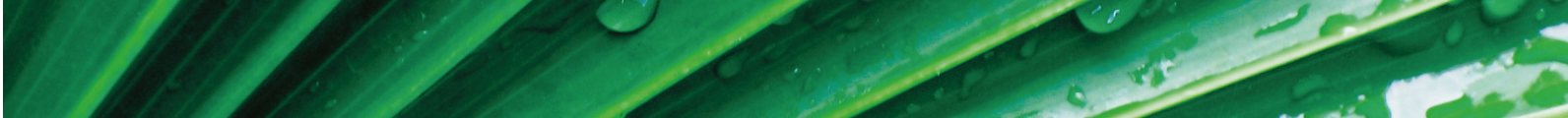
3. Using the built-in pressure ports, **measure the pressure differential across the PICV** installed in the index terminal branch. The index branch is usually either the branch furthest from the pump or the one with the highest resistance terminal unit.



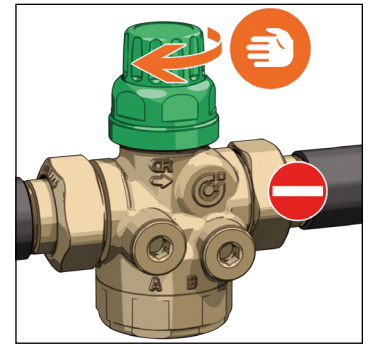
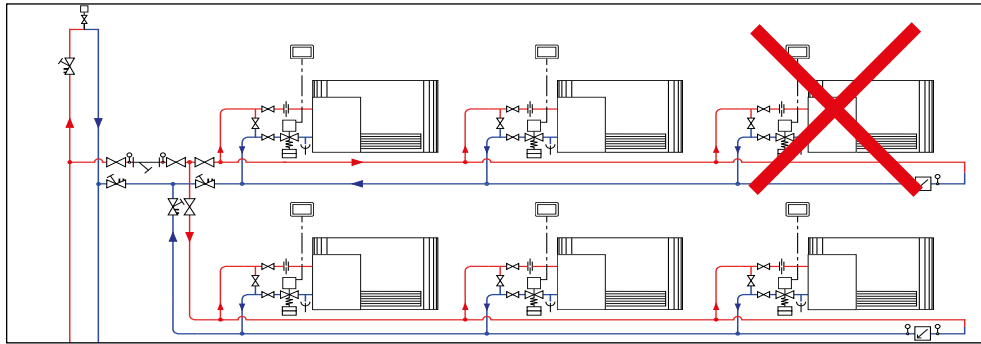
4. Check that **value (or values) measured is (are) within the manufacturer's stated pressure differential operating range for the PICV**. If not, change the pump speed or close valves elsewhere in the system until the measured pressure differential is within the stated operating range. Refer to Flow Rate adjustment table reported in 18195 Caleffi instruction sheet (reported below).

TAB.1

	1	2	3	4	5	6	7	8	9	10	
145... H20	0,02-0,20 (m³/h)	0,02	0,04	0,06	0,08	0,10	0,12	0,14	0,16	0,18	0,20
	0,09-0,90 (GPM)	0,09	0,18	0,27	0,36	0,45	0,54	0,63	0,72	0,81	0,90
	Δp min (kPa)	25	25	25	25	25	25	25,5	25,5	26	26
145... H40	0,08-0,40 (m³/h)	-	0,08	0,12	0,16	0,20	0,24	0,28	0,32	0,36	0,40
	0,35-1,75 (GPM)	-	0,35	0,53	0,70	0,88	1,05	1,23	1,40	1,58	1,75
	Δp min (kPa)	-	25	25,5	26	26	26,5	26,5	27	27	27
145... H80	0,08-0,80 (m³/h)	0,08	0,16	0,24	0,32	0,40	0,48	0,56	0,64	0,72	0,80
	0,35-3,50 (GPM)	0,35	0,70	1,05	1,40	1,75	2,10	2,45	2,80	3,15	3,50
	Δp min (kPa)	25	25	25,5	26	26	27	27,5	28	28,5	29
145... 1H2	0,12-1,20 (m³/h)	0,12	0,24	0,36	0,48	0,60	0,72	0,84	0,96	1,08	1,20
	0,53-5,30 (GPM)	0,53	1,06	1,59	2,12	2,65	3,18	3,71	4,24	4,77	5,30
	Δp min (kPa)	25	25	25,5	26	26	26,5	26,5	27	27,5	28
145... 1H8	0,18-1,80 (m³/h)	0,18	0,36	0,54	0,72	0,90	1,08	1,26	1,44	1,62	1,80
	0,80-8,00 (GPM)	0,80	1,60	2,40	3,20	4,00	4,80	5,60	6,40	7,20	8,00
	Δp min (kPa)	35	35	35	35	35	28	25	25	25	25
145... 3H0	0,30-3,00 (m³/h)	0,30	0,60	0,90	1,20	1,50	1,80	2,10	2,40	2,70	3,00
	1,30-13,00 (GPM)	1,30	2,60	3,90	5,20	6,50	7,80	9,10	10,40	11,70	13,00
	Δp min (kPa)	35	35	35	35	35	35	35	35	35	35
145... 3H7	0,37-3,70 (m³/h)	0,37	0,74	1,11	1,48	1,85	2,22	2,59	2,96	3,33	3,70
	1,65-16,50 (GPM)	1,65	3,30	4,95	6,60	8,25	9,90	11,55	13,20	14,85	16,50
	Δp min (kPa)	48	48	48	48	45	45	43	43	43	43
		6,96	6,96	6,96	6,96	6,53	6,53	6,24	6,24	6,24	6,24



5. If the terminal branches containing PICVs also have flow measurement devices installed, **measure the Flow Rate** at each of these points to confirm that the set design Flow Rate for each terminal is being achieved within the required tolerance limits.
6. If the terminal branches containing PICVs do not have flow measurement devices installed, **measure the total Flow Rate in the main branch**. Isolate each terminal branch in turn, each time recording the flow difference through the main branch. Confirm that in each case, the flow difference is equal to the set design Flow Rate through the isolated branch.



7. Confirm that **the Flow Rate measured at the main branch is equal to the sum of downstream PICV settings**. If this is not the case, investigate the cause and, if necessary, report to the designer.

Notes

REFERENCE DOCUMENTATION: INSTR. SHEET 18195
TECH. BROCH. 01262

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