

***1-44MC Series***  
***Multistep Cascade***  
***Control Valves***



**PARCOL**

## Overview

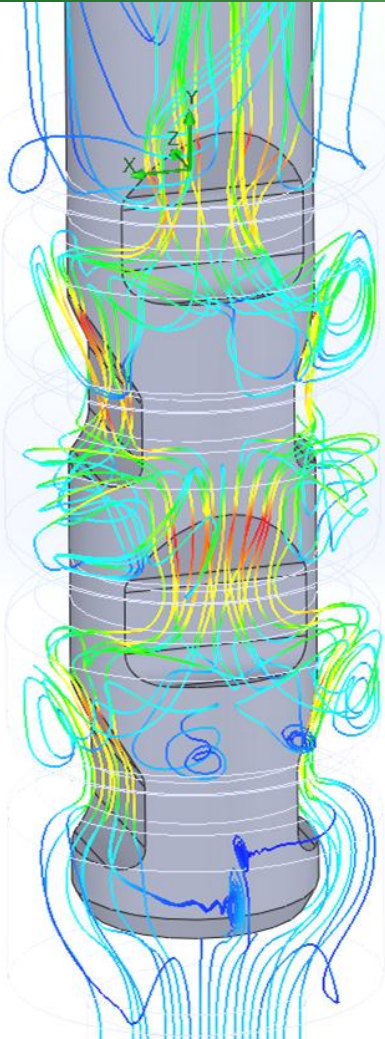
PARCOL 1-44MC Series Multistep Cascade Control Valves are the best solution for severe services with high pressure, dirt, cavitating and erosive liquid flow.

The peculiar trim is constituted by several plug sections, working in cascade with increasing passage areas to guarantee excellent anti-cavitation performances. A number of stages with different area ratios are available to cover different process conditions. Furthermore, the trim can be customized to fully accomplish particular requirements.

The seat can provide Class VI leakage according to IEC 60534-4 and ANSI/FCI 70-2.

Large passage sections permit to process also liquids with large particles without damaging and plugging.

Easy quick changing of the trim is possible thanks to the top-entry design, which guarantee full access to the valve interior without removing valve from the pipe.



## General Data

Size	from 1" to 8"
Rating	ANSI Class 600 to 2500 (ISO PN 100 to 420)
Body type	Angle style (straight way body on request)
End Connections	RFF, RTJ, socket weld, butt weld, threaded, print flanges
Balancing	Balanced plug for port size $\geq 2"$
Flow characteristics	Modified linear
Leakage	Class V acc. to IEC 534-4 and ANSI/FCI 70-2 (Class VI available on demand with soft sealing)
Actuator	Pneumatic (Diaphragm or Cylinder) Electric
Handwheel	Optional
Temperature range	From -30 to +300 °C

## Trim Design

### Standard trim types

Valve size [inch]	Port [mm]	Port size [inch]	Stroke [mm]	3 STAGES TRIM				4 STAGES TRIM				6 STAGES TRIM			
				N3R1 TRIM	N3R2 TRIM	N3R3 TRIM	N3R4 TRIM	N4R1 TRIM	N4R2 TRIM	N4R3 TRIM	N4R4 TRIM	N6R1 TRIM	N6R2 TRIM	N6R3 TRIM	N6R4 TRIM
				F <sub>L</sub> 0,963	F <sub>L</sub> 0,985	F <sub>L</sub> 0,992	F <sub>L</sub> 0,995	F <sub>L</sub> 0,972	F <sub>L</sub> 0,988	F <sub>L</sub> 0,994	F <sub>L</sub> 0,997	F <sub>L</sub> 0,981	F <sub>L</sub> 0,992	F <sub>L</sub> 0,996	F <sub>L</sub> 0,998
1	15,1	0,5	7	1,7	1,9	1,5	1,3	1,4	1,6	1,2	0,9	1,2	1,3	0,9	0,7
1,5	23,1	1	10	3,4	3,9	3,1	2,6	2,9	3,3	2,5	1,9	2,4	2,7	1,8	1,4
2	35,1	1.1/2	15	8,0	9,3	7,4	6,1	7,0	7,7	5,8	4,6	5,7	6,4	4,3	3,3
3	60,2	2.1/2	20	14,9	17,2	13,8	11,3	12,9	14,3	10,8	8,5	10,5	11,9	8,1	6,2
4	86,3	4	30	34,5	39,9	32,0	26,1	29,9	33,2	24,9	19,7	24,4	27,6	18,7	14,4
6	136	6	45	76,8	88,7	71,1	58,0	66,5	73,8	55,5	43,7	54,3	61,4	41,5	32,0
8	148	8	50	98,7	114,0	91,4	74,6	85,5	94,9	71,3	56,2	69,8	78,9	53,4	41,2

**C<sub>v</sub> and F<sub>L</sub> for different number of stages and area ratios**

Each trim type has its own number of stages and area ratios, to fit the best solution for every application.

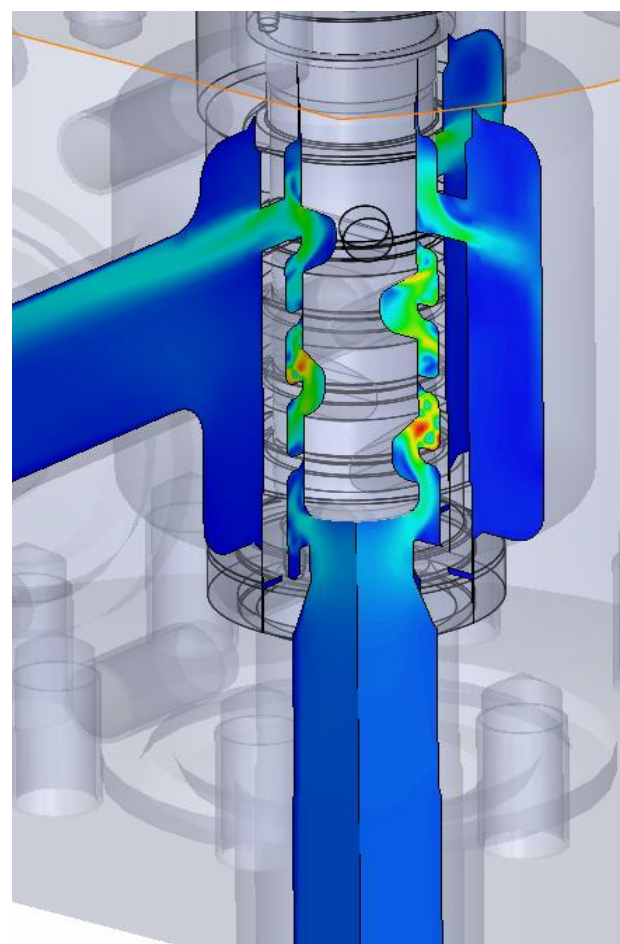
Maximum ΔP allowed for stage is 60 bar.

Shutoff performances are highly reliable due to the plug overlap in regulating sections, which avoids high velocity flow and erosion of the seat sealing areas.

Hardened steels or superalloys available to limit damaging due to erosion and hard particles impacts.

Reduced clearances between plug and guide improve stability and minimize vibrations.

Trim Capacity C<sub>v</sub> and liquid pressure recovery factor F<sub>L</sub> are calculated with numerical CFD analysis and experimentally tested.





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