

Max. allowable flow velocity
Industrial facilities:

 for liquids $w \leq 5 \text{ m/s}$

 for steam and gases $w \leq 100 \text{ m/s}$ (with oxygen pay attention to „UVV-Sauerstoff“ resp. national standards)

Heating, Ventilation, Air conditioning systems: $w \leq 2 \text{ m/s}$
Regard non-cavitation flow using at parabolic or V-port plugs..!
Selection for stellite coating of inner parts

Medium	Flow restrictors	$\Delta p < 15 \text{ bar}$	$\Delta p > 15 \text{ bar}$
Liquid	Parabolic plug	without stellite	Stellite sealing edges (seat and plug)
Gases and vapours			without stellite
Liquid	Perforated plug	without stellite	without stellite

**For standard values. In critical working-conditions for example cavitation, special precautions are necessary.
In these cases please send us your inquiry..**

The medium to be tested enters the control valve from the standard inlet side. If the medium is liquid, the control valve has to be opened, so that outlet side and pipeline are filled up quickly. After that the control valve must be closed to be avoid bubbles in the body of the control valve.

Test pressure, test media and seat leakage

Leakage class	Medium	Test procedure / remarks	Max. seat leakage If leak-flow is stabilized
I	As arranged between customer and manufacturer		
II	water	Test pressure max. 4 bar	$5 \times 10^{-3} \text{ max. flow (m}^3/\text{h)}$
III	water	Test pressure max. 4 bar	$10^{-3} \text{ max. flow (m}^3/\text{h)}$
IV ARI-Standard	water	Catalogue-value or customers order	$10^{-4} \text{ max. flow (m}^3/\text{h)}$
IV - S1	water	metallic polished	$5 \times 10^{-6} \text{ max. flow (m}^3/\text{h)}$
IV - S2	gas	Test pressure max. 4 bar	$2 \times 10^{-2} \times \Delta p \times \text{seat-}\phi \text{ (l/h)}$
V	water	Catalogue -value or customers order	$1,8 \times 10^{-5} \times \Delta p \times \text{seat-}\phi \text{ (l/h)}$
VI	gas	Test pressure max. 4 bar with soft seal from Kvs 1	$0,3 \times \Delta p \times \text{leakage-factor (ml/min)}$

 Δp in bar; seat- ϕ in mm

Leakage-Factors

Seat diameters	Leakage-Factors	
mm	ml / min	Quantity of bubbles per minute
25	0,15	1
40	0,3	2
50	0,45	3
65	0,6	4
80	0,9	6
100	1,7	11
150	4	27
200	6,75	45
250	11,1	--
300	16	--
350	21,6	--
400	28,4	--



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GERMAN QUALITY VALVES