

Kämmer Series 041000 *Low Temperature Valves*



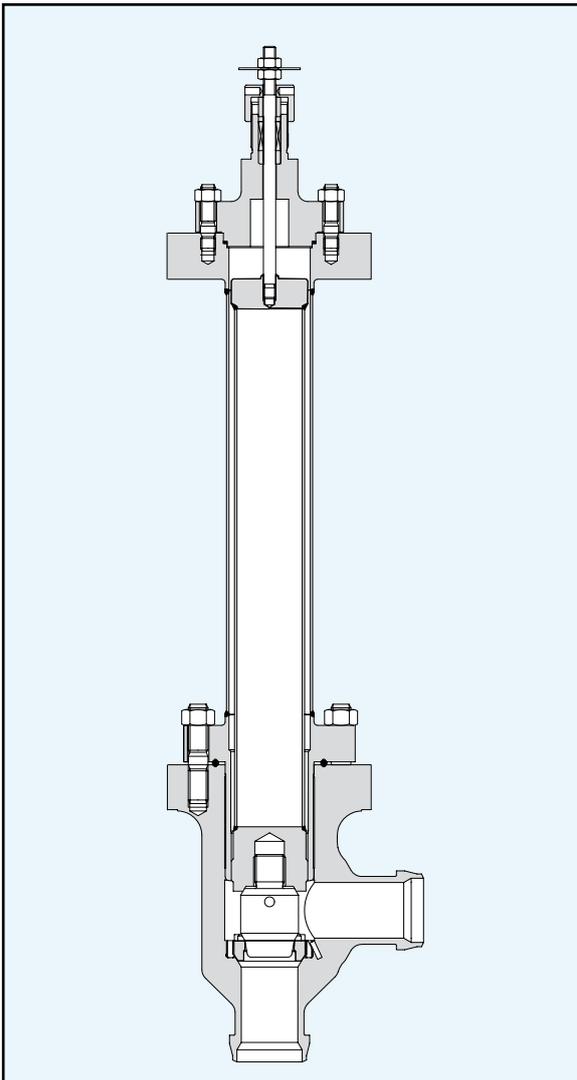
Series 041000

Description

Low temperature valves made from aluminium for air separation plants. Designed for service temperatures between $-196\text{ }^{\circ}\text{C}$ and $+120\text{ }^{\circ}\text{C}$ ($-320\text{ }^{\circ}\text{F}$ and $+250\text{ }^{\circ}\text{F}$). These valves function reliably in “Cold-Box” systems.

Air is a raw material from which its elementary gases, oxygen, nitrogen, argon and other rare gases can be extracted in pure form. The elements of air are used in many industrial processes and ensure that these processes are more environmentally friendly. Air is thus a source for many environmental applications.

The pure gases are extracted in air separation units. The air is compressed, liquified and separated in columns. Liquefaction only occurs at extremely low temperatures of down to $-196\text{ }^{\circ}\text{C}$. Since the various components of air boil at different temperatures, they can be separated by distillation.



Control valve model 041500 for air separation. Aluminium body with and stainless steel extension for „Cold-Box“ systems. On sizes DN 25 / 1" to DN 100 / 4" the trim can be removed through the extension. Service temperature down to $-196\text{ }^{\circ}\text{C}$.

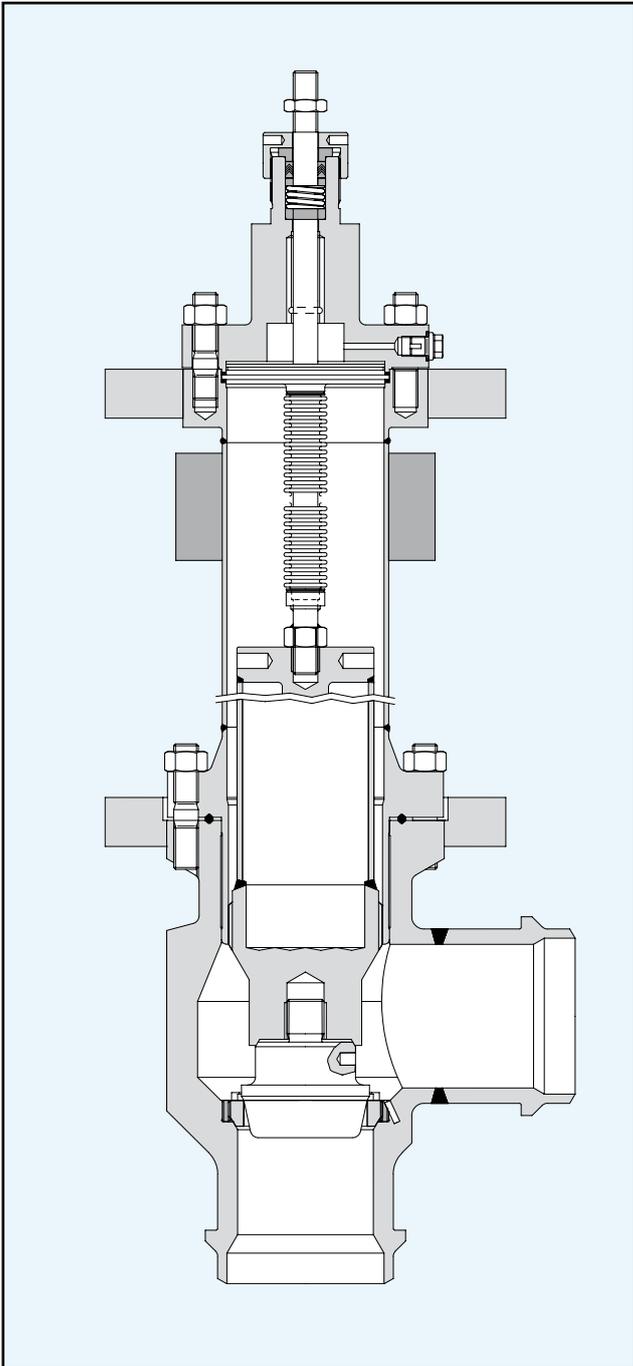
Series 041000

Technical Data

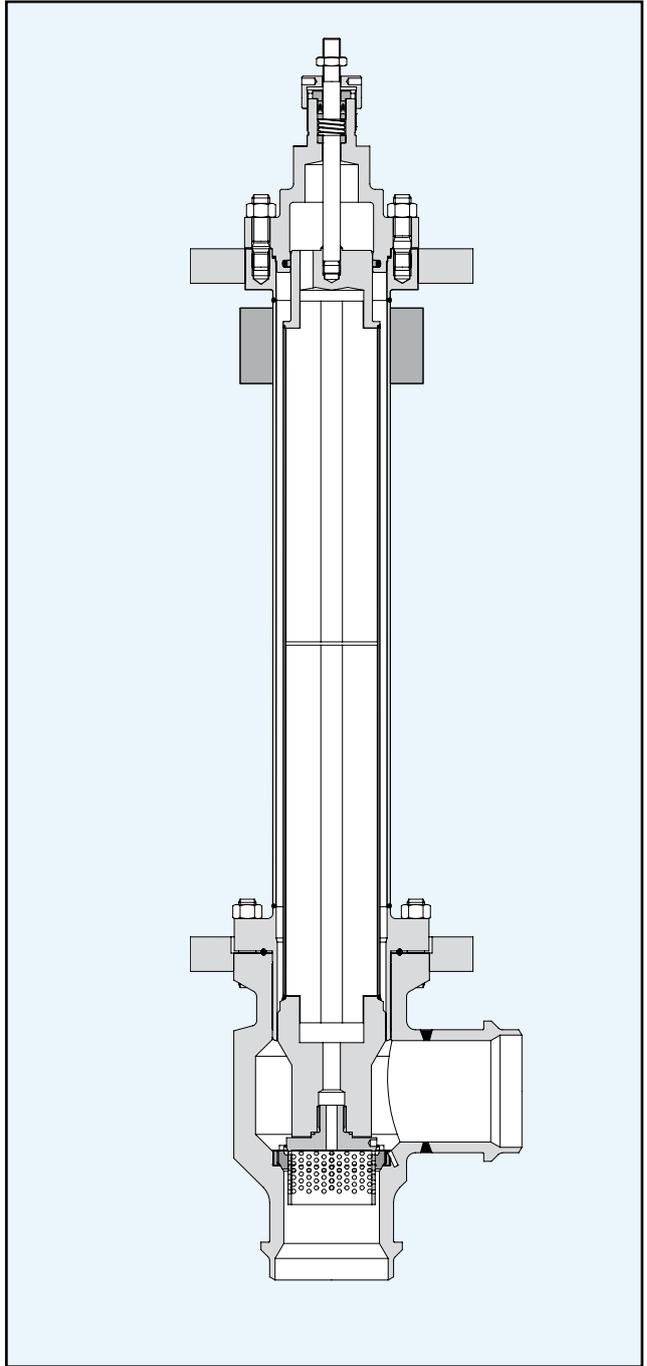
Valve body style	Angle valve
Characteristics	Equal %, Linear, On - Off
DN	25 - 200
PN	10 - 63, higher pressures upon request
Seat leakage, standard	< 0.01% of rated k_{vs} value, other requirements on request
Material for plug / seat ring	1.4541 (321 stainless steel), Alloy 6 optional
Soft seat	Plug with PCTFE insert from kvs 0.1, Vespel optional
Packing	PTFE packing for oxygen service, graphite optional for high pressures
Body material	AlMg 4,5 Mn, alternative stainless steel
Body gasket	Al 99,5 between valve body and extension. PTFE between extension and bonnet
Extension	1.4541 (321 stainless steel). Extensions can be made in any length
Body connections	Butt weld ends
kvs values	See table page 6
Bellows seal	All valves available with 1.4541 (321 stainless steel) bellows seal. Other materials on request
Cover plate	Cover plates for „Cold-box“ installation available in any size

Series 041000

Designs



Low temperature valve with bellows seal and test connection



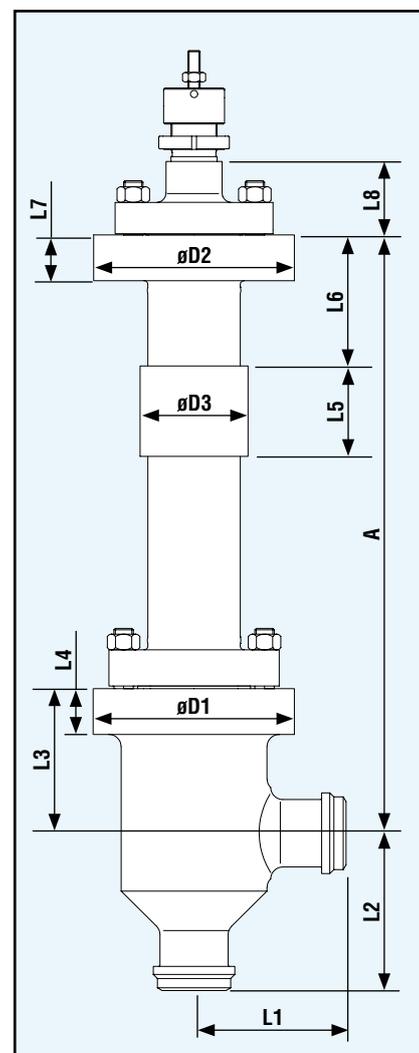
Low temperature valve with pressure balancing and multi-hole cage plug

Series 041000

Dimensions [mm]

Valves with aluminium bodies, PN 10 - 63 / ANSI Class 150 - 300 (DN 200 / 8" only up to PN 40 / Class 300)

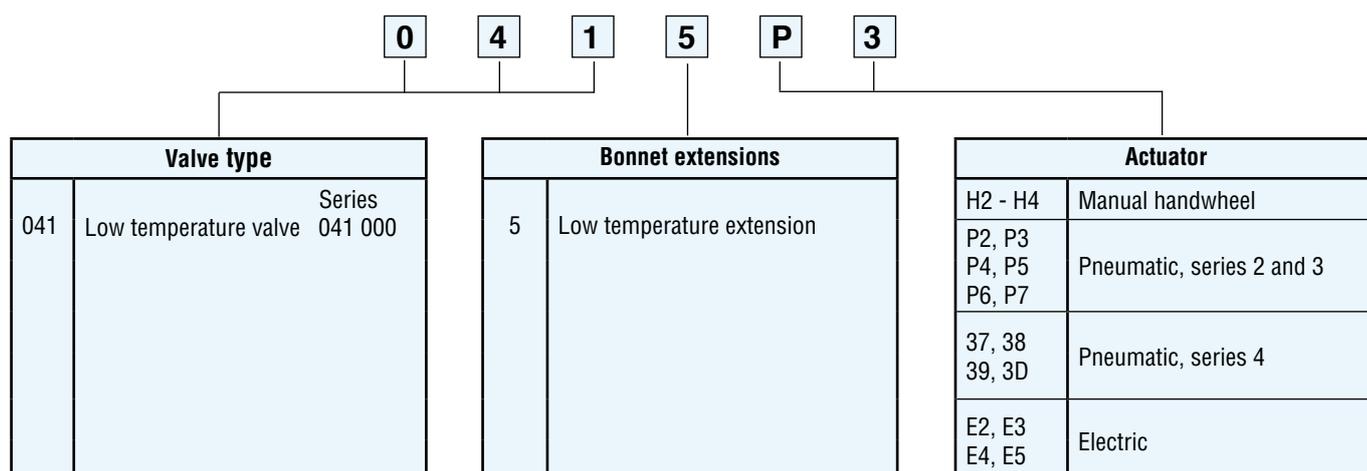
DN ANSI	25 1"	40 / 50 1½" / 2"	80 3"	100 4"	150 6"	200 8"
L1	100	125	155	175	220	260
L2	100	125	155	175	220	260
L3	80	120	110	143	160	185
L4	27	37	32	32	20	50
L5	60	60	70	70	-	-
L6	60	60	55	55	-	-
L7	38	38	32	32	20	32
L8	61	61	95	95	95	95
A	635	660	625	815	800	840
øD1	130	165	200	260	280	260
øD2	130	165	200	260	200	260
øD3	60.3	89	114.3	168.3	89	108



Weights (kg)

DN ANSI	25 1"	40 / 50 1½" / 2"	80 3"	100 4"	150 6"	200 8"
	15	26 / 28	32	52	62	79

Valve Code



Series 041000

Standard K_{VS} Values

								K_{VS} value ¹⁾	Seat diameter (mm)	Rangeability ²⁾	Seat material (standard)	Plug material (standard)
Size DIN	25	40	50	80	100	150	200					
Size ANSI	1"	1½"	2"	3"	4"	6"	8"					
Stroke (mm)	20	20	20	40	40	40	40/60					
Stem diameter (mm)	10	10	10	16	16	16	16					
								0.10	4.5	50:1	1.4541	1.4541
								0.16	4.5			
								0.25	4.5			
								0.4	4.5			
								0.63	4.5			
								1.0	7.0			
								1.6	7.0			
								2.5	10			
								4.0	12			
								6.3	16			
								10	20			
								16 ³⁾	25			
								25	32			
								40	40			
								63	50			
								100	63			
								160	80			
								250	100			
								400 ⁴⁾	125			
								630	175			

¹⁾ $K_{VS} < 0,25 = K_V \times F_R$ acc. to IEC 534 (more information on request)

²⁾ For calibrating conditions.

³⁾ Max. $K_{VS} = 14$ (but trim is $K_{VS} 16$)

⁴⁾ For DN 150 K_{VS} max = 346)

For soft seats $K_{VS} = 0.10$ to 1.6 the seat diameter is 10 mm and the seat is Alloy 6 plated.
Further special engineered K_{VS} values on request.

Other Low Temperature Series



Series 141000: Similar to series 041000, but with transition joint connection between aluminium body and stainless steel extension.
Sizes from DN 25 to 100.



Series 241000: Manufactured from stainless steel for Helium liquefaction to complete the range from low temperature to cryogenic.
Sizes from DN 4 to 150.



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