

AVENTICS Series KPZ Compact cylinders

The AVENTICS Series KPZ is a compact cylinders based on the widely used standard NFE 49 004. It offer a wide variety of variants and are suitable for a multitude of applications thanks to their sizing.



Technical data

Industry	Industrial
Standards	NFE 49004
Piston Ø	20 mm
Stroke	40 mm
Ports	M5
Functional principle	Double-acting
Cushioning	elastic cushioning
Magnetic piston	Piston with magnet
Environmental requirements	Industry standard ATEX optional
Piston rod thread - type	Internal thread
Piston rod	non-rotating, with front plate
Scraper	Standard Industry Scraper
Pressure for determining piston forces	6,3 bar
Retracting piston force	148 N
Extracting piston force	198 N
Min. ambient temperature	-20 °C
Max. ambient temperature	80 °C
Min. working pressure	1 bar
Max. working pressure	10 bar

Impact energy	0.2 J
Stroke max.	300 mm
Medium	Compressed air
Min. medium temperature	-20 °C
Max. medium temperature	80 °C
Max. particle size	50 µm
Min. oil content of compressed air	0 mg/m ³
Max. oil content of compressed air	5 mg/m ³

Material

Piston rod	Stainless Steel
Scraper material	Polyurethane
Seal material	Nitrile butadiene rubber
Material, front cover	Aluminum
Cylinder tube	Aluminum
End cover	Aluminum
Front plate	Aluminum
Part No.	0822391606

Technical information

The material for heat-resistant scraper and seal variants (ambient temperature: -10 °C ... 120 °C) is fluorocarbon.

Further options can be generated in the Internet configurator.

The pressure dew point must be at least 15 °C less than ambient and medium temperature and may not exceed 3 °C.

The oil content of compressed air must remain constant during the life cycle.

Use only the approved oils from AVENTICS. Further information can be found in the "Technical information" document (available in <https://www.emerson.com/en-us/support>).

Overview drawing



* Available for installation on KPZ for cylinder diameters 16 - 25 mm

NOTE: This overview drawing is only for orientation to indicate where the various accessory parts can be fastened to the cylinder. The illustration has been simplified for this purpose. It is thus not possible to derive the dimensions from this overview.

Maximum admissible lateral force static



F_{stat} = static lateral force

X = distance between force application point and cylinder cover

Maximum admissible lateral force static



F_{stat} = static lateral force

X = distance between force application point and cylinder cover

S = stroke

Maximum admissible lateral force dynamic



F_{dyn} = dynamic lateral force

X = distance between force application point and cylinder cover

Maximum admissible lateral force dynamic



F_{dyn} = dynamic lateral force

X = distance between force application point and cylinder cover

S = stroke

Max. permissible torque



M = max. permissible torque
 X = distance between force application point and cylinder cover

Max. permissible torque



M = max. permissible torque
 X = spacing between torque contact surface and cylinder cover

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Series KPZ

2025-07-17

Technical drawings of the 3000 series ball valve, showing various views and dimensions:

- Top View:** Shows the valve body with dimensions: BG, LB, LM, ØRR, ØRT, ØDT, ØDA, LJ, EE, LA, PL, WH, ZA+S, ZB+S, E, G, BC, DG, FA, TG, FB.
- Side View:** Shows the valve body with dimensions: ZB+S, WH+S, KF, ØMM, AF.
- End View:** Shows the valve body with dimensions: Ø63 - 100, LJ.
- Detail T:** A cross-section of the ball with dimensions: 3,65 ± 0,15, 6,85 ± 0,15, 5,35 ± 0,15.
- Bottom View:** Shows the valve body with dimensions: X1, X2, X3.

Valve sizes: Ø16, Ø20 - 25, Ø32 - 40, Ø50, Ø63 - 100.

T = View for sensor groove without guide plate

Compact cylinder, Series KPZ

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Piston Ø	AF min. Option: through piston rod	BC	BG min.	DA H11	DG H13	DT H13	E	EE	FA ±0,1	FB
16	10	M3	14.5	10	3	6	29.5	M5	9.9	20
20	12 10: S<3 mm 2)	M4	15.5	12	4	7.5	36	M5	12	24
25	12 10: S<3 mm 2)	M5	15.5	12	5	8	40	M5	15.6	30
32	12	M5	18	14	5	8.6	50	G 1/8	19.8	38
40	12	M5	18	14	5	9	58	G 1/8	23.3	44
50	16 12: S<4 mm 2)	M6	24	18	6	11	68	G 1/8	29.7	54
63	16 12: S<4 mm 2)	M6	24	18	6	11	80	G 1/8	35.4	62
80	20 15: S<3 mm 2)	M8	28	23	8	14	99	G 1/8	46	80
100	26 21: S<5 mm 2)	M10	27.5	28	10	15	120	G 1/8	56.6	100

Piston Ø	G	KF	LA	LB	LJ	LM	MM f8	PL	Ø RR	RT
16	19	M4	2.5	3.5	2.5	6	8	7.5	3.3	M4
20	25	M6	2.5	4.5	4.5	8	10	7.5	4.2	M5
25	27	M6	2.5	4.4	5	8	10	7.5	4.2	M5
32	32	M8	2.5	5.5	5.1	10	12	8.5	5.1	M6
40	42	M8	2.5	5.5	9.6	10	12	8.5	5.1	M6
50	50	M10	2.5	2	8.5	12	16	8.5	6.7	M8
63	62	M10	2.5	2	17.8	12	16	8.5	6.7	M8
80	82	M12	3	1	22.9	14	20	8.3	8.5	M10
100	103	M16	3	3.5	26.5	14	25	9.7	8.5	M10

Piston Ø	TG	WH	X1	X2	X3	ZA + Stroke	ZB + Stroke
16	18 ±0,4	4.5	–	–	–	38	42,5 0/ +1,4
20	22 ±0,4	5	4.2	–	–	38	43 0/+1,4
25	26 ±0,4	5.5	4.5	–	–	39	44,5 0/ +1,4
32	32 ±0,5	7	6.5	–	–	44	51 0/+1,6
40	42 ±0,5	7	11	–	–	45	52 0/+1,6
50	50 ±0,6	7.5	13	4	13	45.5	53 0/+1,6
63	62 ±0,7	8	18	12	21	49	57 0/+2
80	82 ±0,7	9.5	18	16.5	25.5	54.5	64 0/+2
100	103 ±0,7	10.5	20	20	29	66.5	77 0/+2