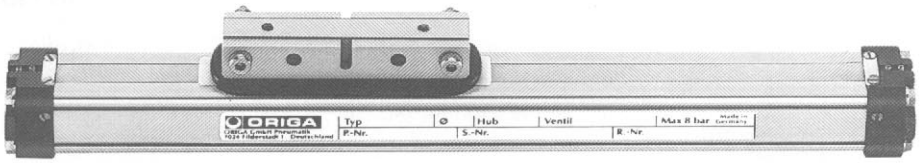
HOERBIGER
ORIGA

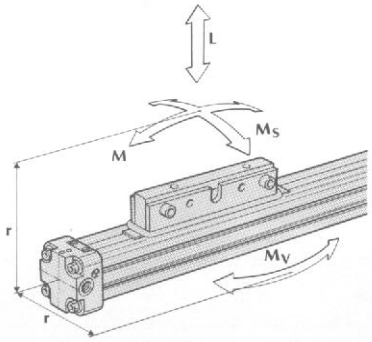
Series P 210

Diameters 10, 16, 25 and 32 mm
Optional stroke lengths up to 7,000 mm. (Longer strokes available on request.)



Technical Data

Loads, forces, moments

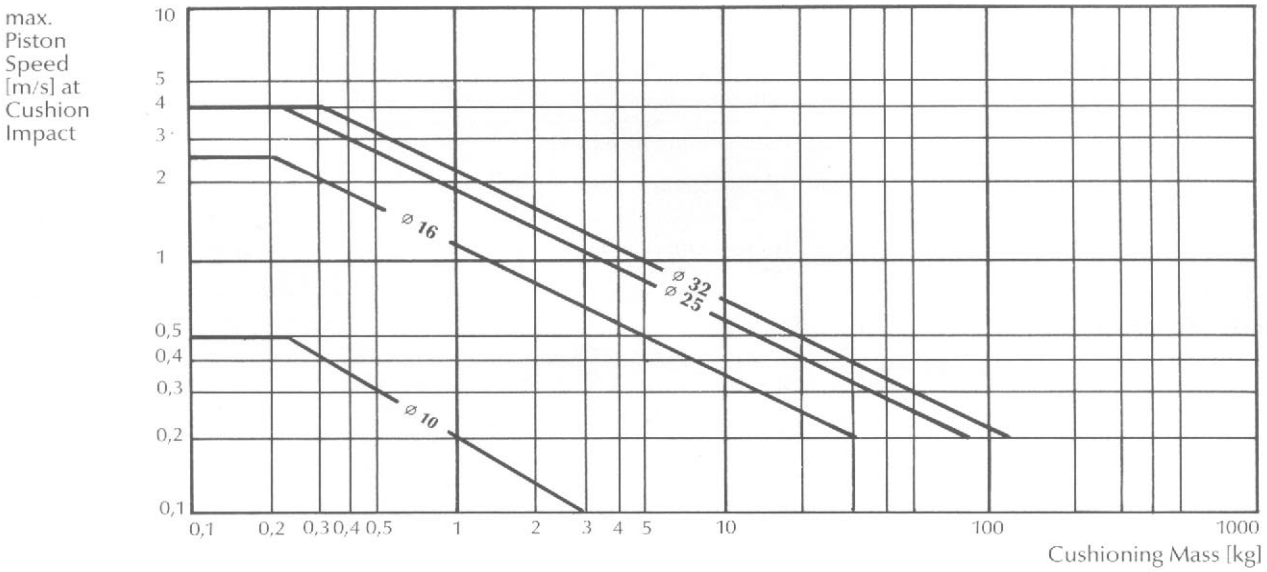


$M = F \cdot r$
$M_S = F \cdot r$
$M_V = F \cdot r$

Cyl. Ø	effective Force [N] at 6 bar	Cushion Length [mm]	Max. Allowed Bending Moment [Nm] M	M_S	Max. Allowed Torque [Nm] M_V	Max. Allowed Load [N] L
10	32	2,5	1	0,2	0,3	20
16	78	15	4	0,3	0,5	120
25	250	21	15	1,0	3	300
32	420	26	30	2,0	5	450

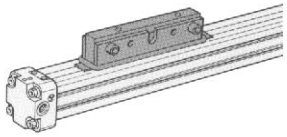
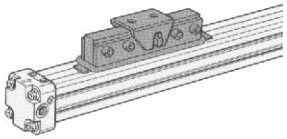
Values are based on light shock free duty and should not be exceeded during piston acceleration.
Side bending moments should be avoided.
Operating pressure max. 8 bar.

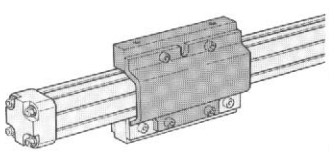
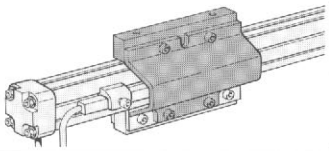
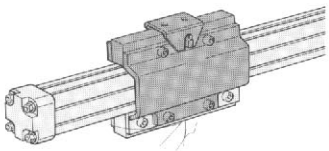
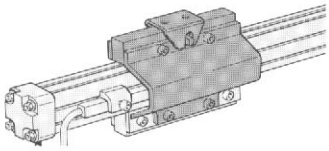
Cushioning Diagram



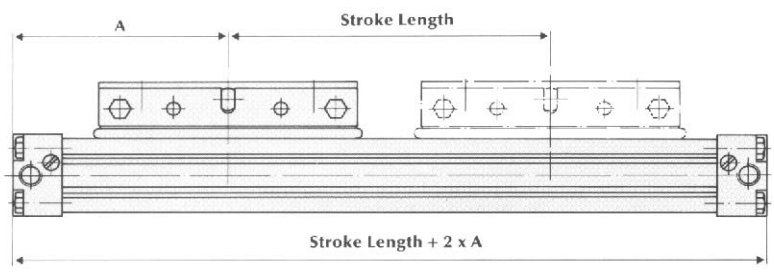
For piston speeds of more than 1 m/s, viton seals are recommended.
If the approved limits are exceeded additional shock absorbers are advisable.
For piston speeds of less than 0,2 m/s slow speed lubrication is recommended.
Maximum seal life will be achieved when piston speeds do not exceed 1 m/s.

Piston Mountings

Standard Piston Mountings			Cyl. ⌀	Cylinder weight [kg] for 0 stroke	Cylinder weight [kg] Increase 100 mm stroke	Ident-No.
Type P 210/20		Piston mounting No. 20	10	0,087	0,052	0100
			16	0,23	0,095	1000
		Anodised aluminium	25	0,80	0,18	2000
		Mounted during cylinder assembly	32	1,65	0,36	3000
Type P 210/25		Piston mounting No. 25	10	0,10	0,052	0200
		Galvanised steel	16	0,25	0,095	1200
		Carrier pin hardened steel for floating connection	25	0,90	0,18	2200
			32	1,85	0,36	3200

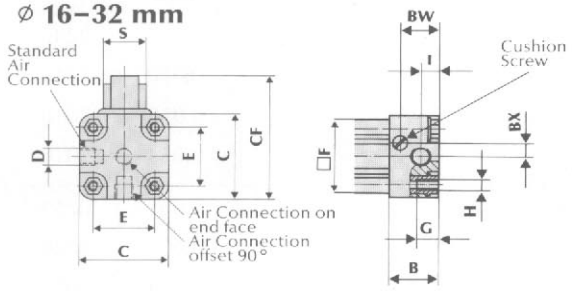
Supplementary Piston Mountings			Cyl. ⌀	Weight [kg]	Ident No.
For Type P 210/20 Aluminium		Piston mounting No. 31	10	-	-
			16	0,10	1510
			25	0,20	2510
		For use with cylinders without sensors	32	0,45	3510
Screws (8.8 galvanized) Power take off turned by 180° opposite the piston yokes.		Piston mounting No. 34	10	-	-
			16	0,12	1540
			25	0,25	2540
		For use with cylinder sensors both sides	32	0,52	3540
These mountings transfer power to the back of the cylinder and allow an installation method which protects the bands from excessive foreign particles, (sand, welding sparks etc).		Piston mounting No. 35	10	-	-
			16	0,12	1550
			25	0,35	2550
		For use with cylinders without sensors	32	1,20	3550
		Piston mounting No. 37	10	-	-
			16	0,13	1570
			25	0,40	2570
		For use with cylinder sensors both sides	32	1,30	3570

Overall Dimensions

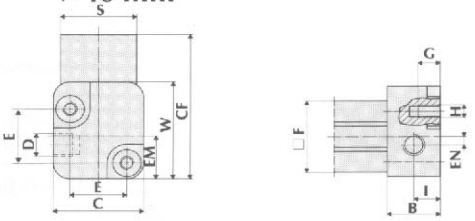


Overall Dimensions

⌀ 16–32 mm

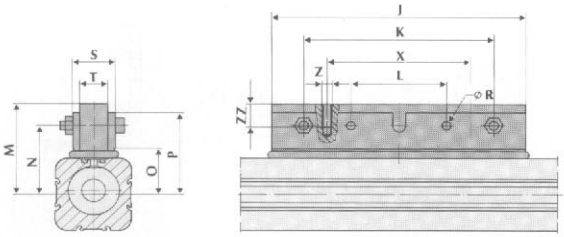


⌀ 10 mm

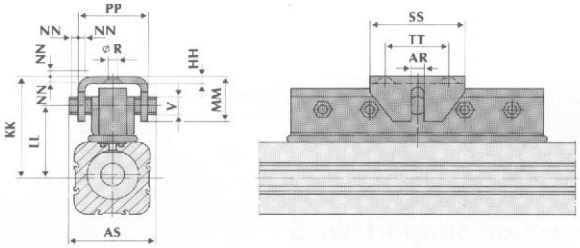


Note: These end cap dimensions change when integrated control valves are used!

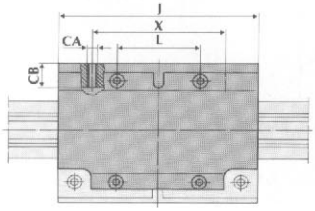
Piston Mounting No. 20



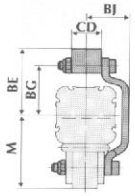
No. 25



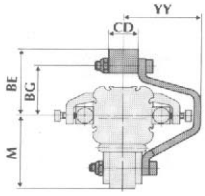
Supplementary Piston Mountings



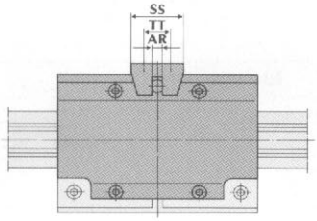
No. 31

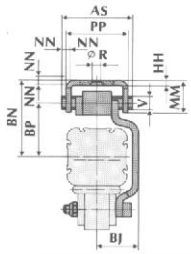


No. 34

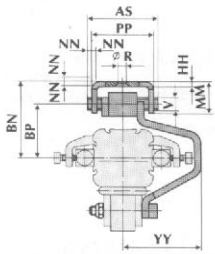


No. 35



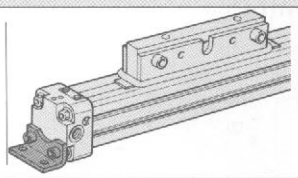
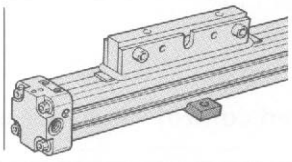


No. 37

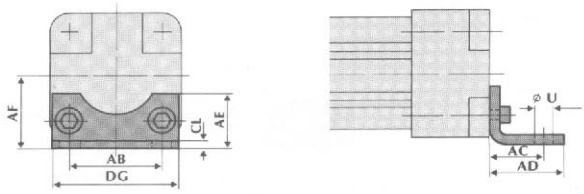


Cyl. ⌀	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	R	S	T	V	W	X	Z	AR
10	44,5	12	19	M5	12	17	5	M3	6	60	–	22	22,5	17,5	10,5	21,5	3,4	16	10	3,5	22,5	31	M3	2
16	65	15	27	M5	18	24	5	M3	5,5	76	64	32	30	24	16	29	4,5	18	10	5	–	48	M4	3
25	100	23	40	G1/8	27	36	9	M5	8,5	120	100	50	46	33	24	43	5,5	23	15	8	–	80	M5	5
32	125	27	52	G1/4	36	48	14	M6	10,5	160	120	60	60	46	30	54	7	27	18	12	–	90	M6	8

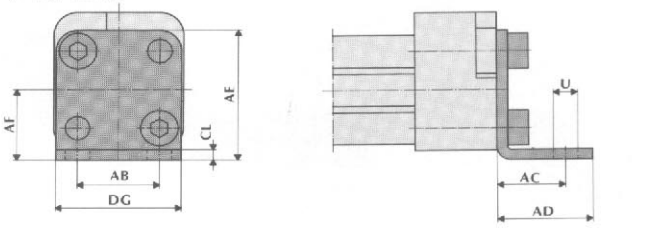
Cyl. ⌀	AS	BE	BG	BJ	BN	BP	BW	BX	CA	CB	CD	CF	EM	EN	HH	KK	LL	MM	NN	PP	SS	TT	YY	ZZ
10	27	–	–	–	–	–	–	–	–	–	–	32	9,5	2	2	26	18,5	11,5	1	24	20	10	–	6
16	28	29	23	18	33	23	12	4	M4	12	16	43,5	–	–	2	34	24,5	13	1,5	25	20	10	34	8
25	42	41,5	31	25	48	34	18	6,5	M6	15	17,6	66	–	–	3	52	38	20	2	37	32	16	47	10
32	55	58	44	33	67	46,5	21,5	9	M8	25	20	86	–	–	4	68	48,5	30	3	44	60	40	56	15

Cylinder Mountings			Cyl. ⌀	Weight [kg]	Ident No.
		End cap mounting No. 4	10	0,007	0240
		Galvanised steel	16	0,010	1010
			25	0,030	2010
		Including screws (8.8 galvanized)	32	0,054	3010
Soley for support of cylinder		Mid-section support No. 5	10	0,001	0250
Axial forces cannot be transferred		Anodised aluminium	16	0,002	1020
			25	0,013	2020
		For placing in the profiled groove of the cylinder barrel	32	0,022	3020

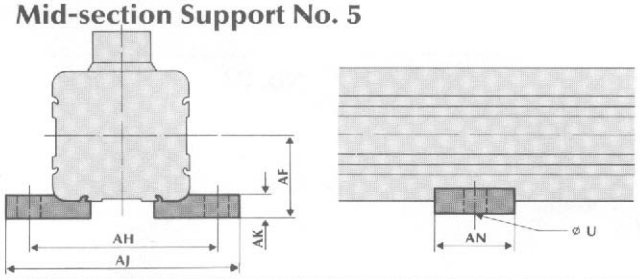
End cap Mounting No. 4 ⌀ 16–32 mm



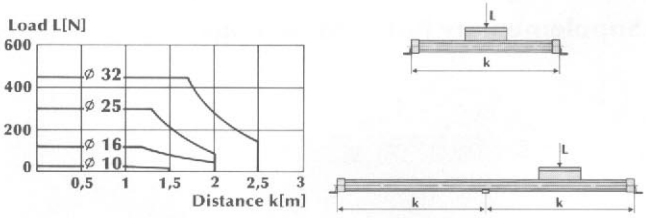
⌀ 10 mm



Mid-section Support No. 5



Position of Cylinder Mountings



Cyl. ⌀	U	AB	AC	AD	AE	AF	AH	AJ	AK	AN	CL	DG
10	3,6	12	10	14	20,2	11	25,4	33,4	3,5	12	1,6	18,4
16	3,6	18	10	14	12,5	15	32	40	4,5	12	1,6	26
25	5,5	27	16	22	18	22	48	60	6,5	20	2,5	39
32	6,6	36	18	26	20	30	61	73	8,5	20	4	50

End Cap Options

Air Connection in End Cap (see illustration of end cap Page 3.1/3)	Ident-No.			
Cylinder ⌀	**10**	**16**	**25**	**32**
Offset by 90°	–	1851	2751	3751
End face ⌀ 16: M 5, ⌀ 25: G 1/8, ⌀ 32: G 1/4	–	1852	2752	3752

Optional Features

Viton Seals	Ident No.			
End cap and piston	3095	1772	2771	3771
Stainless Steel Parts	**Ident No.**			
Screws (V2 A/1541)	3081	1781	2781	3781
Carrier pin and bush for Type P210/25	–	1782	2782	3782
Lubrication	**Ident-No.**			
Grease lubrication for slow speed <0,2 m/s	3091	1691	2791	3791

Accessories: Electrical VOE or Pneumatic VOP control valves, proximity switch RS or IS – Please refer to Chapter 4 - Accessories.