

Piston Rod Cylinders Bellows Cylinders

Advanced cylinder concepts with outstanding performance define the ORIGA piston rod cylinder programme.



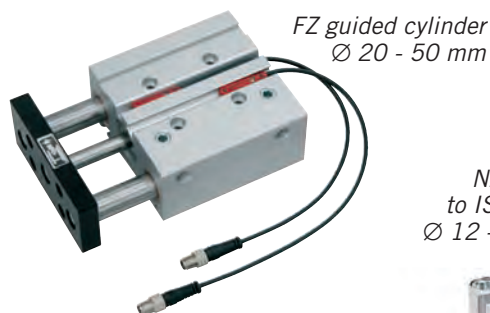
Consistent design of accessories for all cylinder series, e.g. swivel mountings, pivots, piston rod eyes, magnetic switches, etc.

The resulting advantages are the basis for trouble-free operation – whether as individual components or in a combined system, meeting the demands of modern automation for high reliability and high economic efficiency. Special solutions can be developed for optimum efficiency in specific applications.

*DZ tie rod cylinder
to ISO 15552 (ISO 6431)
Ø 125 - 320 mm*

*DZB blocking cylinder
mountings to ISO 15552
(ISO 6431)
Ø 32 - 125 mm*

ST stop cylinder



*FZ guided cylinder
Ø 20 - 50 mm*

*NZ cylinder
to ISO 21287
Ø 12 - 100 mm*

*SZ short stroke cylinder
Ø 12 - 100 mm*

*AZV non-rotating cylinder
mountings to
ISO 15552 (ISO 6431)
Ø 32 - 100 mm*

*AZ cylinder
to ISO 15552 (ISO 6431)
VDMA 24562
Ø 32 - 100 mm*

*R round cylinder
to ISO 6432 Ø 10 - 25 mm
R round cylinder Ø 32 - 63 mm*

*SP bellows cylinder
single, double, triple convolution*

HOERBIGER-ORIGA-Products for -Atmospheres

Equipment Group II Category 2GD

Piston Rod Cylinders:  II 2GD c T4 T135°C

Note on ordering:

When ordering the ATEX version of a cylinder, please add "ATEX" to the type designation and order no.

Example:

DZ 5125-0100 ATEX

PA 53540-0100 ATEX

Cylinders for EX-Areas ATEX versions



Formula	$F = p \cdot A \cdot R$
Symbol	Description
A p R	Piston area Pressure in bar Friction ca. 10%

¹⁾ Air consumption when charging in dm³/100 mm stroke. The tube volume must also be taken into consideration. The given figures relate to piston area A.

The figures for piston area B change proportionally with the piston areas A to B.

A = Piston area - piston side
B = Piston area - piston rod side



Piston Force and Air Consumption

for
Standard Cylinders

		Piston diameter (mm)																
		8	10	12	16	20	25	32	40	50	63	80	100	125	160	200	250	320
Piston area * (cm²)	A	0.5	0.8	1.1	2.0	3.1	4.9	8.0	12.6	19.6	31.2	50.0	78.0	122.7	201.0	314.1	490.8	804
	B	0.38	0.65	0.85	1.7	2.6	4.1	6.9	10.6	16.5	28.0	45.4	73.6	114.7	188.5	301.5	471.2	773
Approx. piston force (kN) at ... bar	1	0.0045	0.007	0.010	0.018	0.028	0.044	0.072	0.113	0.176	0.281	0.452	0.706	1.104	1.809	2.827	4.417	7.236
	2	0.0090	0.014	0.020	0.036	0.056	0.088	0.144	0.226	0.353	0.561	0.905	1.413	2.209	3.619	5.654	8.835	14.476
	3	0.0135	0.021	0.030	0.054	0.084	0.132	0.217	0.339	0.530	0.842	1.357	2.120	3.313	5.428	8.482	13.253	21.715
	4	0.0180	0.028	0.040	0.072	0.113	0.176	0.289	0.452	0.707	1.122	1.809	2.827	4.417	7.238	11.309	17.671	28.953
	5	0.0225	0.035	0.050	0.090	0.141	0.220	0.362	0.565	0.884	1.402	2.262	3.534	5.522	9.407	14.137	22.089	36.191
	6	0.0270	0.042	0.060	0.108	0.169	0.265	0.434	0.678	1.060	1.683	2.714	4.241	6.626	10.857	16.964	26.507	43.429
	7	0.0315	0.049	0.070	0.126	0.197	0.309	0.506	0.792	1.237	1.963	3.167	4.948	7.731	12.666	19.792	30.952	50.652
	8	0.0360	0.056	0.080	0.144	0.226	0.353	0.579	0.905	1.414	2.244	3.619	5.654	8.835	14.476	22.619	35.342	57.788
	9	0.0405	0.063	0.090	0.162	0.254	0.397	0.651	1.018	1.590	2.524	4.071	6.361	9.940	16.286	25.447	39.760	65.124
	10	0.0450	0.070	0.100	0.180	0.282	0.441	0.723	1.131	1.767	2.805	4.523	7.068	11.044	18.095	28.274	44.178	72.360
Approx. air consumption (dm3/100 mm stroke at ... bar1) Figures are valid for piston area A (see symbol)	1	0.010	0.016	0.02	0.04	0.06	0.09	0.18	0.30	0.46	0.71	1.20	1.90	2.65	4.60	6.90	10.80	16.50
	2	0.015	0.024	0.03	0.06	0.09	0.14	0.27	0.43	0.69	1.00	1.85	2.85	4.10	6.90	10.40	16.30	24.50
	3	0.020	0.032	0.04	0.08	0.12	0.19	0.36	0.58	0.92	1.40	2.45	3.80	5.50	9.20	13.90	21.80	32.50
	4	0.025	0.040	0.05	0.10	0.15	0.24	0.45	0.72	1.15	1.75	3.00	4.75	6.95	11.50	17.40	27.20	40.50
	5	0.030	0.048	0.06	0.12	0.18	0.29	0.55	0.86	1.40	2.10	3.65	5.70	8.40	13.80	20.90	32.70	48.00
	6	0.035	0.056	0.07	0.14	0.21	0.34	0.65	1.00	1.60	2.50	4.25	6.60	9.70	16.00	24.40	38.20	56.50
	7	0.040	0.064	0.08	0.16	0.25	0.39	0.73	1.15	1.80	2.85	4.85	7.60	11.15	18.30	27.90	43.70	64.50
	8	0.045	0.072	0.09	0.18	0.28	0.41	0.82	1.30	2.00	3.20	5.45	8.50	12.55	20.60	31.50	49.20	72.50
	9	0.050	0.080	0.10	0.20	0.31	0.49	0.90	1.45	2.30	3.55	6.10	9.50	14.00	22.90	35.00	54.60	80.50
	10	0.055	0.088	0.11	0.22	0.34	0.53	1.00	1.60	2.50	3.90	6.40	10.40	15.40	25.20	38.50	60.10	89.00

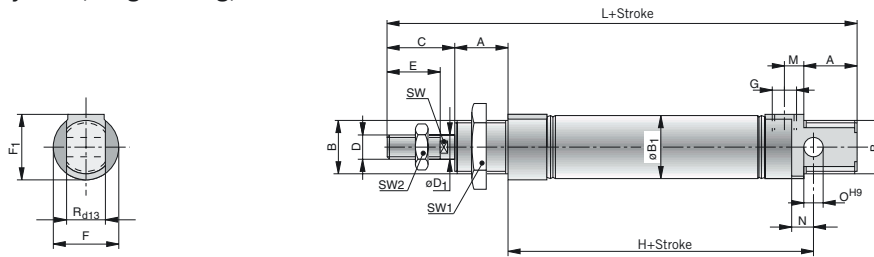


R - Round Cylinders

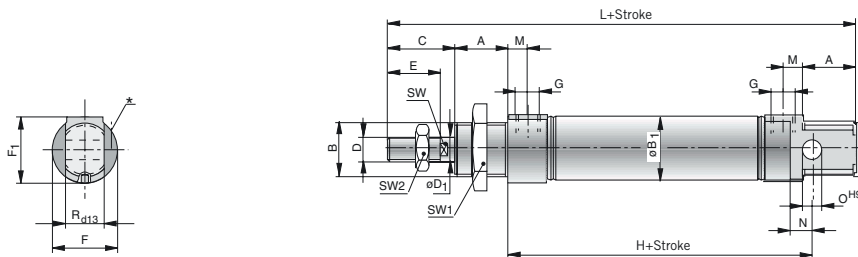
Ø 10-25 mm

to ISO 6432 and CETOP RP52P

Dimensions – Basic Cylinder, Single Acting, Ø 10 – 25 mm
Series R3...

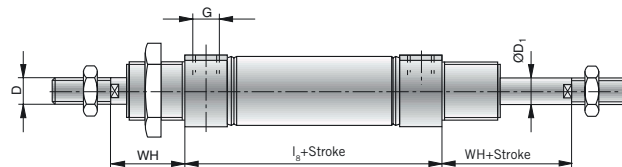


Dimensions – Basic Cylinder, Double Acting, Ø 10 – 25 mm
Series R5..., R6..., R1...



*From the connection side: adjustable end cushioning only for types R 5016, R 5020, R 5025

Dimensions – Basic Cylinder, Double Acting with through piston rod
Series RDU6...



for further dimensions see Series R5....

Dimension Table (mm) for Basic Cylinder, Series R..., RDU....

Cyl.Ø	A	B	ØB ₁	C	D	ØD ₁	E	F	F ₁	G	H + Stroke	l _s +Stroke
10	12	M12x1.25	11.3	16	M4	4	12	15	15	M5	48	44.5
12	17	M16x1.5	13.3	21	M6	6	16	20	20	M5	53	46
16	17	M16x1.5	17.3	21	M6	6	16	20 *	20*	M5	60	56
20	20	M22x1.5	21.3	24	M8	8	20	27	27	G1/8	71	66
25	22	M22x1.5	26.5	28	M10x1.25	10	22	27	27	G1/8	76	69

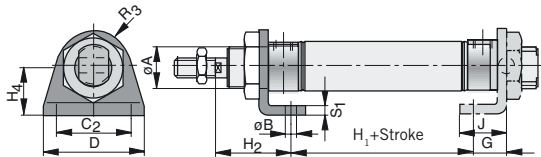
* for Type R5016: F = 22, F₁ = 21

Cyl.Ø	L+Stroke	M	N	ØO ^{H9}	R _{d13}	SW	SW ₁	SW ₂	WH	WH+Stroke
10	84	5	6	4	8	–	19	7	16	16
12	101	5	9	6	12	5	24	10	22	22
16	111	5	9	6	12	5	24	10	22	22
20	130	8	12	8	16	7	32	13	24	24
25	141	8	12	8	16	9	32	17	28	28



Mountings – Series R..., RDU..., Ø 10 – 25 mm

Dimensions Mounting RA

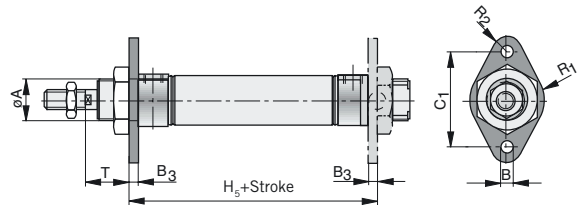


Material: steel, passivated

Dimension Table (mm) for Mounting RA

Cyl.- Ø	ØA	ØB	C ₂	D	G	H ₁ + Stroke	H ₂	H ₄	J	R ₃	S ₁
10	12	4.5	25	35	11	30	24	16	16	10	3
12	16	5.5	32	42	14	29	32	20	20	13.5	4
16	16	5.5	32	42	14	36	32	20	20	13.5	4
20	22	6.6	40	54	17	44	36	25	25	18	5
25	22	6.6	40	54	17	45	40	25	25	18	5

Dimensions Mounting RC

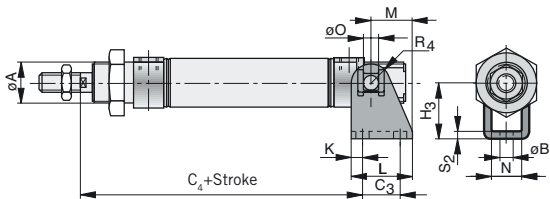


Material: steel, passivated

Dimension Table (mm) for Mounting RC

Cyl.- Ø	ØA	ØB	B ₃	C ₁	H ₅ + Stroke	R ₁	R ₂	T
10	12	4.5	3	30	52	12.5	5	13
12	16	5.5	4	40	58	15	6	18
16	16	5.5	4	40	64	15	6	18
20	22	6.6	5	50	78	20	8	19
25	22	6.6	5	50	79	20	8	23

Rear Trunnion Mounting RB



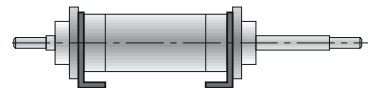
Material: steel, passivated

Dimension Table (mm) – for Mounting RB

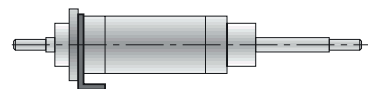
Cyl. Ø	ØB	C ₃	C ₄ + Stroke	H ₃	K	L	M	N	ØO	R ₄	S ₂
10	4.5	12.5	65	24	6.5	23	18	8.1	4	5	2.5
12	5.5	15	73	27	5	25	18	12.1	6	7	3
16	5.5	15	80	27	5	25	18	12.1	6	7	3
20	6.6	20	91	30	6	32	22	16.1	8	10	4
25	6.6	20	100	30	6	32	22	16.1	8	10	4

Mountings – Series RDU....

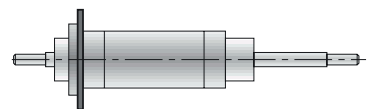
Mounting RA2... (2 brackets)



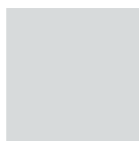
Mounting RA1... (1 bracket)



Mounting RC... (1 flange)



Mountings - Accessories

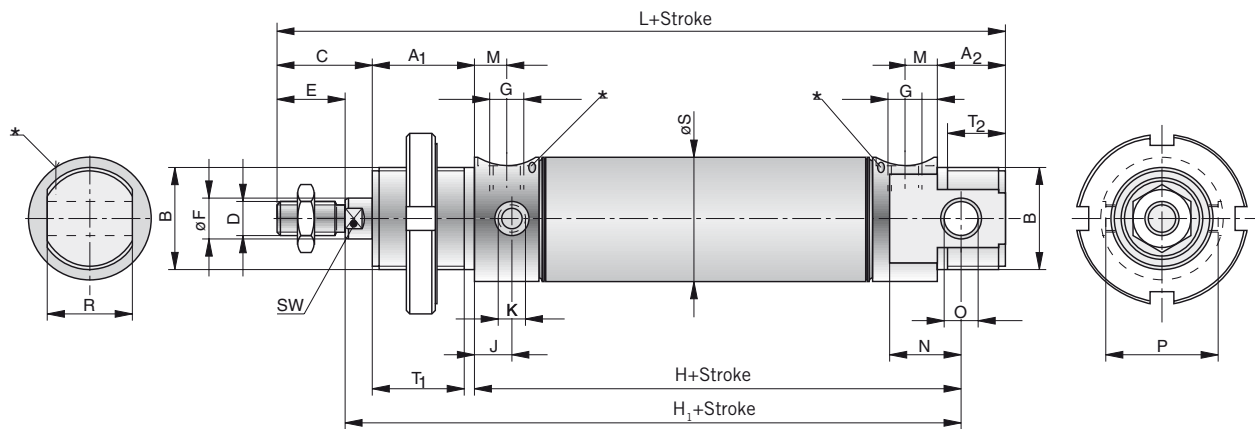


R - Round Cylinders

Ø 32-63 mm

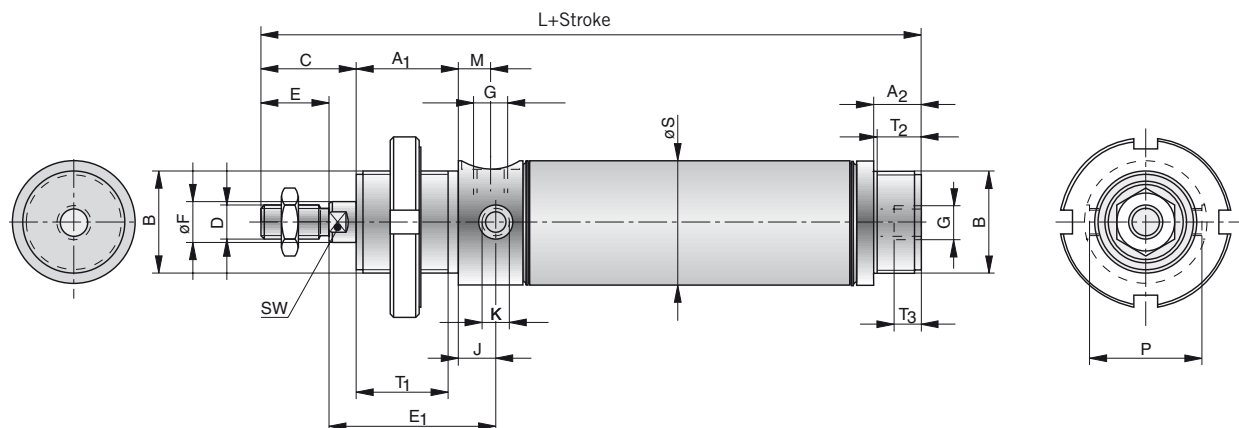
to ISO 6432

Dimensions – Basic Cylinder, Series R..., Ø 32 – 63 mm



* adjustable end cushioning only for series R 5000

Dimensions – Basic Cylinder, Series RK..., Ø 32 – 63 mm

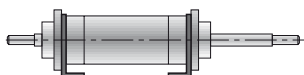


Dimension Table (mm) – Basic Cylinder, Series R..., RK..., RDU....

Cyl. Ø	A ₁	A ₂	A ₂	B	C	D	E	E ₁	ØF	G	H	H ₁ +Stroke	J	K	I ₈ +Stroke
32	30	19.5	14	M30x1.5	28	M10	20	49	12	G1/8	90.5	128.5	11	M8x1	83.5
40	35	21.5	16	M38x1.5	34	M12	24	57	16	G1/4	99.5	144.5	12	M10x1	89
50	38	25	18	M45x1.5	44	M16	32	63	20	G1/4	109.5	159.5	13	M12x1.5	93.5
63	38	24.5	18	M45x1.5	45	M16	32	64.5	20	G3/8	116.5	167.5	13.5	M14x1.5	101

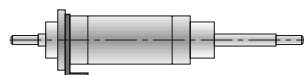
Mountings – Series RDU... (with through piston rod), Ø 32 – 63 mm

Foot mounting
(2 mounting brackets)



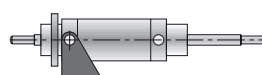
Material: steel, passivated

Foot mounting
Flange mounting



steel, passivated

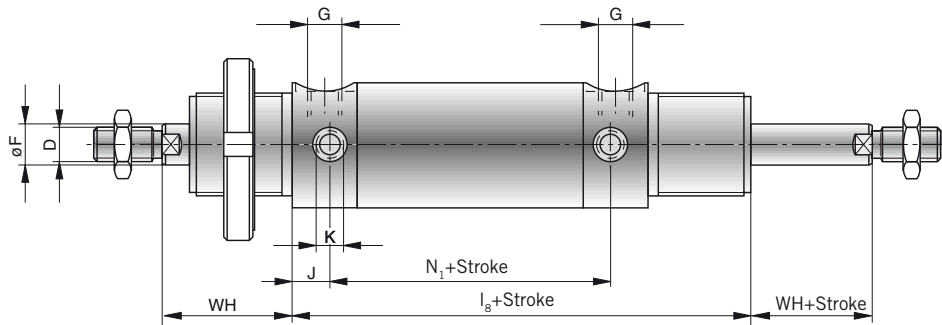
Trunnion
Mounting



steel, passivated



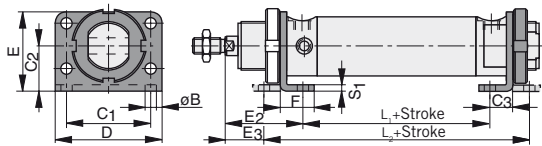
Dimensions – Basic Cylinder with Through Piston Rod, Series RDU..., Ø 32 – 63 mm



Cyl. Ø	L + Stroke R....	L + Stroke RK....	M	N	N ₁ + Stroke	O	P	R _{h12}	ØS	T ₁	T ₂	T ₃	SW	WH	WH + Stroke
32	160.5	138.5	9.5	21	61.5	10	33	25	35	27	16.5	8	10	38	38
40	181.5	156.5	11	24	65	12	42	30	43	32	17.5	12	14	45	45
50	205.5	179.5	11	27	67.5	14	52	35	54	35	21	12	17	50	50
63	215.5	186.5	12.5	28	74	16	62	35	67	35	20.5	12	17	51	51

Mountings – Series R..., RK..., Ø 32 – 63 mm

Foot Mounting Type RA...



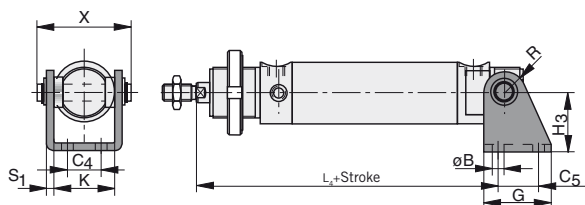
Material: steel, passivated

Dimension Table (mm)

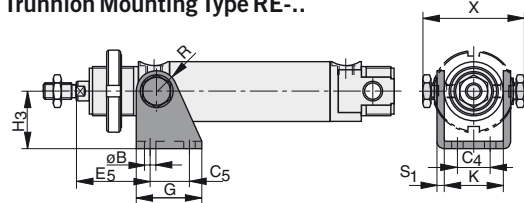
Cyl. Ø	ØB	C ₁	C ₂	C ₃	D	E	E ₂	E ₃	F	L ₁ + Stroke	L ₂ + Stroke	S ₁
32	6.6	52	28	14	66	49	48	24	21	63 46.5*	111 94.5*	4
40	9	60	33	20	80	58	60	25	30	61 41.5*	131 111.5*	5
50	9	70	40	20	90	70	64	30	30	70.5 51.5*	138.5 119.5*	6
63	9	76	45	20	96	80	65	31	30	80 57.5*	148 125.5*	6

* Dimensions in the grey fields are valid for series RK....

Rear Trunnion Mounting Type RB...



Front Trunnion Mounting Type RE...



Material: steel, passivated

Dimension Table (mm)

Cyl. Ø	ØB	C ₄	C ₅	E ₅	G	H ₃	K	R	S ₁	X
32	6.6	20	24	45	40	35	36.1	12	4	60
40	9	28	30	54	50	40	45.1	13	5	75
50	9	36	34	59	54	45	55.1	14	6	89
63	9	42	35	63.5	65	50	70.1	16	6	109

Dimension Table (mm)

Cyl. Ø	ØB	C ₄	C ₅	G	H ₃	H	K	L ₄ + Stroke	R	S ₁	X
32	6.6	20	24	40	35	8	36.1	124.5	12	4	58
40	9	28	30	50	40	10	45.1	141.5	13	5	70
50	9	36	34	54	45	10	55.1	155.5	14	6	86
63	9	42	35	65	50	15	70.1	166.5	16	6	100