



Stainless steel cylinders Series 92

Single and double-acting (magnetic)
 ø32 - 40 - 50 - 63 cushioned

Stainless steel cylinders Series 92 suit applications where, for hygienic reasons, the cylinder will be exposed to rigorous cleaning. They are therefore suitable for use in the off-shore, naval, pharmaceutical, nuclear and food industries.

This series of cylinders is normally equipped with adjustable end-stroke cushioning. In addition, these cylinders are equipped with a mechanical cushioning in order to make the impact of the piston less noisy as it reaches the end of the stroke.



A T O R S

- ▶ Clean design
- ▶ Stainless steel
AISI 316
- ▶ Adjustable end-stroke
cushioning

GENERAL DATA

Type of construction	compact, end blocks secured to the tube
Operation	single-acting and double-acting
Materials	Stainless steel AISI 316, end blocks, tube, rod NBR seals
Type of mounting	feet - front and rear bracket threaded pin - locking ring for end cap
Stroke	standard (see table)/min.-max. all bores 25-800 mm
Bore	ø32, 40, 50, 63 mm
Ports	32 = G1/8, 40/50 = G1/4, 63 = G3/8
Assembly position	any position
Operating temperature	0° ÷ 80°C (with dry air -20°C)



ACTUA

NEUMATIC SPECIFICATIONS

Operating pressure	1 ÷ 10 bar
Speed	10 ÷ 1000 mm/sec (no load)
Fluid	clean air, with or without lubrication

CYLINDER CODING

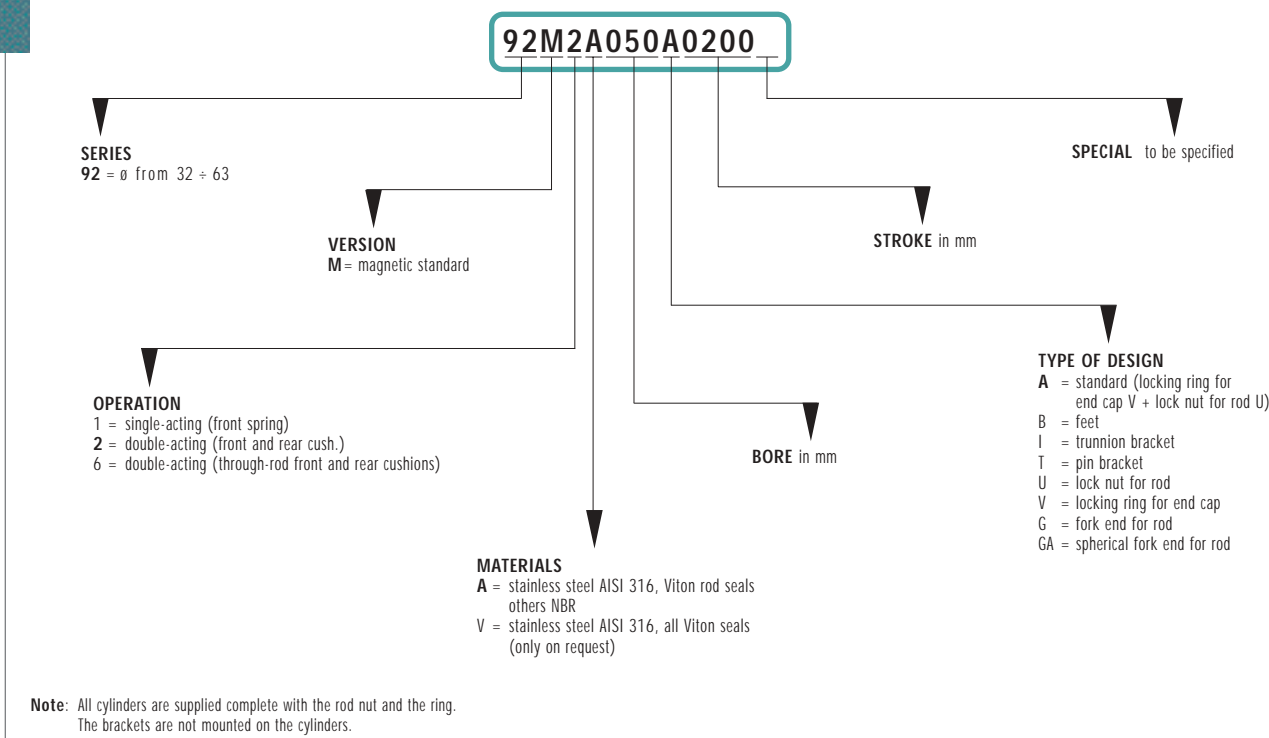


TABLE SHOWING THE STANDARD STROKES FOR DOUBLE-ACTING CYLINDERS SERIES 92

x Double-acting 92M2A

Series	ø	Standard Strokes													
		25	50	75	80	100	125	150	160	200	250	300	320	400	500
92	32	x	x	x	x	x	x	x	x	x	x	x	x	x	x
92	40	x	x	x	x	x	x	x	x	x	x	x	x	x	x
92	50	x	x	x	x	x	x	x	x	x	x	x	x	x	x
92	63	x	x	x	x	x	x	x	x	x	x	x	x	x	x

CHARACTERISTICS OF SINGLE-ACTING CYLINDERS SERIES 92

Series	ø	min= max stroke	Thrust (N) at 6 bar	Force of spring at rest (N) (stroke 75 mm)	Force of compressed spring (N)
92	32	10 ÷ 75	425	31	57
92	40	10 ÷ 75	664	35	57
92	50	10 ÷ 75	1037	60	115
92	63	10 ÷ 75	1650	60	115

Note: The Series 92 single-acting cylinders' size L1 and L2 are increased by 25 mm.



TABLE SHOWING AIR CONSUMPTION OF SERIES 92

ø cyl. in mm.	ø rod in mm.	Working area in cm ² .	Operating pressure in bar										
			1	2	3	4	5	6	7	8	9	10	
			Air consumption in NL/min for each 10 mm. of stroke										
32	12	Thrust side	8.03	0.016	0.024	0.032	0.040	0.048	0.056	0.064	0.072	0.080	0.088
		Traction side	6.9	0.014	0.021	0.028	0.035	0.042	0.048	0.055	0.062	0.070	0.076
40	16	Thrust side	12.56	0.025	0.038	0.050	0.063	0.075	0.088	0.100	0.113	0.126	0.138
		Traction side	10.56	0.021	0.032	0.042	0.053	0.063	0.074	0.085	0.095	0.106	0.116
50	20	Thrust side	19.6	0.039	0.059	0.079	0.098	0.118	0.137	0.157	0.177	0.196	0.216
		Traction side	16.48	0.033	0.050	0.066	0.083	0.099	0.115	0.132	0.148	0.165	0.182
63	20	Thrust side	31.15	0.062	0.094	0.125	0.156	0.187	0.218	0.249	0.280	0.312	0.343
		Traction side	28	0.056	0.084	0.112	0.140	0.168	0.196	0.224	0.252	0.280	0.306

THE VALUES SHOWN IN THE TABLE WERE OBTAINED USING THE FOLLOWING FORMULAE:

$$O_s = \frac{D^2 \cdot \pi \cdot (P + 1)}{4 \cdot 1000} \cdot H \quad O_n = (O_s + O_t) \cdot n \quad O_t = \frac{(D^2 - d^2) \cdot \pi \cdot (P + 1)}{4 \cdot 1000} \cdot H$$

O_s = consumption on thrust side O_t = consumption on traction side O_n = consumption of cylinder n = number of cycles per minute
 D = diameter on thrust side in cm. d = diameter of rod in cm. H = cylinder stroke in cm. P = operating pressure in bar

TABLE SHOWING THE OUTPUT FORCE OF SERIES 92

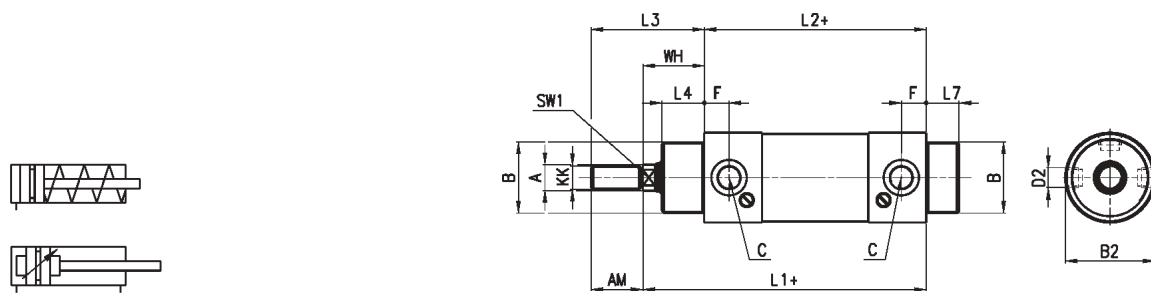
ø cyl. in mm.	ø rod in mm.	Working area in cm ² .	Operating pressure in bar										
			1	2	3	4	5	6	7	8	9	10	
			Output force in N (efficiency factor 0,9)										
32	12	Thrust side	8.03	70	140	210	283	354	425	494	595	635	706
		Traction side	6.9	60	120	180	243	305	365	426	487	548	608
40	16	Thrust side	12.56	110	220	330	443	554	664	775	886	998	1108
		Traction side	10.56	93	186	280	373	465	559	652	745	838	931
50	20	Thrust side	19.6	173	346	518	692	865	1037	1210	1382	1556	1729
		Traction side	16.48	145	290	436	582	727	872	1017	1163	1308	1454
63	20	Thrust side	31.15	275	550	824	1098	1373	1650	1923	2198	2472	2747
		Traction side	28	247	494	740	988	1235	1480	1729	1976	2222	2470

THE VALUES SHOWN IN THE TABLE WERE OBTAINED USING THE FOLLOWING FORMULAE:

$$S_s = \frac{D^2 \cdot \pi}{4} \cdot P \cdot \eta \quad S_t = \frac{(D^2 - d^2) \cdot \pi}{4} \cdot P \cdot \eta$$

S_s = output force on thrust side P = operating pressure in bar d = rod diameter in cm.
 S_t = output force on traction side η = efficiency factor

Cylinders Series 92



DIMENSIONS

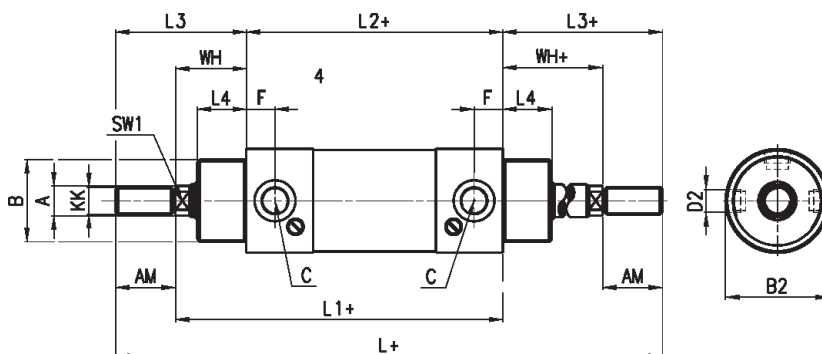
Series	ø	A	KK	B	B2	C	D2	F	SW1	AM	WH	L1	L2	L3	L4	L7
92	32	12	M10x1,25	M30x1,5	35	G1/8	M8x1	10,5	10	22	26	120	94	48	18	14
92	40	16	M12x1,25	M38x1,5	44	G1/4	M10x1	15	13	24	30	135	105	54	22	16
92	50	20	M16x1,5	M45x1,5	54	G1/4	M12x1,5	14,5	17	32	37	143	106	69	25	18
92	63	20	M16x1,5	M45x1,5	67	G3/8	M14x1,5	15	17	32	37	158	121	69	25	18

The company reserves the right to vary models and dimensions without notice. These products are designed for industrial applications and are not suitable for sale to the general public.

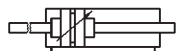


Cylinders Series 92

Through-rod.



(+ add the stroke)

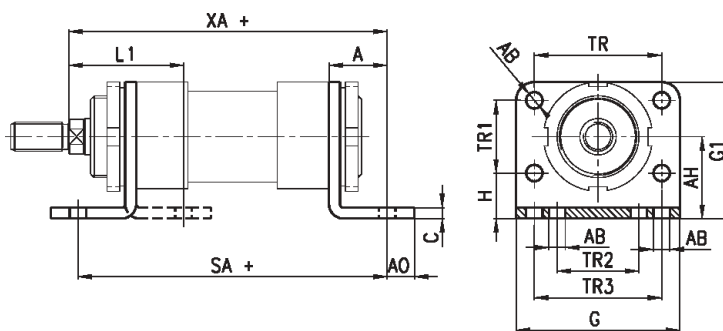


DIMENSIONS

Series	ø cyl.	A	AM	B	F	C	KK	SW1	WH	L	L1	L2	L3	L4	B2	D2
92	32	12	22	M30x1,5	10,5	G1/8	M10x1,25	10	26	190	120	94	48	18	35	M8x1
92	40	16	24	M38x1,5	15	G1/4	M12x1,25	13	30	213	135	105	54	22	44	M10x1
92	50	20	32	M45x1,5	14,5	G1/4	M16x1,5	17	37	244	143	106	69	25	54	M12x1,5
92	63	20	32	M45x1,5	15	G3/8	M16x1,5	17	37	259	158	121	69	25	67	M14x1,5

Foot mount Mod. P..

Material: stainless steel 304.



(+ add the stroke)

DIMENSIONS

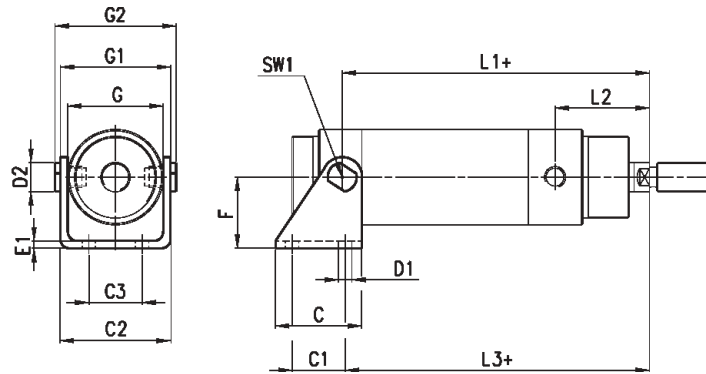
Mod.	ø cyl.	A	AB	AO	AH	C	G	G1	TR	TR1	TR2	TR3	H	L1	SA	XA
P-92-32	32	24	ø7	11	32	4	66	53	52	28	32	52	18	46	142	144
P-92-40	40	28	ø9	15	36	5	80	61	60	30	36	60	21	53	161	163
P-92-50	50	32	ø9	15	45	6	90	75	70	40	45	70	25	63	170	175
P-92-63	63	32	ø9	10	50	6	96	85	76	50	50	76	25	63	185	190



1

Trunnion bracket Mod. I...

Material: stainless steel 304.



(+ add the stroke)

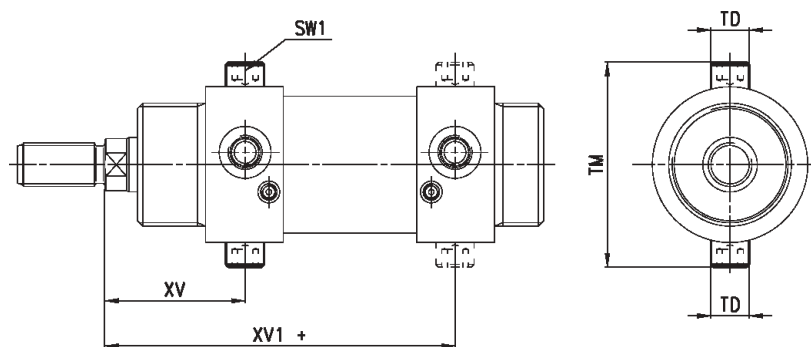
DIMENSIONS

Mod.	ø cyl.	C	C1	C2	C3	D1	D2	E1	F	G	G1	G2	L1	L2	L3	SW1
I-92-32	32	40	24	46,1	20	ø7	ø10	4	35	38,1	50,1	58,1	109,5	36,5	105,5	13
I-92-40	40	50	30	56,1	28	ø9	ø12	5	40	46,1	60,1	70,1	120	45	117	17
I-92-50	50	54	34	69,1	36	ø9	ø14	6	45	57,1	74,1	86,1	128,5	51,5	124,5	19
I-92-63	63	65	35	82,1	42	ø9	ø16	6	50	70,1	88,1	100,1	143	52	142	19

Bracket with threaded pins Mod. T...

Material: stainless steel 303.

A pair.



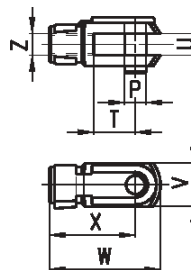
(+ add the stroke)

DIMENSIONS

Mod.	ø	XV	XV1	TD (f7)	TM	SW1
T-42-32	32	36,5	109,5	10	51	5
T-42-40	40	45	120	12	62	6
T-42-50	50	51,5	128,5	14	75	6
T-42-63	63	52	143	16	91	8

Rod fork end Mod. G-90...

Material: stainless steel 303.

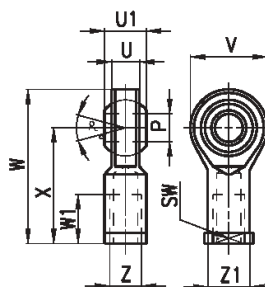


DIMENSIONS

Mod	ø cyl.	øP	T	U	V	W	X	Z
G-90-25-32	32	10	20	10	20	52	40	M10x1,25
G-90-40	40	12	24	12	24	62	48	M12x1,25
G-90-50-63	50-63	16	32	16	32	83	64	M16x1,5

Swivel ball joint Mod. GA-90...

Material: stainless steel 304.

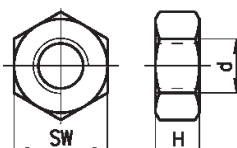


DIMENSIONS

Mod	ø cyl.	øP (H7)	U	U1	V	W	W1	X	Z	Z1	α°	SW
GA-90-32	32	10	10.5	14	28	56	20	43	M10x1,25	15	8	17
GA-90-40	40	12	12	16	32	65	22	50	M12x1,25	17,5	8	19
GA-90-50-63	50-63	16	15	21	42	83	28	64	M16x1,5	22	8,5	22

Piston rod lock nut Mod. U-90...

Material: stainless steel 304.

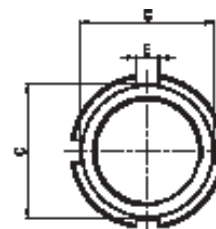
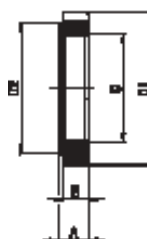


DIMENSIONS

Mod.	ø cyl.	d	H	SW
U-90-25-32	32	M10x1,25	6	17
U-90-40	40	M12x1,25	7	19
U-90-50-63	50-63	M16x1,5	8	24

Nose nut Mod. V...

Material: stainless steel 304



DIMENSIONS

Mod.	ø cyl.	D	D1	D2	A	B	C	E
V-92-32	32	M30x15	42	36	8	7	37	6,2
V-92-40	40	M38x15	50	48	10	9	44	7,2
V-92-50-63	50-63	M45x15	60	56	10	9	53	7,2