

# Series 97 stainless steel cylinders

Single and double-acting, cushioned, magnetic.  
 ø 32, 40, 50, 63 mm



- » Clean design
- » Stainless steel AISI 304
- » Adjustable endstroke cushioning

**Series 97 stainless steel cylinders are suitable for use in the off-shore, naval, pharmaceutical, nuclear and food industries.**

These cylinders are normally equipped with end-stroke cushioning which can be adjusted through a screw on the end block. In order to quieten the impact of the piston on the end block, these cylinders are also equipped with mechanical cushioning.

## GENERAL DATA

<b>Type of construction</b>	the end blocks are screwed to the tube with an intermediate Teflon ring
<b>Operation</b>	single-acting and double-acting
<b>Materials</b>	end blocks, tube, rod in stainless steel AISI 304 rod seals in PU, piston seals in NBR plastic guiding element, NSF H1-certified lubricant
<b>Type of mounting</b>	threaded front and rear locking ring pins on front cap ends rear male hinge articulated rear male hinge rear female hinge
<b>Stroke min-max</b>	25 ÷ 800 mm
<b>Operating temperature</b>	0°C ÷ 80°C (with dry air - 20°C)
<b>Operating pressure</b>	1 ÷ 10 bar
<b>Speed</b>	10 ÷ 1000 mm/sec (without load)
<b>Fluid</b>	Filtered air, without lubrication. If lubricated air is used, it is recommended to use oil ISOVG32. Once applied the lubrication should never be interrupted.

**STANDARD STROKES FOR CYLINDERS SERIES 97**

- = Single-acting
- ✕ = Double-acting

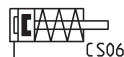
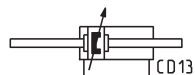
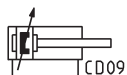
STANDARD STROKES		25	50	75	80	100	125	150	160	200	250	300	320	400	500
Ø															
32	✕•	✕•	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
40	✕•	✕•	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
50	✕•	✕•	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕
63	✕•	✕•	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕	✕

**CODING EXAMPLE**

<b>97</b>	<b>M</b>	<b>2</b>	<b>A</b>	<b>050</b>	<b>A</b>	<b>0200</b>	
<b>97</b>	SERIES						
<b>M</b>	VERSIONS: M = rear male hinge S = articulated rear male hinge F = rear female hinge T = front and rear threaded end blocks A = front end block with pin						
<b>2</b>	OPERATION: 1 = single-acting, front spring 2 = double-acting, front and rear cushions 6 = double-acting, through-rod, front and rear cushions (T and A versions only)				PNEUMATIC SYMBOLS: CS06 CD09 CD13		
<b>A</b>	MATERIALS: A = stainless steel AISI 304 - PU seals V = stainless steel AISI 304 - FKM seals (150°C)						
<b>050</b>	BORE: 032 = 32 mm - 040 = 40 mm - 050 = 50 mm - 063 = 63 mm						
<b>A</b>	TYPE OF DESIGN: A = standard (locking ring for end cap V + lock nut for rod U)						
<b>0200</b>	STROKE (see the table)						
	= standard V = rod seal in FKM						

**PNEUMATIC SYMBOLS**

The pneumatic symbols which have been indicated in the CODING EXAMPLE are shown below.



**ACCESSORIES FOR STAINLESS STEEL CYLINDERS SERIES 97**
**1**

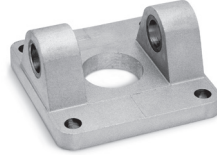
MOVEMENT



Foot mount Mod. B



Trunnion bracket Mod. I



Rear female trunnion bracket Mod. C-H



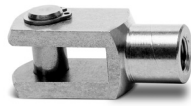
Tight rear female tr. bracket Mod. CR



Male tr. bracket with swivel ball joint Mod. R



90° male tr. bracket + sw. ball joint Mod. ZCR



Rod fork end Mod. G-90



Swivel ball joint Mod. GA-90



Piston rod lock nut Mod. U-90



Nose nut Mod. V-97



Clevis pin Mod. S-90



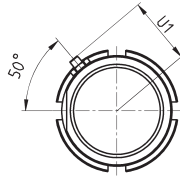
Anti-rotation clevis pin Mod. SR-90



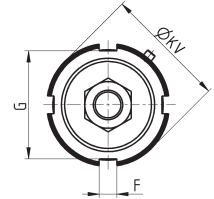
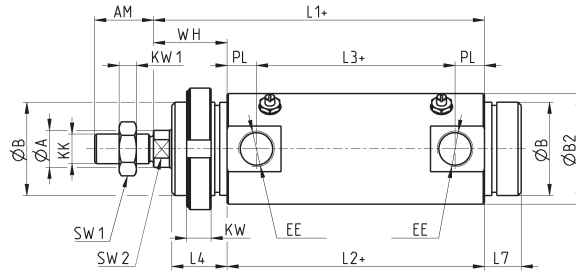
All accessories are supplied separately, except for piston rod lock nut Mod. U and nose nut Mod. V.

Cylinders Series 97, Mod. T

With threaded front and rear end blocks



+ = add the stroke

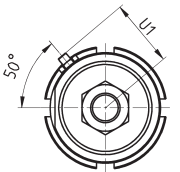


DIMENSIONS

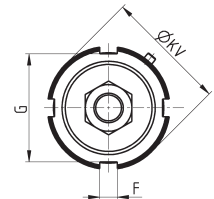
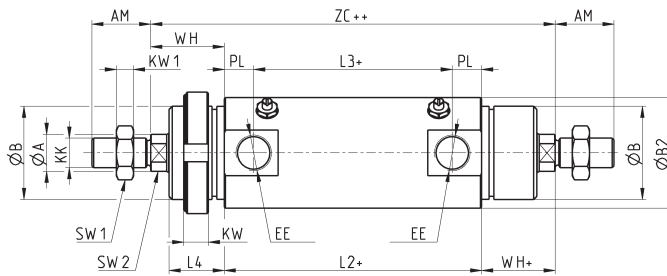
Ø	ØA	AM	ØB	ØB2	EE	F	G	KK	PL	SW1	KW1	SW2	U1	WH	L1+	L2+	L3+	L4	L7	KW	ØKV
32	12	22	M30x1.5	36	G1/8	5	38	M10x1.25	9	17	6	10	23	26	120	94	76	19.5	15	7	42
40	16	24	M38x1.5	45	G1/4	6	50	M12x1.25	12	19	7	13	27	30	135	105	81	22.5	15	8	55
50	20	32	M45x1.5	55	G1/4	6	53	M16x1.5	12	24	8	17	33	37	143	106	82	28	18	10	60
63	20	32	M45x1.5	68	G3/8	6	53	M16x1.5	13	24	8	17	40	37	158	121	95	28	18	10	60

Cylinders Series 97, Mod. T - through-rod

With threaded end blocks



+ = add the stroke once  
++ = add the stroke twice

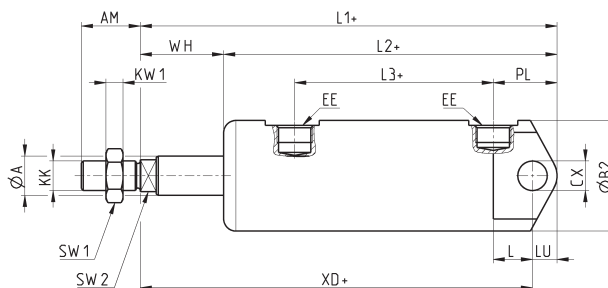
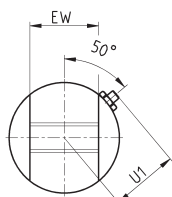


DIMENSIONS

Ø	ØA	AM	ØB	ØB2	EE	F	G	KK	PL	SW1	KW1	SW2	U1	WH+	L2+	L3+	L4	KW	ØKV	ZC++
32	12	22	M30x1.5	36	G1/8	5	38	M10x1.25	9	17	6	10	23	26	94	76	19.5	7	42	146
40	16	24	M38x1.5	45	G1/4	6	50	M12x1.25	12	19	7	13	27	30	105	81	22.5	8	55	165
50	20	32	M45x1.5	55	G1/4	6	53	M16x1.5	12	24	8	17	33	37	106	82	28	10	60	180
63	20	32	M45x1.5	68	G3/8	6	53	M16x1.5	13	24	8	17	40	37	121	95	28	10	60	195

### Cylinders Series 97, Mod. M

With rear male trunnion bracket



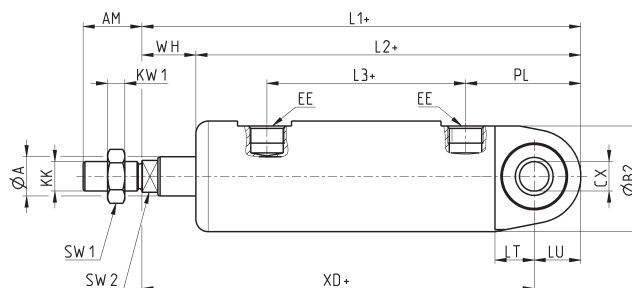
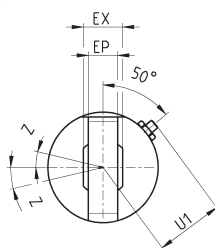
+ = add the stroke

#### DIMENSIONS

Ø	ØA	AM	ØB2	CX	EE	EW	KK	PL	SW1	KW1	SW2	U1	WH	L1+	L2+	L3+	L	LU	XD+
32	12	22	36	10	G1/8	26	M10x1.25	23	17	6	10	23	26	151	125	76	13	9	142
40	16	24	45	12	G1/4	28	M12x1.25	26	19	7	13	27	34	170	136	81	16	10	160
50	20	32	55	12	G1/4	32	M16x1.5	32	24	8	17	33	37	182	145	82	16.5	12	170
63	20	32	68	16	G3/8	40	M16x1.5	29.5	24	8	17	40	50	202	152	95	21	12	190

### Cylinders Series 97, Mod. S

With articulated rear male trunnion bracket



+ = add the stroke

#### DIMENSIONS

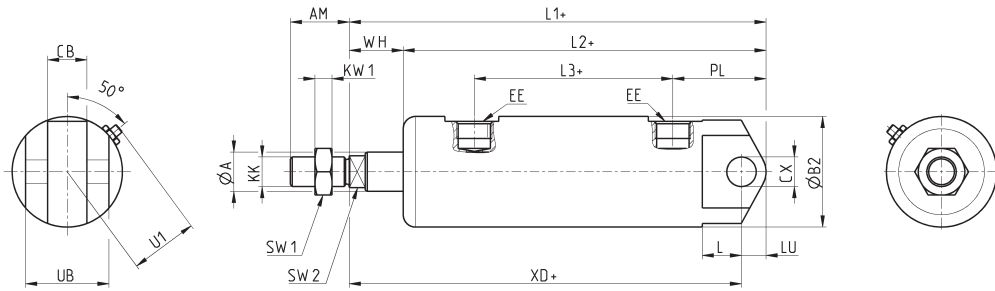
Ø	ØA	AM	ØB2	CX	EE	EP	EX	KK	PL	SW1	KW1	SW2	U1	WH	L1+	L2+	L3+	LT	LU	XD+	Z
32	12	22	36	10	G1/8	10.5	14	M10x1.25	37	17	6	10	23	18	157	139	76	13	15	142	13
40	16	24	45	12	G1/4	12	16	M12x1.25	47	19	7	13	27	22	179	157	81	16	19	160	13
50	20	32	55	16	G1/4	15	21	M16x1.5	49	24	8	17	33	28.5	190.5	162	82	16.5	20.5	170	15
63	20	32	68	16	G3/8	15	21	M16x1.5	60	24	8	17	40	31.5	214	182.5	95	21	24	190	15

Cylinders Series 97, Mod. F

With rear female trunnion bracket



+ = add the stroke



DIMENSIONS

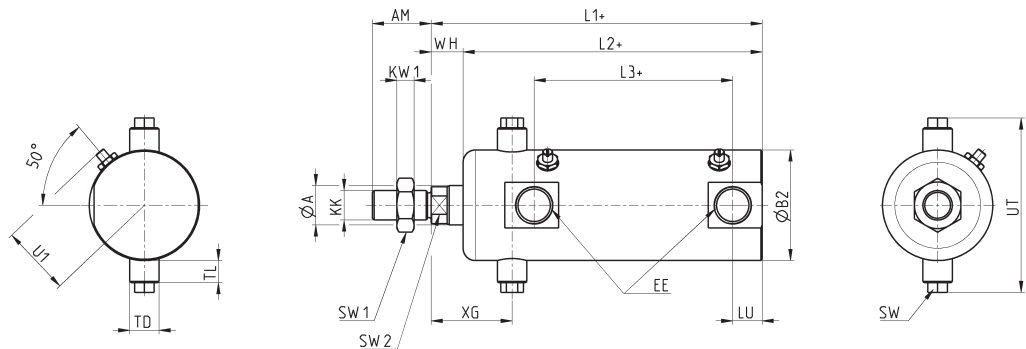
Ø	ØA	AM	ØB2	CB	CX	EE	KK	PL	SW1	KW1	SW2	U1	WH	L1+	L2+	L3+	L	LU	XD+	UB
32	12	22	36	14	10	G1/8	M10x1.25	31	17	6	10	23	18	151	133	76	13	9	142	34
40	16	24	45	16	12	G1/4	M12x1.25	38	19	7	13	27	22	170	148	81	16	10	160	40
50	20	32	55	21	16	G1/4	M16x1.5	40.5	24	8	17	33	28.5	182	153.5	82	16.5	12	170	45
63	20	32	68	21	16	G3/8	M16x1.5	48	24	8	17	40	31.5	202	170.5	95	21	12	190	51

Cylinders Series 97, Mod. A

With front end block with pins



+ = add the stroke

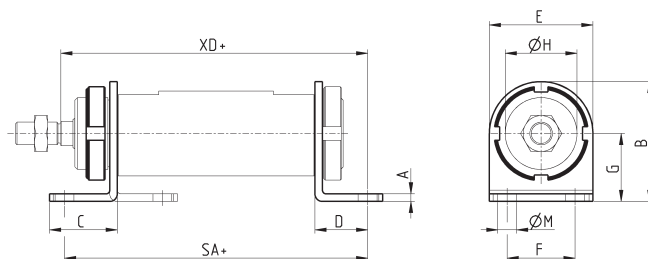


DIMENSIONS

Ø	ØA	AM	ØB2	EE	KK	SW	SW1	KW1	SW2	U1	WH	L1+	L2+	L3+	LU	XG	TD	TL	UT
32	12	22	36	G1/8	M10x1.25	8	17	6	10	23	9	120	111	76	9	27	10	7	58
40	16	24	45	G1/4	M12x1.25	8	19	7	13	27	13	135	122	81	12	33	12	9	71
50	20	32	55	G1/4	M16x1.5	8	24	8	17	33	18	143	125	82	12	40	14	9	81
63	20	32	68	G3/8	M16x1.5	12	24	8	17	40	22.5	158	135.5	95	13	45	16	12	104

**Foot mount Mod. B**

Material: stainless steel 304

 Supplied with:  
 1x nut  
 2x single feet


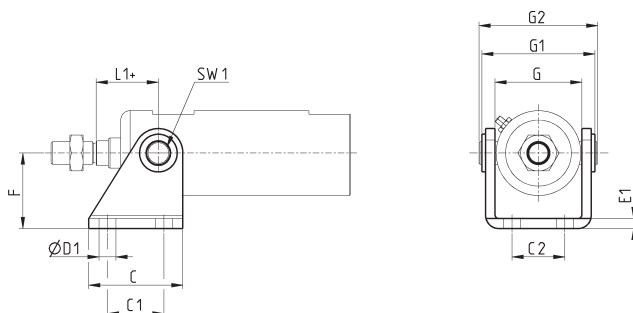
+ = add the stroke

**DIMENSIONS**

Mod.	Ø	A	B	C	D	E	SA+	F	G	ØH	ØM	XD+
<b>B-97-32</b>	32	4	53	35	24	42	142	32	32	30	7	142
<b>B-97-40</b>	40	4	63.5	36	28	55	161	36	36	38	10	160
<b>B-97-50</b>	50	5	77.5	47	32	65	170	45	45	45	10	170
<b>B-97-63</b>	63	5	82.5	45	32	65	185	50	50	45	10	190

**Trunnion bracket Mod. I**

Material: stainless steel 304

 Supplied with:  
 1x female trunnion  
 2x cartridges


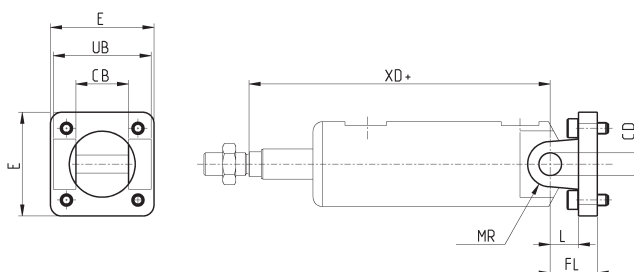
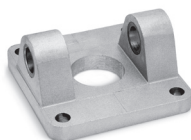
+ = add the stroke

**DIMENSIONS**

Mod.	Ø	C	C1	C2	ØD1	E1	F	G	G1	G2	L1+	SW1
<b>I-97-32</b>	32	40	24	20	7	4	35	38	50	58	27	8
<b>I-97-40</b>	40	50	30	28	9	5	40	46	60	71	33	8
<b>I-97-50</b>	50	54	34	36	9	6	45	57	74	81	40	8
<b>I-97-63</b>	63	65	35	43	9	6	50	70	88	104	45	12

**Rear female trunnion bracket Mod. C-H**

Material: stainless steel 316

 Supplied with:  
 1x female trunnion bracket  
 4x screws


+ = add the stroke

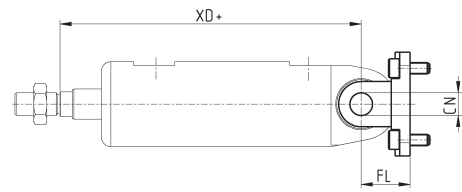
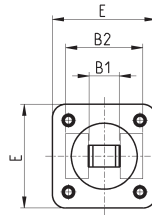
**DIMENSIONS**

Mod.	Ø	CB	CD	E	FL	L	MR	UB	XD+
<b>C-H-90-32</b>	32	26	10	45	22	12	10	45	142
<b>C-H-90-40</b>	40	28	12	55	25	15	12	52	160
<b>C-H-90-50</b>	50	32	12	65	27	17	12	60	170
<b>C-H-90-63</b>	63	40	16	75	32	20	16	70	190

### Tight rear female trunnion bracket Mod. CR

Material: stainless steel 316

Supplied with:  
1x female trunnion bracket  
4x screws



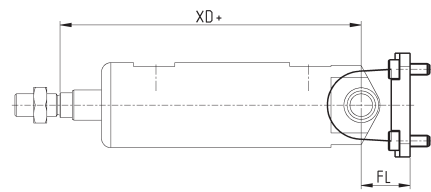
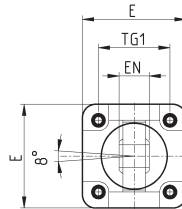
+ = add the stroke

DIMENSIONS							
Mod.	∅	B1	B2	E	CN	FL	XD+
<b>CR-90-32</b>	32	14	34	45	10	22	142
<b>CR-90-40</b>	40	16	40	55	12	25	160
<b>CR-90-50</b>	50	21	45	65	16	27	170
<b>CR-90-63</b>	63	21	51	75	16	32	190

### Male trunnion bracket with swivel ball joint Mod. R

Material: stainless steel 316

Supplied with:  
1x male trunnion bracket  
4x screws



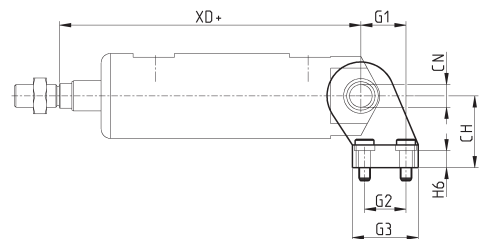
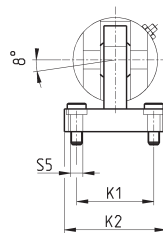
+ = add the stroke

DIMENSIONS						
Mod.	∅	E	EN	FL	TG1	XD+
<b>R-90-32</b>	32	45	14	22	32.5	142
<b>R-90-40</b>	40	55	16	25	38	160
<b>R-90-50</b>	50	65	21	27	46.5	170
<b>R-90-63</b>	63	75	21	32	56.5	190

### 90° male trunnion bracket with swivel ball joint Mod. ZCR

Material: stainless steel 316

Supplied with:  
1x male trunnion bracket  
4x screws



+ = add the stroke

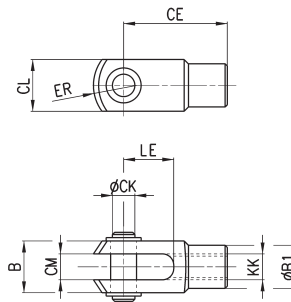
DIMENSIONS											
Mod.	∅	CH	CN	G1	G2	G3	H6	K1	K2	S5	XD+
<b>ZCR-90-32</b>	32	32	10	21	18	31	10	38	51	6.6	142
<b>ZCR-90-40</b>	40	36	12	24	22	35	10	41	54	6.6	160
<b>ZCR-90-50</b>	50	45	16	33	30	45	12	50	65	9	170
<b>ZCR-90-63</b>	63	50	16	37	35	50	12	52	67	14	190



**Rod fork end Mod. G-90**

ISO 8140

Material: stainless steel 303


**DIMENSIONS**

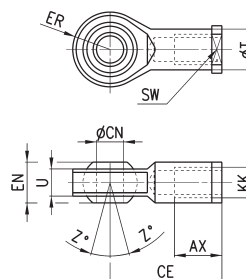
Mod.	Ø	ØCK	LE	CM	CL	ER	CE	KK	B	ØB1
<b>G-90-25-32</b>	32	10	20	10	20	12	40	M10x1.25	26	18
<b>G-90-40</b>	40	12	24	12	24	14	48	M12x1.25	31	20
<b>G-90-50-63</b>	50-63	16	32	16	32	19	64	M16x1.5	39	26

**Swivel ball joint Mod. GA-90**

ISO 8139

Materials:

- stainless steel 304 bracket
- stainless steel 420 spherical ring
- sintered bronze bushing

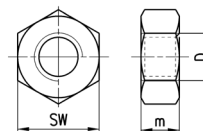

**DIMENSIONS**

Mod.	Ø	ØCN	U	EN	ER	AX	CE	KK	ØT	Z	SW
<b>GA-90-32</b>	32	10	10.5	14	14	20	43	M10x1.25	15	6.5	17
<b>GA-90-40</b>	40	12	12	16	16	22	50	M12x1.25	17.5	6.5	19
<b>GA-90-50-63</b>	50-63	16	15	21	21	28	64	M16x1.5	22	7.5	22

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

ISO 4035

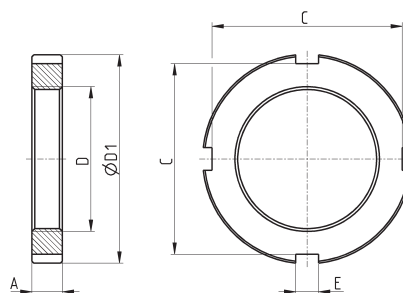
Material: stainless steel 304


**DIMENSIONS**

Mod.	Ø	D	m	SW
<b>U-90-25-32</b>	32	M10x1.25	6	17
<b>U-90-40</b>	40	M12x1.25	7	19
<b>U-90-63</b>	50-63	M16x1.5	8	24

Nose nut Mod. V-97

Material: stainless steel 304

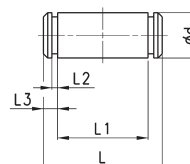


DIMENSIONS

Mod.	Ø	A	D	ØD1	E	C
<b>V-97-32</b>	32	7	M30x1.5	42	5	38
<b>V-97-40</b>	40	8	M38x1.5	55	6	50
<b>V-97-50-63</b>	50-63	10	M45x1.5	60	6	53

Clevis pin Mod. S-90

Supplied with:  
1x clevis pin in stainless steel 303  
2x seeger in steel

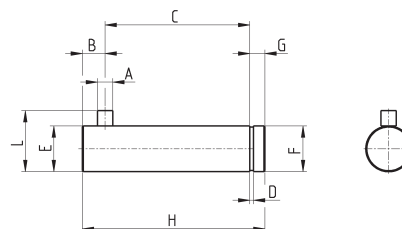


DIMENSIONS

Mod.	Ø	Ød	L	L1	L2	L3
<b>S-90-32</b>	32	10	53	46	1.1	3
<b>S-90-40</b>	40	12	60	53	1.1	3
<b>S-90-50</b>	50	12	68	61	1.1	3
<b>S-90-63</b>	63	16	78	71	1.1	3

Antirotating clevis pin Mod. SR-90

Supplied with:  
1x antirotating clevis pin  
in stainless steel 316  
1x seeger in steel



DIMENSIONS

Mod.	Ø	A	B	C	D	E	F	G	H	L
<b>SR-90-32</b>	32	3	4.5	32.5	1.1	10	9.6	4	41	14
<b>SR-90-40</b>	40	4	6	38	1.1	12	11.5	4	48	16
<b>SR-90-50</b>	50	4	6	43	1.1	16	15.2	5	54	20
<b>SR-90-63</b>	63	4	6	49	1.1	16	15.2	5	60	20