

Series XL

ISO 15552, double acting

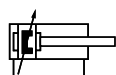
Technical details

Operating pressure	1 ... 10 bar
Temperature range	-20°C ... +80°C (XL, XLL) (XLH: -10°C ... +150°C, XLC: -40°C ...+80°C)
Max. stroke	2.800 mm
Medium	Filtered, oil-free and dried compressed air according to ISO 8573-1:2010, Class 7:2:4, instrument air, free of aggressive additives. Differing the pressure dew point must be at least 10°C below lowest occurring ambient temperature.
Materials	cylinder tube: Al (anodized) End caps: Al-die-cast (painted) Piston rod: steel hard chrome plated (optional 1.4301) Seals: PU, NBR (optional FKM)
	Cylinders in accordance with 2014/34/EU (ATEX) available. (page 30)

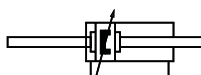


Double acting Al-profile cylinder with integrated sensor grooves, adjustable cushions and magnetic piston for proximity sensors. The sensors can be installed directly into the sensor grooves of the Al-profile. Standard stroke lengths in table below, additional lengths on request.

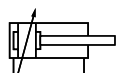
Versions



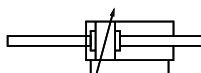
050, 054, 000, 004
double acting, adjustable cushioning,
with magnetic piston



450, 454, 400, 404
double acting, double end piston rod, adjustab-
le cushioning, with magnetic piston



152, 102
double acting, adjustable cushioning



552, 502
double acting, double end piston rod, adjusta-
ble cushioning

Order code

Series, Version		Options	
XL	standard	ATEX	cylinders in accordance with 2014/34/ EU (ATEX)
XLC	low temperature version	E8	piston rod seal E8, two-part, with plastic scraper
XLH	high temperature version		
XLL	low friction cylinder		
XLZ	with tie rods		
Piston Ø		Versions	
032	32 mm	050	standard version
040	40 mm	450	
050	50 mm	000	piston rod stainless steel
063	63 mm	400	
080	80 mm	054	piston rod seal FKM
100	100 mm	454	
125	125 mm	004	piston rod stainless steel , piston rod seal FKM
		152	high temperature version (without magnetic piston)
		552	
		102	high temperature version, piston rod stainless steel (without magnetic piston)
		502	
		Stroke (mm)	
		XXXX	max. 2.800 mm*
		standard	25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, 500 mm

Not all combinations are possible and available.

* For longer stroke lengths please check the max buckling load.

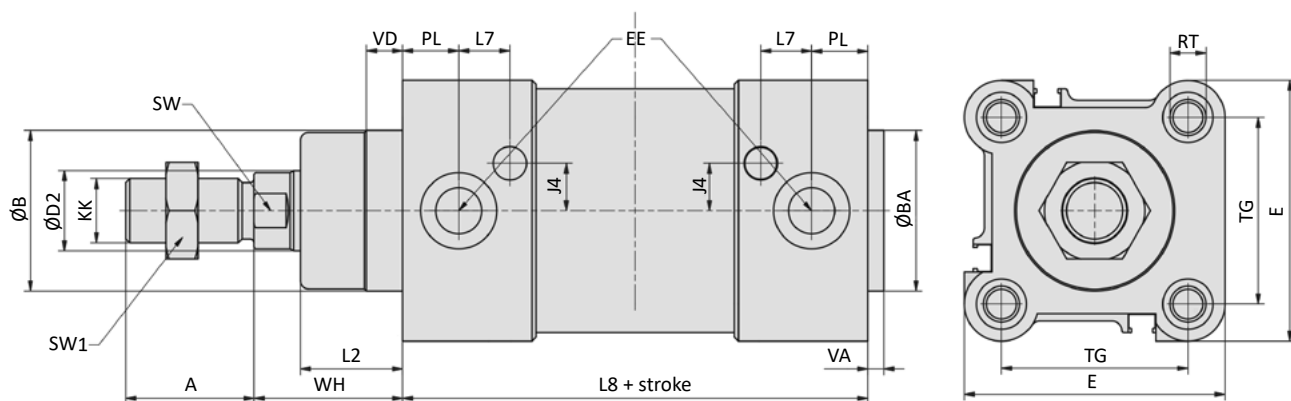
Series XL

ISO 15552, double acting

Technical data

Model-no.:	XL-032-...	XL-040-...	XL-050-...	XL-063-...	XL-080-...	XL-100-...	XL-125-...
Piston Ø (mm)	32	40	50	63	80	100	125
Force at 6 bar (N)	434	678	1060	1682	2713	4239	6623
Extension Retraction	373	570	890	1513	2448	3974	6189
Connection	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2	G1/2
Piston rod thread	M10 x 1.25	M12 x 1.25	M16 x 1.5	M16 x 1.5	M20 x 1.5	M20 x 1.5	M27 x 2
Cushioning length (mm)	27	29	32	32	32	32	42

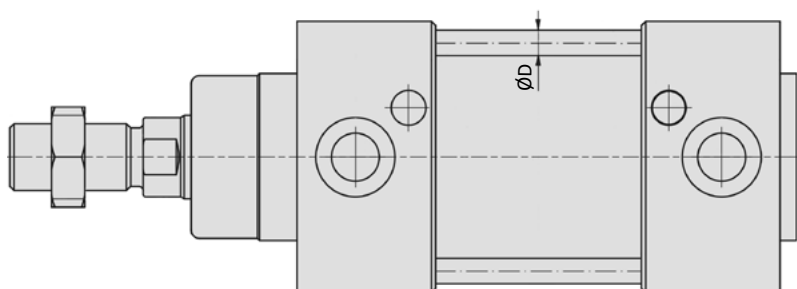
Dimensions series XL



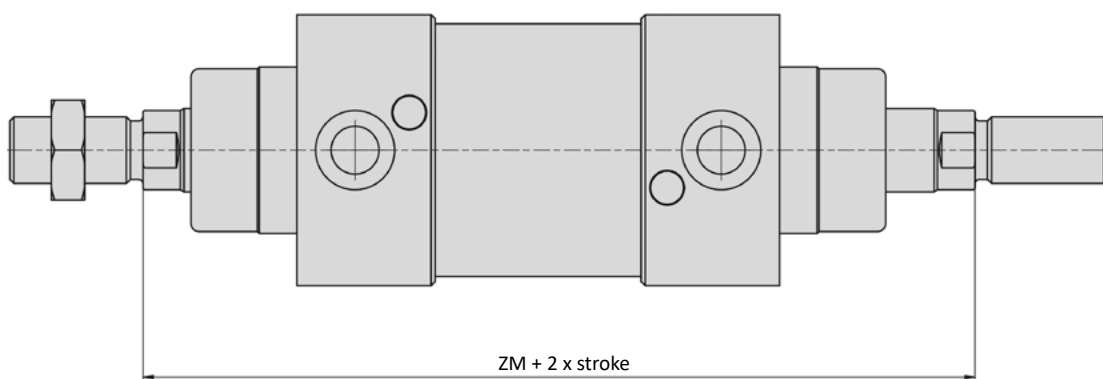
Piston Ø	A	Ø B	Ø BA	Ø D2	E	EE	J4	KK	L2
32	22	30	30	12	47	G1/8	6	M10 x 1.25	18
40	24	35	35	16	54	G1/4	9	M12 x 1.25	22
50	32	40	40	20	63	G1/4	8	M16 x 1.5	25.5
63	32	45	45	20	74	G3/8	9.5	M16 x 1.5	25
80	40	45	45	25	93.5	G3/8	14	M20 x 1.5	35
100	40	55	55	25	110	G1/2	15	M20 x 1.5	38
125	54	60	60	32	137.5	G1/2	15	M27 x 2	46

Piston Ø	L7	L8	PL	RT	SW	SW1	TG	VA	VD	WH
32	11.5	94	12.5	M6	10	17	32.5	4	9.5	26
40	13	105	14	M6	13	19	38	4	9.5	30
50	12.75	106	14	M8	17	24	46.5	4	9.5	37
63	14.5	121	16.5	M8	17	24	56.5	4	9.5	37
80	13.75	128	17	M10	22	30	72	4	10	46
100	15.5	138	18	M10	22	30	89	4	10	51
125	20	160	18	M12	27	41	110	6	11	65

Piston Ø (mm)	32	40	50	63	80	100	125
Weight 0 mm stroke	0.617	0.925	1.421	1.950	3.250	4.396	6.391
Weight (kg) each 100 mm stroke	0.286	0.403	0.528	0.597	0.861	0.946	1.517

Dimensions series XLZ (Ergänzungen bei Zugstangenausführung)


Piston Ø (mm)	32	40	50	63	80	100	125
ØD	6	6	8	8	10	10	12

Dimensions series XL (addition at double end piston rod)


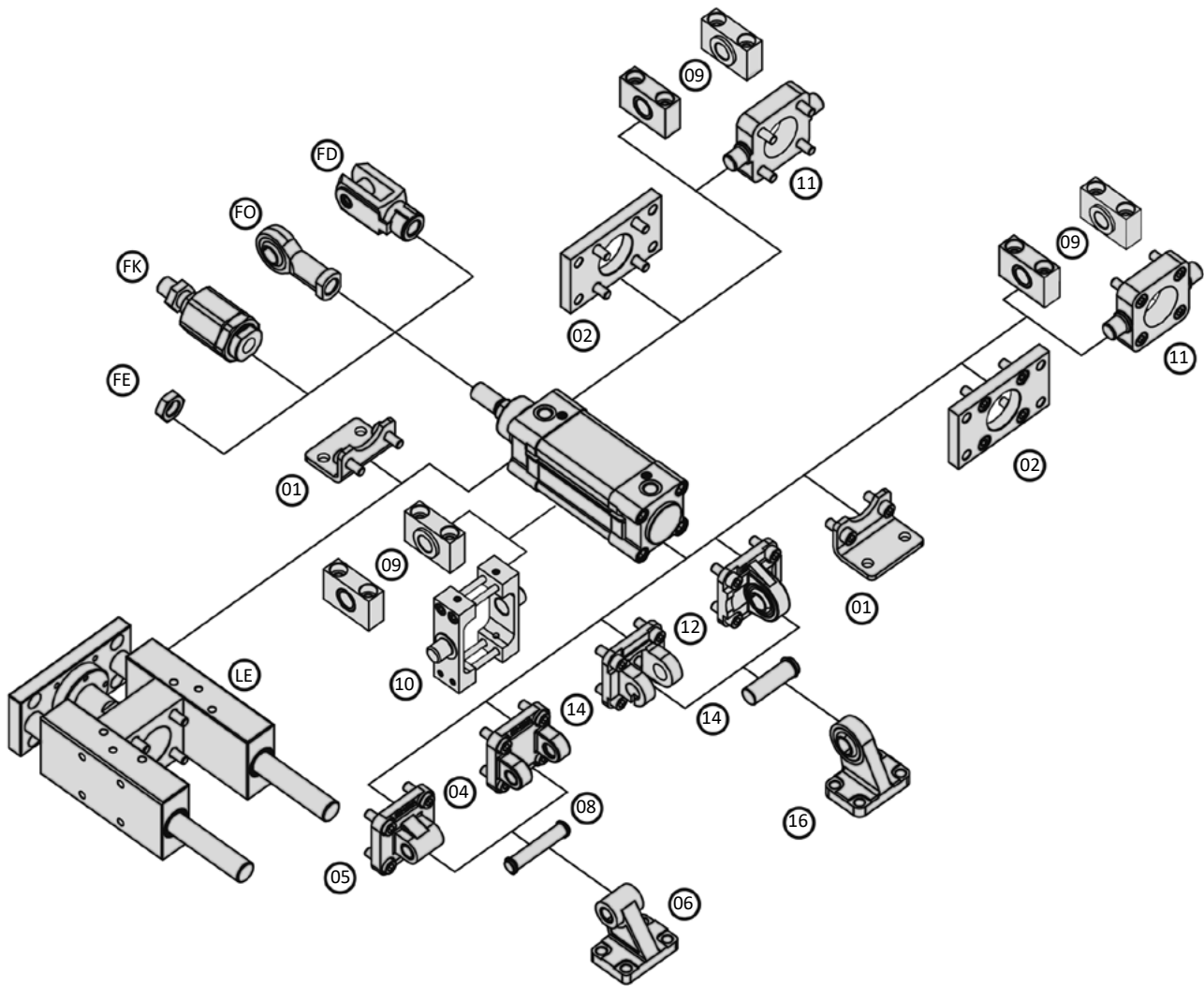
Piston Ø (mm)	32	40	50	63	80	100	125
ZM	146	165	180	195	220	240	290

Piston Ø (mm)	32	40	50	63	80	100	125
Weight (kg)							
0 mm stroke	0.702	1.065	1.713	2.208	3.780	5.057	9.387
each 100 mm stroke	0.374	0.559	0.768	0.837	1.243	1.328	2.143

Series SLX, XL and 88-XSI

Mounting accessories

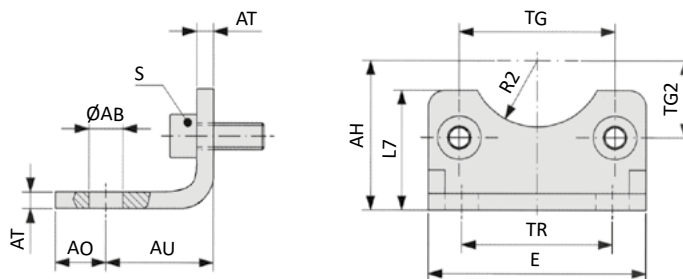
Mounting the add-on parts XLB-xxx-yy



Series SLX, XL and 88-XSI

Mounting accessories

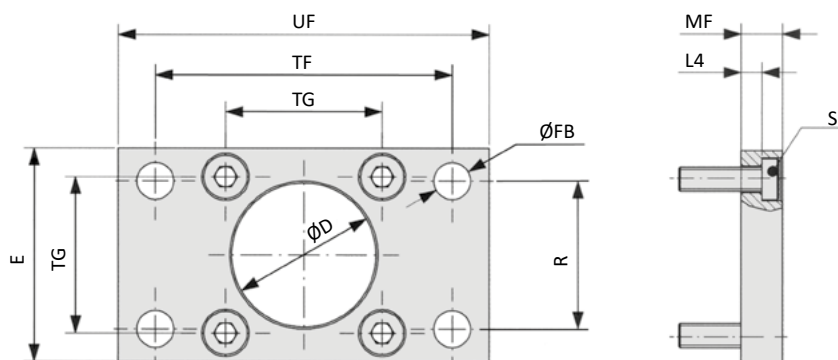
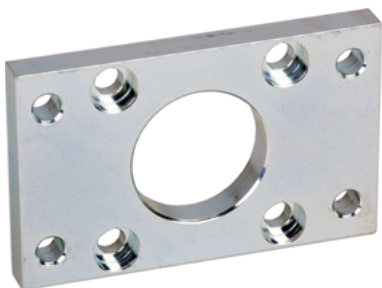
XLB-xxx-01 Foot mount



Model-no.:	Ø AB	AH	AO	AU	AT	E	L7	R2	S	TG	TG2	TR
XLB-032-01	7	32	11	24	4	45	30	15	M6 x 16	32.5	16.25	32
XLB-040-01	10	36	8	28	4	52	30	17.5	M6 x 16	38	19	36
XLB-050-01	10	45	15	32	5	65	36	20	M8 x 20	46.5	23.25	45
XLB-063-01	10	50	13	32	5	75	35	22.5	M8 x 20	56.5	28.25	50
XLB-080-01	12	63	14	41	6	95	47	22.5	M10 x 20	72	36	63
XLB-100-01	14.5	71	16	41	6	115	53	27.5	M10 x 20	89	44.5	75
XLB-125-01	16.5	90	25	45	8	140	70	30	M12 x 25	110*	55	90
<i>tolerances and adjustments</i>	H14	JS16		± 0.2				H15		± 0.2 *± 0.3		JS14

Materials: steel, zinc plated; 2 x 2 screws in accordance with EN ISO 4762 are included.

XLB-xxx-02 Flange mount



Model-no.:	Ø D	E	Ø FB	L4	MF	R	S	TF	TG	UF
XLB-032-02	30	45	7	5	10	32	M6 x 20	64	32.5	80
XLB-040-02	35	52	9	5	10	36	M6 x 20	72	38	90
XLB-050-02	40	65	9	6.5	12	45	M8 x 20	90	46.5	110
XLB-063-02	45	75	9	6.5	12	50	M8 x 20	100	56.5	120
XLB-080-02	45	95	12	9	16	63	M10 x 25	126	72	150
XLB-100-02	55	115	14	9	16	75	M10 x 25	150	89	170
XLB-125-02	60	140	16	10.5	20	90	M12 x 25	180	110*	205
<i>tolerances and adjustments</i>	H11		H13	- 0.5	JS14	JS14		JS14	± 0.2 *± 0.3	

Materials: steel, zinc plated; 4 screws in accordance with DIN 7984 are included.

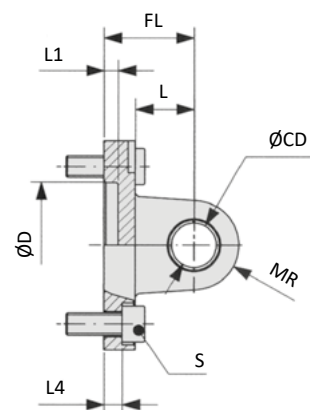
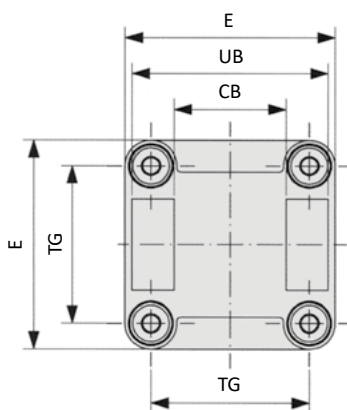
Series SLX, XL and 88-XSI

Mounting accessories

XLB-xxx-04 Clevis mount with bushing



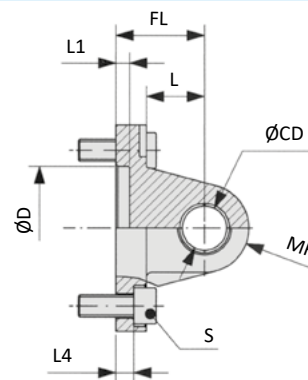
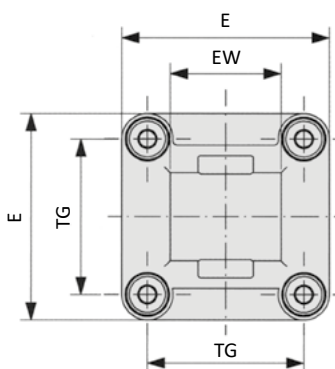
Inclusive clevis pin
order no.: **XLB-xxx-48**



Model-no.:	CB	Ø CD	Ø D	E	FL	L	L1	L4	MR	S	TG	UB
XLB-032-04	26	10	30	45	22	13	5	5.5	10	M6 x 20	32.5	45
XLB-040-04	28	12	35	52	25	16	5	5.5	12	M6 x 20	38	52
XLB-050-04	32	12	40	65	27	16	5	6.5	12	M8 x 20	46.5	60
XLB-063-04	40	16	45	75	32	21	5	6.5	16	M8 x 20	56.5	70
XLB-080-04	50	16	45	95	36	22	5	10	16	M10 x 25	72	90
XLB-100-04	60	20	55	115	41	27	5	10	20	M10 x 25	89	110
XLB-125-04	70	25	60	140	50	30	7	10	25	M12 x 25	110*	130
<i>tolerances and adjustments</i>	H14	H9	H11		± 0.2			± 0.5			± 0.2 *± 0.3	h13

Materials: Al, bushing steel and PTFE; 4 screws in accordance with EN ISO 4762 are included.

XLB-xxx-05 Swivel mount



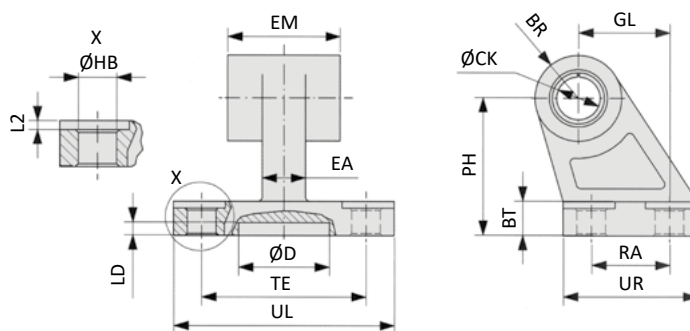
Model-no.:	Ø CD	Ø D	E	EW	FL	L	L1	L4	MR	S	TG
XLB-032-05	10	30	45	26	22	13	5	5.5	10	M6 x 20	32.5
XLB-040-05	12	35	52	28	25	16	5	5.5	12	M6 x 20	38
XLB-050-05	12	40	65	32	27	16	5	6.5	12	M8 x 20	46.5
XLB-063-05	16	45	75	40	32	21	5	6.5	16	M8 x 20	56.5
XLB-080-05	16	45	95	50	36	22	5	10	16	M10 x 25	72
XLB-100-05	20	55	115	60	41	27	5	10	20	M10 x 25	89
XLB-125-05	25	60	140	70	50	30	7	10	25	M12 x 25	110*
<i>tolerances and adjustments</i>	H9	H11			± 0.2			± 0.5			± 0.2 *± 0.3

Materials: Al, bushing steel and PTFE; 4 screws in accordance with EN ISO 4762 are included.

Series SLX, XL and 88-XSI

Mounting accessories

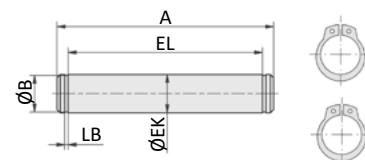
XLB-xxx-06 Swivel mount 90°



Model-no.:	BR	BT	ØCK	Ø D	EA	EM	GL	ØHB	L2	LD	PH	RA	TE	UL	UR
XLB-032-06	10	8	10	21	10	26	21	6.6	1.6	3	32	18	38	51	31
XLB-040-06	11	10	12	21	15	28	24	6.6	1.6	3	36	22	41	54	35
XLB-050-06	13	12	12	21	16	32	33	9	1.6	3	45	30	50	65	45
XLB-063-06	15	14	16	21	16	40	37	9	1.6	3	50	35	52	67	50
XLB-080-06	15	14	16	21	20	50	47	11	2.5	3	63	40	66	86	60
XLB-100-06	19	17	20	11	20	60	55	11	2.5	3	71	50	76	96	70
XLB-125-06	22.5	20	25	21	30	70	70	14	3.2	3	90	60	94	124	90
<i>tolerances and adjustments</i>			H9				JS14	H13			JS15	JS14	JS14		

Materials: Al, bushing steel and PTFE

XLB-xxx-08 Clevis pin



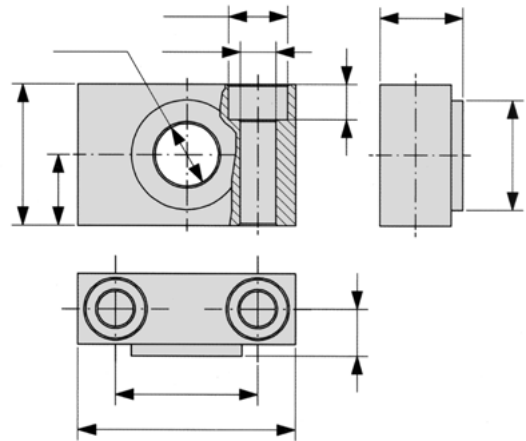
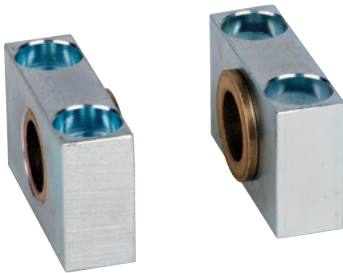
Model-no.:	A	Ø B	Ø EK	EL	LB
XLB-032-08	53	9.6	10	46	1.1
XLB-040-08	60	11.5	12	53	1.1
XLB-050-08	68	11.5	12	61	1.1
XLB-063-08	78	15.2	16	71	1.1
XLB-080-08	98	15.2	16	91	1.1
XLB-100-08	118	19	20	111	1.3
XLB-125-08	139	23.9	25	132*	1.3
<i>tolerances and adjustments</i>			e8	+ 2 *+ 3	

Materials: steel, zinc plated; 2 snap rings are included.

Series SLX, XL and 88-XSI

Mounting accessories

XLB-xxx-09 Bearing block



Model-no.:	for cylinder Ø	Ø A	Ø B	C	Ø CR	FK	FN	Ø HB	LA	NH	TH	UL
XLB-032-09	32	11	22	10.5	12	15	30	6.6	7	18	32	46
XLB-040-09	40, 50	15	28	12	16	18	36	9	9	21	36	55
XLB-063-09	63, 80	18	32	13	20	20	40	11	11	23	42	65
XLB-100-09	100, 125	20	39	16	25	25	50	14	13	28.5	50	75

tolerances and adjustments

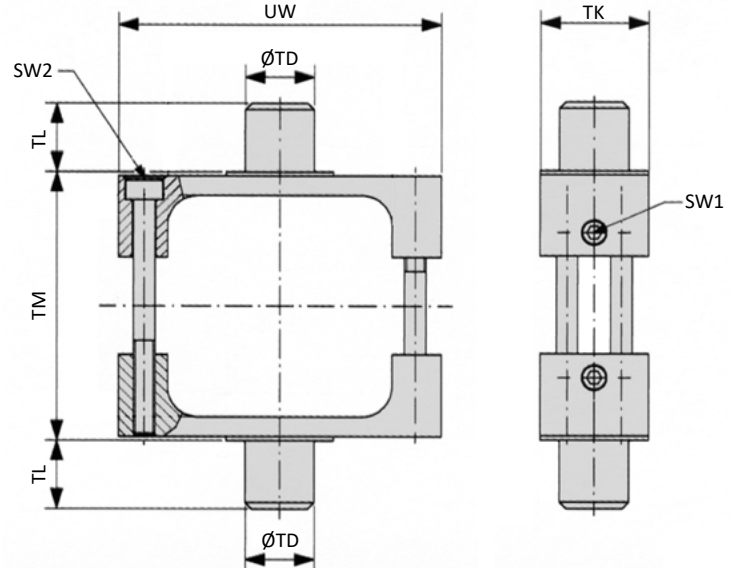
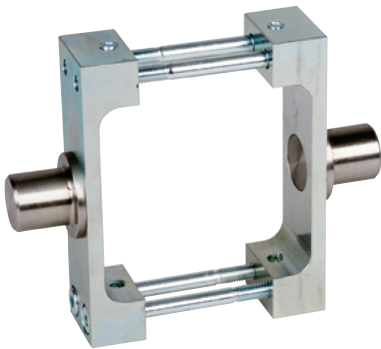
H9 ± 0.1

H13

± 0.2

Materials: steel, zinc plated; bronze bushing

XLB-xxx-10 Trunnion mount (only for cylinder series XL)



Model-no.:	SW1	SW2	Ø TD	TK	TL	TM	UW
XLB-032-10	3	2.5	12	25	12	50	65
XLB-040-10	3	3	16	25	16	63	75
XLB-050-10	3	4	16	30	16	75	95
XLB-063-10	3	4	20	30	20	90	105
XLB-080-10	3	4	20	30	20	110	130
XLB-100-10	4	5	25	40	25	132	145
XLB-125-10	4	6	25	40	25	160	175

tolerances and adjustments

e9

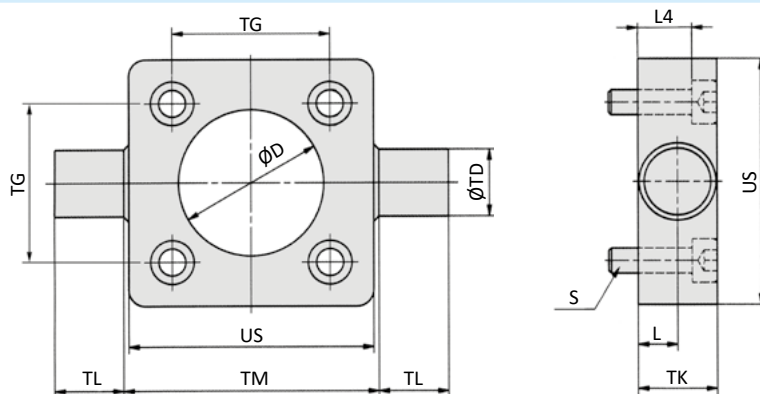
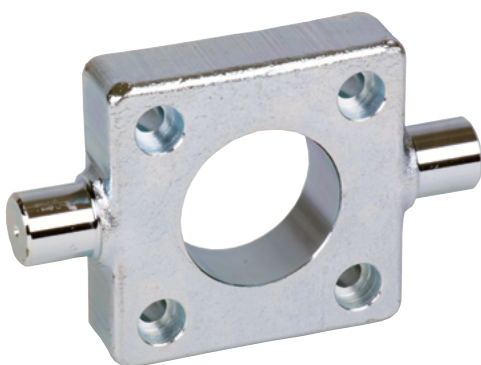
h14

Materials: steel, zinc plated

Series SLX, XL and 88-XSI

Mounting accessories

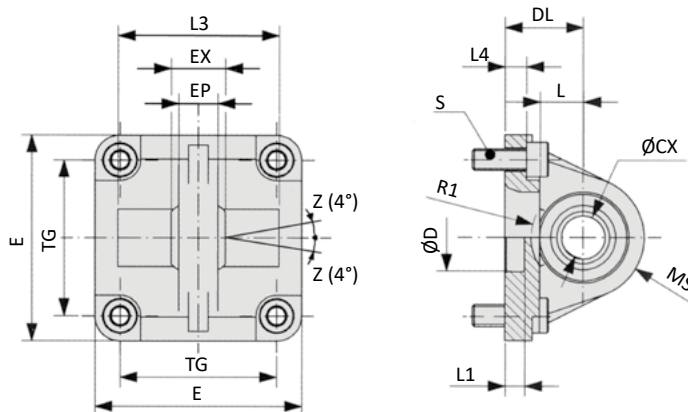
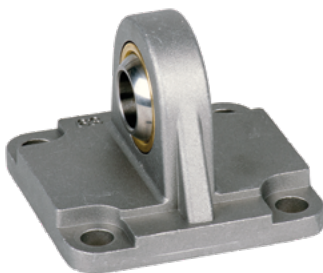
XLB-xxx-11 Trunnion mount



Model-no.:	Ø D	L	L4	S	Ø TD	TG	TK	TL	TM	US
XLB-032-11	30	6.5	8	M6 x 20	12	32.5	14	12	50	46
XLB-040-11	35	9	13	M6 x 25	16	38	19	16	63	59
XLB-050-11	40	9	11	M8 x 25	16	46.5	19	16	75	69
XLB-063-11	45	11.5	16	M8 x 30	20	56.5	24	20	90	84
XLB-080-11	45	11.5	14	M10 x 30	20	72	24	20	110	102
XLB-100-11	55	14	19	M10 x 35	25	89	29	25	132	125
XLB-125-11	60	15	18	M12 x 35	25	110*	30	25	160	150
<i>tolerances and adjustments</i>	H 11	+ 0.2			e9	± 0.2 *± 0.3		h14	h14	

Materials: steel, zinc plated; 4 screws in accordance with EN ISO 4762 are included.

XLB-xxx-12 Swivel mount with spherical bearing



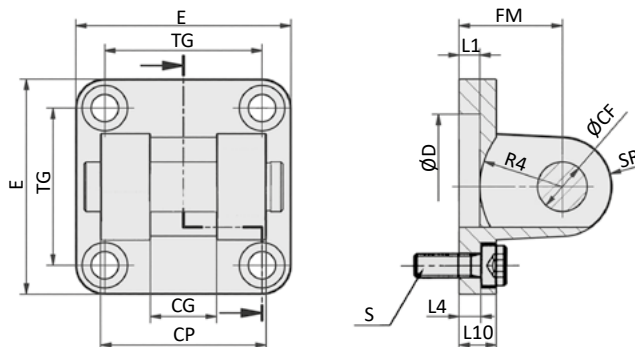
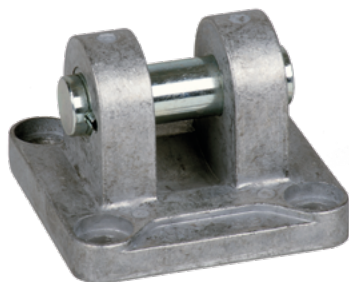
Model-no.:	Ø CX	Ø D	DL	E	EP	EX	L	L1	L3	L4	MS	R1	S	TG
XLB-032-12	10	30	22	45	10.5	14	12	7	-	5.5	16	-	M6 x 20	32.5
XLB-040-12	12	35	25	52	12	16	15	7	-	5.5	18	-	M6 x 20	38
XLB-050-12	16	40	27	65	15	21	15	7	51	6.5	21	19	M8 x 20	46.5
XLB-063-12	16	45	32	75	15	21	20	7	-	6.5	23	-	M8 x 20	56.5
XLB-080-12	20	45	36	95	18	25	20	9	74	10	28	24	M10 x 25	72
XLB-100-12	20	55	41	115	18	25	25	9	-	10	30	-	M10 x 25	89
XLB-125-12	30	60	50	140	25	37	30	9	-	10	40	-	M12 x 25	110*
<i>tolerances and adjustments</i>	H7	H11	± 0.2			± 0.1				± 0.5				± 0.2 *± 0.3

Materials: Al, bearing steel, bronze bushing; 4 screws in accordance with EN ISO 4762 are included.

Series SLX, XL and 88-XSI

Mounting accessories

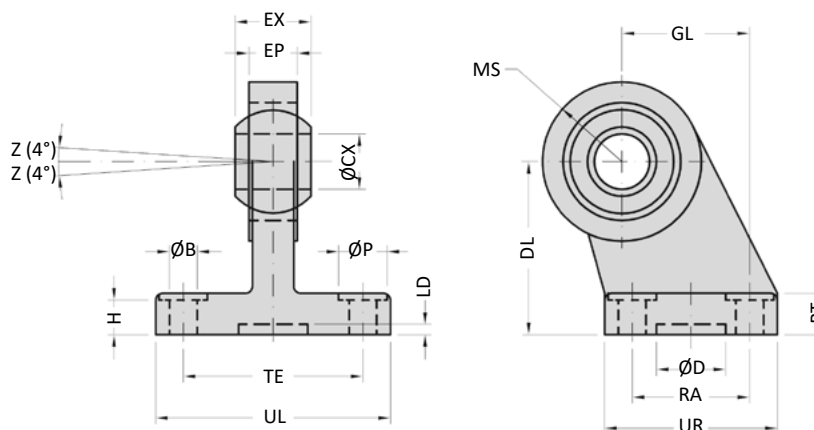
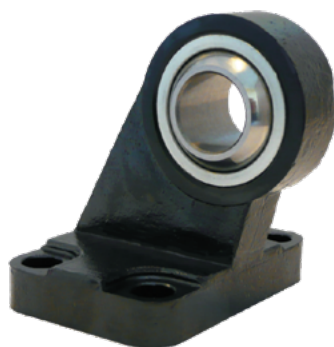
XLB-xxx-14 Clevis mount small with pin



Model-no.:	Ø CF	CG	CP	Ø D	E	FM	L1	L4	L10	R4	S	SR	TG
XLB-032-14	10	14	34	30	45	22	5	5.5	9	17	M6 x 20	10	32.5
XLB-040-14	12	16	40	35	52	25	5	5.5	9	20	M6 x 20	12	38
XLB-050-14	16	21	45	40	65	27	5	6.5	11	22	M8 x 20	14	46.5
XLB-063-14	16	21	51	45	75	32	5	6.5	11	25	M8 x 20	18	56.5
XLB-080-14	20	25	65	45	95	36	5	10	14	30	M10 x 25	20	72
XLB-100-14	20	25	75	55	115	41	5	10	14	32	M10 x 25	22	89
XLB-125-14	30	37	97	60	140	50	7	10	20	42	M12 x 25	25	110*
<i>tolerances and adjustments</i>	F7	D10	d12	H11		± 0.2		± 0.5					± 0.2 *± 0.3

Materials: Al, clevis pin steel, zinc plated; 4 screws in accordance with EN ISO 4762 are included.

XLB-xxx-16 Swivel mount with spherical bearing 90°



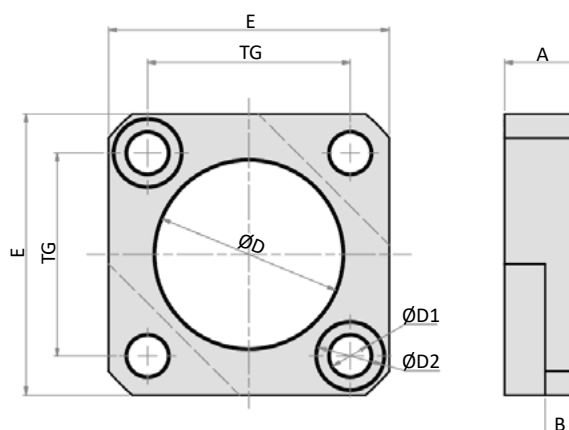
Model-no.:	Ø B	BT	ØCX	ØD	DL	EP	EX	GL	H	LD	MS	ØP	RA	TE	UL	UR
XLB-032-16	6.6	10	10	20	32	10.5	14	21	8.5	3	15	11	18	38	51	31
XLB-040-16	6.6	10	12	20	36	12	16	24	8.5	3	18	11	22	41	54	35
XLB-050-16	9	12	16	20	45	15	21	33	10.5	3	20	15	30	50	65	45
XLB-063-16	9	12	16	20	50	15	21	37	10.5	3	23	15	35	52	67	50
XLB-080-16	11	14	20	20	63	18	25	47	11.5	3	27	18	40	66	86	60
XLB-100-16	11	15	20	20	71	18	25	55	12.5	3	30	18	50	76	96	70
XLB-125-16	13.5	20	30	20	90	25	37	70	17	3	40	20	60	94	124	90
<i>tolerances and adjustments</i>	H13		H7	H13	JS15	max	0 - 0.1	JS15	+0.5 0		max	H13	JS14	JS14	max	max

Materials: steel, bearing steel, bronze bushing

Series SLX, XL and 88-XSI

Mounting accessories

XLB-xxx-23 Multi positioning adapter



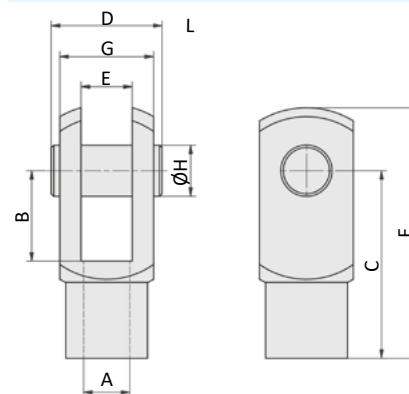
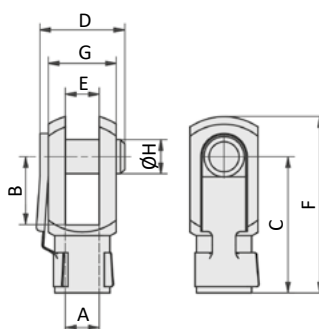
Model-no.:	A	B	Ø D	Ø D1	Ø D2	E	TG
XLB-032-23	12	5.5	30	6.5	10.6	45	32.5
XLB-040-23	12	5.5	35	6.5	10.6	50	38
XLB-050-23	16	7.5	40	8.5	13.5	65	46.5
XLB-063-23	16	7.5	45	8.5	13.5	75	56.5
XLB-080-23	20	9	45	10.5	16.5	90	72
XLB-100-23	20	10.5	55	10.5	16.5	105	89
XLB-125-23	30	15	68	12.5	18.5	130	110

Materials: Al
Mounting material is part of the delivery.

RD-xx, FD-xxx Rod clevis

Spring loaded pin (RD-25, FD-40...80)

Clevis pin with snap rings (FD-125)



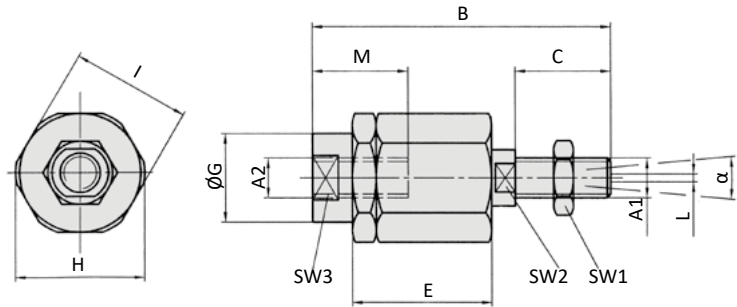
Model-no.:	for cylinder Ø	A	B	C	D	E	F	G	Ø H
RD-25	32	M10 x 1.25	20	40	26	10	52	20	10
FD-40	40	M12 x 1.25	24	48	32	12	62	24	12
FD-63	50, 63	M16 x 1.5	32	64	40	16	83	32	16
FD-80	80, 100	M20 x 1.5	40	80	50	20	105	40	20
FD-125	125	M27 x 2	54	110	65	30	148	55	30

Materials: steel, zinc plated

Series SLX, XL and 88-XSI

Mounting accessories

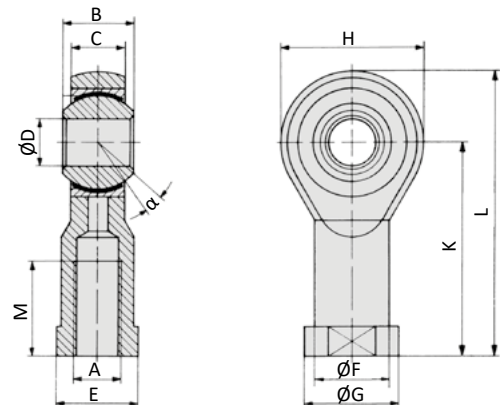
FK-xxx Flexible coupling



Model-no.:	for cylinder Ø	A1, A2	B	C	D	E	Ø G	H	I	L	M	SW1	SW2	SW3	α
FK-32	32	M10 x 1.25	71.5	20	7.5	35	22	32	30	2	22	17	12	19	8°
FK-40	40	M12 x 1.25	75	24	7.5	35	22	32	30	2	22	19	12	19	8°
FK-63	50, 63	M16 x 1.5	104	32	10	53	32	45	41	2	30	24	20	27	6°
FK-80	80, 100	M20 x 1.5	119	40	10	53	32	45	41	2	37	30	20	30	6°
FK-125	125	M27 x 2	147	54	10	60	57	70	65	2	48	41	24	54	8°

Materials: steel, zinc plated

RO-xx, FO-xxx Rod eye



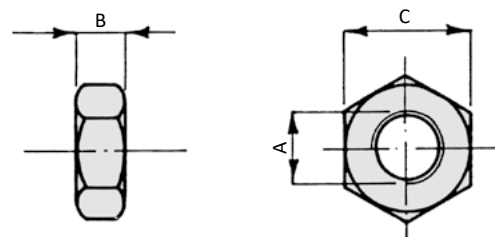
Model-no.:	for cylinder Ø	A	B	C	Ø D	E	Ø F	Ø G	H	K	L	M	α
RO-25	32	M10 x 1.25	14	10.5	10	17	15	19	28	43	57	20	13°
FO-40	40	M12 x 1.25	16	12	12	19	17.5	22	32	50	66	22	13°
FO-63	50, 63	M16 x 1.5	21	15	16	22	22	27	42	64	85	28	15°
FO-80	80, 100	M20 x 1.5	25	18	20	30	27.5	34	50	77	102	33	14°
FO-125	125	M27 x 2	37	25	30	41	40	50	70	110	145	51	17°

Materials: steel, zinc plated, bearing steel, bronze bushing

Series SLX, XL and 88-XSI

Mounting accessories

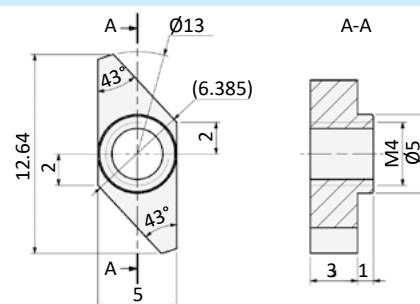
RL-xx, FE-xxx Piston rod nut



Model-no.:	for cylinder Ø	A	B	C
RL-25	32	M10 x 1.25	5	17
FE-40	40	M12 x 1.25	6	19
FE-63	50, 63	M16 x 1.5	8	24
FE-80	80, 100	M20 x 1.5	10	30
FE-125	125	M27 x 2	13.5	41

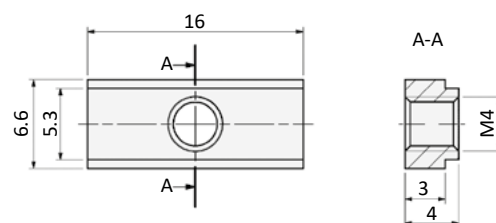
Materials: steel, zinc plated

NST-T-4-U Slot nut



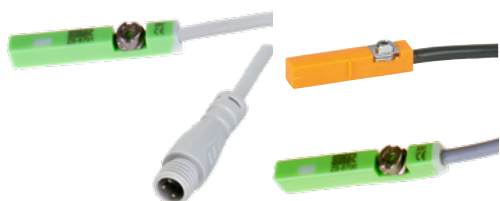
Materials: steel, zinc plated

NST-T-4-V Slot nut



Materials: steel, zinc plated

Proximity sensors



Series SLX and XL

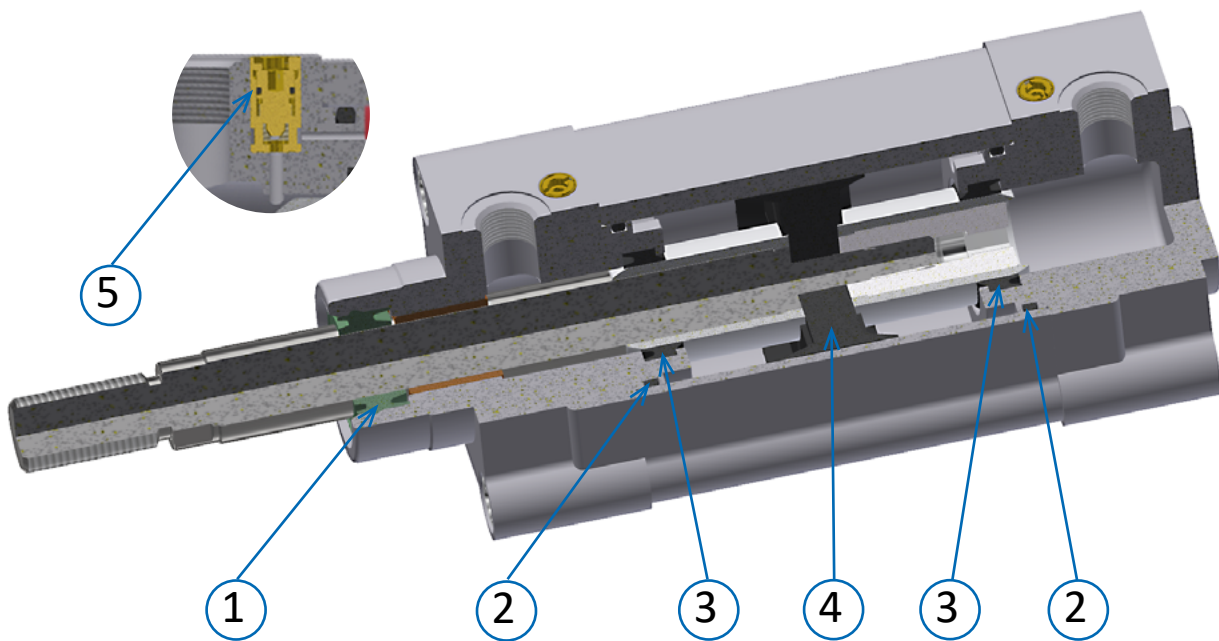
Repair kits

Order code

Series		Versions	
VS-XL repair kit for series XL and SLX		01	standard version
		02	high temperature version
		03	double end piston rod
		04	double end piston rod, high temperature version

Piston Ø	
032	32 mm
040	40 mm
050	50 mm
063	63 mm
080	80 mm
100	100 mm
125	125 mm

Content



Standard version

Position	Product description	Quantity
1	piston rod seal (PUR)	1*
2	O-ring, cylinder tube (NBR)	2
3	damping seal (PUR)	2
4	piston with magnet (NBR)	1
5	O-ring for adjustable screw (NBR)	2

*2 pieces for version 03

High temperature version

Position	Product description	Quantity
1	piston rod seal (FKM) + snap ring	1*
2	O ring (FKM)	2
3	damping seal (FKM)	2
4	piston (FKM)	1
5	O-ring for adjustable screw (FKM)	2

*2 pieces for version 04



Please grease the running surfaces after fitting the seals.
We recommend our assembly grease 21-MP-01-00030-50.



Technical details

Operating pressure	1 ... 10 bar	
Temperature range	-30°C ... +100°C	
Max. stroke	1000 mm	
Materials	Body:	Al (anodized)
	Guide rod:	steel hard chrome plated (bronze bearing) steel, getempert (ball bearings)
	Bearing:	sintered bronze (bronze bearing) steel (ball bearings)
	Seals:	NBR



Linear guide for piston rod cylinders in accordance with ISO 15552.

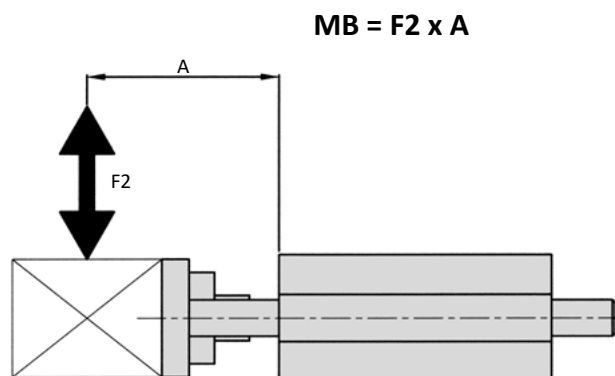
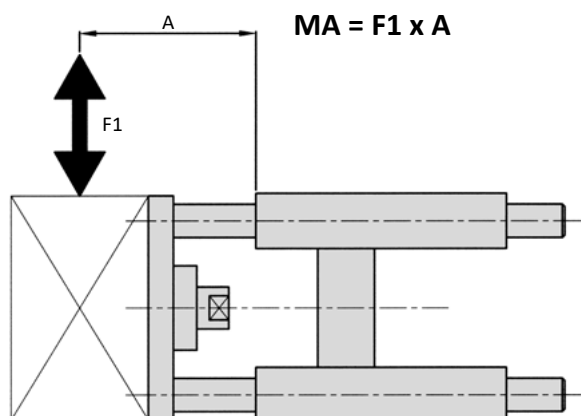
Order code

Series		LE-***-****-**		Versions	
				HK	type H ball bearings
				HG	type H bronze bearings
				CG*	type C bronze bearings
Cylinder-Ø				Stroke (mm)	
32	32 mm			XXXX	max. 1000 mm
40	40 mm				
50	50 mm				
63	63 mm				
80	80 mm				
100	100 mm				

* only up to Ø 63 mm

Technical information

Version	Piston Ø (mm)	32	40	50	63	80	100
CG	max. load MA (Nm)	13	21	21	26	-	-
	max. load MB (Nm)	12	19	19	23	-	-
HG	max. load MA (Nm)	20	35	50	60	72	80
	max. load MB (Nm)	18	32	45	54	65	72
HK	max. load MA (Nm)	16	29	42	48	60	60
	max. load MB (Nm)	14	16	38	43	54	54

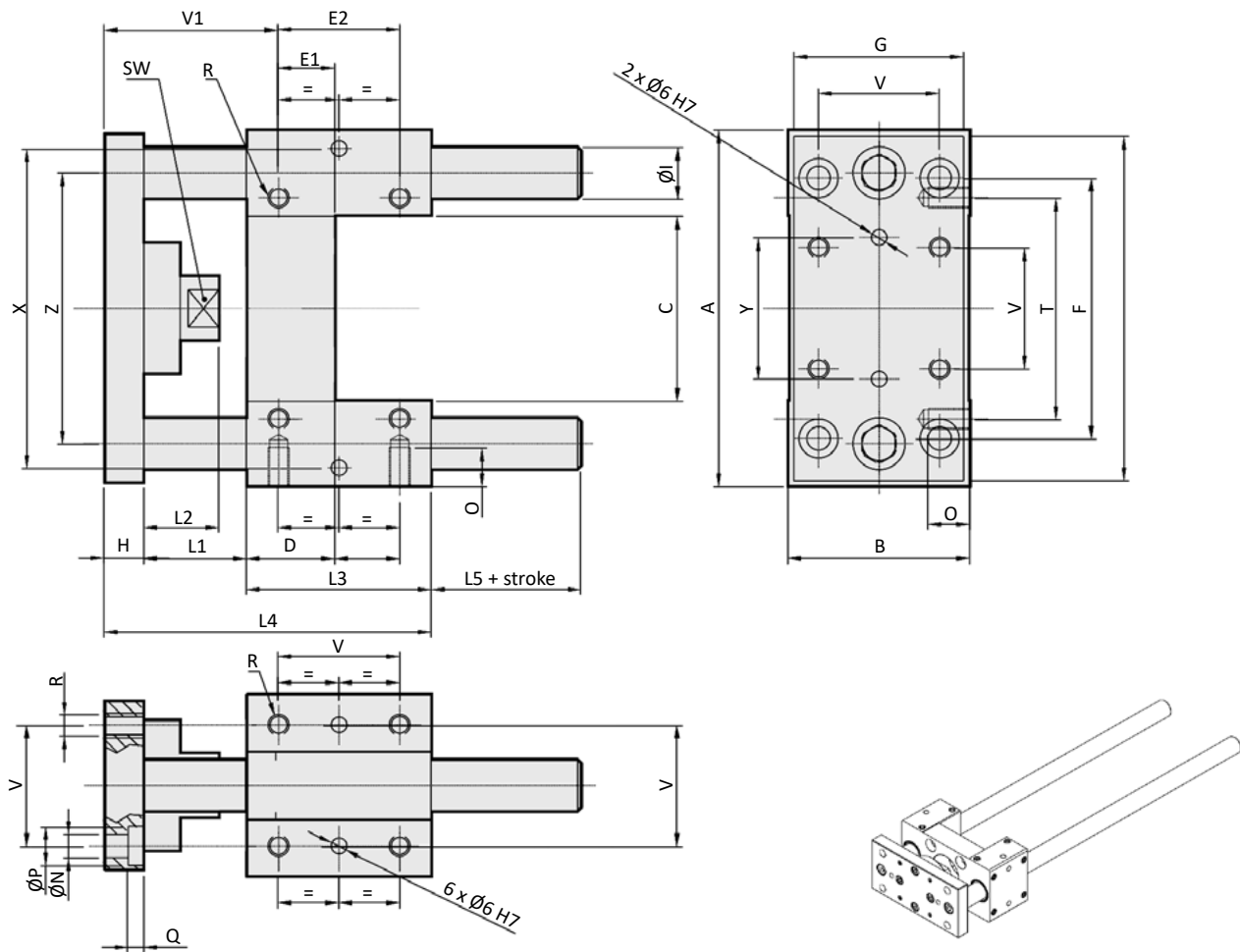


Series LE

Linear guides



Dimensions type CG

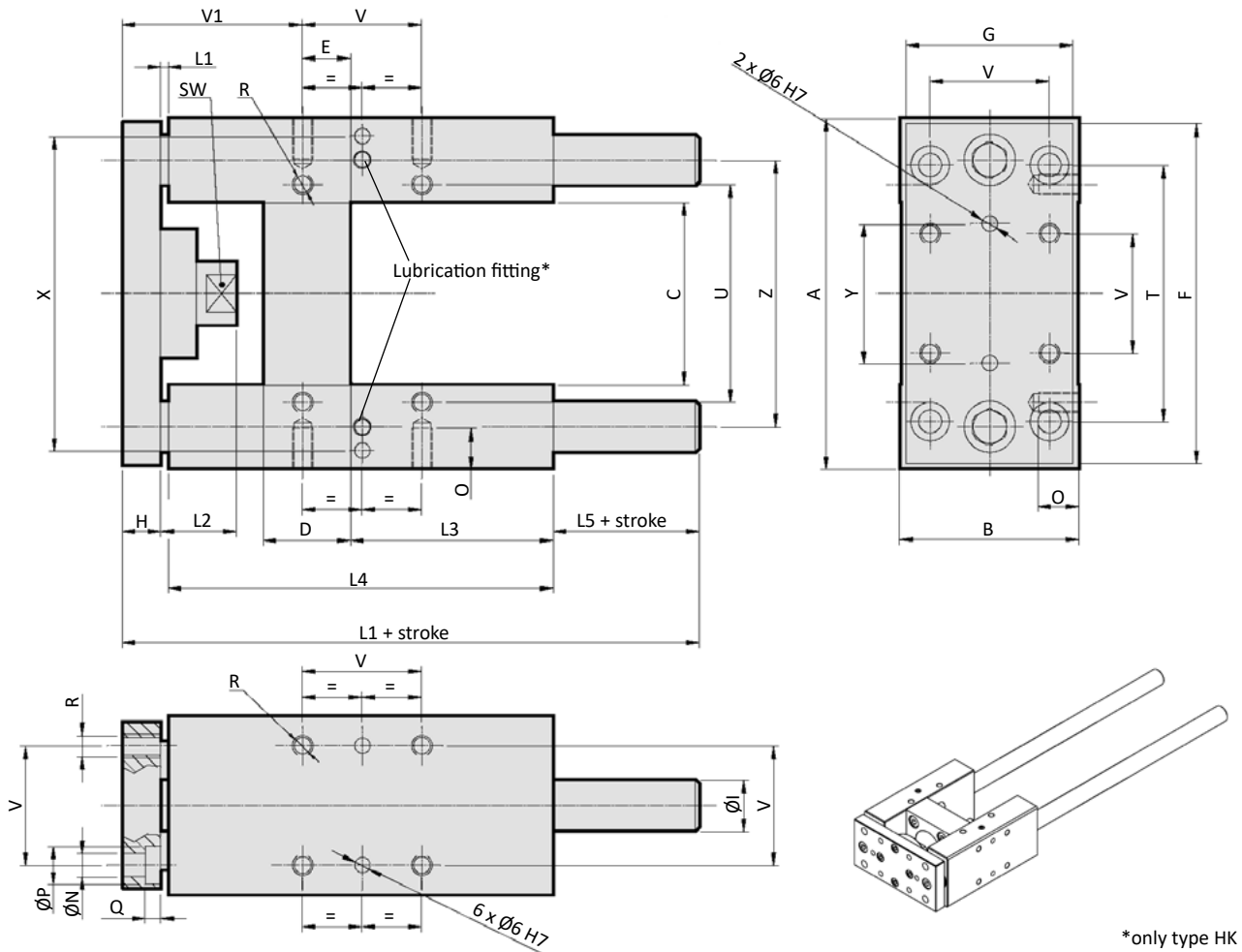


Piston-Ø	A	B	C	D	E	E1	E2	F	G	H	Ø I	L1	L2	L3
32	97	49	51	17	9.25	9.25	32.5	93	45	12	12	42	25	48
40	115	58	58.2	21	11	11	38	112	55	12	16	43	25	58
50	137	70	70.2	25	18.8	18.8	46.5	134	65	15	20	49	29	59
63	152	85	85.2	25	15.3	15.3	56.5	147	80	15	20	49	29	76

Piston-Ø	L4	L5	Ø N	O	Ø P	Q	R	SW	T	U	V	X	Y	Z
32	102	18	6.6	12	11	6.5	M6	15	78	61	32.5	81	50	74
40	113	17	6.6	12	11	6.5	M6	15	84	69	38	99	54	87
50	123	20	9	16	15	8.5	M8	20	100	85	46.5	119	72	104
63	140	21	9	16	15	9	M8	20	105	100	56.5	132	82	119

Piston-Ø (mm)		32	40	50	63
Weight	0 mm stroke	0.80	1.30	2.30	3.00
HG (kg)	each 100 mm stroke	0.18	0.32	0.50	0.50

Dimensions type HG. HK



*only type HK

Piston-Ø	A	B	C	D	E	F	G	H	Ø I	L1	L2	L3	L4
32	97	49	51	24	4.3	93	45	12	12	187	19	75	125
40	115	58	58.2	28	11	112	55	12	16	207	24	80	140
50	137	70	70.2	34	18.8	134	65	15	20	223	27	78	148
63	152	85	85.2	34	15.3	147	80	15	20	243	27	106	178
80	189	105	105.5	50	25	180	100	20	25	267	27	111	195
100	213	130	130.5	55	30	206	120	20	25	290	27	128	218

Piston-Ø	L5	Ø N	O	Ø P	Q	R	SW	T	U	V	X	Y	Z
32	47	6.6	12	11	6.5	M6	15	78	61	32.5	81	50	74
40	52	6.6	12	11	6.5	M6	15	84	69	38	99	54	87
50	57	9	16	15	8.5	M8	20	100	85	46.5	119	72	104
63	47	9	16	15	9	M8	20	105	100	56.5	132	82	119
80	49	11	20	18	11	M10	26	130	130	72	166	106	148
100	49	11	20	18	11	M10	26	150	150	89	190	131	173

Piston-Ø (mm)		32	40	50	63	80	100
Weight	0 mm stroke	1.29	2.40	3.50	4.60	8.40	11.80
HG (kg)	each 100 mm stroke	0.18	0.32	0.50	0.50	0.77	0.77
Weight	0 mm stroke	1.20	2.30	3.40	4.40	8.20	11.60
HK (kg)	each 100 mm stroke	0.18	0.32	0.50	0.50	0.77	0.77

Series XLVK

ISO 15552

Technical details

Series cylinder	XL
Series valve	KM-09 (up to Ø 63 mm), KM-10 (up from Ø 80 mm)
Operating pressure	3 ... 10 bar
Temperature range	-10°C ... +70°C
Max. stroke	2800 mm
Medium	Filtered, oil-free and dried compressed air according to ISO 8573-1:2010, Class 7:2:4, instrument air, free of aggressive additives. Differing the pressure dew point must be at least 10°C below lowest occurring ambient temperature.
Protection	IP 65 according to EN 60529



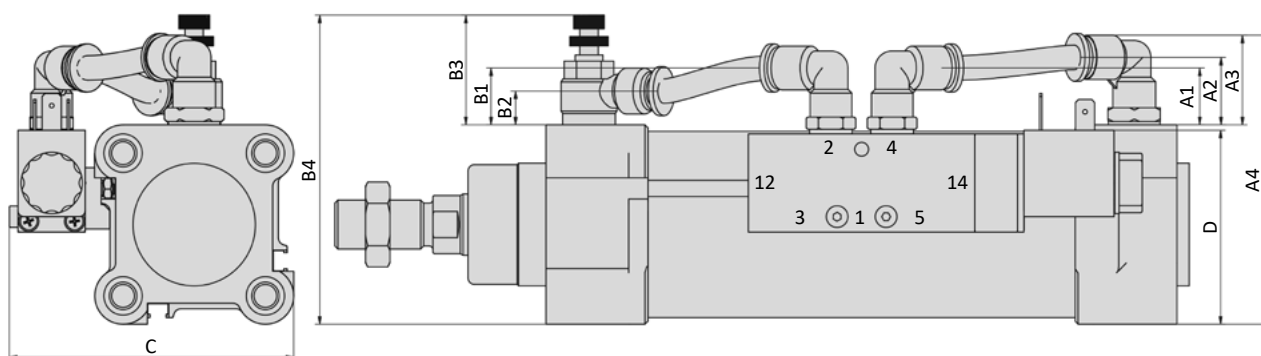
Double acting Al-profile cylinder with integrated sensor grooves, adjustable cushions and magnetic piston for proximity sensors. The sensors can be installed directly into the sensor grooves of the Al-profile. The cylinder includes a 5/2- or 5/3-way valve with a high flow rate and compact dimensions. Standard stroke lengths in table below, additional lengths on request.

Order code

XLVK-***-*****			
Series		consecutive number	
		see page 20	
Piston Ø			
032	32 mm		
040	40 mm		
050	50 mm		
063	63 mm		
080	80 mm		
100	100 mm		
125	125 mm		

* For longer stroke lengths please check the max buckling load.

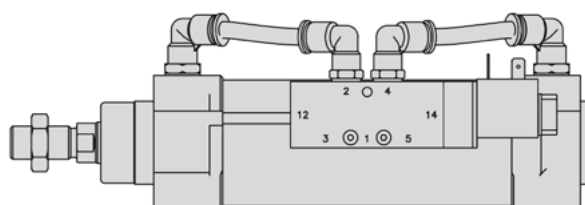
Dimensions



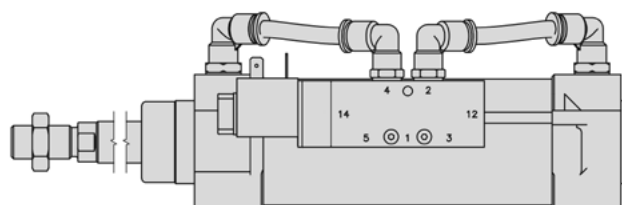
Piston Ø	A1	A2	A3	A4	B1	B2	B3 _{max}	B4 _{max}	C	D
32	20	21	28.5	76.5	20	9.5	34.5	81.5	76.5	47.7
40	18.8	22	29.5	83.5	18.8	11	39.5	93.5	83.3	52.5
50	18.6	22	29.5	94.5	18.6	11	39.5	102.5	92.9	63.3
63	24	18.9	31.5	106.5	24	11.4	44	118	106.5	78.9
80	22.8	18.9	30	124	26.4	13	44	137.5	132.9	86.5
100	35.4	25.8	45	156	35.4	14.5	49.5	159.5	151.8	112.5
125	26.3	25.3	36	175	16.3	14	49.5	187.5	178.4	131.4*

*versions with flow controls D = 121,4

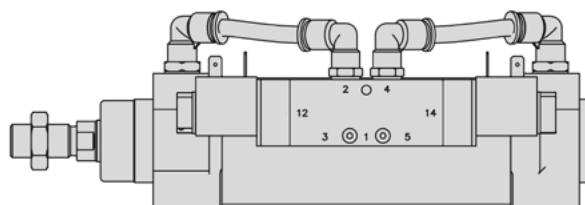
single solenoid valve, normally retracted



single solenoid valve, normally extended



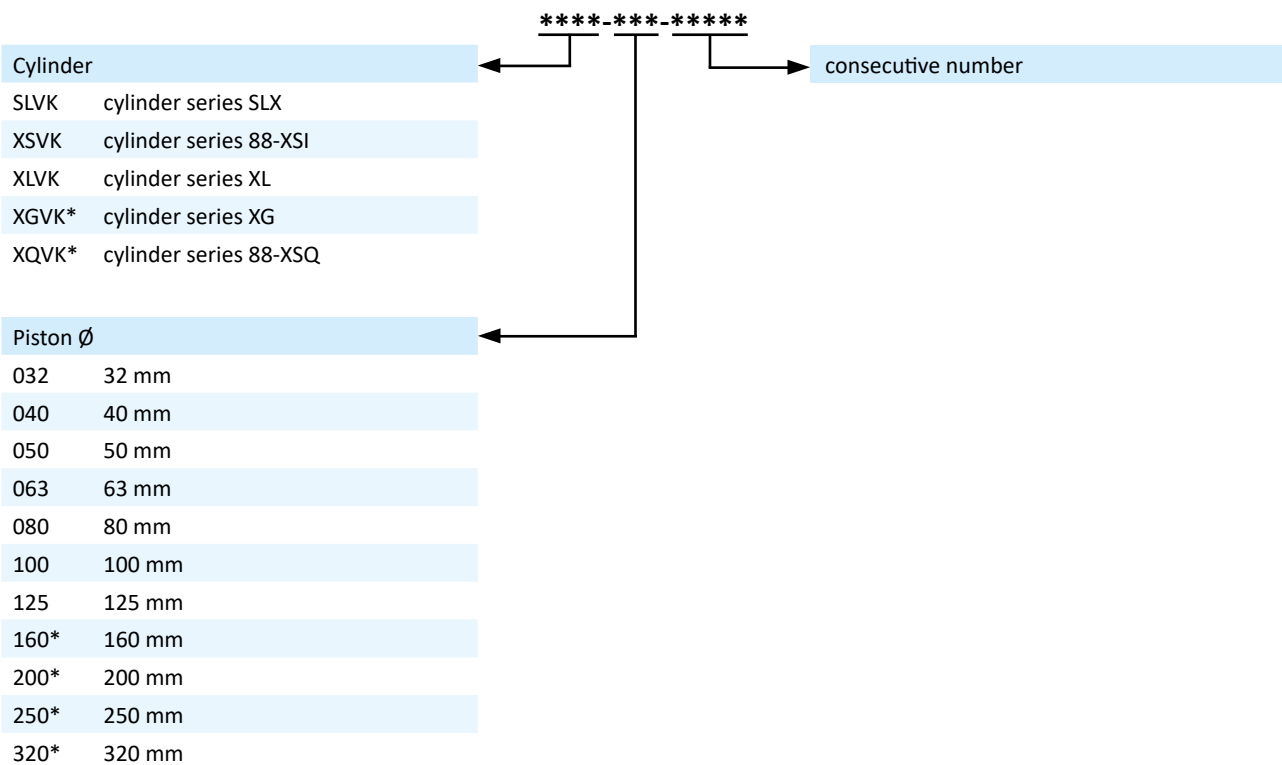
double solenoid valve, 5/3-way valve



Cylinder/ valve combinations

ISO 15552

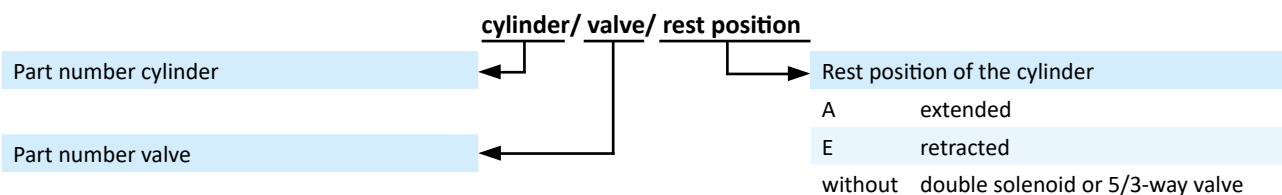
Part number



* Cylinder-valve combinations with large cylinders Ø 160 mm to 320 mm are possible (also with fixed pipework). For information on the possible versions, please contact us at info@airtec.de.

Order code

Code 1: Basic configuration



Order code

Code 2: Supplements

Fittings/Flow controls, Silencers/Add-on parts/Accessories

Description of the screw connection in port 1 of the valve

Gxx straight fitting for tube Ø xx

Wxx elbow fitting for tube Ø xx

Description of the assembly in ports 3 and 5 of the valve

SDS sintered bronze silencer

SDK plastic silencers

DRS sintered bronze silencer with flow control

DRK plastic silencers with flow control

Gxx straight fitting for tube Ø xx

Wxx elbow fitting for tube Ø xx

Description of the assembly in the cylinder connections

without elbow fitting

ARH flow-regulator, outlet with external adjusting screw

ARS flow-regulator, outlet with internal adjusting screw

Description of the add-on parts

B01 foot mount

B02 flange mount

B04 clevis mount

B48 clevis mount with clevis pin

B05 swivel mount

B06 swivel mount 90°

B09 bearing block (1pair)

B10 trunnion mount

B11 trunnion mount

B12 swivel mount with spherical bearing

B14 clevis mount small with pin

B16 swivel mount with spherical bearing 90°

FD rod clevis

FK flexible coupling

FO rod eye

Mounting the add-on parts

V front

H rear

VH front and rear

V90 front, 90° rotated

H90 rear, 90° rotated

VH90 front and rear, 90° rotated

L attached

Description of the accessories

STxx plug socket for valve, version xx

VL fitting accessories, enclosed

RxKy 2 proximity sensors, Reed sensor, x-pole, y-cable length (e.g.: ZS-5600, ZS-5700)

SxKy 2 proximity sensors, inductive, x-pole, y-cable length (e.g.: ZS-6600, ZS-6700, ZS-MZT8-10, ZS-7300)

SxS 2 proximity sensors, inductive, x-pole, 0,3 mcable with connection (e.g.: ZS-6601, ZS-6701, ZS-7302)

KSM additional piston rod nut

Cylinder/ valve combinations

ISO 15552

Example 1

Part number: XLVK-063-00003

Code 1 (text line 1): XL-063-0500-050-ATEX/KM-09-510-HN-V12/A

cylinder	XL-063-0500-050-ATEX
valve	KM-09-510-HN-V12
rest position	extended

Code 2 (text line 2): G08/DRS/S3K3/KSM

G08	straight fitting for Ø 8 mm tubing, mounted in connection 1 of the valve
DRS	sintered bronze silencer with flow control, mounted in connections 3 and 5 of the valve
S3K3	2 proximity sensors, inductive, 3-pole, 3 m-cable length (here due to ATEX: ZS-7300)
KSM	additional piston rod nut

Example 2

Part number: XLVK-063-00001

Code 1 (text line 1): XLD-063-0080-0A1254/ICK-09-511-HN-F42/A

cylinder	XLD-063-0080-0A1254
valve	ICK-09-511-HN-F42
rest position	extended

Code 2 (text line 2): G10/G10/ARS/B02V/ST06/VL/S3K10

G10	straight fitting for Ø 10 mm tubing, mounted in connection 1 of the valve
G10	straight fitting for Ø 10 mm tubing, mounted in connections 3 and 5 of the valve
ARS	flow-regulators, outlet with internal adjusting screw assembly in the cylinder connections
B02V	flange mount XLB-063-02, mounted in front
ST06	plug socket for valve, version 28-ST-06 (here due to the valve voltage: 28-ST-06-112), mounted on the coil
VL	fitting accessories, enclosed (here 2 x 44-XPUL-100, according to customer specification)
S3K10	2 proximity sensors, inductive, 3-pole, 10 m-cable length (here due to ATEX: ZS-MZT8-10), attached

Technical details

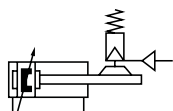
Operating pressure	Bremse: 3 ... 6 bar
Temperature range	-5°C ... +80°C
Max. stroke	2.800 mm
Medium	Filtered, oil-free and dried compressed air according to ISO 8573-1:2010, Class 7:2:4, instrument air, free of aggressive additives. Differing the pressure dew point must be at least 10°C below lowest occurring ambient temperature.
Materials	cylinder tube: Al (anodized) End caps: Al-die-cast (painted) Piston rod: steel hard chrome plated Seals: PU, NBR Rod lock: Al (anodized), steel, steel, zinc plated, bronze, PU, NBR, Delrin



A BH rod lock with mechanical clamping is mounted on the front cylinder head. The rod lock is activated by spring force when at rest and is released by pressurisation.

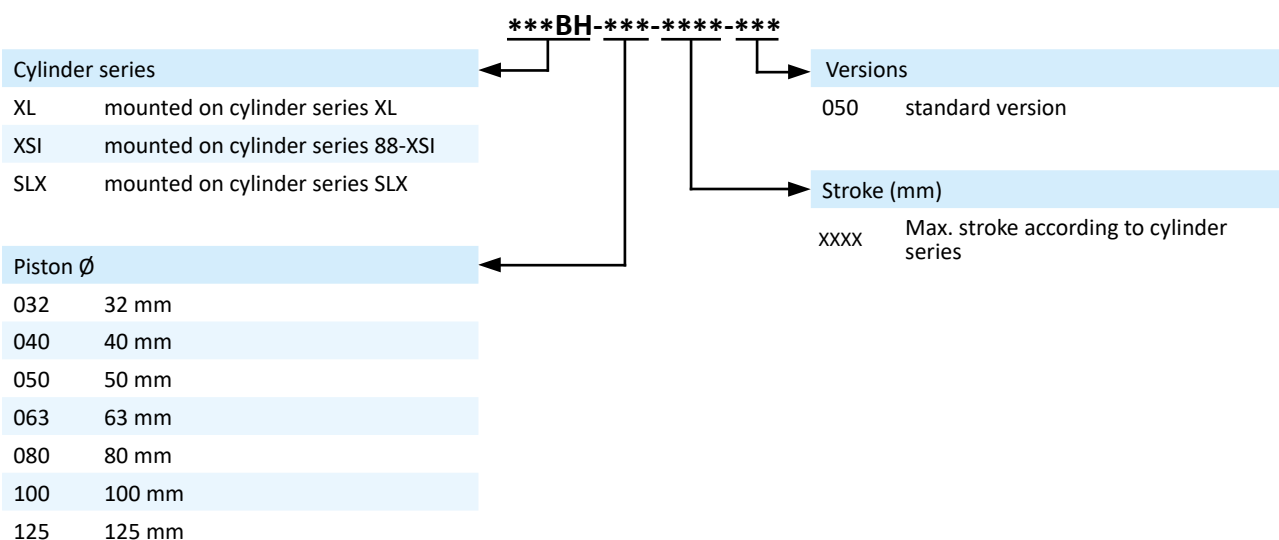
Rod lock's functioning is of static type (cylinder rod must be stopped). It is necessary to stop the cylinder rod before locking it.

Versions



XLBH, XSIBH, SLXBH
rod lock, cylinder double acting, adjustable cushioning, with magnetic piston

Order code



Series XLBH, XSIBH, SLXBH ISO 15552



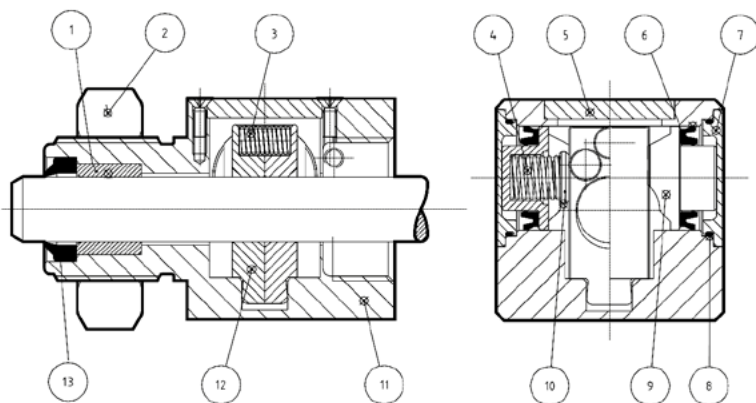
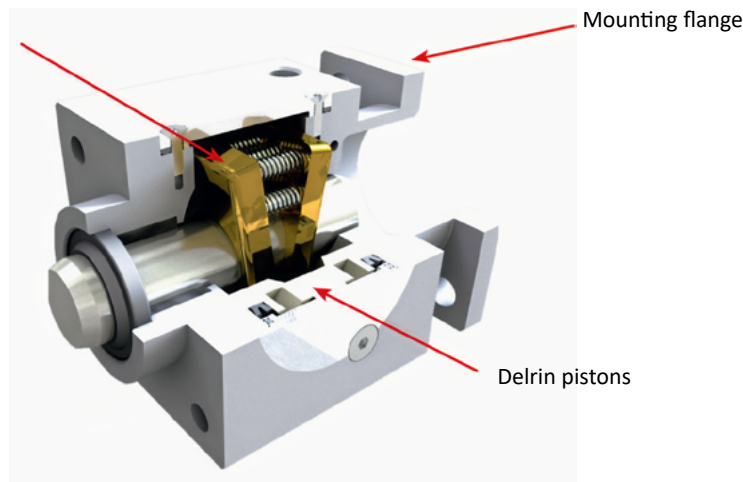
Design and function

The BH series rod lock is a mechanical device that can be used for all ISO 15552 and ISO 6432 cylinders. It is used to lock the piston rod of the cylinder in any position.

This solution makes it possible to block the stroke of the cylinder each time an unexpected pressure drop occurs.

The blocking force is always greater than that developed by the corresponding cylinder at 10 bar.

System with plate apart

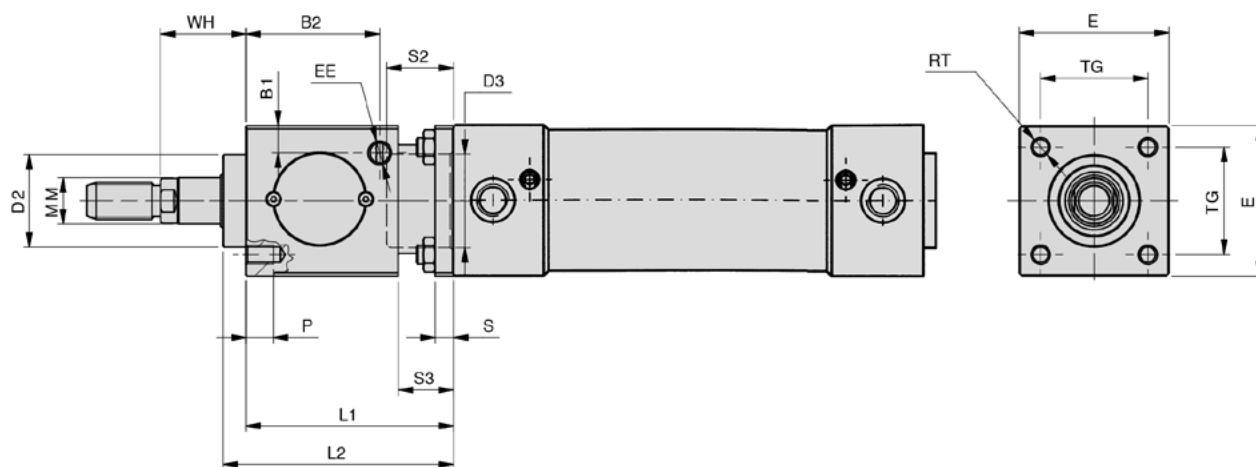


Position	Description	Material
1	guide bush	Delrin
2	nut (only for BH-20 and BH-25)	steel
3	spring	steel
4	spring	steel
5	cover	aluminium
6	piston seal	PUR
7	cover	aluminium
8	O ring	NBR
9	piston	Delrin
10	spring cover	Delrin
11	body	aluminium
12	jaws	bronze
13	piston rod seal	NBR

Technical data

Model-no.:	***BH-032	***BH-040	***BH-050	***BH-063	***BH-080	***BH-100	***BH-125
Piston Ø (mm)	32	40	50	63	80	100	125
Force at 6 bar	434	678	1060	1682	2713	4239	6623
Extension							
Retraction							
Clamp force (N)	790	1240	1930	3060	5400	7700	12040
Operating pressure cylinder (bar)	3 ... 6	3 ... 6	3 ... 6	3 ... 6	3 ... 6	3 ... 6	3 ... 6
Release pressure (bar)	> 4.5	> 4.5	> 4.5	> 4.5	> 4.5	> 4.5	> 4.5

Dimensions series XLBH, SLBH, XSIBH



EE = port to release the rod lock

Piston Ø	B1	B2	ØD2	D3	E	EE	L1	L2
32	9	33.25	30	30.5	47	G1/8	60	67.5
40	9	42.5	34.9	35.5	54	G1/8	70	80
50	12.5	58	40	40.5	65	G1/8	90	100
63	17.5	59	45	45.5	75	G1/8	90	100
80	17.5	69	45	45.5	95	G1/4	110	120
100	20	69	55	55.5	114	G1/4	110	120
125	19	84.5	60	60.5	138	G1/4	140	156

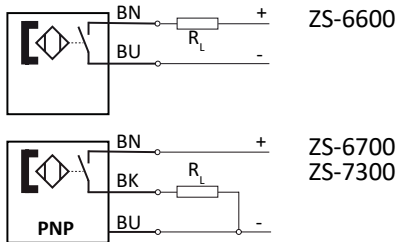
Piston Ø	ØMM	P	RT	S	S2	S3	TG	VL*	WH
32	12	8	M6	6	19.5	20	32.5	56	22
40	16	8	M6	6	22.5	20	38	70	30
50	20	12	M8	8	29	24	46.5	90	37
63	20	12	M8	8	29	24	56.5	90	37
80	25	16	M10	12	37	32	72	110	46
100	25	16	M10	12	39	32	89	110	51
125	32	20	M12	20	51.5	45	110	140	65

* The dimension VL is the required piston rod extension for the cylinder.

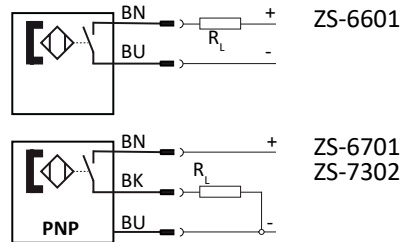
Series ZS

Proximity sensors

Proximity sensors with cable



Proximity sensors with plug



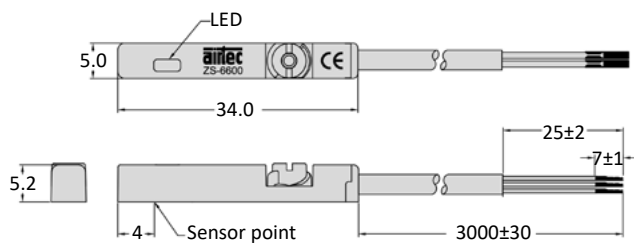
Technical data

Model-no.:	ZS-6600	ZS-6601	ZS-6700	ZS-6701
				
Design	2-pole inductive	2-pole inductive	3-pole inductive	3-pole inductive
Contact function	NO	NO	NO	NO
Output	NO	NO	PNP	PNP
Rated operational voltage	10 ... 30 V DC	10 ... 30 V DC	5 ... 30 V DC	5 ... 30 V DC
Rated operational current I_E	≤ 50 mA	≤ 50 mA	≤ 100 mA	≤ 100 mA
Max. voltage drop at I_E	≤ 2.65	≤ 2.65	≤ 1.0	≤ 1.0
Breaking capacity	1,4 W	1,4 W	3 W	3 W
Sensitivity	40 ~ 800 Gauss	40 ~ 800 Gauss	40 ~ 800 Gauss	40 ~ 800 Gauss
Cable length	3 m	0.3 m with M8 connection	3 m	0.3 m with M8 connection
Reverse polarity protection	nein	nein	ja	ja
Temperature range	-10 ... +70°C	-10 ... +70°C	-10 ... +70°C	-10 ... +70°C
Protection	IP 67	IP 67	IP 67	IP 67
Switching status indication	LED red	LED red	LED red	LED red

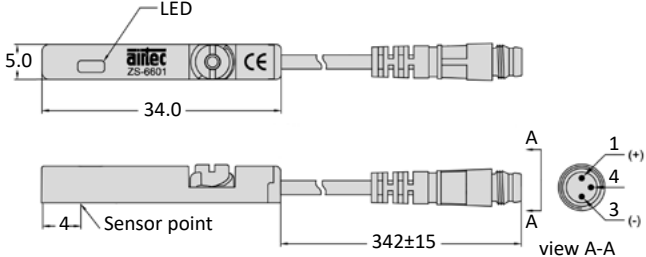
Model-no.:	ZS-7300	ZS-7302
		
Design	3-pole inductive	3-pole inductive
Contact function	NO	NO
Output	PNP	PNP
Rated operational voltage	10 ... 30 V DC	10 ... 30 V DC
Rated operational current I_E	≤ 100 mA	≤ 100 mA
Max. voltage drop at I_E	≤ 2.5	≤ 2.5
Breaking capacity	3 W	3 W
Cable length	6 m	0.3 m with M12 connection
Temperature range	-20 ... +60°C	-20 ... +60°C
Protection	IP 67	IP 67
Switching status indication	LED yellow	LED yellow
	II 3G Ex nA T4 II 3D Ex tD A22 IP67 T 125°C	II 3D Ex tc IIIC T125°C Dc X

Dimensions

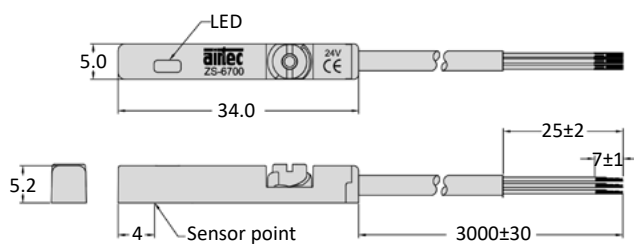
ZS-6600



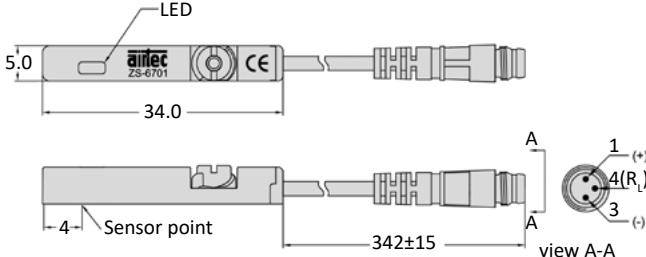
ZS-6601



ZS-6700



ZS-6701



Mounting

The sensors are mounted at the groove of the cylinder profile. It is fixed by turning the fixing screw at the sensor clockwise. The cover stripe XLB-011 (see below) can be used for protecting the sensor cable.

A direct sensor mounting is possible for following series:

Series SLX, Series XL, Series 88-XSI

Cover for sensor groove

Model-no.:

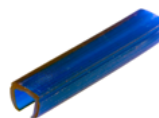
XLB-011

Design

For series

plastic profile, 50 cm length, blue

XL, NXD, NXE, NYD, NYE, NYSE, LX



Series ZS

Proximity sensors



Connection cable M8

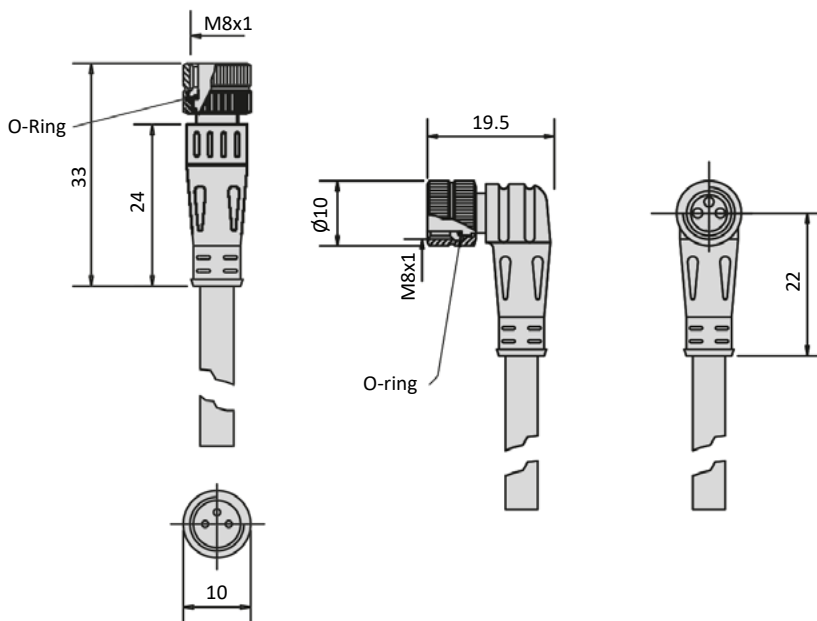
Contacts	M8 Plug socket
Protection	IP 67 according to EN 60529 in conjunction with suitable connection plug
Duty cycle	100 %
Temperature range*	-25°C...+90°C
max. voltage	60 V AC / DC
Use for	Solenoids with M8 plug, cylinder switch with M8 plug



Model-no.:	KA-10-01	KA-30-01	KA-50-01	KA-100-01
Contacts	M8 Socket, straight	M8 Socket, straight	M8 Socket, straight	M8 Socket, straight
Mounting	Coupling nut	Coupling nut	Coupling nut	Coupling nut
Cable	3-pin	3-pin	3-pin	3-pin
Length (L)	1 m	3 m	5 m	10 m

Model-no.:	KA-11-01	KA-31-01	KA-51-01	KA-101-01
Contacts	M8 Socket, elbow 90°	M8 Socket, elbow 90°	M8 Socket, elbow 90°	M8 Socket, elbow 90°
Mounting	Coupling nut	Coupling nut	Coupling nut	Coupling nut
Cable	3-pin	3-pin	3-pin	3-pin
Length (L)	1 m	3 m	5 m	10 m

Dimensions



Pin assignment



1 = brown
3 = blue
4 = black

Cylinder - * * * - xxxx		
Cylinder double acting	Piston rod versions	Seals, Air connection
0 piston rod on one side with magnetic piston adjustable cushioning	0 piston rod stainless steel male thread	0 standard seals (PUR, NBR) air connection G thread
1 piston rod on one side adjustable cushioning	1 piston rod stainless steel female thread	1 standard seals (PUR, NBR) air connection NPT thread
2 piston rod on one side with magnetic piston	2 piston rod stainless steel female thread with guide and non rotating	2 high temperature version (FKM) air connection G thread
3 piston rod on one side	3 piston rod stainless steel male thread non rotating	3 high temperature version (FKM) air connection NPT thread
4 double end piston rod with magnetic piston adjustable cushioning	4 piston rod stainless steel female thread non rotating	4 standard seals (NBR) piston rod seal FKM air connection G thread
5 double end piston rod adjustable cushioning	5 piston rod steel hard chrome plated male thread	5 standard seals (NBR) piston rod seal FKM air connection NPT thread
6 double end piston rod with magnetic piston	6 piston rod steel hard chrome plated female thread	
7 double end piston rod	7 Doppelkolbenstange	
8 double end piston rod through hollow with magnetic piston	8 piston rod stainless steel without thread	
	9 piston rod steel hard chrome plated female thread with guide and non rotating	
	Axxx piston rod stainless steel male thread lengthened by xxx mm [#]	
	Bxxx piston rod stainless steel female thread lengthened by xxx mm	
	Cxxx piston rod steel hard chrome plated male thread lengthened by xxx mm [#]	
	Dxxx piston rod steel hard chrome plated female thread lengthened by xxx mm [#]	
	Exxx piston rod stainless steel without thread lengthened by xxx mm [#]	
	Fxxx piston rod steel hard chrome plated without thread lengthened by xxx mm [#]	
	V piston rod stainless steel AISI 316 (1.4401) male thread	
	xxxx - Additions* ATEX EX X cylinders in accordance with 2014/34/EU (ATEX) E8 piston rod seal E8, two-part, with plastic scraper	
	* Use taking into account the maximum length of 20 characters for an article number	

Cylinder single acting
0 piston rod on one side with magnetic piston normally retracted
1 piston rod on one side normally retracted
2 piston rod on one side with magnetic piston normally extended
3 piston rod on one side normally extended
4 double end piston rod with magnetic piston
5 double end piston rod

Exceptions

Round cylinders are described by the designation of the series.
A design code is only used if there are deviations from the standard described.

If it is not possible to describe the version of the cylinder using the version code, a project number in the form Pxxxx should be used.

Not all options are suitable for all cylinder series



Cylinders

Piston rod cylinders

Device marking

Piston rod cylinders are marked as follows:

 II 2G Ex h IIC T5 Gb
 II 2D Ex h IIIC T100°C Db
 -20°C T_{amb} +80°C

Marking according to DIN EN ISO 80079-36/ -37.

Piston rod cylinders conform to Equipment category 2 and can be used in Zone 1 respectively Zone 21.

Available cylinders

Series	Versions
XL	XL, XLH
	XLC (-40°C T _{amb} +80°C)

Piston rod cylinders

Piston rod cylinders according ATEX are marked with following suffix:

-ATEX
-EX
-X

Accessories for piston rod cylinders

The cylinders are intended to be used with the following accessories:

Accessories	series
Flexible coupling	FK-Ø
Rod eye	FO-Ø, RO-Ø, PO-Ø (v _{max} 1 m/s)
Rod clevis	FD-Ø, RD-Ø, PD-Ø
Piston rod nut	FE-Ø, RL-Ø, PL-Ø
Mounting accessories XL	XLB-Ø-01, XLB-Ø-02, XLB-Ø-03, XLB-Ø-04, XLB-Ø-05, XLB-Ø-06, XLB-Ø-07, XLB-Ø-08, XLB-Ø-09, XLB-Ø-10, XLB-Ø-11, XLB-Ø-12, XLB-Ø-13, XLB-Ø-14,
Mounting accessories XG	VLB-Ø-01, VLB-Ø-02, VLB-Ø-03, VLB-Ø-04, VLB-Ø-05, VLB-Ø-06, VLB-Ø-08, VLB-Ø-09, VLB-Ø-12
Mounting accessories HM	RA-Ø, RC-Ø, RG-Ø, RH-Ø, RB-Ø, RM-Ø
Mounting accessories CM	PA-Ø, PC-Ø, PB-Ø, PM-Ø

Proximity switches

Model-No.	Classification / Identification marking
ZS-7300	 II 3G Ex nA T4  II 3D Ex tD A22 IP67 T 125°C
ZS-7302	 II 3D Ex tc IIIC T125°C Dc X



The operating instructions for the valve and the electrical equipment must be taken into account before putting into operation. These are included with each valve and are available at www.airtec.de.

Air consumption cylinder (NI for a single stroke of 100 mm, based upon extension)

Piston-Ø	Pressure in bar						
	2	3	4	5	6	7	8
32	0.24	0.32	0.40	0.48	0.56	0.64	0.72
40	0.38	0.50	0.63	0.75	0.88	1.01	1.13
50	0.59	0.79	0.98	1.18	1.37	1.57	1.77
63	0.94	1.25	1.56	1.87	2.18	2.49	2.81
80	1.51	2.01	2.51	3.02	3.52	4.02	4.52
100	2.36	3.14	3.93	4.71	5.50	6.28	7.07
125	3.72	4.96	6.21	7.42	8.64	9.91	11.14

Required flow rate (NI/min at p = 6 bar)

Piston-Ø	speed (m/s)				
	0.25	0.5	1	1.5	2
32	84	169	338	506	675
40	132	264	528	791	1055
50	206	412	824	1236	1649
63	327	654	1309	1963	2617
80	528	1055	2110	3165	4220
100	824	1649	3297	4946	6594
125	1288	2576	5152	7727	10303

Force chart cylinders (N)

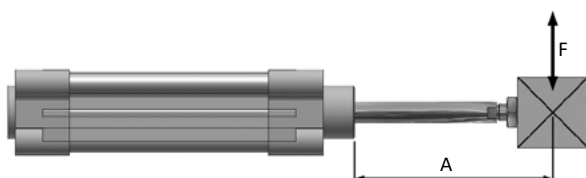
Piston-Ø	Series	Piston rod Ø (mm)	Pressure in bar						
			2	3	4	5	6	7	8
32			145	217	289	362	434	506	579
	XL	12	124	187	249	311	373	435	497
40			226	339	452	565	678	791	904
	XL	16	190	285	380	475	570	665	760
50			353	530	707	883	1060	1236	1413
	XL	20	297	445	593	742	890	1039	1187
63			561	841	1122	1402	1682	1963	2243
	XL	20	504	756	1009	1261	1513	1765	2017
80			904	1356	1809	2261	2713	3165	3617
	XL	25	816	1224	1632	2040	2448	2856	3264
100			1413	2120	2826	3533	4239	4946	5652
	XL	25	1325	1987	2649	3312	3974	4636	5299
125			2208	3312	4416	5520	6623	7727	8831
	XL	32	2063	3095	4126	5158	6189	7221	8252

extension force*

retraction force*

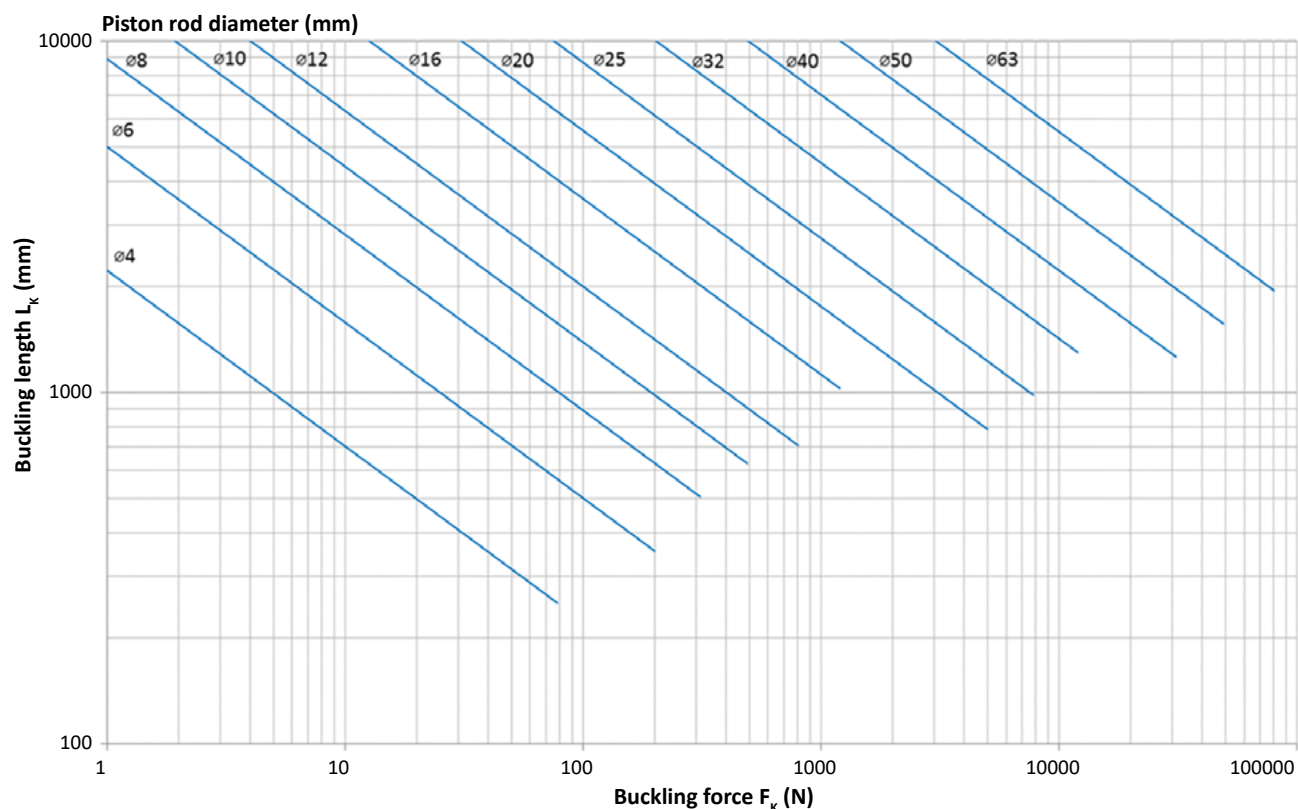
* A correction factor of 0.9 for the internal friction is already calculated.

Permissible side load F (N), series SLX

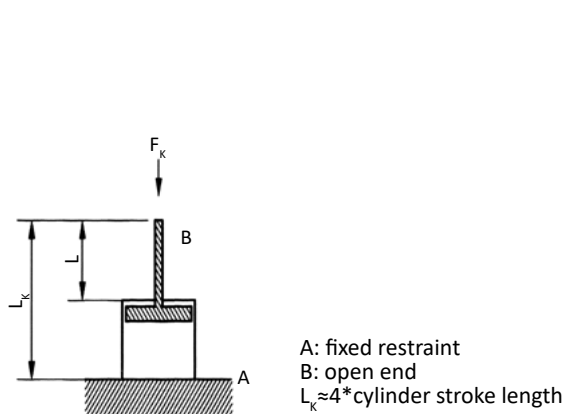


Piston-Ø	Distance A (mm)											
	25	40	50	80	100	125	160	200	250	320	400	500
32	75	55	50	40	34	28	23	20	16	12	9	7
40	175	150	130	105	91	78	62	55	45	35	28	21
50 + 63	220	180	170	130	120	105	90	80	65	52	43	33
80 + 100	500	450	400	350	310	270	230	205	180	150	125	100
125	810	710	680	590	520	470	420	390	330	270	230	200

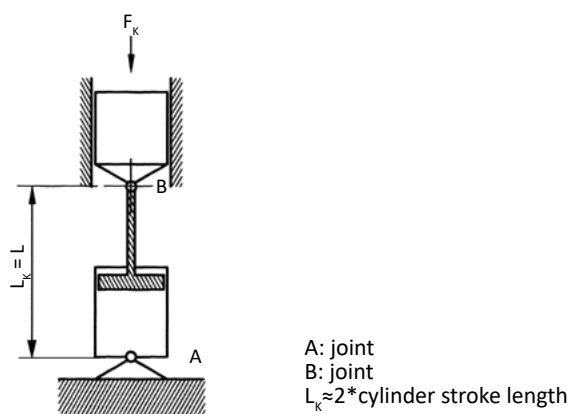
Critical load diagram for the piston rod



First elastic case of buckling



Second elastic case of buckling



Knowing the actual buckling case, either 1 or 2, and knowing the requested stroke length you can calculate the buckling length L_k . If you know the buckling force F_k (compressive force) you determine in the diagram above the intersection of both data. Choose the next graph line above to get the necessary rod diameter.