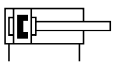
Series NYD
ISO 21287, double acting

Technical details

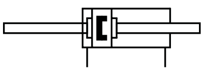
Operating pressure	1 ... 10 bar
Temperature range	-20°C ... +80°C (Ø 32 mm - Ø 125 mm: -30°C...+80°C) (NYDH: -10°C ... +150°C)
Medium	Filtered, oil-free and dried compressed air according to ISO 8573-1:2010, Class 7:2:4, instrument air, free of aggressive additives. Differing the pressure dew point must be at least 10°C below lowest occurring ambient temperature.
Materials	cylinder tube: Al (anodized) End caps: Al-die-cast (painted) Piston rod: stainless steel Seals: PU, NBR (optional FKM)
Ex	Cylinders in according with 2014/34/EU (ATEX) available. (page 24)

Double acting pneumatic cylinder with magnetic piston for proximity sensors and built-in cushioning rings.
Standard stroke lengths in table below, additional lengths on request.

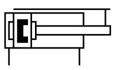
Versions



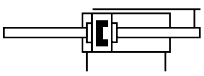
200, 202, 210, 212
double acting, built-in cushioning rings, with magnetic piston



600, 602, 610, 612, 800, 810
double acting, double end piston rod, built-in cushioning rings, with magnetic piston



220, 222
double acting, non rotating, built-in cushioning rings, with magnetic piston



620, 622
double acting, non rotating, double end piston rod, built-in cushioning rings, with magnetic piston

Order code

NYD*-*-***-***-****

Series, Version	
NYD	standard
NYDD	with metal scraper#
NYDH	high temperature version
NYB	double end, through hollow telescopic piston rod (only Ø 32 mm)

Piston Ø	
020	20 mm
025	25 mm
032	32 mm
040	40 mm
050	50 mm
063	63 mm
080	80 mm
100	100 mm
125	125 mm

Stroke (mm)	
XXX	max. 250 mm (up from Ø 32 max. 400 mm)
standard	5, 10, 15, 20, 25, 30, 40, 50, 60*, 80*

* up from Ø 32 mm
# only Ø 32 - Ø 80 mm

Options	
ATEX	cylinders in accordance with 2014/34/ EU (ATEX)
E8	piston rod seal E8, two-part, with plastic scraper

Versions	
200 600	standard version, male thread
210 610	standard version, female thread
220 620	non rotating
202 602	high temperature version (with magnetic piston up to 80°C effective), male thread
212 612	high temperature version (with magnetic piston up to 80°C effective), female thread
222 622	high temperature version (with magnetic piston up to 80°C effective), non rotating + female thread
800	double end, through hollow piston rod, male thread
810	double end, through hollow piston rod, female thread

Not all combinations are possible and available.

Series NYD
ISO 21287, double acting

Technical data

Model-no.:		NYD-020-...	NYD-025-...	NYD-032-...	NYD-040-...	NYD-050-...
Piston Ø (mm)		20	25	32	40	50
Force at 6 bar (N)	Extension	170	265	434	678	1060
	Retraction	127	223	373	617	951
Connection		M5	M5	G1/8	G1/8	G1/8
Piston rod thread	male	M8	M8	M10 x 1.25	M10 x 1.25	M12 x 1.25
	female	M6	M6	M8	M8	M10

Model-no.:		NYD-063-...	NYD-080-...	NYD-100-...	NYD-125-...
Piston Ø (mm)		63	80	100	125
Force at 6 bar (N)	Extension	1682	2713	4239	6623
	Retraction	1574	2543	3974	6345
Connection		G1/8	G1/8	G1/8	G1/4
Piston rod thread	male	M12 x 1.25	M16 x 1.5	M16 x 1.5	M20 x 1.5
	female	M10	M12	M12	M16

Piston Ø (mm)		20	25	32	40	50	63	80	100
Weight (kg)	0 mm stroke (-200)	0.143	0.178	0.240	0.301	0.471	0.661	1.066	1.793
	0 mm stroke (-210)	0.131	0.166	0.217	0.278	0.435	0.625	0.996	1.722
	each 10 mm stroke	0.024	0.028	0.029	0.030	0.048	0.057	0.088	0.115

Piston Ø (mm)		20	25	32	40	50	63	80	100
Weight (kg)	0 mm stroke (-220)	0.163	0.204	0.287	0.373	0.590	0.833	1.398	2.261
	each 10 mm stroke	0.028	0.034	0.035	0.038	0.062	0.071	0.114	0.139

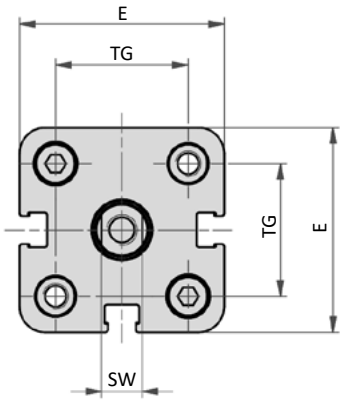
Piston Ø (mm)		20	25	32	40	50	63	80	100
Weight (kg)	0 mm stroke (-600)	0.140	0.175	0.232	0.293	0.463	0.653	1.050	1.833
	0 mm stroke (-610)	0.164	0.199	0.278	0.339	0.535	0.725	1.190	1.975
	each 10 mm stroke	0.030	0.034	0.037	0.038	0.064	0.073	0.114	0.149

Piston Ø (mm)		20	25	32	40	50	63	80	100
Weight (kg)	0 mm stroke (-620)	0.172	0.213	0.302	0.388	0.618	0.861	1.452	2.372
	each 10 mm stroke	0.034	0.040	0.043	0.046	0.078	0.087	0.140	0.173

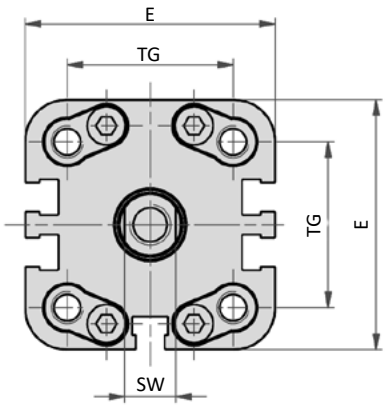
Series NYD
ISO 21287, double acting

Dimensions series NYD (Versions 200, 202, 210 and 212)

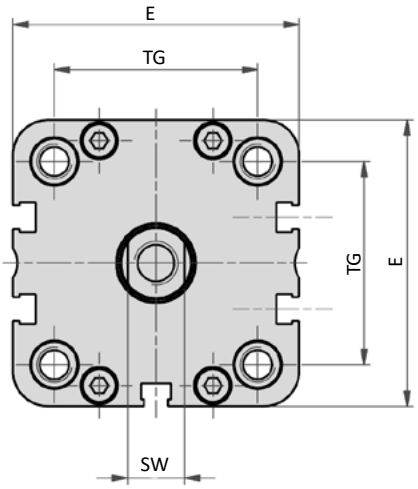
Ø 20 - 25



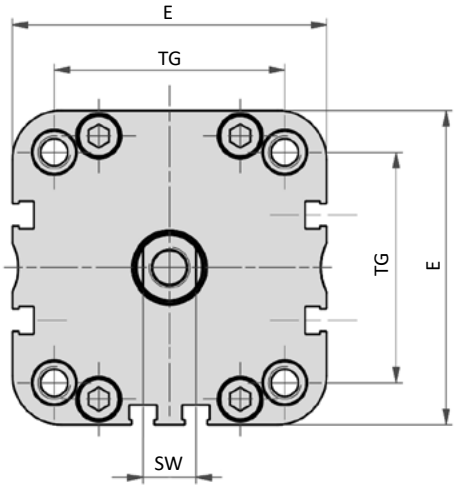
Ø 32



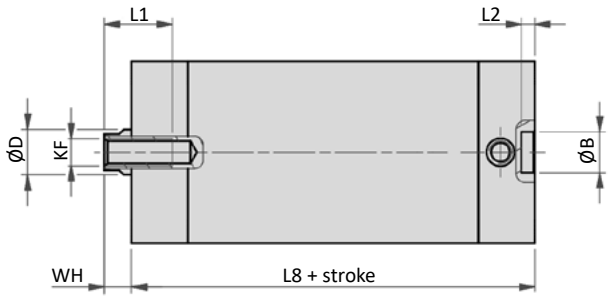
Ø 40 - 50



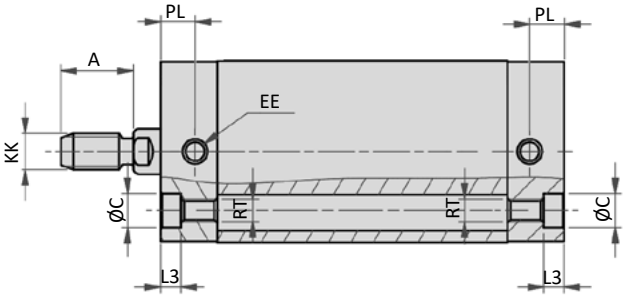
Ø 63 - 125



Versions 210, 212



Versions 200, 202

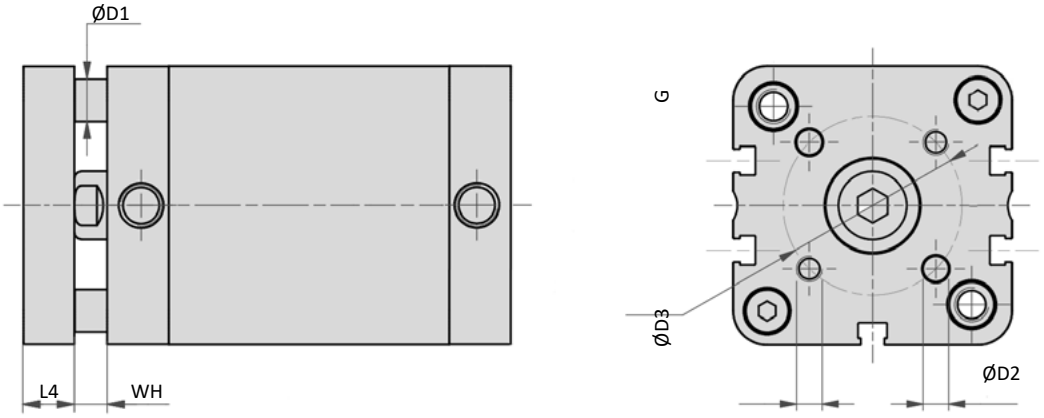


Piston Ø	A	Ø B	Ø C	Ø D	E	EE	KF	KK	L1	L2	L3	L8	PL	RT	SW	TG	WH
20	16	9	7.5	10	36	M5	M6	M8	15	3	4.5	37	7.5	M5	8	22	6.5
25	16	9	7.5	10	40	M5	M6	M8	15	3	4.5	39	7.5	M5	8	26	6
32	19	9	9	12	49	G1/8	M8	M10 x 1.25	16	3	5	44	7.5	M6	10	32.5	6.5
40	19	9	9	12	54.5	G1/8	M8	M10 x 1.25	16	3	5	45	8	M6	10	38	7
50	22	12	10.5	16	65.5	G1/8	M10	M12 x 1.25	17	4	5	45	8	M8	13	46.5	8
63	22	12	10.5	16	77	G1/8	M10	M12 x 1.25	17	4	5	49	7.5	M8	13	56.5	8
80	28	12	13.5	20	95.5	G1/8	M12	M16 x 1.5	20	4	3	54	8	M10	17	72	9
100	28	12	13.5	25	113.5	G1/8	M12	M16 x 1.5	20	4	3	67	10.5	M10	22	89	10
125	40	12	-	25	135	G1/4	M16	M20 x 1.5	25	4	-	81	10.5	M12	22	110	11

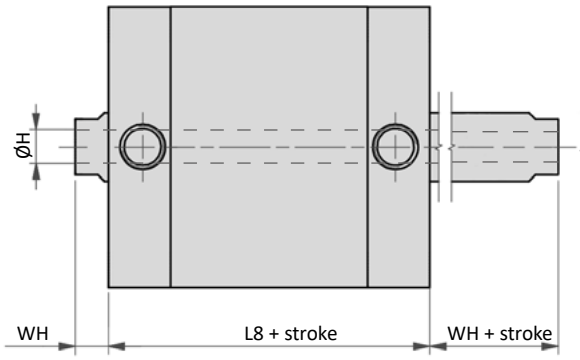
Series NYD
ISO 21287, double acting

Dimensions series NYD (Versions 220, 600, 602, 610, 612, 620, 622, 800 and 810)

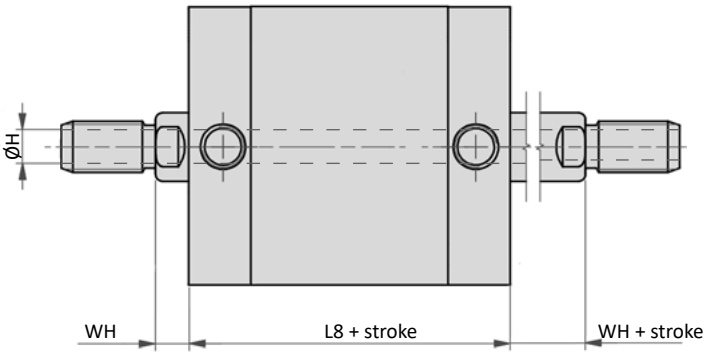
Version 220, 222



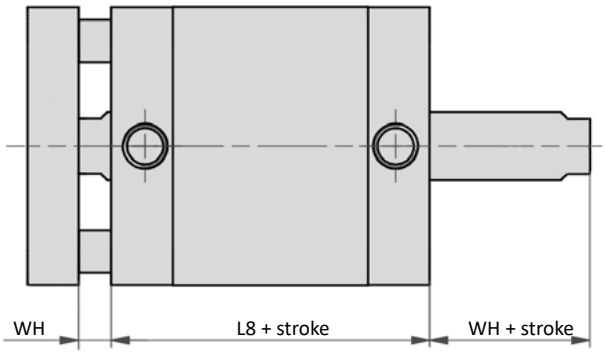
Versions 610, 612, 810



Versions 600, 602, 800



Version 620, 622



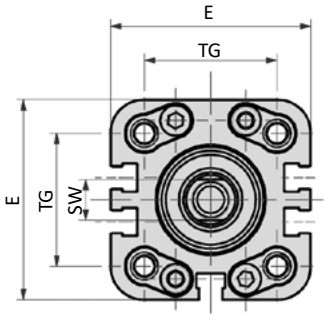
Piston Ø	Ø D1	Ø D2	Ø D3	G	Ø H*	L4	L8	WH
20	5	17	4	M4	4	8	37	6.5
25	6	22	5	M5	4	8	39	6
32	6	28	5	M5	5	10	44	6.5
40	8	33	5	M5	5	10	45	7
50	10	42	6	M6	6	12	45	8
63	10	50	6	M6	6	12	49	8
80	14	65	8	M8	8	14	54	9
100	14	80	10	M10	10	14	67	10

* only types 800 and 810

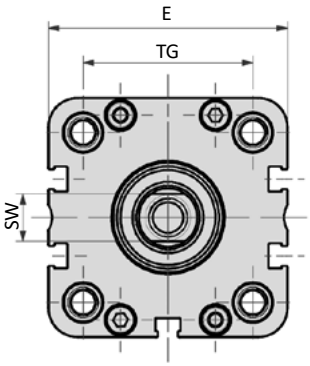
Series NYD
ISO 21287, double acting

Dimensions series NYD (Option E8) and Series NYDD

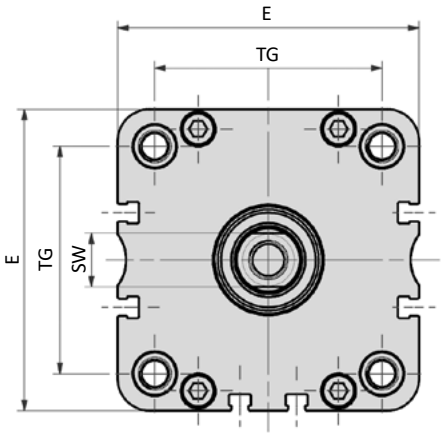
Ø 32

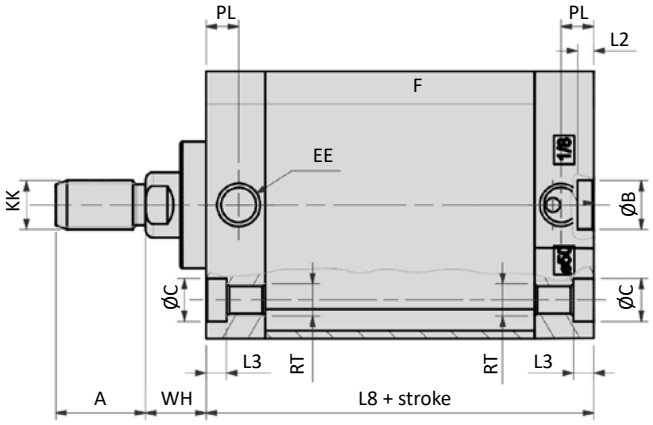


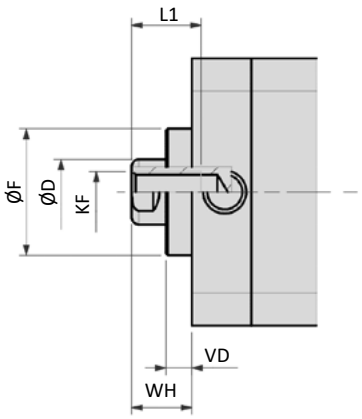
Ø 40 - 50



Ø 63 - 80



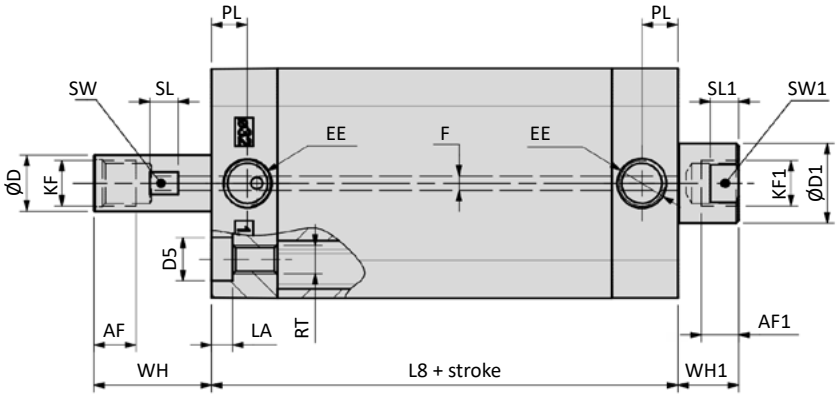


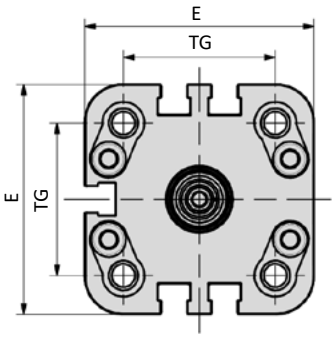


Piston Ø	A	Ø B	Ø C	Ø D	Ø F	E	EE	KF	KK	L1	L2	L3	L8	RT	SW	TG	VD	WH
32	19	9	9	12	27	49	G1/8	M8	M10 x 1.25	16	3	5	44	M6	10	32.5	6.4	12.5
40	19	9	9	12	27	54.5	G1/8	M8	M10 x 1.25	16	3	5	45	M6	10	38	6.4	12.5
50	22	12	10.5	16	31	65.5	G1/8	M10	M12 x 1.25	17	4	5	45	M8	13	46.5	6.4	14.8
63	22	12	10.5	16	31	77	G1/8	M10	M12 x 1.25	17	4	5	49	M8	13	56.5	6.4	14.6
80	28	12	13.5	20	35	95.5	G1/8	M12	M16 x 1.5	20	4	3	54	M10	17	72	6.4	15.4

Series NYD
ISO 21287, double acting

Dimensions series NYB

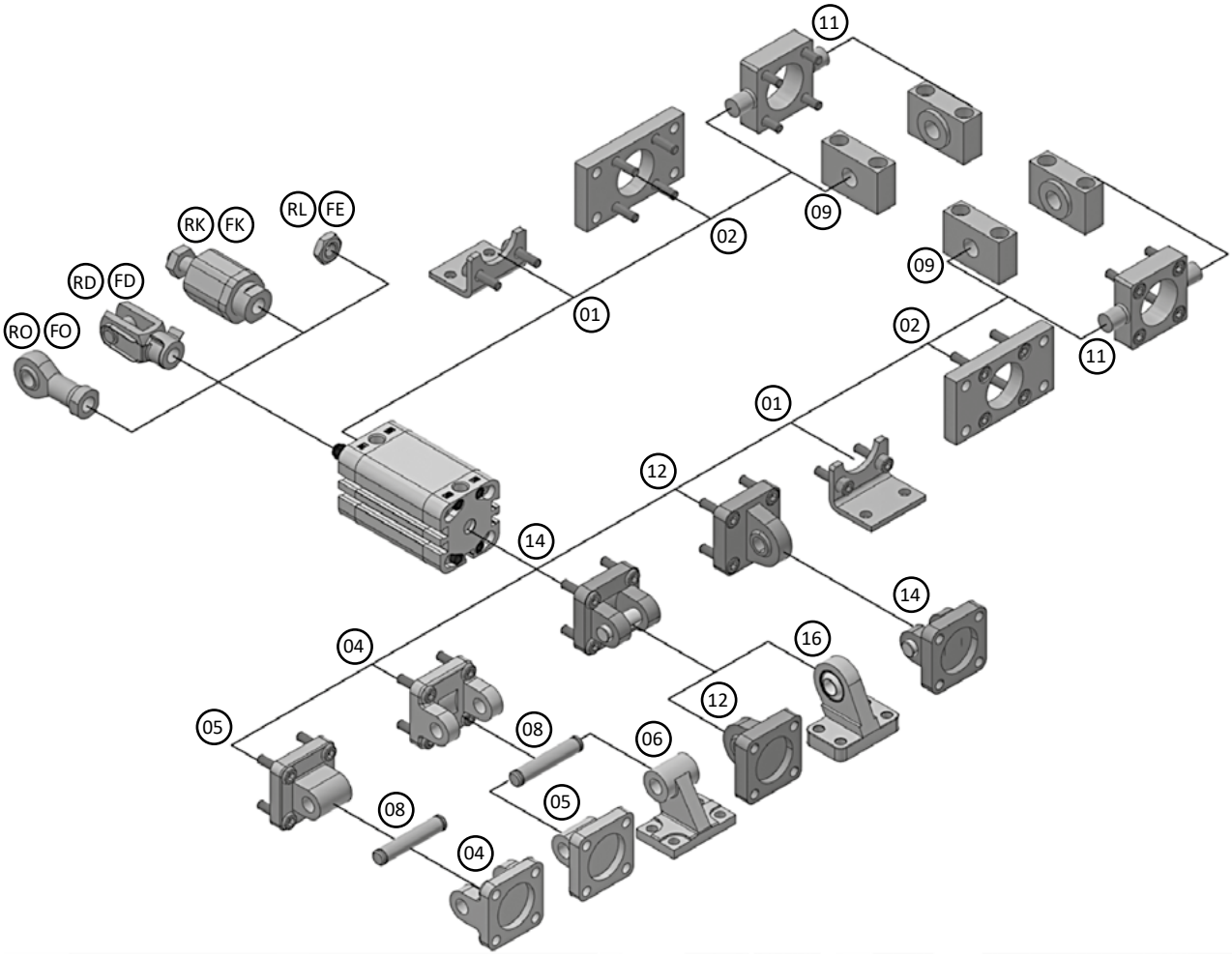




Piston Ø	AF	AF1	Ø D	Ø D1	Ø D5	E	EE	Ø F	KF	KF1
32	9	7.5	12	17	9	49	G1/8	3	G1/8	G1/8

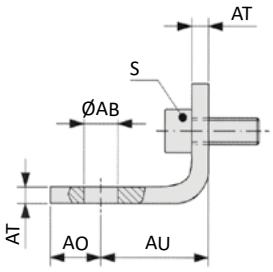
Piston Ø	L8	LA	PL	RT	SL	SL1	SW	SW1	TG	WH	WH1
32	50	5	7.5	M6	6	6	11	15	32.5	25	13

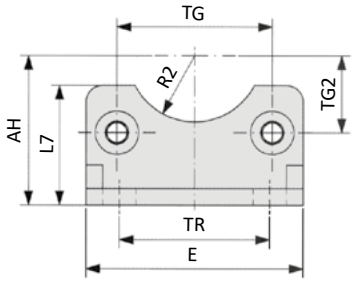
Mounting the add-on parts XLB-xxx-yy



Series NYD
Mounting accessories

XLB-xxx-01 Foot mount



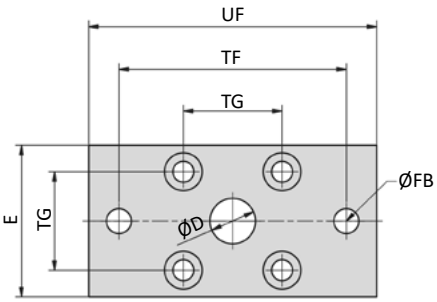


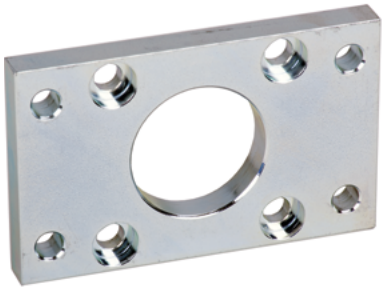
Model-no.:	Ø AB	AH	AO	AU	AT	E	L7	R2	S	TG	TG2	TR
NXB-020-01	6.5	27	6	16	4	36	11	10	M5 x 14	22	11	22
NXB-025-01	6.5	30	6	16	4	40	23	11	M5 x 14	26	13	26
XLB-032-01	7	32	11	24	4	45	30	15	M6 x 16	32.5	16.25	32
XLB-040-01	10	36	8	28	4	52	30	17.5	M6 x 16	38	19	36
XLB-050-01	10	45	15	32	5	65	36	20	M8 x 20	46.5	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
tolerances and adjustments	H14	JS16		± 0.2				H15		± 0.2 *± 0.3		JS14

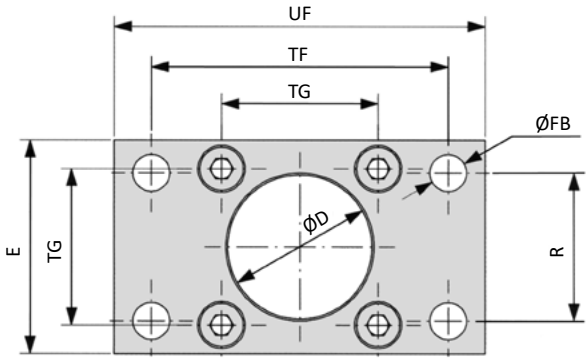
Materials: steel, zinc plated; 2 x 2 screws in accordance with EN ISO 4762 are included..

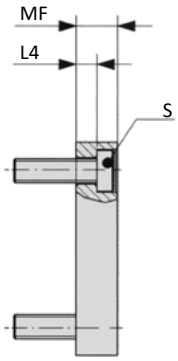
Series NYD
Mounting accessories

NXB-xxx-02, XLB-xxx-02 Flange mount







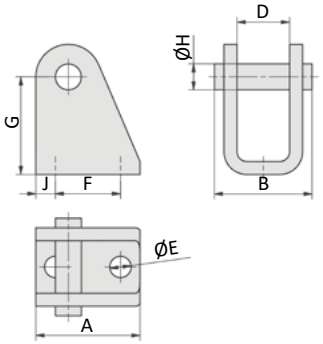


Model-no.:	Ø D	E	Ø FB	L4	MF	R	S	TF	TG	UF
NXB-020-02	12	36	6.6	4.6	10	-	M5 x 20	55*	22	70
NXB-025-02	12	40	6.6	4.6	10	-	M5 x 20	60*	26	76
XLB-032-02	30	45	7	5	10	32	M6 x 20	64	32.5	80
XLB-040-02	35	52	9	5	10	36	M6 x 20	72	38	90
XLB-050-02	40	65	9	6.5	12	45	M8 x 20	90	46.5	110
XLB-063-02	45	75	9	6.5	12	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
tolerances and adjustments	H11		H13	- 0.5	JS14	JS14		*JS13 JS14	± 0.2 *± 0.3	

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

Series NYD
Mounting accessories

RC-xx Clevis mount

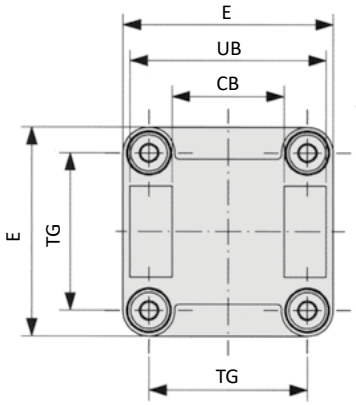


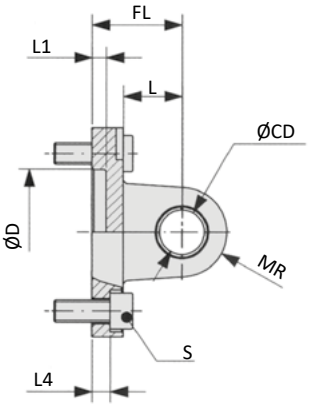
Model-no.:	A	B	D	Ø E	F	G	Ø H	J
RC-30	32	30	16.1	6.6	20	30	8	6

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

XLB-xxx-04 Clevis mount with bushing

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



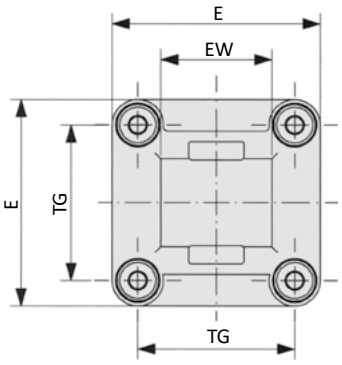


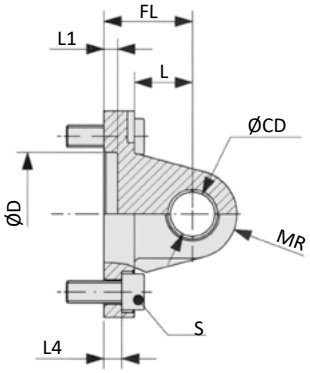
Model-no.:	CB	Ø CD	Ø D	E	FL	L	L1	L4	MR	S	TG	UB
XLB-032-04	26	10	30	45	22	13	5	5.5	10	M6 x 20	32.5	45
XLB-040-04	28	12	35	52	25	16	5	5.5	12	M6 x 20	38	52
XLB-050-04	32	12	40	65	27	16	5	6.5	12	M8 x 20	46.5	60
XLB-063-04	40	16	45	75	32	21	5	6.5	16	M8 x 20	56.5	70
XLB-080-04	50	16	45	95	36	22	5	10	16	M10 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
tolerances and adjustments	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..

Series NYD
Mounting accessories

NXB-xxx-04, XLB-xxx-05 Swivel mount

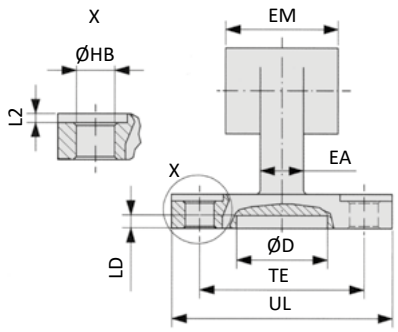


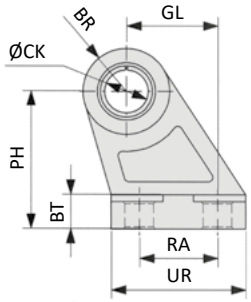


Model-no.:	Ø CD	Ø D	E	EW	FL	L	L1	L4	MR	S	TG
NXB-020-04	8	12	34	16	20	14	3	2.6	8	M5 x 16	22
NXB-025-04	8	12	38	16	20	14	3	2.6	8	M5 x 16	26
XLB-032-05	10	30	45	26	22	13	5	5.5	10	M6 x 20	32.5
XLB-040-05	12	35	52	28	25	16	5	5.5	12	M6 x 20	38
XLB-050-05	12	40	65	32	27	16	5	6.5	12	M8 x 20	46.5
XLB-063-05	16	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*
tolerances and adjustments	H9	H11			± 0.2			± 0.5			± 0.2 *± 0.3

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

XLB-xxx-06 Swivel mount 90°



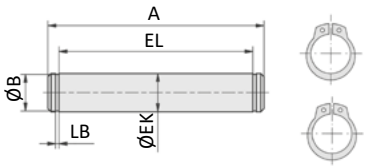


Model-no.:	BR	BT	ØCK	Ø D	EA	EM	GL	ØHB	L2	LD	PH	RA	TE	UL	UR
XLB-032-06	10	8	10	21	10	26	21	6.6	1.6	3	32	18	38	51	31
XLB-040-06	11	10	12	21	15	28	24	6.6	1.6	3	36	22	41	54	35
XLB-050-06	13	12	12	21	16	32	33	9	1.6	3	45	30	50	65	45
XLB-063-06	15	14	16	21	16	40	37	9	1.6	3	50	35	52	67	50
XLB-080-06	15	14	16	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
tolerances and adjustments			H9				JS14	H13			JS15	JS14	JS14		

Materials: Al, bushing steel and PTFE

Series NYD
Mounting accessories

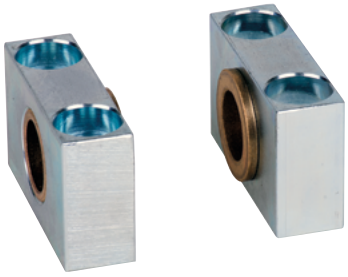
XLB-xxx-08 Clevis pin

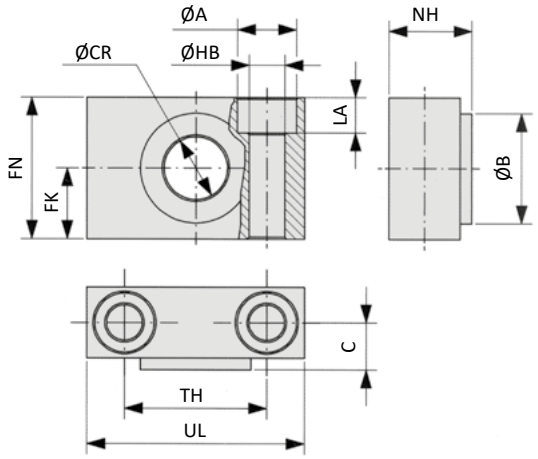


Model-no.:	A	Ø B	Ø EK	EL	LB
XLB-032-08	53	9.6	10	46	1.1
XLB-040-08	60	11.5	12	53	1.1
XLB-050-08	68	11.5	12	61	1.1
XLB-063-08	78	15.2	16	71	1.1
XLB-080-08	98	15.2	16	91	1.1
XLB-100-08	118	19	20	111	1.3
XLB-125-08	139	23.9	25	132*	1.3
tolerances and adjustments			e8	+ 2 *+ 3	

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

XLB-xxx-09 Bearing block



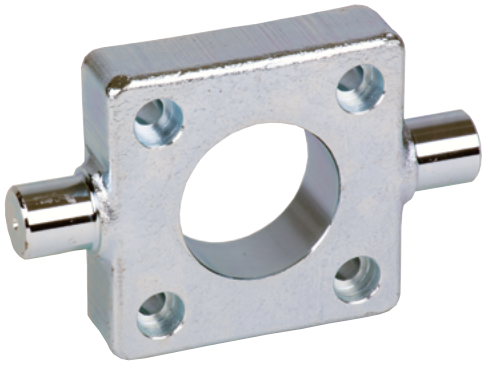


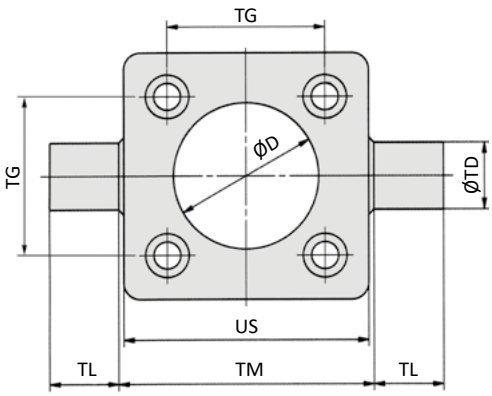
Model-no.:	for cylinder Ø	Ø A	Ø B	C	Ø CR	FK	FN	Ø HB	LA	NH	TH	UL
XLB-032-09	32	11	22	10.5	12	15	30	6.6	7	18	32	46
XLB-040-09	40. 50	15	28	12	16	18	36	9	9	21	36	55
XLB-063-09	63. 80	18	32	13	20	20	40	11	11	23	42	65
XLB-100-09	100. 125	20	39	16	25	25	50	14	13	28.5	50	75
tolerances and adjustments					H9	± 0.1		H13			± 0.2	

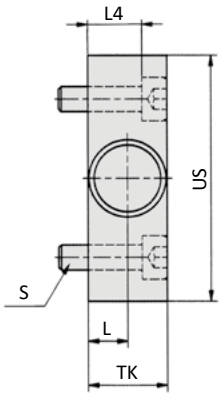
Materials: Al, bronze bushing

Series NYD
Mounting accessories

XLB-xxx-11 Trunnion mount



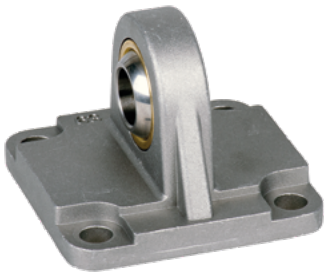


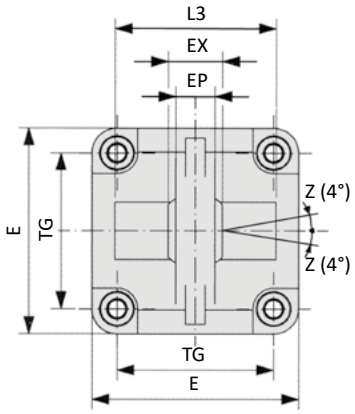


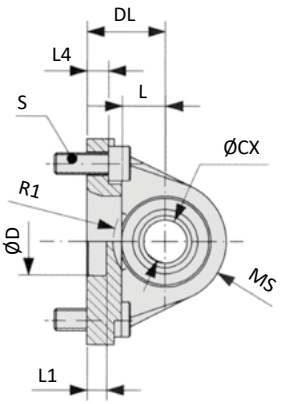
Model-no.:	Ø D	L	L4	S	Ø TD	TG	TK	TL	Ø TM	US
XLB-032-11	30	6.5	8	M6 x 20	12	32.5	14	12	50	46
XLB-040-11	35	9	13	M6 x 25	16	38	19	16	63	59
XLB-050-11	40	9	11	M8 x 25	16	46.5	19	16	75	69
XLB-063-11	45	11.5	16	M8 x 30	20	56.5	24	20	90	84
XLB-080-11	45	11.5	14	M10 x 30	20	72	24	20	110	102
XLB-100-11	55	14	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
tolerances and adjustments	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





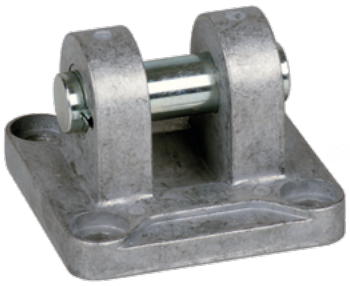


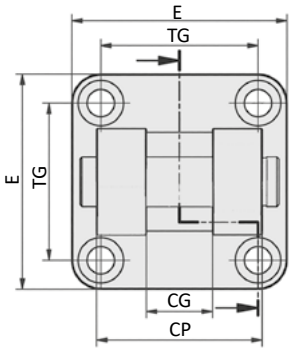
Model-no.:	Ø CX	Ø D	DL	E	EP	EX	L	L1	L3	L4	MS	R1	S	TG
XLB-032-12	10	30	22	45	10.5	14	12	7	-	5.5	16	-	M6 x 20	32.5
XLB-040-12	12	35	25	52	12	16	15	7	-	5.5	18	-	M6 x 20	38
XLB-050-12	16	40	27	65	15	21	15	7	51	6.5	21	19	M8 x 20	46.5
XLB-063-12	16	45	32	75	15	21	20	7	-	6.5	23	-	M8 x 20	56.5
XLB-080-12	20	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*
tolerances and adjustments	H7	H11	± 0.2			± 0.1				± 0.5				± 0.2 *± 0.3

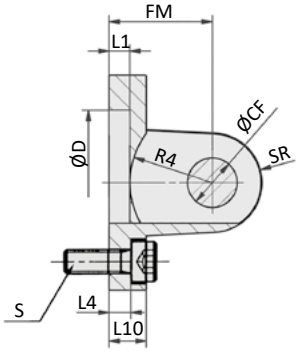
Materials: Al, bearing steel, bronze bushing; 4 screws in accordance with EN ISO 4762 are included..

Series NYD
Mounting accessories

XLB-xxx-14 Clevis mount small with pin



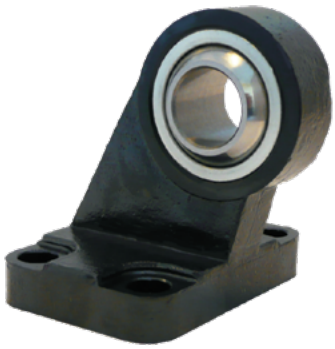


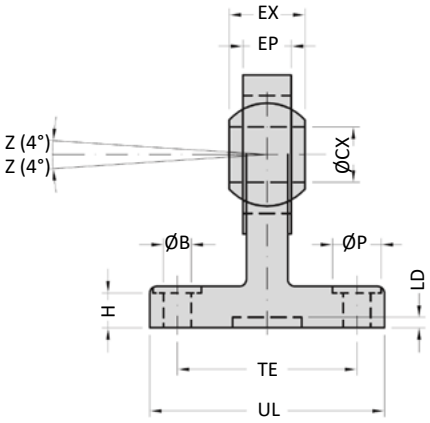


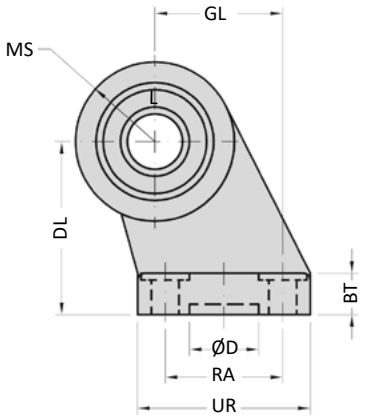
Model-no.:	Ø CF	CG	CP	Ø D	E	FM	L1	L4	L10	R4	S	SR	TG
XLB-032-14	10	14	34	30	45	22	5	5.5	9	17	M6 x 20	10	32.5
XLB-040-14	12	16	40	35	52	25	5	5.5	9	20	M6 x 20	12	38
XLB-050-14	16	21	45	40	65	27	5	6.5	11	22	M8 x 20	14	46.5
XLB-063-14	16	21	51	45	75	32	5	6.5	11	25	M8 x 20	18	56.5
XLB-080-14	20	25	65	45	95	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*
tolerances and adjustments	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°





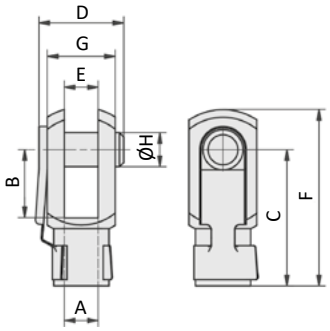


Model-no.:	Ø B	BT	ØCX	ØD	DL	EP	EX	GL	H	LD	MS	ØP	RA	TE	UL	UR
XLB-032-16	6.6	10	10	20	32	10.5	14	21	8.5	3	15	11	18	38	51	31
XLB-040-16	6.6	10	12	20	36	12	16	24	8.5	3	18	11	22	41	54	35
XLB-050-16	9	12	16	20	45	15	21	33	10.5	3	20	15	30	50	65	45
XLB-063-16	9	12	16	20	50	15	21	37	10.5	3	23	15	35	52	67	50
XLB-080-16	11	14	20	20	60	18	25	47	11.5	3	27	18	40	66	86	60
XLB-100-16	11	15	20	20	70	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
tolerances and adjustments	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 NYD
Mounting accessories

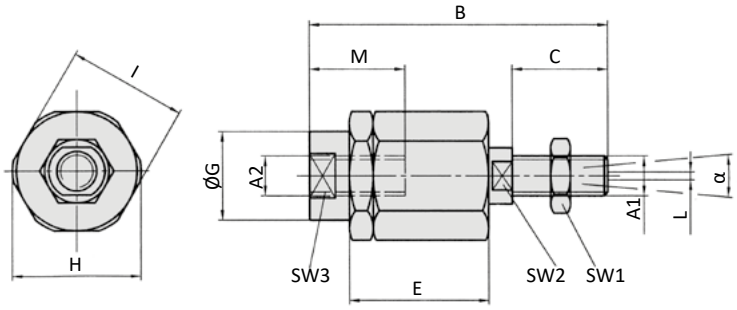
RD-xx, FD-xx Rod clevis



Model-no.:	for cylinder Ø	A	B	C	D	E	F	G	Ø H
RD-20	20, 25	M8	16	32	22	8	42	16	8
RD-25	32, 40	M10 x 1.25	20	40	26	10	52	20	10
FD-40	50, 63	M12 x 1.25	24	48	32	12	62	24	12
FD-63	80, 100	M16 x 1.5	32	64	40	16	83	32	16
FD-80	125	M20 x 1.5	40	80	50	20	105	40	20

Materials: steel, zinc plated

FK-xx Flexible coupling

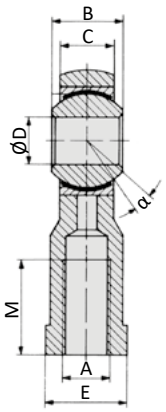


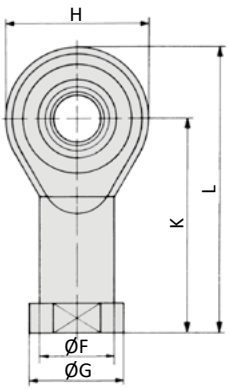
Model-no.:	for cylinder	A1, A2	B	C	D	E	Ø G	H	I	L	M	SW1	SW2	SW3	α
FK-20	20, 25	M8	57	21	5	26	12.5	19	17	2	16	13	7	11	8°
FK-32	32, 40	M10 x 1.25	71.5	20	7.5	35	22	32	30	2	22	17	12	19	8°
FK-40	50, 63	M12 x 1.25	75	24	7.5	35	22	32	30	2	22	19	12	19	8°
FK-63	80, 100	M16 x 1.5	104	32	10	53	32	45	41	2	30	24	20	27	6°
FK-80	125	M20 x 1.5	119	40	10	53	32	45	41	2	37	30	20	30	6°

Materials: steel, zinc plated

Series NYD
Mounting accessories

RO-xx, FO-xx Rod eye

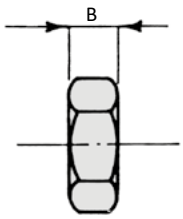


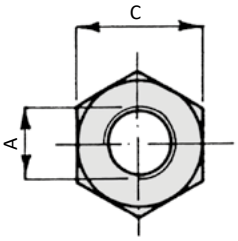


Model-no.:	for cylinder	A	B	C	Ø D	E	Ø F	Ø G	H	K	L	M	α
RO-20	20, 25	M8	12	9	8	14	12.5	16	24	36	48	16	14°
RO-25	32, 40	M10 x 1.25	14	10.5	10	17	15	19	28	43	57	20	13°
FO-40	50, 63	M12 x 1.25	16	12	12	19	17.5	22	32	50	66	22	13°
FO-63	80, 100	M16 x 1.5	21	15	16	22	22	27	42	64	85	28	15°
FO-80	125	M20 x 1.5	25	18	20	30	27.5	34	50	77	102	33	14°

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

RL-xx, FE-xx Piston rod nut

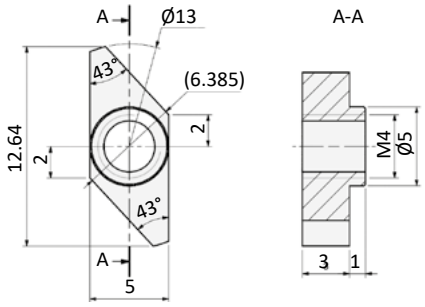




Model-no.:	for cylinder	A	B	C
RL-20	20, 25	M8	5	13
RL-25	32, 40	M10 x 1.25	5	17
FE-40	50, 63	M12 x 1.25	8	19
FE-63	80, 100	M16 x 1.5	8	24
FE-80	125	M20 x 1.5	10	30

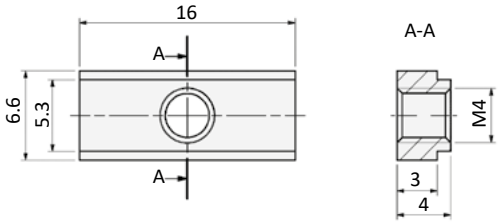
Material: steel, zinc plated

NST-T-4-U Slot nut



Materials: steel, zinc plated

NST-T-4-V Slot nut



Materials: steel, zinc plated

Proximity sensors

page 20

Series NY
Repair kits

Order code

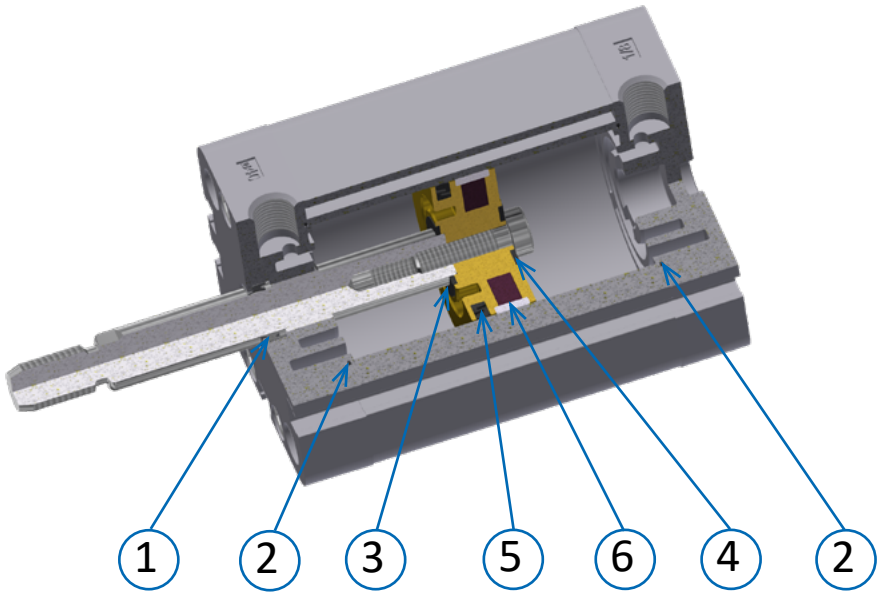
VS-NY-*-****

Series	
VS-NY	repair kit for series NY
VS-NYH	repair kit for series NYH

Piston Ø	
020	20 mm
025	25 mm
032	32 mm
040	40 mm
050	50 mm
063	63 mm
080	80 mm
100	100 mm
125	125 mm

Versions	
01	standard version
02	double end piston rod
03	high temperature version
04	double end piston rod, high temperature version

Content Ø 20 - 25 mm



Standard version

Position	Product description	Quantity
1	piston rod seal (PUR)	1*
2	O-ring, cylinder tube (NBR)	2
3	damping seal (Neopren)	1
4	damping seal (Neopren)	1
5	piston seal (NBR)	2
6	guide band (PBT+PTFE)	1

*2 pieces for version 02

High temperature version

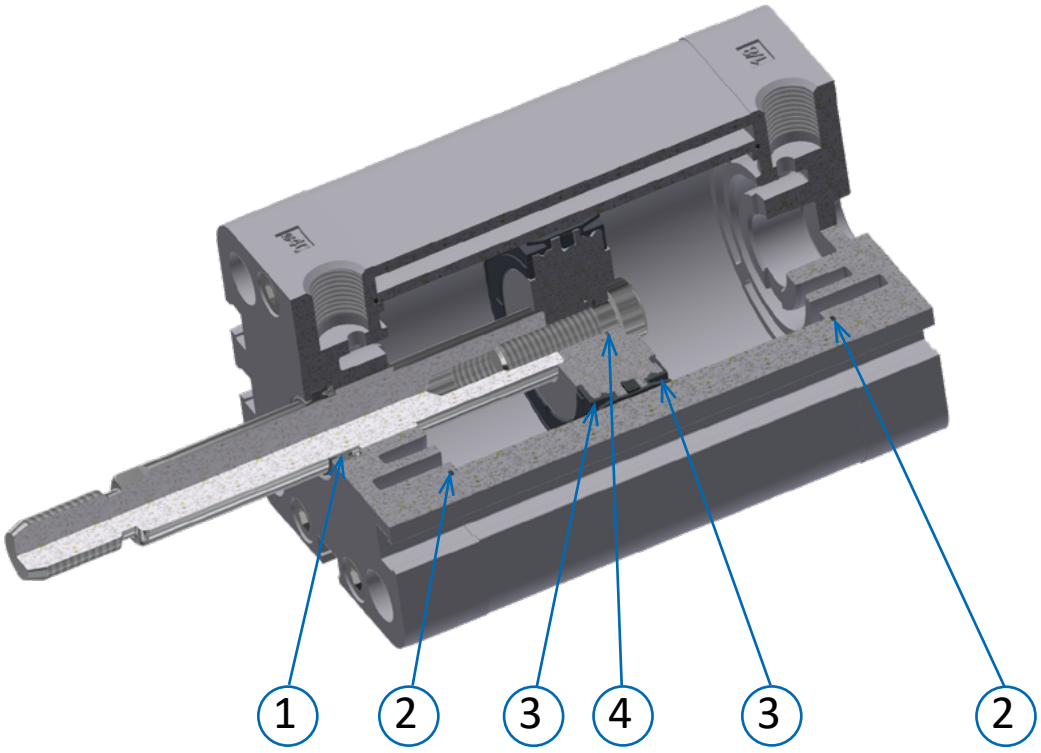
Position	Product description	Quantity
1	piston rod seal (FKM)	1*
2	O-ring, cylinder tube (FKM)	2
3	damping seal (FKM)	1
4	damping seal (FKM)	1
5	piston seal (FKM)	2
6	guide band (PBT+PTFE)	1

*2 pieces for version 04

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

Series NY
Repair kits

Content Ø 32 - 125 mm



Standard version

Position	Product description	Quantity
1	piston rod seal (PUR)	1*
2	O-ring, cylinder tube (NBR)	2
3	piston seal (PUR)	2
4	O ring (NBR)	1

*2 pieces for version 02

High temperature version

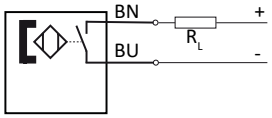
Position	Product description	Quantity
1	piston rod seal (FKM)	1*
2	O-ring, cylinder tube (FKM)	2
3	piston seal (FKM)	2
4	O ring (FKM)	1

*2 pieces for version 04

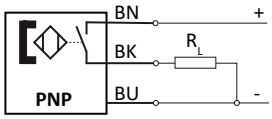
Please grease the running surfaces after fitting the seals.
We recommend our assembly grease 21-MP-01-00030-50.

Series ZS
Proximity sensors

Proximity sensors with cable

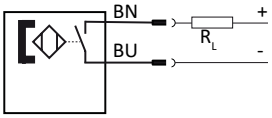


ZS-6600

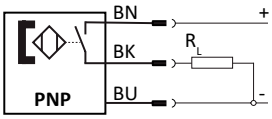


ZS-6700
ZS-7300

Proximity sensors with olug



ZS-6601



ZS-6701
ZS-7302

Technical data

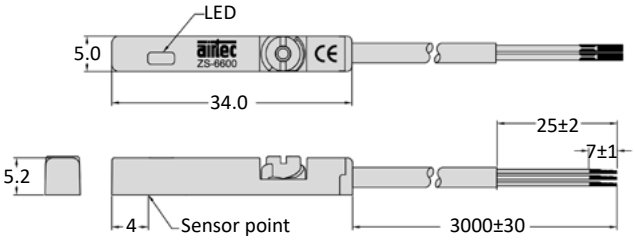
Model-no.:	ZS-6600	ZS-6601	ZS-6700	ZS-6701
				
Design	2-pole inductive	2-pole inductive	3-pole inductive	3-pole inductive
Contact function	NO	NO	NO	NO
Output	NO	NO	PNP	PNP
Rated operational voltage	10 ... 30 V DC	10 ... 30 V DC	5 ... 30 V DC	5 ... 30 V DC
Rated operational current I_E	≤ 50 mA	≤ 50 mA	≤ 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
⟨Ex⟩	II 3G Ex nA T4 II 3D Ex tD A22 IP67 T 125°C	II 3D Ex tc IIIC T125°C Dc X

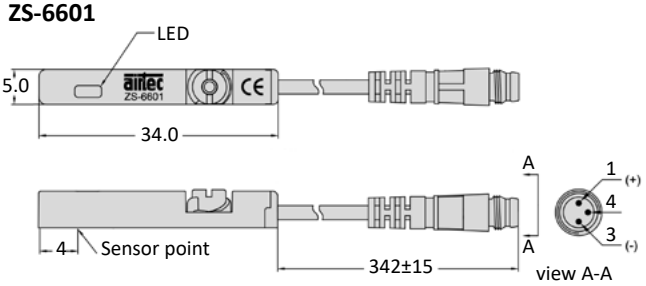
Series ZS
Proximity sensors

Dimensions

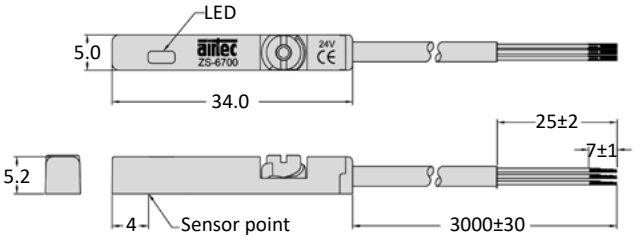
ZS-6600



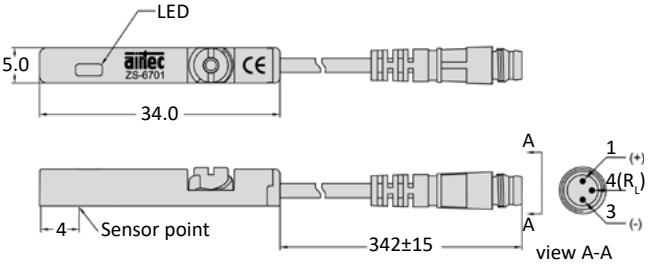
ZS-6601



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.

Series ZS
Proximity sensors

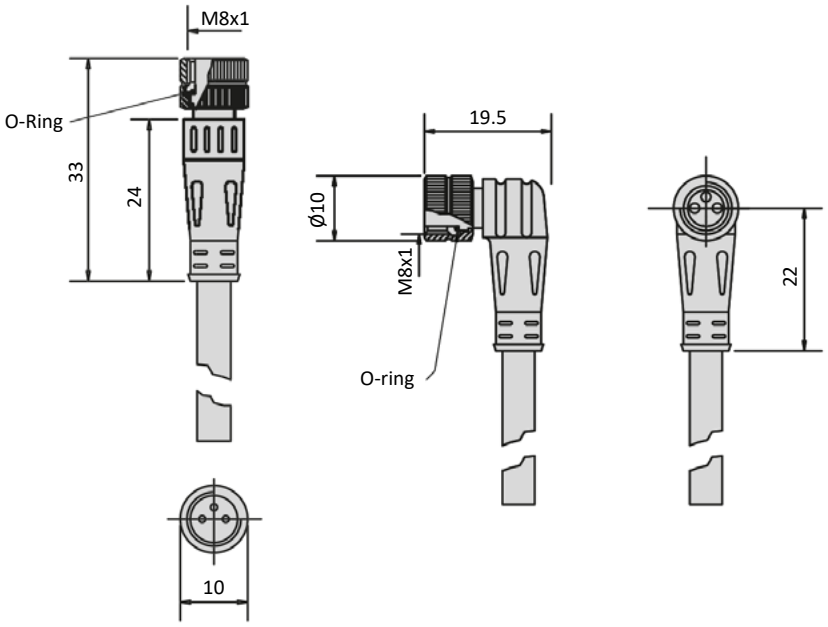
Connection cable M8

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

Version code

Cylinder - * * * - xxxx

Cylinder double acting

0	piston rod on one side with magnetic piston adjustable cushioning
1	piston rod on one side adjustable cushioning
2	piston rod on one side with magnetic piston
3	piston rod on one side
4	double end piston rod with magnetic piston adjustable cushioning
5	double end piston rod adjustable cushioning
6	double end piston rod with magnetic piston
7	double end piston rod
8	double end piston rod through hollow with magnetic piston

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

Piston rod versions

0	piston rod stainless steel male thread
1	piston rod stainless steel female thread
2	piston rod stainless steel female thread with guide and non rotating
3	piston rod stainless steel male thread non rotating
4	piston rod stainless steel female thread non rotating
5	piston rod steel hard chrome plated male thread
6	piston rod steel hard chrome plated female thread
7	double piston rod
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

with a double end piston rod, only one side is extended

Seals, Air connection

0	standard seals (PUR, NBR) air connection G thread
1	standard seals (PUR, NBR) air connection NPT thread
2	high temperature version (FKM) air connection G thread
3	high temperature version (FKM) air connection NPT thread
4	standard seals (NBR) piston rod seal FKM air connection G thread
5	standard seals (NBR) piston rod seal FKM air connection NPT 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

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 IIB T4 Gb
II 2D Ex h IIIC T120°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
NYD	Ø 20 and 25 with 5 ... 60 mm stroke, Ø 32 up to 100 with 5 ... 80 mm stroke

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 (Nl for a single stroke of 100 mm, based upon extension)

	Pressure in bar						
Piston-Ø	2	3	4	5	6	7	8
20	0.09	0.13	0.16	0.19	0.22	0.25	0.28
25	0.15	0.20	0.25	0.29	0.34	0.39	0.44
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 (Nl/min at p = 6 bar)

	speed (m/s)				
Piston-Ø	0.25	0.5	1	1.5	2
20	33	66	132	198	264
25	52	103	206	309	412
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)

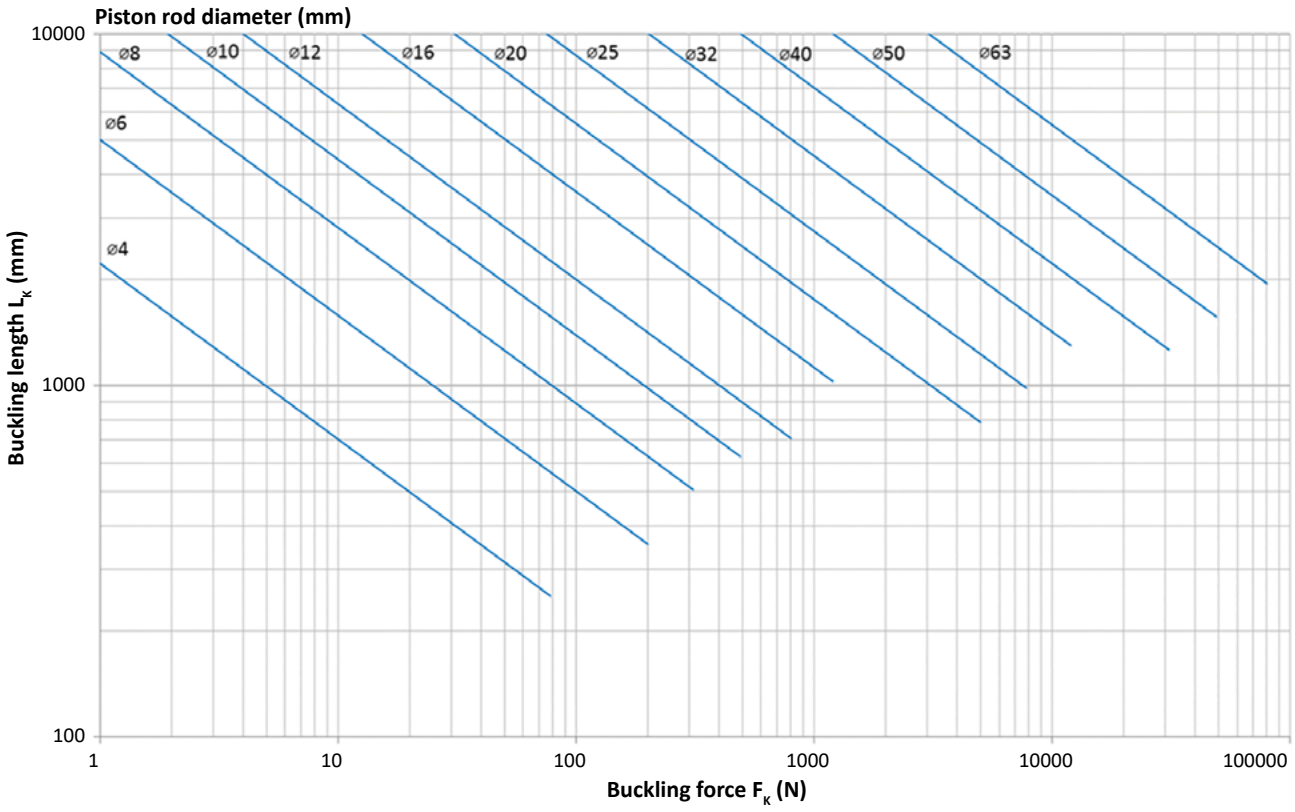
Piston-Ø	Series	Piston rod Ø (mm)	Pressure in bar						
			2	3	4	5	6	7	8
20			57	85	113	141	170	198	226
	NYD	10	42	64	85	106	127	148	170
25			88	132	177	221	265	309	353
	NYD	10	74	111	148	185	223	260	297
32			145	217	289	362	434	506	579
	NYD	12	124	187	249	311	373	435	497
40			226	339	452	565	678	791	904
	NYD	12	206	309	411	514	617	720	823
50			353	530	707	883	1060	1236	1413
	NYD	16	317	476	634	793	951	1110	1268
63			561	841	1122	1402	1682	1963	2243
	NYD	16	525	787	1049	1312	1574	1836	2099
80			904	1356	1809	2261	2713	3165	3617
	NYD	20	848	1272	1696	2120	2543	2967	3391
100			1413	2120	2826	3533	4239	4946	5652
	NYD	25	1325	1987	2649	3312	3974	4636	5299
125			2208	3312	4416	5520	6623	7727	8831
	NYD	25	2120	3179	4239	5299	6358	7418	8478

extension force*

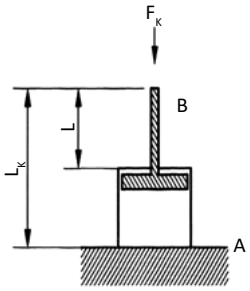
retraction force*

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

Critical load diagram for the piston rod

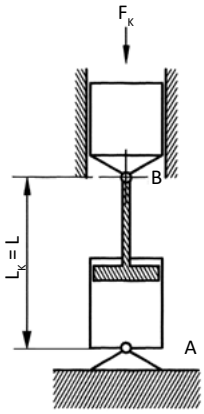


First elastic case of buckling



A: fixed restraint
B: open end
$L_K \approx 4$*cylinder stroke length

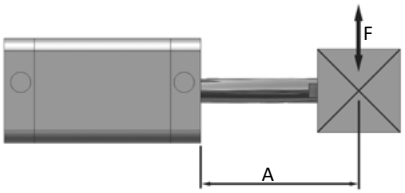
Second elastic case of buckling



A: joint
B: joint
$L_K \approx 2$*cylinder stroke length

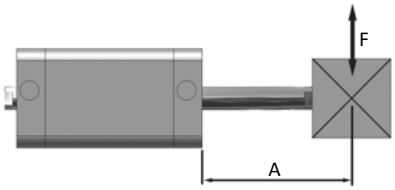
Knowing the actual buckling case, either 1 or 2, and knowing the requested stroke length you can calculate the buckling length L_K. If you know the buckling force F_K (compressive force) you determine in the diagram above the intersection of both data. Choose the next graph line above to get the necessary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

Permissible side load F (N), series NYD, version 200 and 210



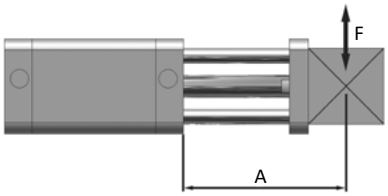
	Distance A (mm)									
Piston-Ø	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**125**
20 + 25	12	11	9	7	6	5	4	3	3	-
32 + 40	23	20	16	12	10	8	7	7	6	4
50 + 63	38	34	28	22	18	15	13	12	11	3
80	49	43	35	28	24	20	18	17	16	12
100	93	82	67	55	46	40	37	34	31	23

Permissible side load F (N), series NYD, version 600 and 610



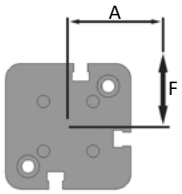
	Distance A (mm)									
Piston-Ø	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**125**
20 + 25	32	30	26	21	19	16	14	13	12	9
32 + 40	47	43	38	32	28	26	22	20	18	13
50 + 63	83	78	68	59	51	46	41	38	36	27
80	112	108	93	83	74	67	60	57	54	40
100	194	181	160	144	130	118	108	101	96	72

Permissible side load F (N), series NYD, version 220



	Distance A (mm)									
Piston-Ø	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**	**125**
20	38	33	27	23	20	18	16	14	12	9
25	59	53	43	37	31	27	24	23	22	15
32	76	68	58	49	43	38	35	34	32	24
40	112	101	84	72	62	56	50	47	46	34
50 + 63	145	130	108	92	83	74	66	61	56	42
80 + 100	200	180	155	135	120	110	100	90	80	60

Permissible torque F x A (Nm), series NYD, version 220



	Distance A (mm)											
Piston-Ø	**10**	**15**	**20**	**25**	**30**	**40**	**50**	**60**	**70**	**80**	**90**	**100**
20	1,0	0,85	0,8	0,7	0,6	0,4	0,35	0,35	0,3	0,25	0,2	0,2
25	2,0	1,75	1,6	1,3	1,2	0,9	0,75	0,6	0,5	0,45	0,45	0,4
32	2,7	2,5	2,2	2,0	1,8	1,6	1,3	1,1	1,0	0,9	0,9	0,8
40	5,0	4,0	3,5	3,3	3,0	2,5	2,2	2,0	1,8	1,5	1,4	1,3
50	8,8	7,6	6,7	6,0	5,4	4,6	4,0	3,5	3,0	2,8	2,6	2,4
63	10,7	9,4	8,3	7,4	6,7	5.5	4,8	4,2	3,8	3,5	3,2	2,9
80	17,5	15,3	13,7	12,4	11,3	9,6	8,5	7,6	7,0	6,3	5,8	5,3
100	20,0	19,0	17,0	15,5	14,0	12,0	10,5	9,5	8,5	7,7	7,0	6,5