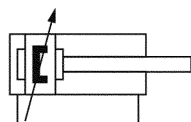


Pneumatic cylinders series CX

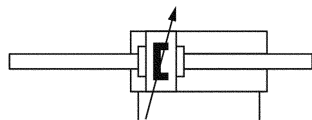
Double acting with magnetic piston, ISO 15552, stainless steel

G1/8 to G1/2 • piston Ø 32 to 100 mm

airtec



000



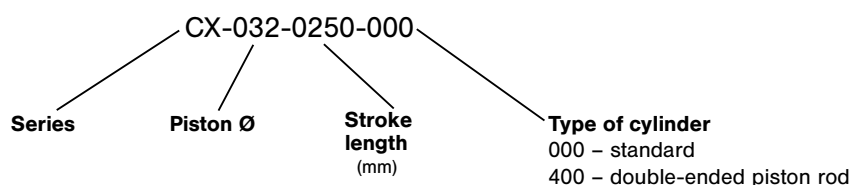
400



Note:

Piston Ø 125, 160 and 200 on request.

Order code



Design and function

Double acting pneumatic cylinder with adjustable cushions and permanent magnet for proximity sensors.

Standard stroke lengths in table below, additional lengths on request.

Valves of this series are available in explosion proof design in accordance with 94/9/EG (ATEX). For further details see chapter 13 of this catalogue.

Order number Please complete according to order code.	CX-032-...	CX-040-...	CX-050-...	CX-063-...	CX-080-...	CX-100-...
Piston Ø (mm)	32	40	50	63	80	100
Force at 6 bar in N**						
	Extension	434	678	1060	1682	2713
	Retraction	373	570	890	1513	2448
Connection	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2
Piston rod thread	M 10 x 1,25	M12 x 1,25	M16 x 1,5	M16 x 1,5	M20 x 1,5	M20 x 1,5
Cushioning length (mm)	27	29	32	32	32	32
Operating pressure	1 ... 10 bar (14.5 ... 145 psi)					
Temperature range	– 20 °C ... + 80 °C (– 10 °C ... + 150 °C on request)					
Medium	Compressed air in accordance with ISO 8573-1: 2001, Class 7 4 – and free of aggressive additives					
Standard stroke lengths (mm)*	25, 40, 50, 80, 100, 125, 160, 200, 250, 320, 400, max. 1000					
Materials***	Cylinder tube: AISI 304 (1.4301) End caps: AISI 304 (1.4301) Piston rod: AISI 316 (1.4401) Seals: PU/NBR					

* Refer to "Critical Load Diagram" on page 9.240 to determine critical values on the piston rod.

** The internal friction is considered.

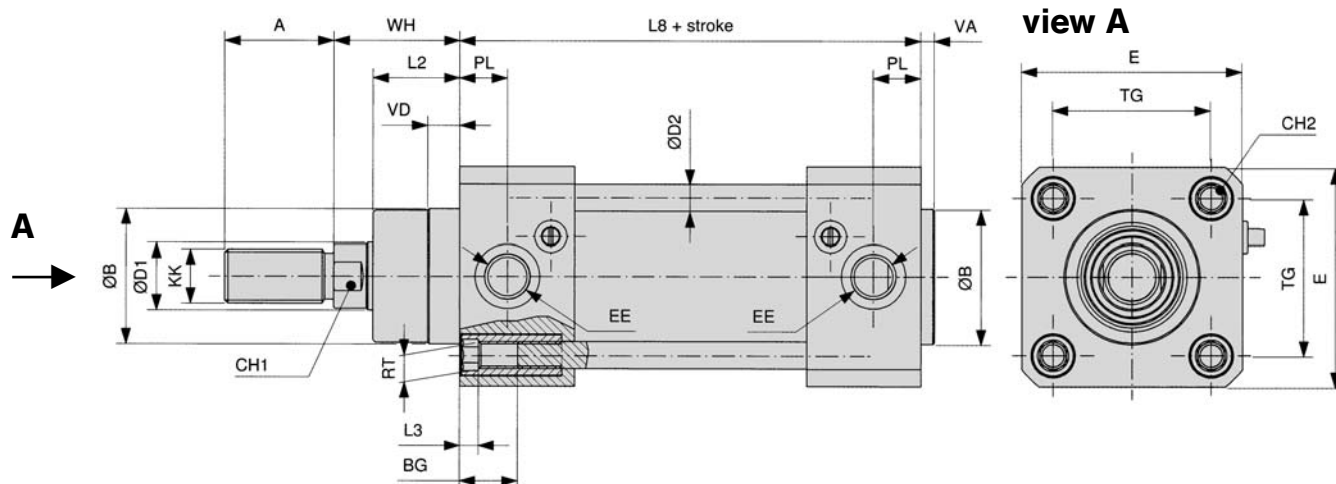
*** Other materials on request.

Pneumatic cylinders series CX

Double acting with magnetic piston, ISO 15552, stainless steel
G1/8 to G1/2 • piston Ø 32 to 100 mm



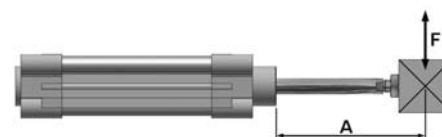
Series CX (Type for order code: -000)



Piston Ø	A	Ø B	BG	CH1	CH2	Ø D1	Ø D2	E	EE	KK
32	22	30	16.5	10	6	12	6	50	G1/8	M10 x 1.25
40	24	35	16.5	13	6	16	6	55	G1/4	M12 x 1.25
50	32	40	17.5	17	8	20	8	65	G1/4	M16 x 1.5
63	32	45	17.5	17	8	20	8	75	G3/8	M16 x 1.5
80	40	45	17.5	22	–	25	10	95	G3/8	M20 x 1.5
100	40	55	17.5	22	–	25	10	110	G1/2	M20 x 1.5

Piston Ø	L2	L3	L8	PL	RT	TG	VA	VD	WH
32	18	5	94	13	M6	32.5	4	9.5	26
40	22	5	105	14	M6	38	4	9.5	30
50	25.5	5	106	14	M8	46.5	4	9.5	37
63	25	5	121	16	M8	56.5	4	9.5	37
80	35	–	128	17	M10	72	4	10	46
100	38	–	138	18	M10	89	4	10	51

Permissible side load (N) for cylinder CX



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

Mounting accessories for series CX

ISO 15552, stainless steel

G1/8 to G1/2 • piston Ø 32 to 100 mm



Piston rod accessories

PO-... Rod eye
PD-... Rod clevis with pin

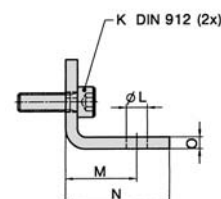
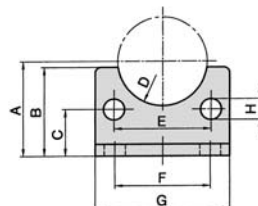
Page 9.213
Page 9.213

PL-... Piston rod nut

Page 9.213

Foot mount

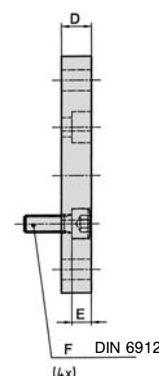
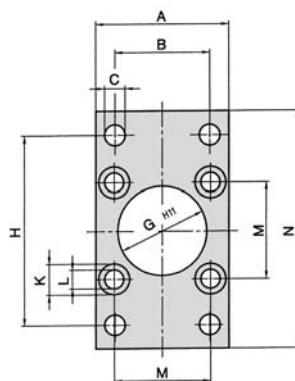
1 pair



Material: AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	K	L	M	N	O
CXB-032-01	32	30	15.75	R 15	32.5	32	45	7	M6 x 20	7	24	35	4
CXB-040-01	36	30	17	R 17.5	38	36	52	7	M6 x 20	9	28	36	4
CXB-050-01	45	36	21.75	R 20	46.5	45	65	9	M8 x 25	9	32	47	5
CXB-063-01	50	35	21.75	R 22.5	56.5	50	75	9	M8 x 25	9	32	45	5
CXB-080-01	63	47	27	R 22.5	72	63	95	11	M10 x 25	12	41	55	6
CXB-100-01	71	53	26.5	R 27.5	89	75	115	11	M10 x 30	14	41	57	6
	JS 15	+ 2					- 0.2						± 0.5

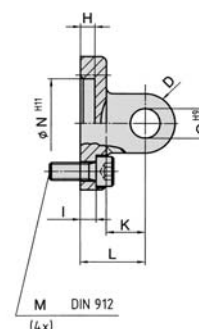
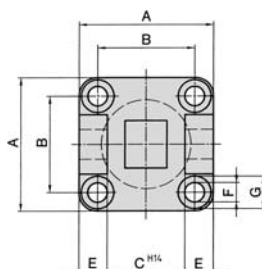
Flange mount



Material: AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	K	L	M	N
CXB-032-02	45	32	7	10	5	M6 x 16	30	64	10.5	6.6	32.5	80
CXB-040-02	52	36	9	10	5	M6 x 16	35	72	11	6.6	38	90
CXB-050-02	65	45	9	12	5.5	M8 x 20	40	90	15	9	46.5	110
CXB-063-02	75	50	9	12	5.5	M8 x 20	45	100	15	9	56.5	120
CXB-080-02	95	63	12	15	8	M10 x 25	45	126	18	11	72	150
CXB-100-02	115	75	14	15	8	M10 x 25	55	150	18	11	89	170

Clevis mount



Material: AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N	O
CXB-032-03	45	32.5	26	10	9.5	6.6	11	5	5.5	12	22	M6 x 16	30	10
CXB-040-03	55	38	28	12	12	6.6	11	5	5.5	15	25	M6 x 16	35	12
CXB-050-03	65	46.5	32	12	14	9	15	5	6.5	17	27	M8 x 20	40	12
CXB-063-03	75	56.5	40	16	15	9	15	5	6.5	20	32	M8 x 20	45	16
CXB-080-03	95	72	50	16	20	11	18	14	10	22	36	M10 x 30	45	16
CXB-100-03	115	89	60	20	25	11	18	14	10	25	41	M10 x 30	55	20

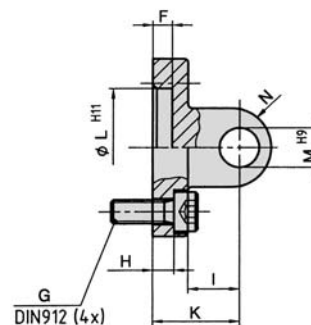
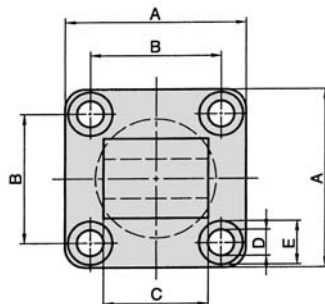
Mounting accessories for series CX

ISO 15552, stainless steel

G1/8 to G1/2 • piston Ø 32 to 100 mm

airtec

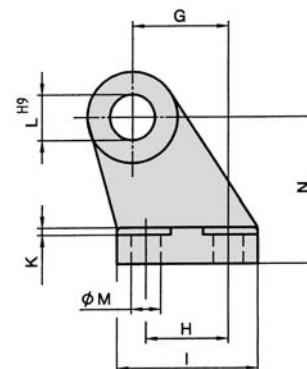
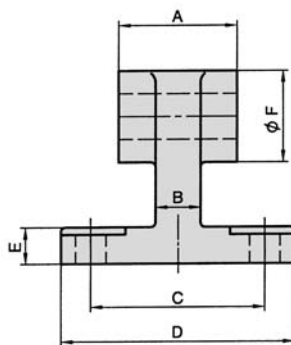
Swivel mount



Material: AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N
CXB-032-05	45	32.5	26	6.6	11	5	M6 x 16	5.5	12	22	30	10	10
CXB-040-05	55	38	28	6.6	11	5	M6 x 16	5.5	15	25	35	12	12
CXB-050-05	65	46.5	32	9	15	5	M8 x 20	6.5	17	27	40	12	12
CXB-063-05	75	56.5	40	9	15	5	M8 x 20	6.5	20	32	45	16	16
CXB-080-05	95	72	50	11	18	5	M10 x 30	10	22	36	45	16	16
CXB-100-05	115	89	60	11	18	5	M10 x 30	10	25	41	55	20	20

Swivel mount 90°

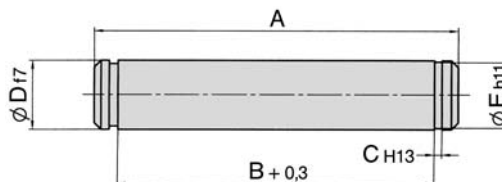


Material: AISI 304 (1.4301)

Order number	A	B	C	D	E	F	G	H	I	K	L	M	N
CXB-032-06	26	10	38	51	8	20	21	18	31	1.5	10	6.6	32
CXB-040-06	28	10	41	54	10	22	24	22	35	1.5	12	6.6	36
CXB-050-06	32	14	50	65	12	26	33	30	45	1.5	12	9	45
CXB-063-06	40	14	52	67	12	30	37	35	50	1.5	16	9	50
CXB-080-06	50	18	66	86	14	30	47	40	60	2.5	16	11	63
CXB-100-06	60	20	76	96	15	36	55	50	70	2.5	20	11	71

- 0.2
- 0.6

Clevis pin



Material: AISI 304 (1.4301)

Snap rings are included.

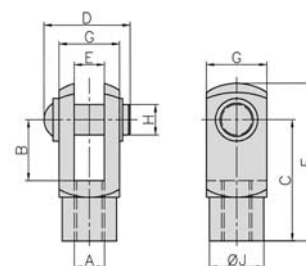
Order number	A	B	C	D	E
CXB-032-08	53	46	1.1	10	9.6
CXB-040-08	60	53	1.1	12	11.5
CXB-050-08	68	61	1.1	12	11.5
CXB-063-08	78	71	1.1	16	15.2
CXB-080-08	98	91	1.1	16	15.2
CXB-100-08	118	111	1.3	20	19.0

Piston rod accessories stainless steel

Assignment to series

Series	Piston rod thread	Rod clevis	Piston rod nut	Rod eye
CM-16	M 6	PD-16	PL-16	PO-16
CM-20	M 8	PD-20	PL-20	PO-20
CM-25	M 10 x 1.25	PD-25	PL-25	PO-25
CX-32				
CX-40	M 12 x 1.25	PD-40	PL-40	PO-40
CX-50	M 16 x 1.5	PD-63	PL-63	PO-63
CX-63				
CX-80	M 20 x 1.5	PD-80	PL-80	PO-80
CX-100				

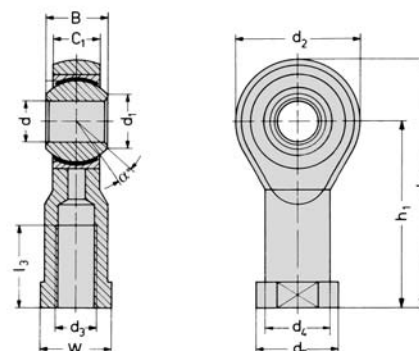
Rod clevis with pin



Material: stainless steel 1.4305

Order number	A	B	C	D	E	F	G	H	J
PD-16	M 6	12	24	17	6	31	12	6	10
PD-20	M 8	16	32	20	8	42	16	8	14
PD-25	M 10 x 1.25	20	40	25	10	52	20	10	18
PD-40	M 12 x 1.25	24	48	30	12	62	24	12	20
PD-63	M 16 x 1.5	32	64	39	16	83	32	16	26
PD-80	M 20 x 1.5	40	80	48	20	105	40	20	34
			± 0,3					h ₁₁	

Rod eye

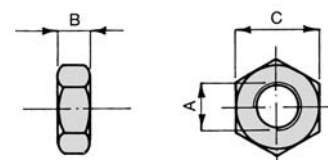


Material Body: stainless steel 1.4057
 Bearing housing: stainless steel 1.4571 PTFE coated
 Inner ring: stainless steel 1.4034 hardened

Order number	d ₃	d	d ₁	d ₂	d ₄	d ₅	B	C ₁	W	L ₃	L ₄	h ₁	α
PO-16	M 6	6	8.9	20	10	13	9	6.75	11	12	40	30	13
PO-20	M 8	8	10.4	24	12.5	16	12	9	13	16	48	36	13
PO-25	M 10 x 1.25	10	12.9	28	15	19	14	10.5	17	20	57	43	13
PO-40	M 12 x 1.25	12	15.4	32	17.5	22	16	12	19	22	66	50	13
PO-63	M 16 x 1.5	16	19.3	42	22	27	21	15	22	28	85	64	15
PO-80	M 20 x 1.5	20	24.3	50	27.5	34	25	18	32	33	102	77	15

Piston rod nut

Order number	A	B	C
PL-16	M 6	3.2	10
PL-20	M 8	4	13
PL-25	M 10 x 1.25	5	17
PL-40	M 12 x 1.25	6	19
PL-63	M 16 x 1.5	8	24
PL-80	M 20 x 1.5	10	30



Material: stainless steel 1.4301

Force chart

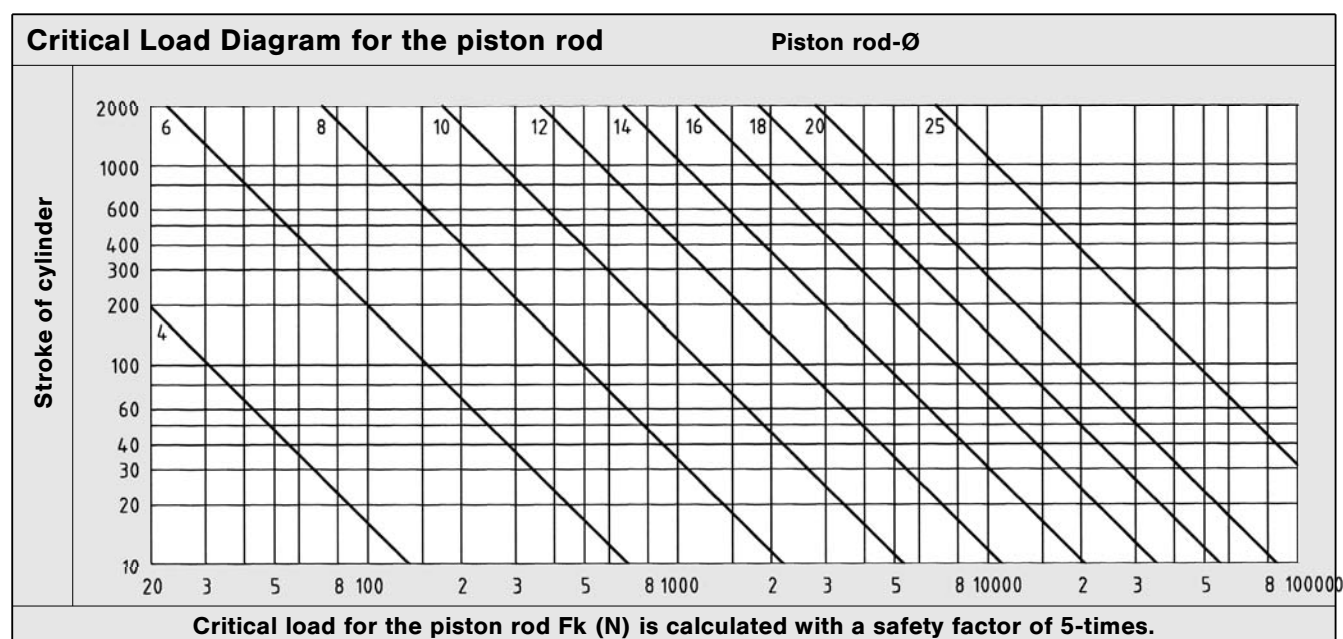
The chart shows extension and retraction forces for double acting cylinders in N. A correction factor of 0,9 for the internal friction is already calculated. Minor influences based on the cushioning bushings are disregarded.

Cylinder Ø	Cylinder series	Rod dia- meter Ø	Piston area [cm²]	Pressure in bar							
				2	3	4	5	6	7	8	
8			Extension force 0,50	9	14	18	23	27	32	36	
	HM	4	Retraction force 0,38	7	10	14	17	20	24	27	
10			Extension force 0,79	14	21	28	35	42	49	57	
	HM	4	Retraction force 0,66	12	18	24	30	36	42	47	
12			Extension force 1,13	20	31	41	51	61	71	81	
	HM	6	Retraction force 0,85	15	23	31	38	46	53	61	
16			Extension force 2,01	36	54	72	90	109	127	145	
	HM, CM	6	Retraction force 1,73	31	47	62	78	93	109	124	
	NXD	8	Retraction force 1,51	27	41	54	68	81	95	109	
20			Extension force 3,14	57	85	113	141	170	198	226	
	HM, CM	8	Retraction force 2,64	47	71	95	119	142	166	190	
	NXD, NYD, LX	10	Retraction force 2,36	42	64	85	106	127	148	170	
25			Extension force 4,91	88	132	177	221	265	309	353	
	HM, NXD, NYD, CM	10	Retraction force 4,12	74	111	148	185	223	260	297	
	LX	12	Retraction force 3,78	68	102	136	170	204	238	272	
32	XL,		Extension force 8,04	145	217	289	362	434	506	579	
	NXD, NYD, CX	12	Retraction force 6,91	124	187	249	311	373	435	497	
	LX	16	Retraction force 6,03	109	163	217	271	326	380	434	
40			Extension force 12,56	226	339	452	565	678	791	904	
	NXD, NYD	12	Retraction force 11,43	206	309	411	514	617	720	823	
	XL, LX, CX	16	Retraction force 10,55	190	285	380	475	570	665	760	
50			Extension force 19,63	353	530	707	883	1060	1236	1413	
	NXD, NYD	16	Retraction force 17,62	317	476	634	793	951	1110	1268	
	XL, LX, CX	20	Retraction force 16,49	297	445	593	742	890	1039	1187	
63			Extension force 31,16	561	841	1122	1402	1682	1963	2243	
	NXD, NYD	16	Retraction force 29,15	525	787	1049	1312	1574	1836	2099	
	XL, LX, CX	20	Retraction force 28,02	504	756	1009	1261	1513	1765	2017	
80			Extension force 50,24	904	1356	1809	2261	2713	3165	3617	
	NXD, NYD	20	Retraction force 47,10	848	1272	1696	2120	2543	2967	3391	
	XL, CX	25	Retraction force 45,33	816	1224	1632	2040	2448	2856	3264	
100	XL, NXD,		Extension force 78,50	1413	2120	2826	3533	4239	4946	5652	
	NYD, CX	25	Retraction force 73,59	1325	1987	2649	3312	3974	4636	5299	
125			Extension force 122,66	2208	3312	4416	5520	6623	7727	8831	
	XL	32	Retraction force 114,62	2063	3095	4126	5158	6189	7221	8252	
160			Extension force 200,96	3617	5426	7235	9043	10852	12660	14469	
	XG	40	Retraction force 188,40	3391	5087	6782	8478	10174	11869	13565	
200			Extension force 314,00	5652	8478	11304	14130	16956	19782	22608	
	XG	40	Retraction force 301,44	5426	8139	10852	13565	16278	18991	21704	
250			Extension force 490,63	8831	13247	17663	22078	26494	30909	35325	
	XG	50	Retraction force 471,00	8478	12717	16956	21195	25434	29673	33912	
320			Extension force 803,84	14469	21704	28938	36173	43407	50642	57876	
	XG	63	Retraction force 772,68	13908	20862	27817	34771	41725	48679	55633	

Technical charts

This table shows the air consumption for a single stroke of 100 mm. These statements are based upon extension and are in NI.

Piston Ø mm	Air pressure in bar/psi						
	2 (29 psi)	3 (43.4 psi)	4 (58 psi)	5 (72.5 psi)	6 (87 psi)	7 (101.5 psi)	8 (116 psi)
8	0.02	0.02	0.03	0.03	0.04	0.04	0.05
10	0.02	0.03	0.04	0.05	0.05	0.06	0.07
12	0.03	0.05	0.06	0.07	0.08	0.09	0.10
16	0.06	0.08	0.10	0.12	0.14	0.16	0.18
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



$$F_k = \frac{\pi^2 EI}{L_k^2 S}$$

F_k = permitted critical force (N)
 E = elasticity module (N/mm²)
 I = moment of inertia (mm⁴)
 L_k = effective length of critical load
 S = security

Elastic cases of buckling according to Euler

