ISO 15552 CYLINDERS ø 32 ÷ 125 mm
Series KL - LIGHT PROFILE

CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air, with or without lubrication
Working pressure	1,5 ÷ 10 bar
End-caps	die-cast aluminium
Barrel	anodised aluminium
Piston	die-cast aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston seal	nitrile rubber
Guide bush for piston rod	UNIVER original self-lubricating and self-aligning
Shock absorber seals	nitrile rubber
Cushionings	pneumatic adjustable
Other available versions	tandem, two-position tandem, opposed, with common piston rod

CODIFICATION KEY

K	L	2	0	0	0	3	2	0	0	5	0		M
1		2	3		4				5			6	7

1 Series

KL = Ø 32÷125 mm - ISO 15552 Pneumatic cylinders

Magnetic version standard supplied

2 Type

1 = Stainless steel piston rod
2 = Chromium-plated steel piston rod

3 Version

00 = **D.A.** Standard version
01 = **D.A.** Through piston rod
60 = **S.A.** Retracted piston rod Max stroke 50 mm
70 = **S.A.** Extended piston rod Max stroke 50 mm

D.A. = Double acting
S.A. = Single acting

4 Bore (mm)

032 = Ø32 **080** = Ø80
040 = Ø40 **100** = Ø100
050 = Ø50 **125** = Ø125
063 = Ø63

5 Stroke (mm)

0025 = 25	**0150** = 150	**0320** = 320	**0700** = 700
0050 = 50	**0160** = 160	**0350** = 350	**0800** = 800
0075 = 75	**0175** = 175	**0400** = 400	**0900** = 900
0080 = 80	**0200** = 200	**0450** = 450	**1000** = 1000
0100 = 100	**0250** = 250	**0500** = 500	
0125 = 125	**0300** = 300	**0600** = 600	

6 Option

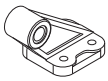
F = Preset for locking unit reduced protrusion
G = Preset for locking unit ISO protrusion

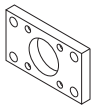
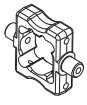
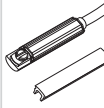
7 Magnetic

M = Magnetic version standard supplied

Magnetic Sensors
(see page 2.27)

FIXING ELEMENTS AND ACCESSORIES

ø	Female fork with clips	Articulated self-lubricating fork	Fork with axially mounted articulated pin	Fork with angle mounted articulated pin	Floating joint	Female rear hinge with pin	Counter hinge 90° (CETOP)	Counter hinge 90°	Counter hinge 90° (CNOMO)	Narrow female hinge with pin	Articuled counter hinge
											
32	KF-15032	KF-17032	KF-22032	KF-23032	KF-24032	KF-10032A	KF-19032CTA	KF-19032	KF-19032CN	KF-10032AS	KF-19032SC
40	KF-15040	KF-17040	KF-22040	KF-23040	KF-24040	KF-10040A	KF-19040CTA	KF-19040	KF-19040050CN	KF-10040AS	KF-19040SC
50	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	KF-10050A	KF-19050CTA	KF-19050	KF-19040050CN	KF-10050AS	KF-19050SC
63	KF-15050	KF-17050	KF-22050	KF-23050	KF-24050	KF-10063A	KF-19063CTA	KF-19063	KF-19063080CN	KF-10063AS	KF-19063SC
80	KF-15080	KF-17080	KF-22080	KF-23080	KF-24080	KF-10080A	KF-19080CTA	KF-19080	KF-19063080CN	KF-10080AS	KF-19080SC
100	KF-15080	KF-17080	KF-22080	KF-23080	KF-24080	KF-10100A	KF-19100CTA	KF-19100	KF-19100125CN	KF-10100AS	KF-19100SC
125	KF-15125	KF-17125	-	-	-	KF-10125A	KF-19125CTA	-	KF-19100125CN	KF-10125AS	KF-19125SC

ø	Articulated rear male hinge	Rear male hinge	Front / rear flange	Angle bracket	Front / rear hinge with floating pin	Support for hinges	ISO intermediate hinge	DF sensor and DHF covering strip	Cable clamping for DF sensor
									
32	KF-11032S	KF-11032	KF-12032	KF-13032	KF-14032AP	KF-41032	KLF-14032	DF DHF-0020100	DF-001
40	KF-11040S	KF-11040	KF-12040	KF-13040	KF-14040AP	KF-41040050	KLF-14040		
50	KF-11050S	KF-11050	KF-12050	KF-13050	KF-14050AP	KF-41040050	KLF-14050		
63	KF-11063S	KF-11063	KF-12063	KF-13063	KF-14063AP	KF-41063080	KLF-14063		
80	KF-11080S	KF-11080	KF-12080	KF-13080	KF-14080AP	KF-41063080	KLF-14080		
100	KF-11100S	KF-11100	KF-12100	KF-13100	KF-14100AP	KF-41100125	KLF-14100		
125	KF-11125S	KF-11125	KF-12125	KF-13125	KF-14125AP	KF-41100125	KLF-14125		

(2017/01)

Tube profile with integrated sensor grooves
UNIVER Original since 2005

Recessed sensor
DF series

Magnetic piston
standard supplied

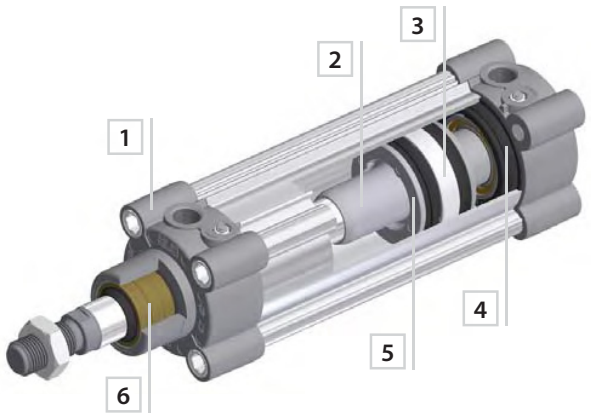
Fixing screws integrated in the end cap profile

Sensor grooves available in different positions

Possibility to mount DH sensors with brackets

Intermediate hinge with locking system guaranteed by UNIVER AUTOMOTIVE expertise

Standard fixing elements
UNIVER Original



1 Die-cast end caps in aluminium alloy

2 Die-cast piston in aluminium alloy

3 Guide slide in acetalic resin with integrated magnetic ring

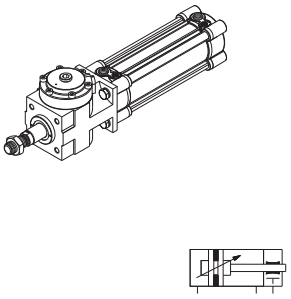
4 Wear-resistant shock absorbers seals in nitrilic rubber compound

5 Lip piston seals in nitrile rubber compound

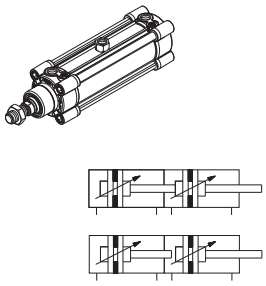
6 **UNIVER Original** self-aligning and self-lubricating guide bush for piston rod

Further available versions

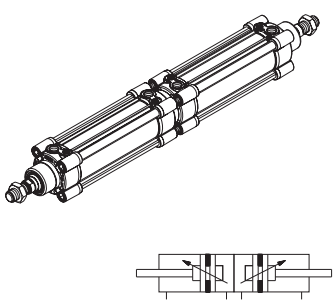
- Cylinder with L1-N locking unit



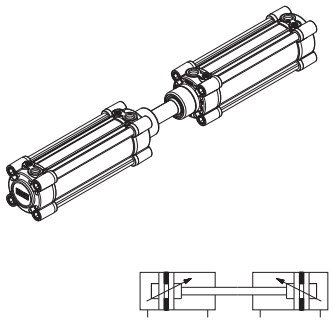
- Tandem cylinder
  Two-position tandem cylinder



- Opposed cylinders



- Cylinders with common piston rod



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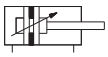
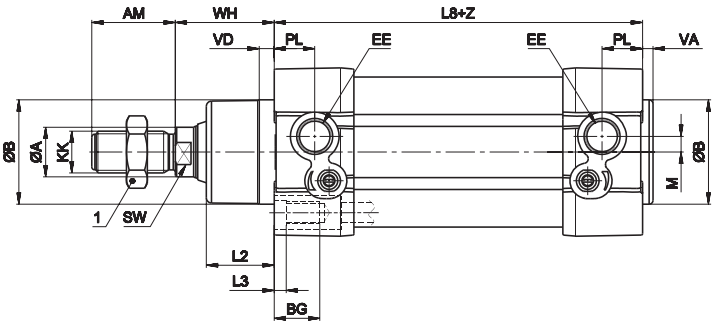
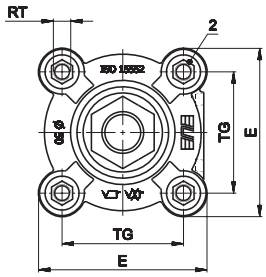
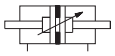
Standard version

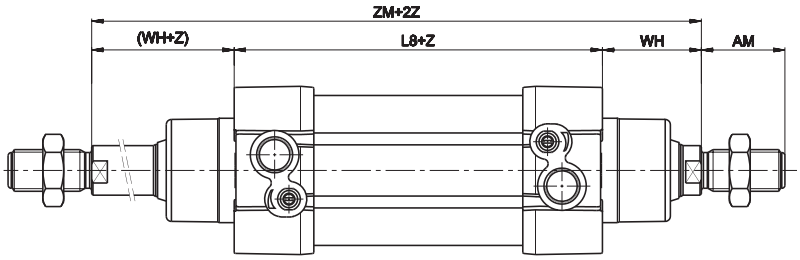






Through rod version





Z= stroke

Overall Dimensions

Ø	ØA	AM	ØB	BG	E+0,5	KK	L2	L3	L8		PL	RT	SW	TG		VA	VD	WH	EE	M	1	2	ZM	
									nom.	tol.				nom.	tol.								nom.	tol.
32	12	22	30	16	46,5	M10x1,25	16	5	94	±0,4	14	M6	10	32,5	±0,5	3,5	5	26	G1/8	4,4	17	6	146	+3,0 -1,5
40	16	24	35	16	52	M12x1,25	20	5	105	±0,7	16	M6	13	38	±0,5	4	5,5	30	G1/4	5	19	6	165	+3,0 -1,5
50	20	32	40	17	64,5	M16x1,5	26	6	106	±0,7	15,5	M8	17	46,5	±0,6	4	6	37	G1/4	6	24	8	180	+3,0 -1,5
63	20	32	45	18	76,5	M16x1,5	26	6	121	±0,8	17,5	M8	17	56,5	±0,7	4	6	37	G3/8	8	24	8	195	+3,0 -1,5
80	25	40	45	20	95	M20x1,5	32	7	128	±0,8	20	M10	22	72	±0,7	4	8	46	G3/8	7,5	30	10	220	+3,0 -1,5
100	25	40	55	20	114	M20x1,5	35	7	138	±1	20,5	M10	22	89	±0,7	4	8	51	G1/2	9	30	10	240	+3,5 -2,0
125	32	54	60	24	140	M27x2	45	8	160	±1	20,5	M12	27	110	±1,1	5,5	10	65	G1/2	11	41	12	290	+3,5 -2,0

Mass

Ø	Cylinder - stroke 0	Increase per mm stroke	Moving element - stroke 0	Moving element	Thrust (N)	Traction (N)
	Kg	gr	Kg	increase gr/mm	6 bar	6 bar
32	0,48	2,05	0,13	0,9	482	414
40	0,71	3,06	0,25	1,6	754	633
50	1,18	4,28	0,44	2,5	1178	990
63	1,74	4,91	0,55	2,5	1869	1680
80	2,74	7,20	0,97	3,8	3014	2722
100	3,92	8,00	1,19	3,8	4710	4416
125	6,83	12,40	2,20	6,2	7359	6882

Through rod cylinder mass

Ø	Cylinder - stroke 0	Increase per mm stroke	Moving element - stroke 0	Moving element
	Kg	gr	Kg	increase gr/mm
32	0,55	2,92	0,19	1,8
40	0,85	4,62	0,36	3,2
50	1,44	6,72	0,64	4,9
63	2,01	7,36	0,74	4,9
80	3,19	11,0	1,35	7,6
100	4,46	11,8	1,57	7,6
125	7,81	18,53	3,05	12,4

Nominal stroke tolerance

Cushion

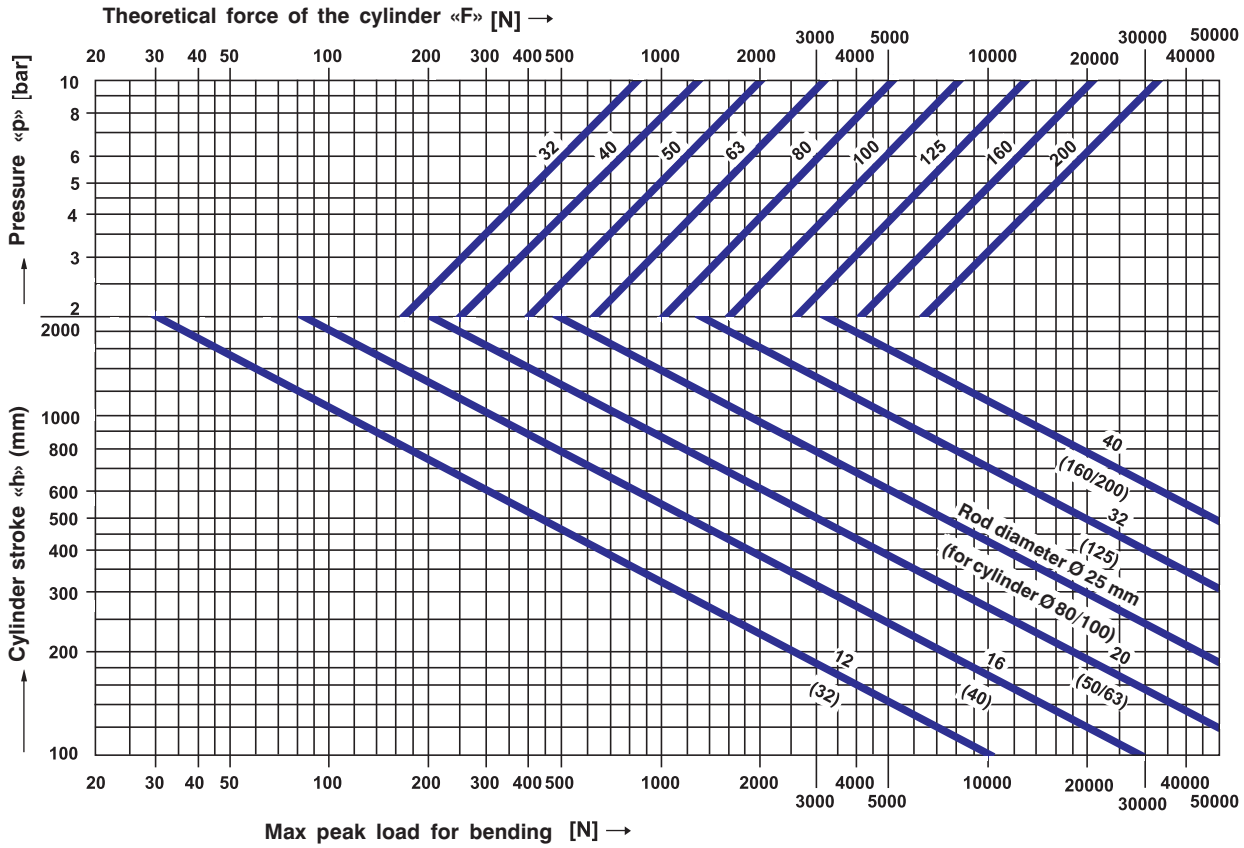
Ø	Strokes up to 500	Strokes from 501 to 1000	Length	Kinetic energy absorption
	mm	mm	mm	Nm
32	+2 - 0	+3,2 - 0	18	1,8
40	+2 - 0	+3,2 - 0	24	2,5
50	+2 - 0	+3,2 - 0	24	4,5
63	+2,5 - 0	+4 - 0	30	8
80	+2,5 - 0	+4 - 0	30	12
100	+2,5 - 0	+4 - 0	35	21
125	+4 - 0	+5 - 0	35	36

(2017/01)

Cyl. Ø	Resultant forces in N at different working pressures (bar). 1 bar = 0,1 MPa							Cushion	
	Working surface area (mm^2)		Working pressure (bar)					length (mm)	Max kinetic energy absorption (J)
			2	4	6	8	10		
32	thrust	804	161	322	482	643	804	18	1,8
	traction	691	138	276	414	553	691		
40	thrust	1256	251	502	754	1005	1256	24	2,5
	traction	1056	211	422	633	844	1055		
50	thrust	1962	393	785	1178	1570	1963	24	4,5
	traction	1649	330	660	990	1320	1650		
63	thrust	3116	623	1246	1869	2493	3116	30	8
	traction	2802	560	1120	1680	2240	2800		
80	thrust	5024	1005	2010	3014	4019	5024	30	12
	traction	4533	907	1814	2722	3629	4536		
100	thrust	7850	1570	3140	4710	6280	7850	35	21
	traction	7359	1472	2944	4416	5888	7360		
125	thrust	12266	2453	4906	7359	9812	12266	35	36
	traction	11462	2294	4588	6882	9176	11470		
160	thrust	20096	4019	8038	12058	16077	20096	45	52
	traction	18840	3770	7540	11310	15080	18850		
200	thrust	31400	6280	12560	18840	25120	31400	45	95
	traction	30144	6029	12058	18086	24115	30144		

For through rod cylinders the theoretical force is equal in both directions and its value is the one given "in traction" as per table.
The values given are theorical and in pratice must take account of weight and friction of the moving element and may be reduced by (≒-10%)

Graph showing theoretical forces/pressures and acceptable strokes depending on maximum peak load



Technical modifications keep in reserve !

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