



CLEAN PROFILE



# KL

ISO 1552 Cylinders

Ø 32 ÷ 125



# KL

ISO 15552 Cylinders

Ø 32 ÷ 125

## CLEAN PROFILE

Easier to clean

## QUICK INSTALLATION

Sensors and connections on one side

## UNIVER TECHNOLOGY

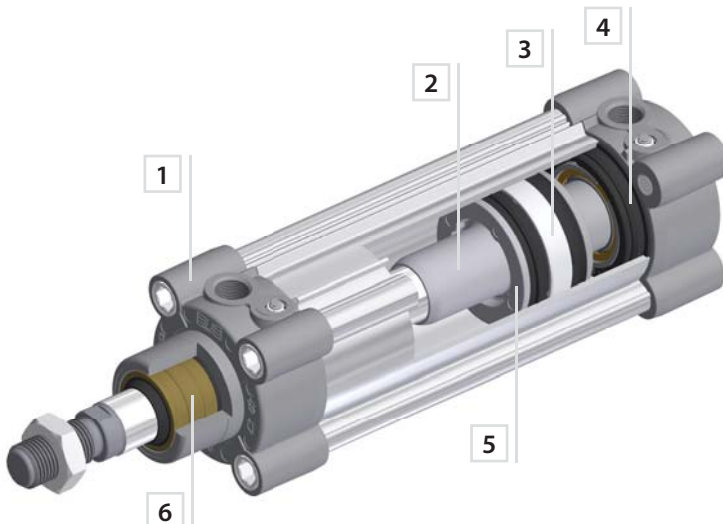
Strong and reliable

## ISO 15552 STANDARD

Interchangeability



### Constructive characteristics



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 cushion 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

The absence of "sharp" edges ensures **maximum safety** during installation



**Accurate design** of end caps in line with tube profile

**Versions available upon request**



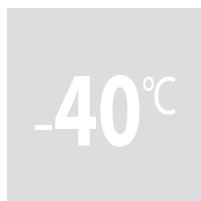
Metallic rod scraper



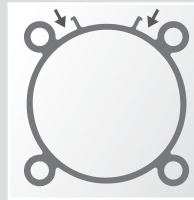
Low friction



High temperature seals



Low temperature seals



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**



Assembly kit



# KL Ø 32 ÷ 125

- New design of the profile for easier cleaning
- Grooves for recessed sensors and connections on one side for easy installation
- Traditional UNIVER technology to ensure strength and reliability
- Dimensions complying with international standards for a full interchangeability



## TECHNICAL CHARACTERISTICS

Ambient temperature	-20 ÷ 80 °C
Fluid	filtered air with or without lubrication
Working pressure	1,5 ÷ 10 bar
Bores	Ø 32 - 40 - 50 - 63 - 80 - 100 - 125
Cushionings	pneumatic and adjustable on both sides

## CONSTRUCTIVE CHARACTERISTICS

End caps	die-cast in aluminium alloy
Barrel	profiled and anodized aluminium
Piston	die-cast in aluminium alloy
Guide slide	acetalic resin
Piston Rod	chromium-plated steel standard, stainless steel upon request
Piston Seal	lip seal in nitrilic resin
Guide bush for rod	UNIVER Original self-lubricating and self-aligning
Cushion seals	nitrilic rubber
Magnet	standard supplied

## CODIFICATION KEY

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

1 Series	2 Type	3 Version
KL = Pneumatic cylinders ISO 15552 Ø 32 ÷ 125 mm Standard Magnetic	1 = Stainless steel rod 2 = Chromium-plated steel rod	00 = D.A. Standard 01 = D.A. Through rod 40 = D.A. Reinforced bushing 60 = S.A. Retracted rod Max stroke 50 mm 70 = S.A. Extended rod Max stroke 50 mm 90 = D.A. High temperature seals +120 °C

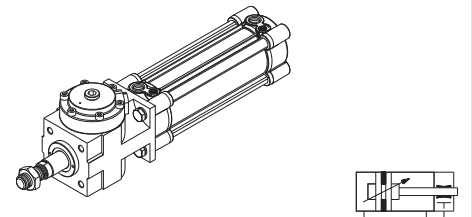
4 Bore	5 Stroke (mm)
032 = Ø32    080 = Ø80 040 = Ø40    100 = Ø100 050 = Ø50    125 = Ø125 063 = Ø63	0025 - 0050 - 0075 - 0080 - 0100 - 0125 - 0150 - 0160 0175 - 0200 - 0250 - 0300 - 0320 - 0350 - 0400 - 0450 0500 - 0600 - 0700 - 0800 - 0900 - 1000

6 Option	7 Magnetic
F = Preset for locking unit - reduced protrusion G = Preset for locking unit - ISO protrusion K = Metallic rod scraper	M = Magnetic version (standard supplied)

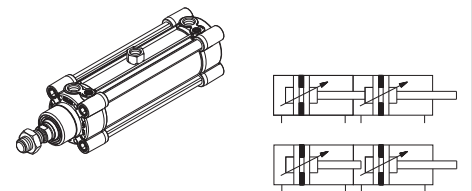
D.A. = Double-acting    S.A. = Single-acting

## Further available versions

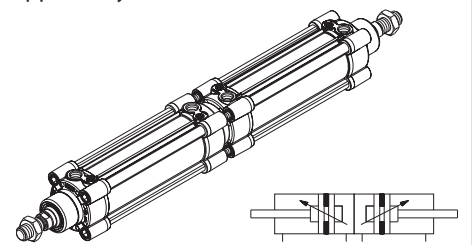
### Cylinder with L1-N locking unit



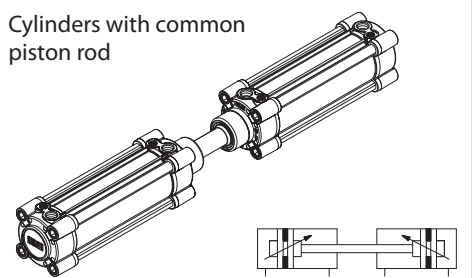
### Tandem cylinder Two-position tandem cylinder



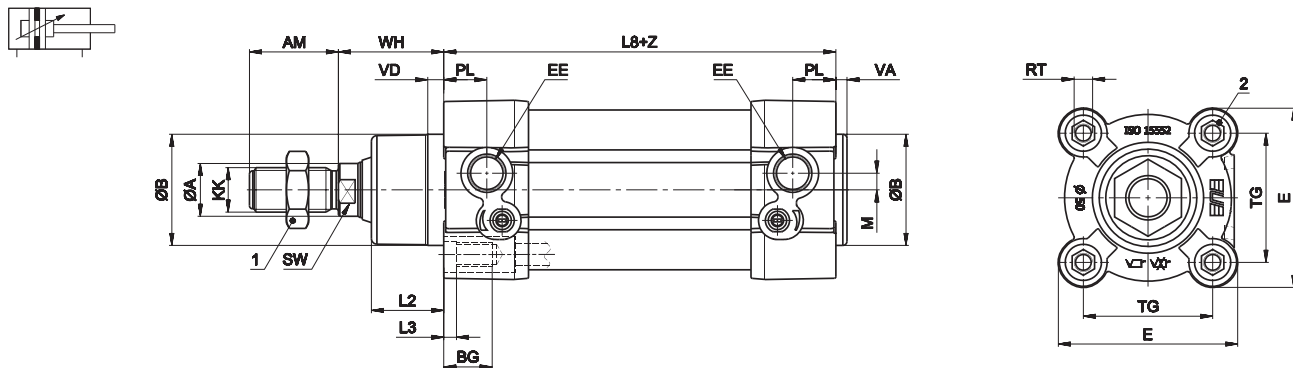
### Opposed cylinders



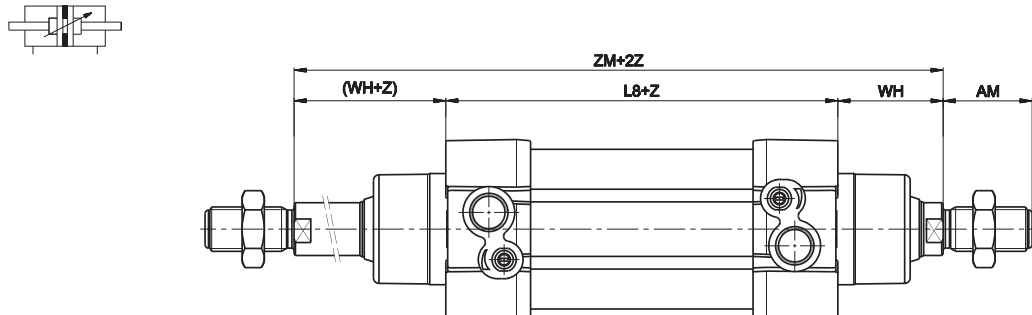
### Cylinders with common piston rod



### 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

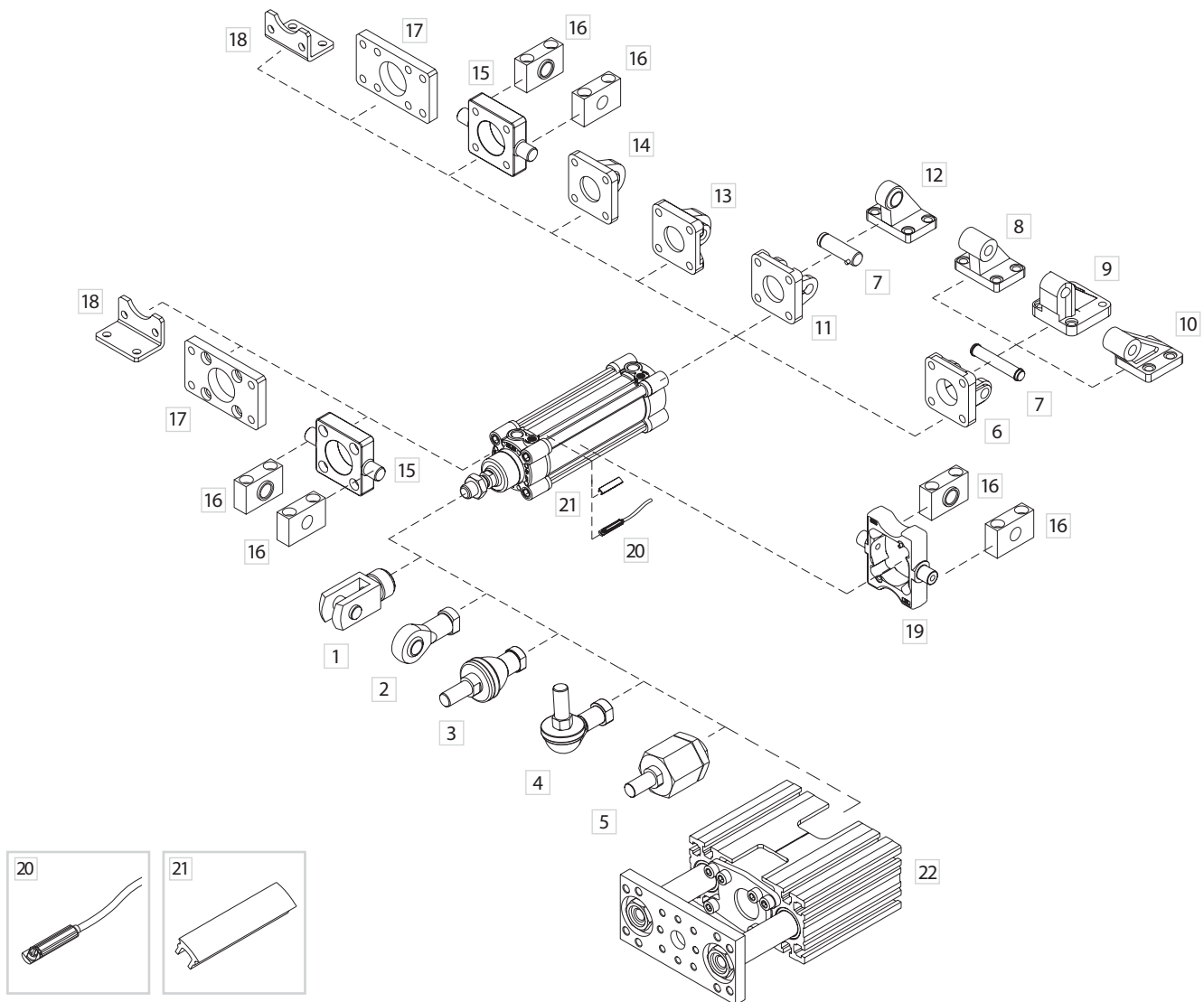
### Nominal stroke tolerance

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

### Cushion

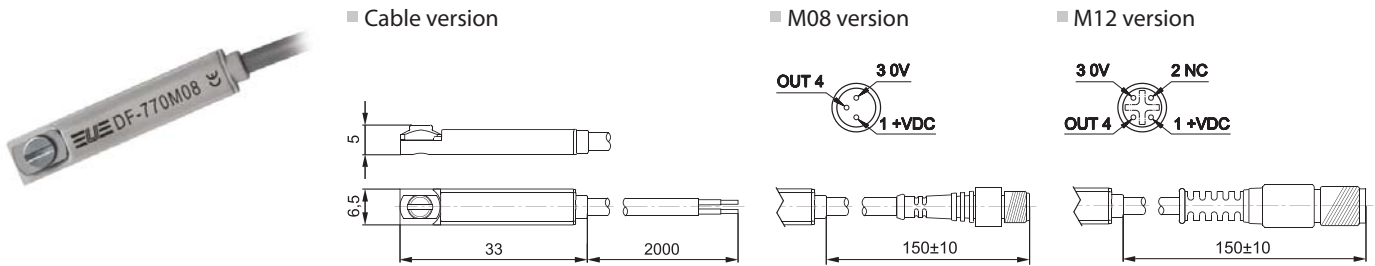


Fixing elements and accessories



DESCRIPTION	NOTE	PART NO.
1 Female fork with clips	Zinc-plated steel	KF-15 ___
2 Articulated self-lubricating fork	Zinc-plated steel	KF-17 ___
3 Fork with axially mounted articulated pin	Zinc-plated steel	KF-22 ___
4 Fork with angle-mounted articulated pin	Zinc-plated steel	KF-23 ___
5 Floating joint	Aluminium (steel upon request)	KF-24 ___
6 Female hinge	Aluminium	KF-10 ___ A
7 Pin	Aluminium (steel upon request)	KF-18 ___
8 90° counter-hinge (CETOP)	Aluminium	KF-19 ___ CTA
9 90° counter-hinge	Aluminium	KF-19 ___
10 90° counter-hinge (CNOMO)	Aluminium	KF-19 ___ CN
11 Narrow female hinge with pin	Aluminium (steel upon request)	KF-10 ___ AS
12 Articulated counter-hinge	Steel	KF-19 ___ SC
13 Articulated male rear hinge	Aluminium (steel upon request)	KF-11 ___ S
14 Male rear hinge	Zinc-plated steel	KF-11 ___
15 Front/rear hinge with floating pin	Zinc-plated steel	KF-14 ___ AP
16 Support for hinges	Zinc-plated steel	KF-41 ___
17 Front flange (MF1) - rear flange (MF2)	Zinc-plated steel	KF-12 ___
18 Angle bracket (MS1)	Zinc-plated steel	KF-13 ___
19 Intermediate hinge	Zinc-plated steel	KLF-14 ___
20 Magnetic sensor DF series	-	DF- ___
21 Strip for covering DF sensor wires	Nitrilic rubber	DHF-0020100
22 Slide unit	-	J12

**Magnetic sensor DF series**

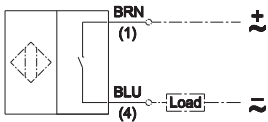


CHARACTERISTICS	TYPE	ELECTROMECHANICAL			ELECTRONIC
		DF-220 2 wires NO	DF-330 3 wires PNP NO	DF-440 3 wires PNP NC	DF-770 3 wires PNP NO
Working voltage	V AC/DC	5÷30 V AC/DC	5÷30 V AC/DC	5÷30 V AC/DC	5÷30 V DC
Max switching current	mA	100	100	100	100
Max switching power	W/VA	3	3	3	3
Max voltage drop	V AC/DC	<3,5V	0,1V	0,1V	0,7V
Minimum magnetic field	gauss	60	60	60	30
Opening response time	ms	< 0,5	< 0,5	< 0,5	0,08
Closing response time	ms	< 1	< 1	< 1	0,03
Electric life with resistive load	cycles	>10 <sup>7</sup>	>10 <sup>7</sup>	>10 <sup>7</sup>	>10 <sup>9</sup>
State indicator	LED	red	red	red	red
Cable number and section	mmq	2 x 0,14	3 x 0,14	3 x 0,14	3 x 0,14
Electric circuit	-	A	C	D	C
Protection degree	EN60529	IP67			
Working temperature	°C	-20 ÷ +80 °C			

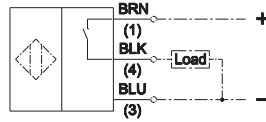
For version with connector M8 and M12 add M08 or M12 at the end of the part no.  
Example: DF-770M08 or DF-770M12

**Electric circuits**

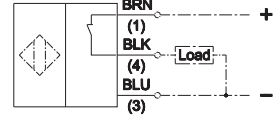
**A AC/DC 2 wires NO**



**C DC 3 wires PNP NO**



**D DC 3 wires PNP NC**



BRN = brown    BLK = black    BLU = blue

**Assembly scheme**

- 1**

Put the sensor in the proper groove and make sure that the fastening plate has the slot for screwdriver along the sensor axis.
- 2**

Turn the sensor inside its groove and make sure that the fastening plate is on the open part of the groove.
- 3**

Check the correct position of the sensor in the groove. Turn it to the wished position for detection.
- 4**

Keep the sensor in its position and screw the fastening plate to fix the sensor in the groove.  
Max torque: 0,5 ÷ 1 Nm



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