



CLEAN PROFILE



KL

ISO 15552 Cylinders

Ø 32 ÷ 125 mm



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Ø 32 ÷ 125 mm

CLEAN PROFILE

Easier to clean

QUICK INSTALLATION

Sensors and connections on one side

UNIVER TECHNOLOGY

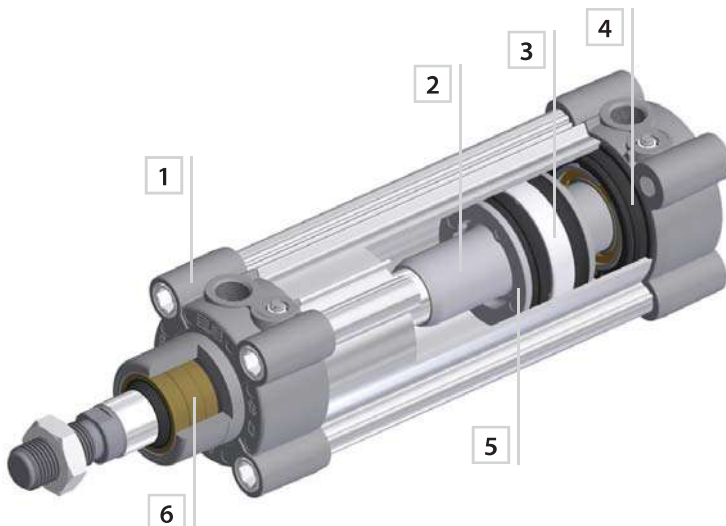
Strong and reliable

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



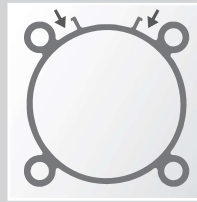
Low friction



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 mm

- 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 mm
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

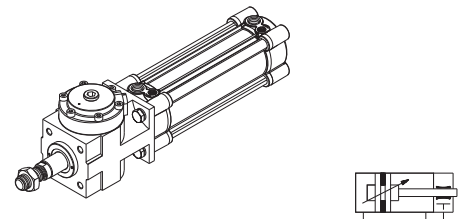
4 Bore	5 Stroke (mm)
032 = Ø32 080 = Ø80	0025 - 0050 - 0075 - 0080 - 0100 - 0125 - 0150 - 0160
040 = Ø40 100 = Ø100	0175 - 0200 - 0250 - 0300 - 0320 - 0350 - 0400 - 0450
050 = Ø50 125 = Ø125	0500 - 0600 - 0700 - 0800 - 0900 - 1000
063 = Ø63	

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)

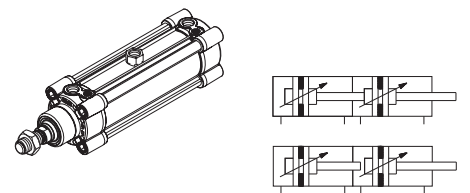
D.A. = Double-acting S.A. = Single-acting

Further available versions

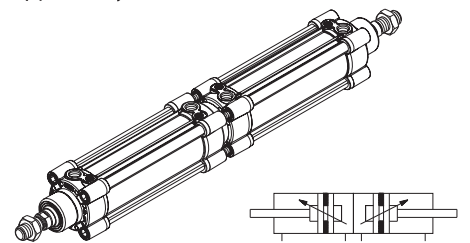
Cylinder with L1-N locking unit



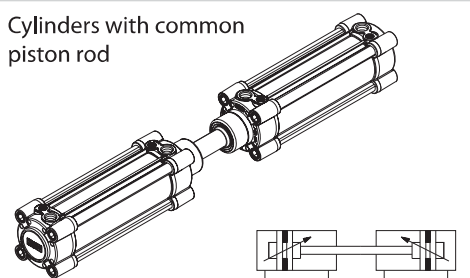
Tandem cylinder
Two-position tandem cylinder



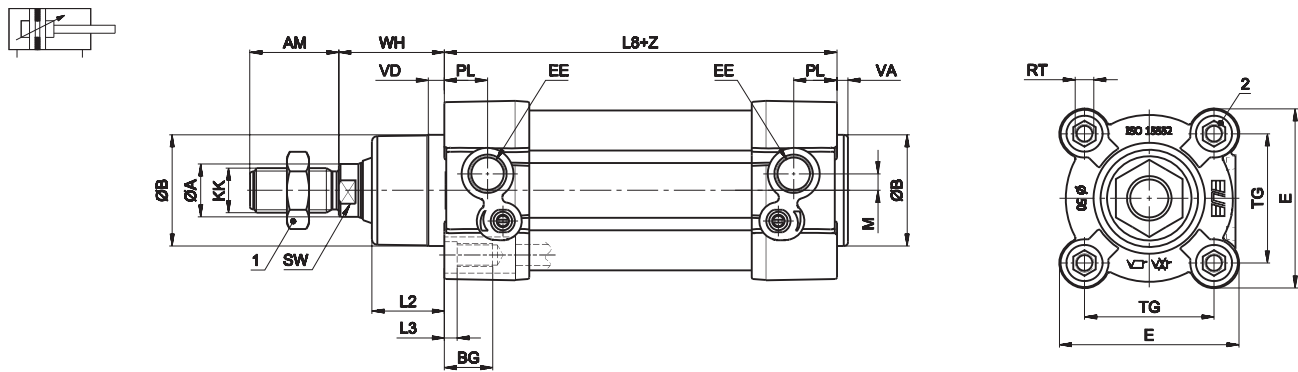
Opposed cylinders



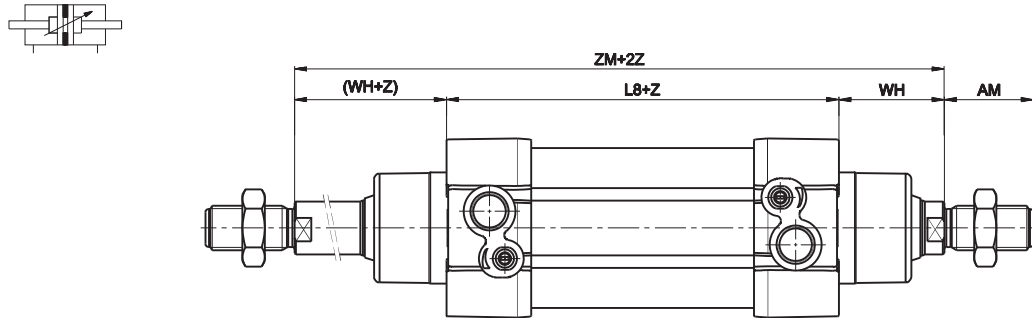
Cylinders with common
piston rod



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

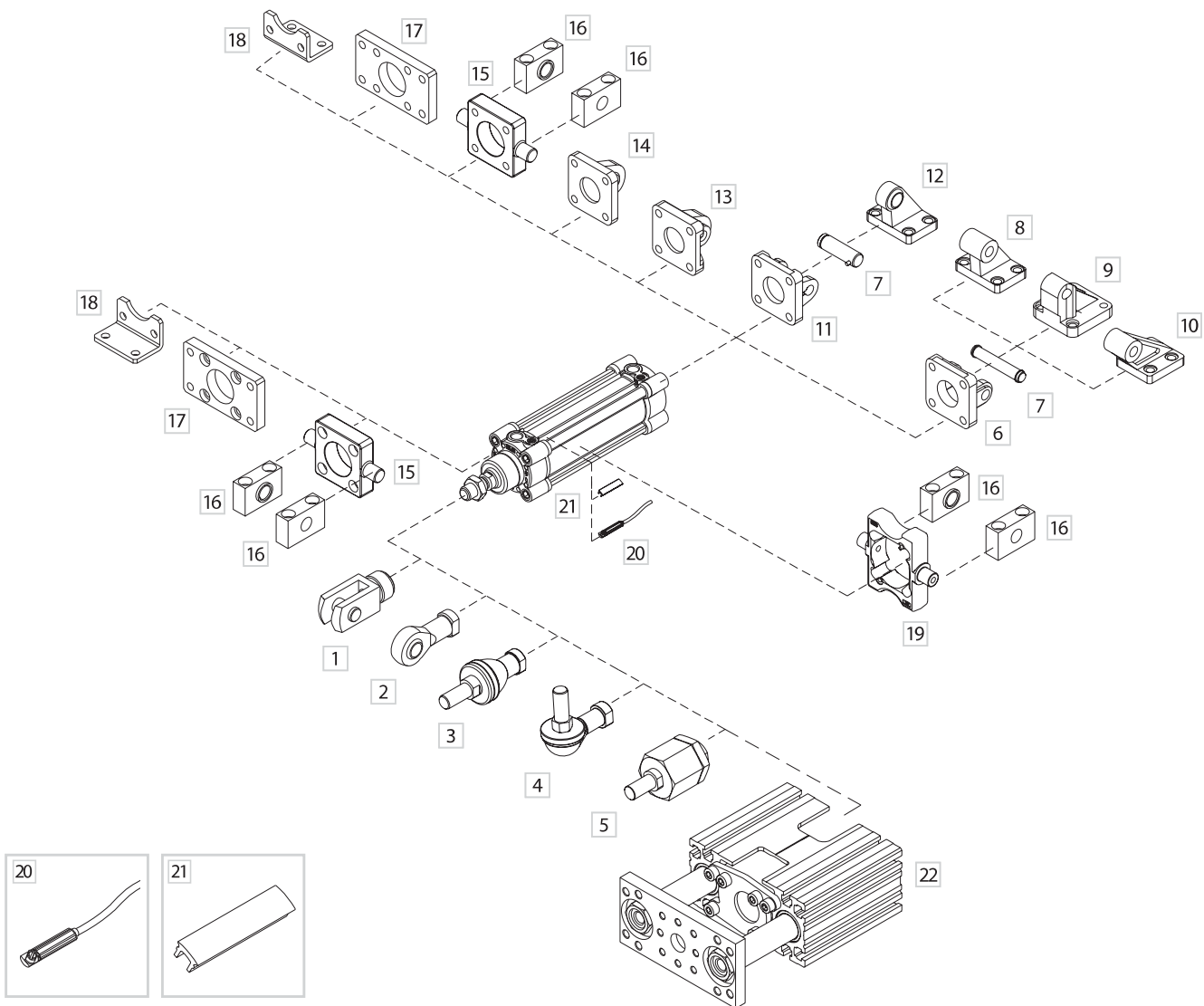
Ø	Cylinder - stroke 0	Increase per mm stroke	Moving element - stroke 0	Moving element
	Kg	gr	Kg	increase gr/mm
32	0,55	2,92	0,19	1,8
40	0,85	4,62	0,36	3,2
50	1,44	6,72	0,64	4,9
63	2,01	7,36	0,74	4,9
80	3,19	11,0	1,35	7,6
100	4,46	11,8	1,57	7,6
125	7,81	18,53	3,05	12,4

Nominal stroke tolerance

Cushion

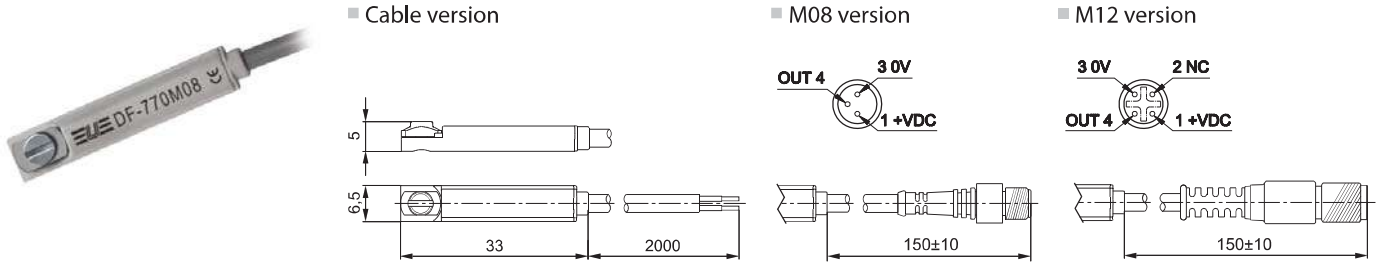
Ø	Strokes up to 500	Strokes from 501 to 1000	Length	Kinetic energy absorption
	mm	mm	mm	Nm
32	+2 -0	+3,2 -0	18	1,8
40	+2 -0	+3,2 -0	24	2,5
50	+2 -0	+3,2 -0	24	4,5
63	+2,5 -0	+4 -0	30	8
80	+2,5 -0	+4 -0	30	12
100	+2,5 -0	+4 -0	35	21
125	+4 -0	+5 -0	35	36

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

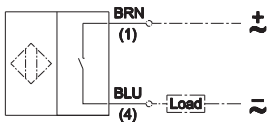


CHARACTERISTICS	TYPE	ELECTROMECHANICAL			ELECTRONIC
		DF-220 2 wires NO	DF-330 3 wires PNP NO	DF-440 3 wires PNP NC	DF-770 3 wires PNP NO
Working voltage	V AC/DC	5÷30 V AC/DC	5÷30 V AC/DC	5÷30 V AC/DC	5÷30 V DC
Max switching current	mA	100	100	100	100
Max switching power	W/VA	3	3	3	3
Max voltage drop	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 ⁷	>10 ⁷	>10 ⁷	>10 ⁹
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			

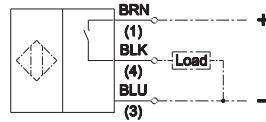
For version with connector M8 and M12 add M08 or M12 at the end of the part no.
Example: DF-770M08 or DF-770M12

Electric circuits

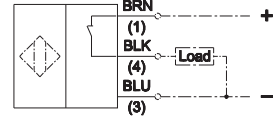
A AC/DC 2 wires NO



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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