ISO CYLINDERS
Series KL/KD/K

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

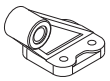
6 Option

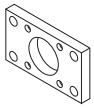
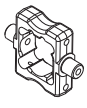
F = Preset for locking unit reduced protrusion
G = Preset for locking unit ISO protrusion

7 Magnetic

M = Magnetic version standard supplied

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		
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	DF DHF-0020100	DF-001
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		

(2020/10)

Tube profile with integrated sensor grooves
UNIVER Original since 2005

Recessed sensor
DF series

Magnetic piston
standard supplied

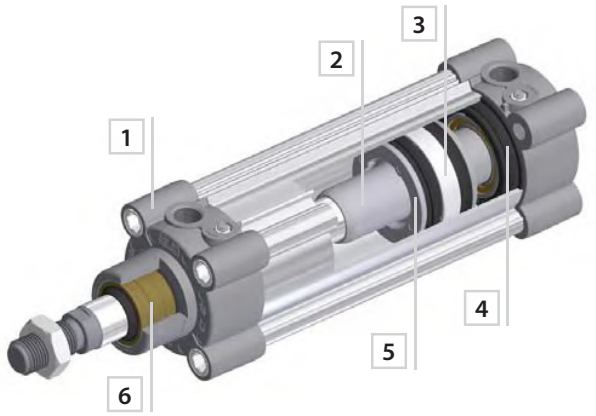
Fixing screws integrated in the end cap profile

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

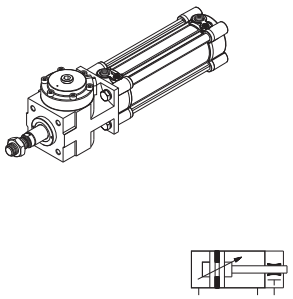
4 Wear-resistant shock absorbers seals in nitrilic rubber compound

5 Lip piston seals in nitrile rubber compound

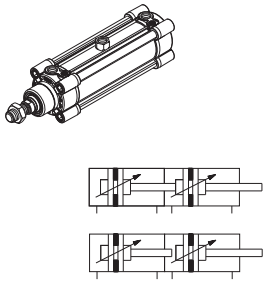
6 **UNIVER Original** self-aligning and self-lubricating guide bush for piston rod

Further available versions

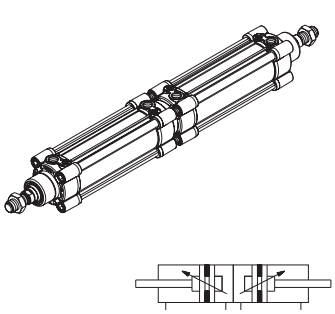
- Cylinder with L1-N locking unit



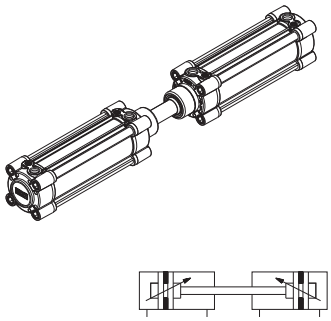
- Tandem cylinder
  Two-position tandem cylinder



- Opposed cylinders



- Cylinders with common piston rod



(2020/10)

☎ +32 3 355 32 20

KD

Ø 32 ÷ 125 mm - ISO 15552 Pneumatic cylinders
HEAVY SERIES TUBE

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	anodized 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	D	2	0	0	0	3	2	0	0	5	0		M
1		2	3		4			5				6	7

1 Series

KD = Ø 32÷125 mm - ISO 15552 Pneumatic cylinders (former ISO 6431 and VDMA 24562)

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

5 Stroke (mm)

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

6 Option

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

7 Magnetic

M = Magnetic version standard supplied

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	Articulated 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	Hinge support	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	KDF-14032	DF DHF-0020100	DF-001
40	KF-11040S	KF-11040	KF-12040	KF-13040	KF-14040AP	KF-41040050	KDF-14040		
50	KF-11050S	KF-11050	KF-12050	KF-13050	KF-14050AP	KF-41040050	KDF-14050		
63	KF-11063S	KF-11063	KF-12063	KF-13063	KF-14063AP	KF-41063080	KDF-14063		
80	KF-11080S	KF-11080	KF-12080	KF-13080	KF-14080AP	KF-41063080	KDF-14080		
100	KF-11100S	KF-11100	KF-12100	KF-13100	KF-14100AP	KF-41100125	KDF-14100		
125	KF-11125S	KF-11125	KF-12125	KF-13125	KF-14125AP	KF-41100125	KDF-14125		

(2020/10)

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
Tie-rods	zinc-plated steel
Piston	die-cast aluminium
Guide slide	acetalic resin
Piston rod	chromium-plated steel, stainless steel upon request
Piston rod scraper saels	NBR
Piston seals	NBR
Cushionings	pneumatics adjustable
Other available versions	tandem, two position tandem, opposed, with common piston rod

Upon request Ø 250/320 mm

CODIFICATION KEY

K	2	0	0	1	6	0	0	0	8	0	
1	2	3		4		5					6

1 Series

K = Ø 160/200 mm - ISO 15552 Pneumatic cylinders

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

D.A. = Double acting

4 Bore (mm)

160 = Ø160
200 = Ø200

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 Magnetic

M = Magnetic version

FIXING ELEMENTS AND ACCESSORIES

Ø	Female fork with clips	Articulated self-lubricating fork	Female rear hinge with pin	Counter hinge 90° (CETOP)	Counter hinge 90° (CNOMO)	Narrow female hinge with pin	Articulated rear male hinge	Rear male hinge	Front/rear flange	Angle bracket	Front / rear hinge with flioating pin
160	KF-15160	KF-17160	KF-10160A	KF-19160CTA	KF-19160200CN	KF-10160AS	KF-11160S	KF-11160	KF-12160	KF-13160	KF-14160AP
200	KF-15160	KF-17160	KF-10200A	KF-19200CTA	KF-19160200CN	KF-10200AS	KF-11200S	KF-11200	KF-12200	KF-13200	KF-14200AP

Ø	Hinge support	ISO intermediate hinge	DH sensor	Mounting bracket for DH sensor
160	KF-41160200	KF-14160	DH	DH-K160200
200	KF-41160200	KF-14200		DH-K160200

Ø160/200 Cylinder with profiled tube (version available upon request)

Technical modifications keep in reserve !

(2020/10)

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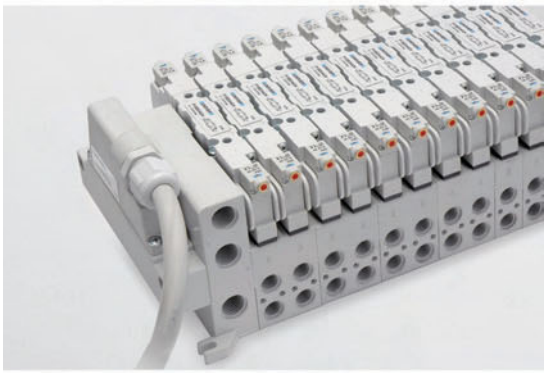

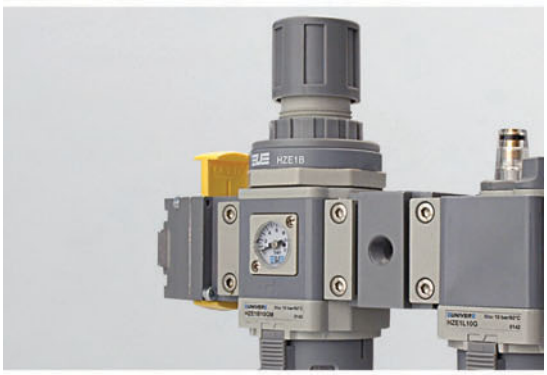

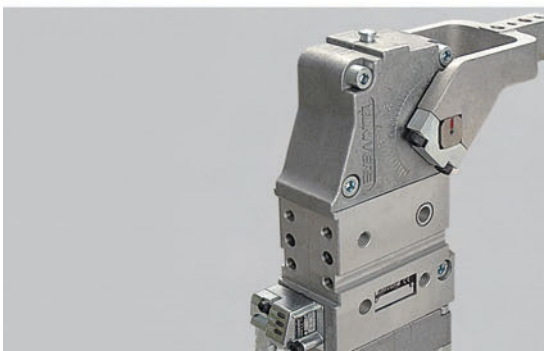

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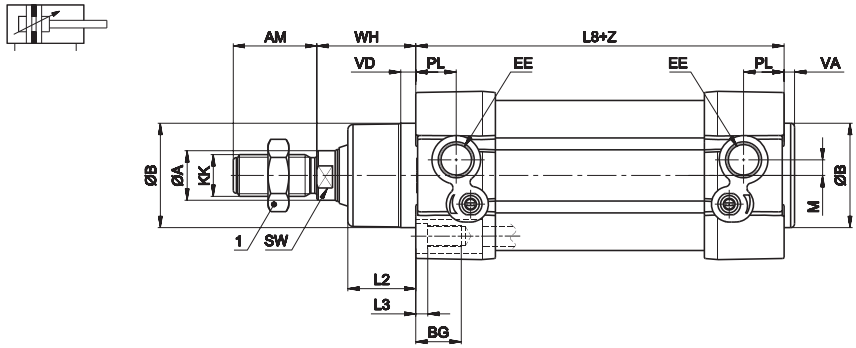
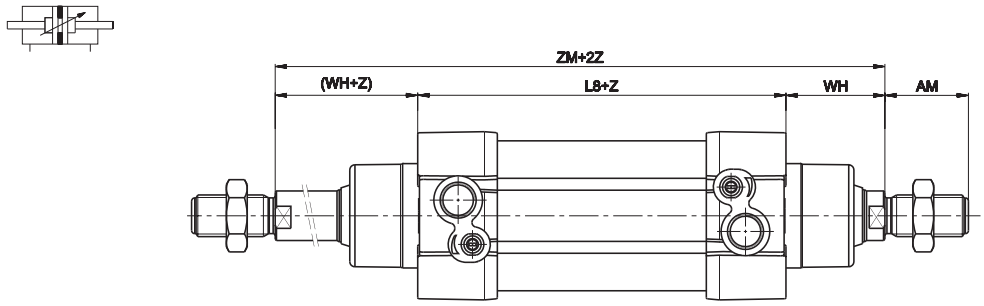
Standard version



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

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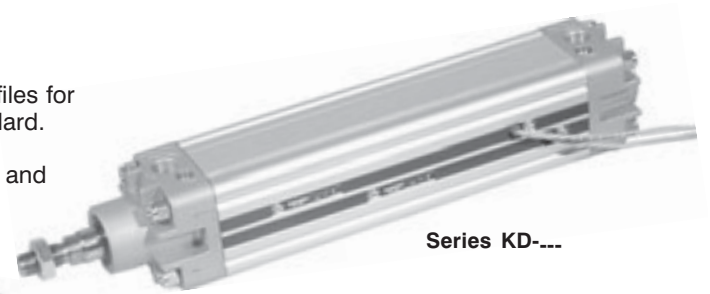
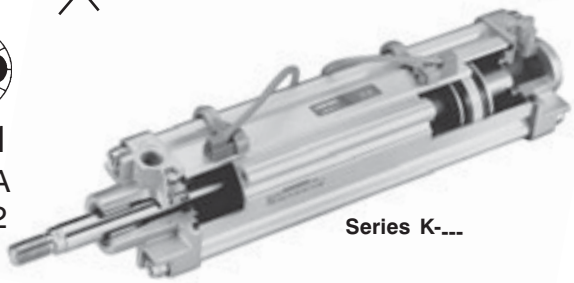
ISO/VDMA CYLINDERS ø32÷200mm Series K/KD

Working pressure: 1,5 ÷ 10 bar
Ambient temperature: -20 ÷ 80°C.
Fluid: filtered air, with or without lubrication.
Barrel: internal/external anodised aluminium and piston rod in chromium-plated steel standard
Bores: Series KD 32 ÷ 125 aluminium barrel with profiles for flush-mounted sensors, magnetic version standard.
Series K 32 ÷ 200 aluminium barrel;
Ø 160 ÷ 200 mm with round aluminium barrel and steel tie-rods. magnetic version upon request.



Series KD-___

ISO 6431
VDMA 24562



Series K-___

Flush-mounted magnetic sensors DF-___ series for KD series.
Wire protection strap magnetic sensor for KD series part no. DHF-002100.
Magnetic sensor DH---- Series for K series

Upon request
- Magnetic rings in plastoferrite
- Locking unit Ø 32 ÷ 125 mm to be coupled **only** with chromium-plated steel rod (section High-Tech page 2.28)
- Slide unit Ø 32 ÷ 100 mm (section High-Tech page 2.26)
- Cylinders with rigid bushing, in tandem, multiple position and opposed version.

Construction details

Clean line barrel produced from extruded aluminium alloy with ribbed "anti-twist" design. Internal and external surfaces anodised to 15 micron.

Die-cast end-caps in aluminium alloy mounted on the barrel holes with self-tapping steel screws.

Pneumatic adjustable cushions provide efficient piston deceleration.

Synthetic rubber shock absorbers avoid mechanical stress and reduce machinery noise (lower than 50 dB).

Die-cast aluminum alloy piston and guide shoe in acetalic resin with a permanent plastoferrite magnetic ring (upon request for the magnetic version).

The piston and cushion seals are made of a wear-resistant nitrile rubber compound suitable for applications with or without lubrication. The double lip seal design automatically self-compensates against wear.

Hardened stainless steel rod (K/KD100 Series) or chromium-plated (K/KD200 Series) with 2 micron Ra.; supplied with nut.

UNIVER original self-lubricating and self-aligning piston rod bush. For special applications, rigid bushings are supplied upon request.

Cylinders Ø 125-160-200 with rigid piston rod bushing standard supplied.

Codification key

K	200	032	050	G	M

- M: Option
- 050: Stroke (in mm)
- 032: Bore (in mm)
- 200: Type
- K: Series

SERIES

KD = Ø 32÷125 mm magnetic version standard.
K = Ø 32÷200 mm magnetic version upon request.

TYPE

100	**D.A.** Stainless steel rod
101	**D.A.** Stainless steel through rod
160	**S.A.** Stainless steel retracted rod, max. stroke 50 mm
170	**S.A.** Stainless steel extended rod, max. stroke 50 mm
200	**D.A.** Chromium-plated rod
201	**D.A.** Chromium-plated through rod
260	**S.A.** Chromium-plated retracted rod, max stroke 50 mm
270	**S.A.** Chromium-plated extended rod, max stroke 50 mm

BORE

Ø 032 - 040 - 050 - 063 - 080 - 0100 - 0125 - 0160 - 0200

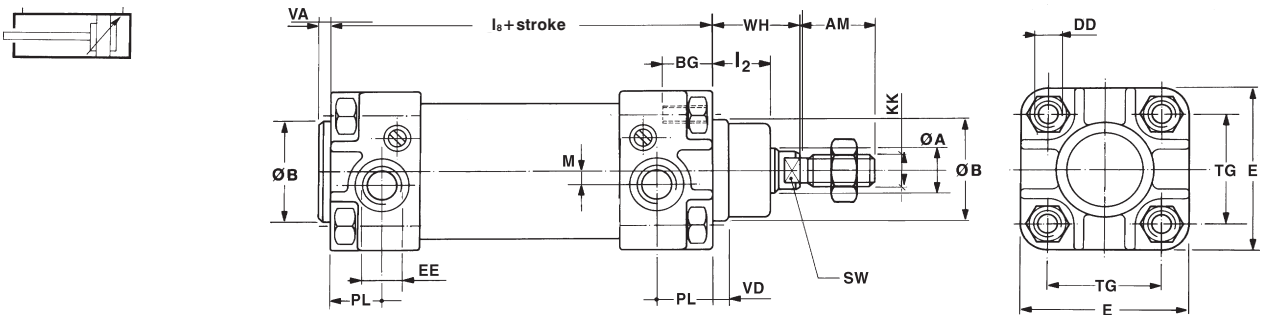
STROKE

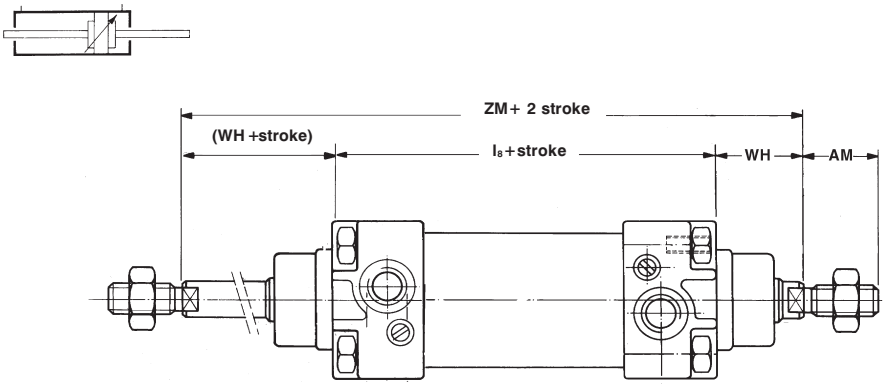
Standard strokes in mm: 0025 - 0050 - 0075 - 0080 - 0100 0125 - 0150 - 0160 - 0175 - 0200 - 0250 - 0300 - 0320 - 0350 0400 - 0450 - 0500 - 0600 - 0700 - 0800 - 0900 - 1000

OPTION

F = For use with locking unit with "reduced dimensions"
G = For use with locking unit with ISO dimensions
M = Magnetic version

Cylinder with pneumatic cushioning Ø 32 ÷ 200





Stroke tolerances

Cyl. Ø	Stroke (mm)	Tolerances on strokes (mm)
32	up to 500	+2 0
40		
50	from 501 to 1.250	+3,2 0
63	up to 500	+2,5 0
80		
100	from 501 to 1.250	+4 0
125	up to 500	+4 0
160		
200	from 501 to 1.250	+5 0

Cyl. Ø	A	AM (Note 1)	B e11	BG	DD	E	EE (Note 2)	l_2	l_8 Nom.	l_8 Toll.	KK (Note 1)	M	PL	SW	TG Nom.	TG Toll.	VD	VA	WH	ZM
32	12	22	30	14	M6	48	G 1/8	16	94	±0,4	M10 x 1,25	4,5	15	10	32,5	±0,5	5	3	26	146
40	16	24	35	14	M6	54	G 1/4	20	105	±0,7	M12 x 1,25	5	18	13	38	±0,5	6	4	30	165
50	20	32	40	16	M8	67	G 1/4	26	106	±0,7	M16 x 1,5	6	18	17	46,5	±0,6	6	4	37	180
63	20	32	45	16	M8	78	G 3/8	26	121	±0,8	M16 x 1,5	8	21,5	17	56,5	±0,7	6	4	37	195
80	25	40	45	16	M10	97	G 3/8	32	128	±0,8	M20 x 1,5	7,5	21,5	22	72	±0,7	8	5 ■	46	220
100	25	40	55	16	M10	115	G 1/2	35	138	±1	M20 x 1,5	9	21,5	22	89	±0,7	8	6 ■	51	240
125	32	54	60	20	M12	140	G 1/2	45	160	±1	M27 x 2	11	24,5	27	110	±1,1	10	7 ■	65	290
160*	40	72	65	25	M16	180	G 3/4	50	180	±1,1	M36 x 2	14	29	36	140	±1,1	10	6	80	340
200*	40	72	75	25	M16	220	G 3/4	60	180	±1,1	M36 x 2	14	29	36	175	±1,1	12	6	95	370

NOTE 1: "KK" and "AM" dimensions correspond to ISO 4359 "long" type
■ Dimensions to specifications, upon request
* Ø 160 and Ø 200 cyl., execution with aluminum tube and steel tie-rods

NOTE 2: "EE" dimensions are in inches and are chosen according to ISO 228/1 standard

K series cylinder mass

Cyl. Ø	Cyl. stroke 0 (kg)	Rate incr. stroke=0 (g)	Moving element stroke=0 (kg)	Rate incr. stroke=0 (g)	Cylinder stroke 0 (kg)	Rate incr. stroke=0 (g)	Moving element stroke=0 (kg)	Rate incr. stroke=0 (g)
32	0,51	2,35	0,13	0,9	0,64	3,24	0,20	1,8
40	0,77	3,24	0,24	1,6	0,92	4,80	0,37	3,2
50	1,21	4,75	0,43	2,5	1,51	7,22	0,64	5,0
63	1,74	5,78	0,47	2,5	2,03	8,25	0,75	5,0
80	2,74	8,64	0,95	3,9	3,26	12,50	1,37	7,8
100	3,78	10,4	1,18	3,9	4,38	14,30	1,60	7,8
125	6,59	14,8	2,18	6,3	7,80	21,10	3,20	12,6
160	14,60	16,9	4,02	9,9	16,85	26,80	5,94	19,8
200	16,50	18,5	4,78	9,9	19,90	28,40	6,80	19,8

KD series cylinder mass

Cyl. Ø	Cyl. stroke 0 (kg)	Rate incr. stroke=0 (g)	Moving element stroke=0 (kg)	Rate incr. stroke=0 (g)	Cylinder stroke 0 (kg)	Rate incr. stroke=0 (g)	Moving element stroke=0 (kg)	Rate incr. stroke=0 (g)
32	0,53	2,8	0,13	0,9	0,66	3,7	0,20	1,8
40	0,80	4,0	0,24	1,6	0,95	5,5	0,37	3,2
50	1,27	6,0	0,43	2,5	1,57	8,5	0,64	4,9
63	1,76	6,2	0,47	2,5	2,05	8,7	0,75	4,9
80	2,86	10,8	0,95	3,9	3,38	14,7	1,37	7,7
100	3,95	13,4	1,18	3,9	4,55	17,3	1,60	7,7
125	6,87	18,6	2,18	6,3	8,08	24,9	3,20	12,6

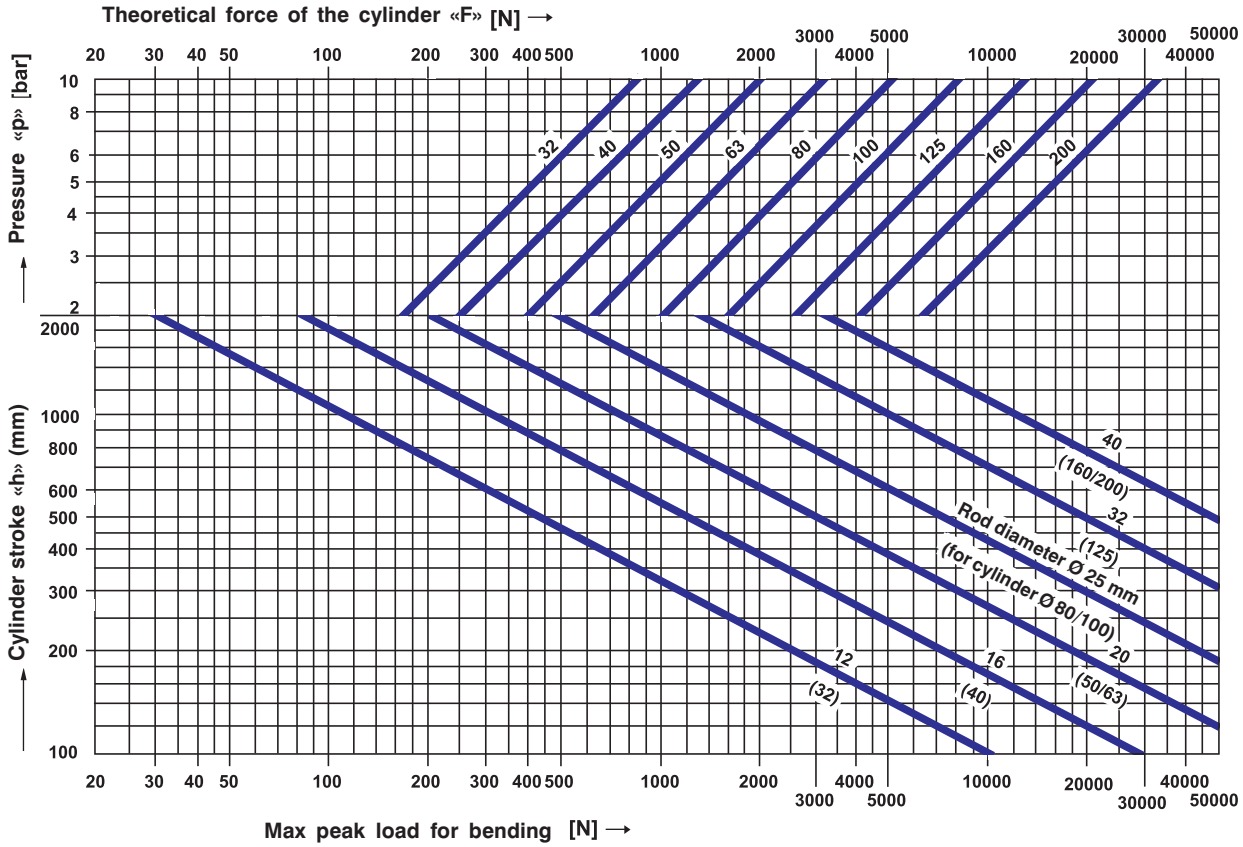
Technical modifications keep in reserve !

(2020/10)

Cyl. Ø	Resultant forces in N at different working pressures (bar). 1 bar = 0,1 MPa							Cushion	
	Working surface area (mm²)		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		

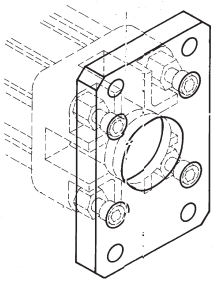
For through rod cylinders the theoretical force is equal in both directions and its value is the one given "in traction" as per table.
The values given are theorical and in pratice must take account of weight and friction of the moving element and may be reduced by (÷-10%)

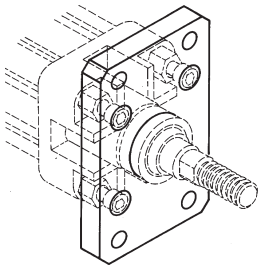
Graph showing theoretical forces/pressures and acceptable strokes depending on maximum peak load



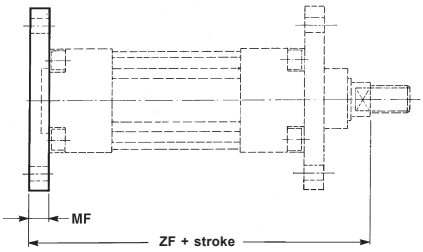
Front/rear flange in zinc plated steel, ISO MF1-MF2 with 4 fixing screws

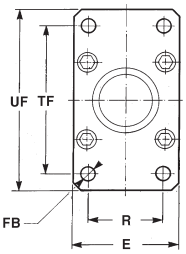
(VDMA standard upon request)



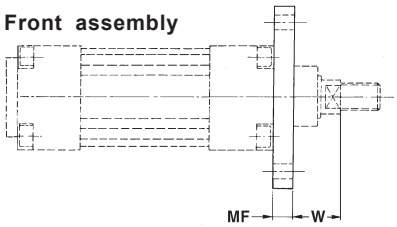


Rear assembly





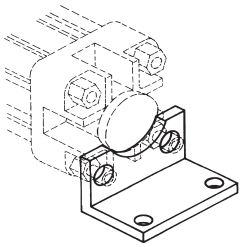
Front assembly

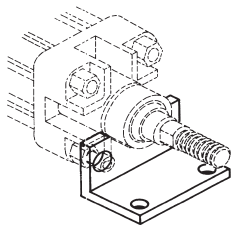


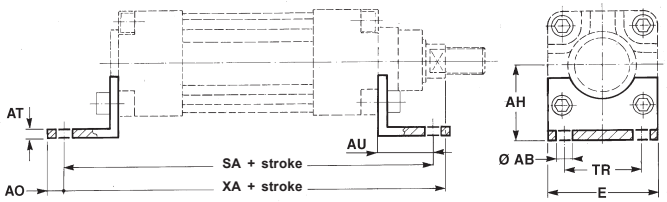
Cyl. Ø	Part number	Mass (kg)
32	KF-12032	0,2
40	KF-12040	0,25
50	KF-12050	0,5
63	KF-12063	0,65
80	KF-12080	1,5
100	KF-12100	2,2
125	KF-12125	4,1
160	KF-12160	7
200	KF-12200	12,4

ISO 6431
VDMA 24562

ISO MS1 angled bracket in zinc plated steel with 2 fixing screws







Cyl. Ø	Part number	Mass (kg)
32	KF-13032	0,07
40	KF-13040	0,09
50	KF-13050	0,2
63	KF-13063	0,2
80	KF-13080	0,4
100	KF-13100	0,6
125	KF-13125	1,2
160	KF-13160	2,4
200	KF-13200	3,4

Dimensions of ISO MF1-MF2 flange / Dimensions of ISO MS1 angled bracket

Cyl. Ø	E (max)	FB H13	MF ± 0,2	R JS14	TF JS14	UF (max)	W Nom.	W Tol.	ZF Nom.	ZF Tol.	AB H13	AH JS15	AO (max)	AT	AU ± 0,2	E (max)	SA Nom.	SA Tol.	TR JS14	XA Nom.	XA Tol.
32	45	7	10	32	64	80	16	±1,6	130	±1,25	7	32	11	4	24	50	142	±1,25	32	144	±1,25
40	52	9	10	36	72	90	20	±1,6	145	±1,25	9*	36	15	4	28	58	161	±1,25	36	163	±1,25
50	65	9	12	45	90	110	25	±1,6	155	±1,25	9*	45	15	5	32	70	170	±1,25	45	175	±1,25
63	75	9	12	50	100	120	25	±2	170	±1,6	9*	50	15	5	32	85	185	±1,6	50	190	±1,6
80	95	12	16	63	126	150	30	±2	190	±1,6	12*	63	20	6	41	105	210	±1,6	63	215	±1,6
100	115	14	16	75	150	170	35	±2	205	±1,6	14*	71	25	6	41	130	220	±1,6	75	230	±1,6
125	140	16	20	90	180	205	45	±2,5	245	±2	16*	90	25	8	45	157	250	±2	90	270	±2
160	180	18	20	115	230	260	60	±2,5	280	±2	18*	115	25	10	60	195	300	±2	115	320	±2
200	220	22	25	135	270	300	70	±2,5	300	±2	22*	135	35	10	70	238	320	±2	135	345	±2

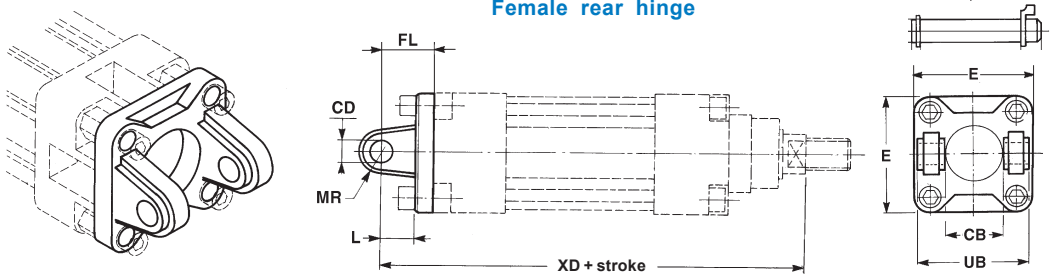
* Non-standard dimension

☎ +32 3 355 32 20

ISO MP2 (female) and MP4 (male) hinge in die-cast aluminum with 4 fixing screws

Clevis pin always included
(details see page 2.11.04)

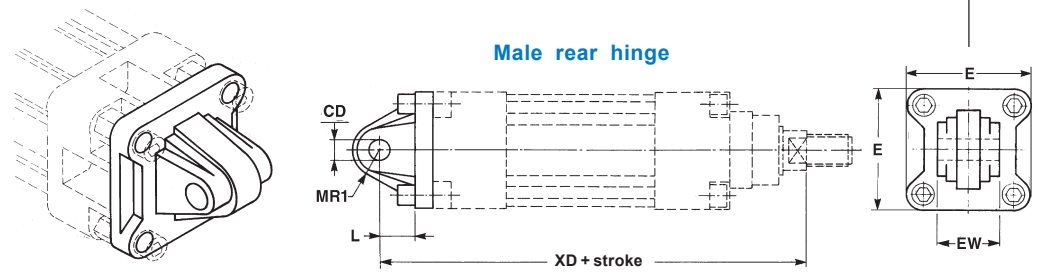
Female rear hinge



Cyl. Ø	Part number	Mass (kg)
32	KF-10032A	0,06
40	KF-10040A	0,08
50	KF-10050A	0,15
63	KF-10063A	0,25
80	KF-10080A	0,36
100	KF-10100A	0,6
125	KF-10125A	1,8
160	KF-10160A	2,4
200	KF-10200A	3,5

without pin

Male rear hinge



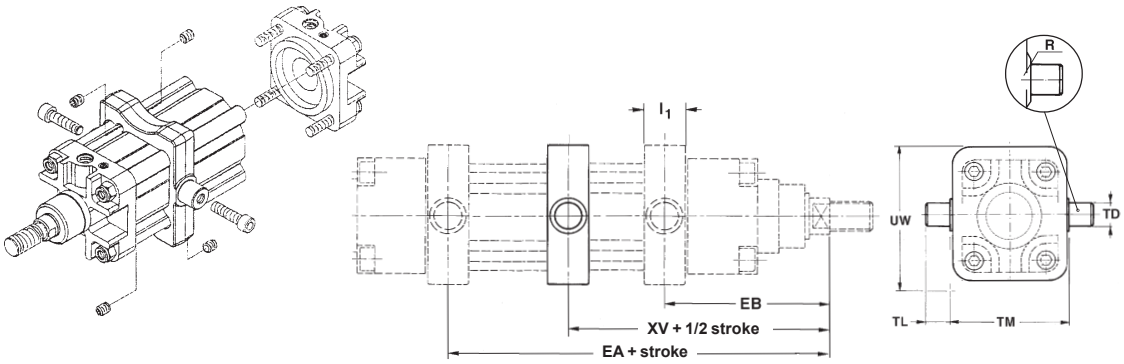
Cyl. Ø	Part number	Mass (kg)
32	KF-11032	0,08
40	KF-11040	0,1
50	KF-11050	0,17
63	KF-11063	0,25
80	KF-11080	0,42
100	KF-11100	0,66
125	KF-11125	1,5
160	KF-11160	2,3
200	KF-11200	3,5

The spheroidal graphite cast iron version is available upon request. Add suffix F to the standard part number.

Available upon request in nodular cast iron. Pin also available.

ISO 6431
VDMA 24562

ISO MT4 centre hinge in cast iron with 4 fixing screws for cylinders K series
(bores 160/200 assembled on tie-rods)



Cyl. Ø	Part number
32	KF-14032
40	KF-14040
50	KF-14050
63	KF-14063
80	KF-14080
100	KF-14100
125	KF-14125
160	KF-14160
200	KF-14200

Note: the **XV** dimension positions the hinge on the centre line of the cylinder basic body (end cap to end cap).
To assemble the middle chamber for bores 160-200, specify the EB dimension, as hinge is normally supplied already assembled on the cylinder.

Dimensions of hinge ISO MP2 - MP4

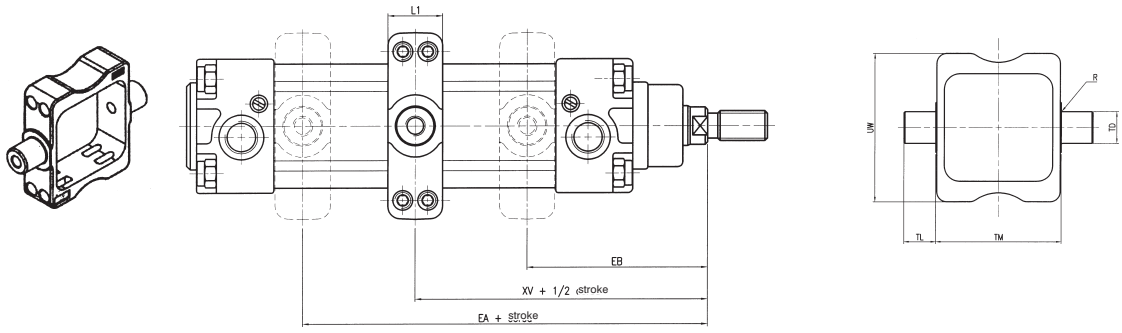
Cyl. Ø	CB H14	CD H9	E (max)	EW Nom.	EW Tol.	FL ± 0,2	L (min)	MR (max)	MR1*	UB h14	XD Nom.	XD Tol.
32	26	10	50	26		22	12	11	15*	45	142	±1,25
40	28	12	58	28	-0,2 -0,6	25	15	13	18*	52	160	±1,25
50	32	12	70	32	±0,2 ±0,2	27	15	13	20*	60	170	±1,25
63	40	16	85	40	±0,6 ±0,6	32	20	17	23*	70	190	±1,6
80	50	16	105	50	±0,6	36	20	17	27*	90	210	±1,6
100	60	20	130	60		41	25	21	29,5*	110	230	±1,6
125	70	25	157	70	-0,5	50	30	26	26	130	275	±2
160	90	30	195	90	-1,2 ±0,5	55	35	31	30*	170	315	±2
200	90	30	232	90	±1,2	60	35	31	30*	170	335	±2

Dimensions of hinge ISO MT4

Cyl. Ø	EA (max)	EB (min)	l1 (max)	R (max)	TD e9	TL h14	TM h14	UW (max)	XV Nom.	XV Tol.
32	82	64	22	0,5	12	12	50	65	73	±2
40	93	72	22	0,5	16	16	63	75	82,5	±2
50	101	79	22	1	16	16	75	95	90	±2
63	107	88	28	1	20	20	90	105	97,5	±2
80	123	97	28	1	20	20	110	130	110	±2
100	131	109	34	1	25	25	132	145	120	±2
125	164	126	34	1,5	25	25	160	175	145	±2,5
160	190	150	40	2,5	32	32	200	190	170	±2,5
200	205	165	40	2,5	32	32	250	240	185	±2,5

* Non-standard dimension

Intermediate hinge ISO MT4
with grub screws for cylinders KD series



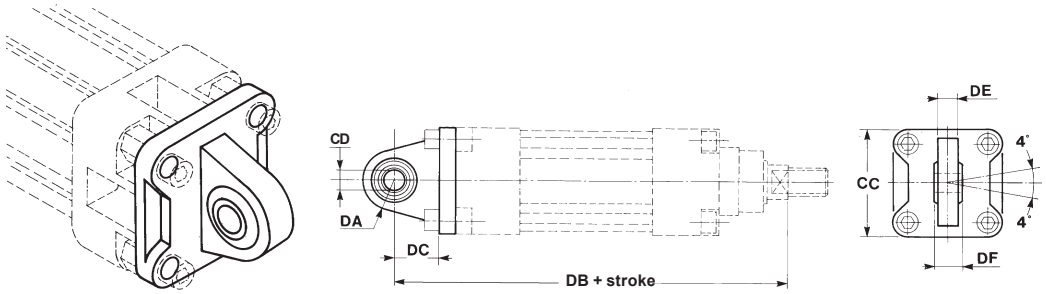
Dimensions hinge ISO MT4 for KD Series

Cyl. ø	EA (max)	EB (min)	I1 (max)	R (max)	TD (e9)	TL (h14)	TM (h14)	UW (max)	XV Nom.	XV Toll.
32	82	64	22	0,5	12	12	50	65	73	±2
40	93	72	22	0,5	16	16	63	75	82,5	±2
50	101	79	22	1	16	16	75	95	90	±2
63	107	88	28	1	20	20	90	105	97,5	±2
80	123	97	28	1	20	20	110	130	110	±2
100	131	109	34	1	25	25	132	145	120	±2
125	164	126	34	1,5	25	25	160	175	145	±2,5

Cyl. Ø	Part number	Mass Kg
32	KDF-14032	0,12
40	KDF-14040	0,24
50	KDF-14050	0,32
63	KDF-14063	0,47
80	KDF-14080	0,80
100	KDF-14100	1,50
125	KDF-14125	1,92

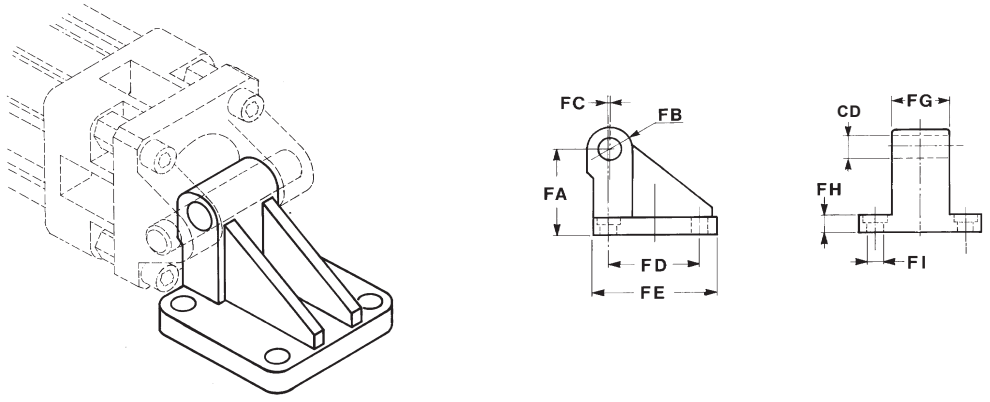
Min. stroke of the cylinder: 10 mm
XV+1/2 stroke: hinge between cylinder end-caps.

Articulated rear hinge in die-cast aluminum with 4 fixing screws



Cyl. Ø	Part number	Mass (kg)
32	KF-11032S	0,1
40	KF-11040S	0,2
50	KF-11050S	0,3
63	KF-11063S	0,35
80	KF-11080S	1,6
100	KF-11100S	0,7

90° hinge in die-cast aluminum with 4 fixing screws

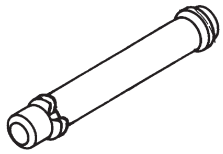


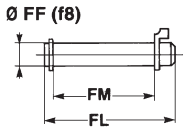
Cyl. Ø	Part number	Mass (kg)
32	KF-19032	0,09
40	KF-19040	0,12
50	KF-19050	0,20
63	KF-19063	0,32
80	KF-19080	0,58
100	KF-19100	0,91

Technical modifications keep in reserve !

(2020/10)

Clevis pin with circlips (zinc plated)

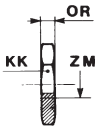




Clevis pin always included with KF-100..A
NOT separately available

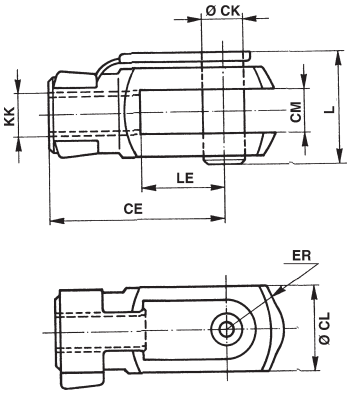
Dimension of articulated male hinge								Dimension of 90° counter-hinge									Dimension of pin		
Cyl. Ø	CC	CD H9	DA	DB	DC	DE	DF	CD H9	FA	FB	FC	FD	FE	FG	FH	FI	FF f8	FL	FM
32	48	10	15	142	14	10,5	14	10	32	10	1,2	32,5	49	26	10	6,4	10	53	46
40	54	12	18	160	16,5	12	16	12	36	12	2,6	38	55	28	10	6,4	12	61,3	53
50	65	12	20	170	17,5	12	16	12	45	12	0,3	46,5	67	32	12	8,4	12	69	61
63	75	16	21	190	21,5	15	21	16	50	16	3,3	56,5	77	40	12	8,4	16	80,5	71
80	95	16	27	210	24	15	21	16	63	16	1,0	72	97	50	14	10,5	16	100,5	91
100	115	20	29,5	230	28	18	25	20	73	20	2,5	89	115	60	16	10,5	20	122,5	111
125																	25	140	131
160																	30	205	171
200																	30	205	171

Piston rod locknut (zinc plated)



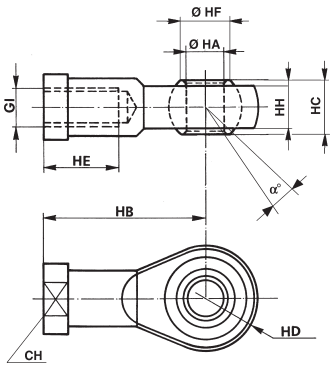
Cyl. Ø	ZM	KK	OR	Part number
32	M10 x 1,25	17	6	**KF - 16032**
40	M12 x 1,25	19	7	**KF - 16040**
50	M16 x 1,5	24	8	**KF - 16050**
63	M16 x 1,5	24	8	
80	M20 x 1,5	30	9	**KF - 16080**
100	M20 x 1,5	30	9	
125	M27 x 2	41	12	**KF - 16125**
160	M36 x 2	55	14	**KF - 16160**
200	M36 x 2	55	14	

Double hinge for rod in zinc-plated steel complying with ISO 8140 standard (with pin)



Cyl. Ø	CE	CK	CL	CM B12	ER	KK	L	LE	Weight-Mass (g.)	Part no.
32	40	10	20	10	12	M10 X 1.25	26	20	90	**KF - 15032**
40	48	12	24	12	19	M12 X 1.25	32	24	150	**KF - 15040**
50-63	64	16	32	16	25	M16 X 1.5	39	32	340	**KF - 15050**
80-100	80	20	40	20	32	M20 X 1.5	50	40	670	**KF - 15080**
125	110	30	55	30	45	M27 X 2	65	54	1790	**KF - 15125**
160-200	144	35	70	35	57	M36 X 2	81	72	3870	**KF - 15160**

Articulated clevis in self-lubricating zinc-plated steel



Cyl. Ø	α°	CH	KK	HA H7	HB	HC	HD	HE	HF	Weight-Mass (g.)	Part no.
32	13°	17	M10 X 1.25	10	43	14	14	20	12.9	76	**KF - 17032**
40	13°	19	M12 X 1.25	12	50	16	16	22	15.4	110	**KF - 17040**
50-63	15°	22	M16 X 1.5	16	64	21	21	28	19.3	220	**KF - 17050**
80-100	14°	30	M20 X 1.5	20	77	25	25	33	24.3	400	**KF - 17080**
125	15°	41	M27 X 2	30	110	37	35	51	34.8	1150	**KF - 17125**
160-200	16°	50	M36 X 2	35	125	43	40	56	37.7	1600	**KF - 17160**