



1.6 Guided drives DPGA

This series of guide rod cylinder diameter is $\phi 10 \sim \phi 63$, cylinder and guide unit are integrated in one cylinder, travel up to 200 mm, high resistance to torque and lateral force, widely used for clamping, lifting, stop and other transmission systems.



Model selection

DPGA	-20	×30	P	A	-GF
Guided drive	①	②	③	④	⑤
①	-Diameter:10 12 16 20 25 32 40 50 63				
②	× Stroke: Refer to stroke sheet				
③	Cushion: P=Elastic cushioning rings/plates on both sides;PPV: Pneumatic cushioning, adjustable at both ends				
④	Position sensing:A=Magnetic sensing Blank=None				
⑤	-GF:sleeve bearing;KF: Recirculating ball bearing guide				

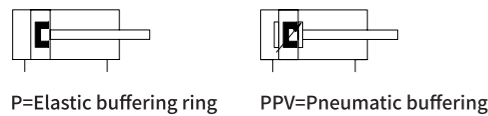
Summary

This series of guide rod cylinder diameter is φ 10 ~ φ 63, cylinder and guide unit are integrated in one cylinder, travel up to 200 mm, high resistance to torque and lateral force, widely used for clamping, lifting, stop and other transmission systems.

Product features

- Good protection against torsion
- High rigidity
- Maintenance-free
- Wide range of mounting options

Diagram



Standard stroke sheet[mm]

Diameter φ	Standard stroke	
	KF: Recirculating ball bearing guide	GF:Sleeve bearing
10	-	5, 10, 15, 20
12	10, 20, 25, 30, 40, 50, 80, 100	10, 20, 25, 30, 40, 50, 80, 100
16	10, 20, 25, 30, 40, 50, 80, 100	10, 20, 25, 30, 40, 50, 80, 100
20	20, 25, 30, 40, 50, 80, 100	20, 25, 30, 40, 50, 80, 100
25	20, 25, 30, 40, 50, 80, 100	20, 25, 30, 40, 50, 80, 100
32	25, 50, 80, 100, 125, 160, 200	25, 50, 80, 100, 125, 160, 200
40	40, 50, 80, 100, 125, 160, 200	40, 50, 80, 100, 125, 160, 200
50	40, 50, 80, 100, 125, 160, 200	40, 50, 80, 100, 125, 160, 200
63	40, 50, 80, 100, 125, 160, 200	40, 50, 80, 100, 125, 160, 200

Note: Please contact us for any other special stroke

Technical parameter

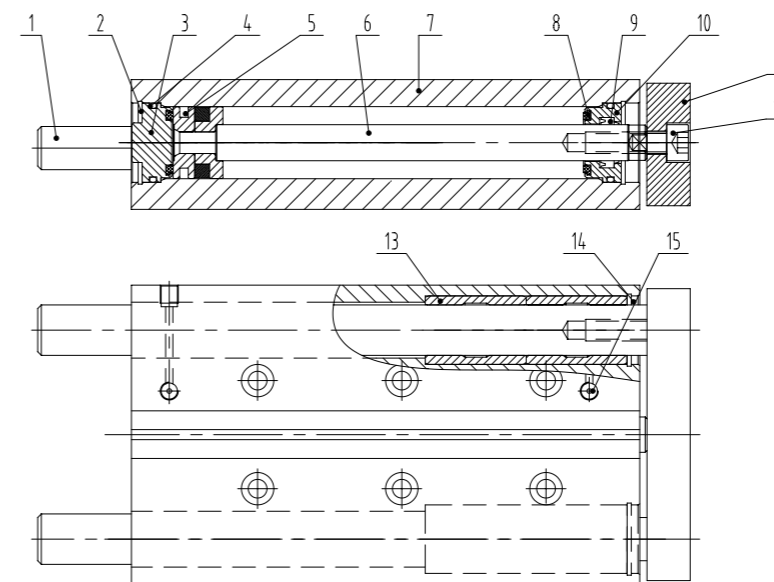
General technical parameter									
Diameter φ	10	12	16	20	25	32	40	50	63
Pneumatic connection	M3	M5	M5	M5	G1/8	G1/8	G1/8	G1/4	G1/4
Design	Piston, piston rod, guild rod with yoke								
Cushioning	P: Elastic cushioning rings/plates at both ends					PPV:Pneumatic cushioning, adjustable at both ends			
Position sensing	Via Magnetic sensing								
Type of mounting	Via through-hole/Via female thread								
Mounting position	Any								
Protection against torsion/guild	Guide rod with yoke/plain-bearing or recirculating ball bearing guide								

Operating and environmental conditions									
Diameter φ	10	12	16	20	25	32	40	50	63
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]								
Operating pressure MPa	0.15~0.8	0.2~1				0.15~1		0.1~1	
Environmental and fluid temperature °C									
GF	-10 ~ +60	-20 ~ +80							
KF	-	-5 ~ +60							
Grade of corrosion resistance	1								
Speed [mm/s]									
cushion P									
Maximum speed, advancing	1.7	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.6
Maximum speed, retracting	1.6	0.8	0.8	0.8	0.8	0.8	0.8	0.6	0.6

-Technical parameter

Forces [N] and Impact energy [J]									
Diameter φ	10	12	16	20	25	32	40	50	63
Theoretical force at 0.6 bar,advancing	47	68	121	188	295	482	754	1178	1870
Theoretical force at 6 bar , retracting	40	51	90	141	247	415	683	1057	1750
Max. impact energy in the end positions 1)	0.035	0.07	0.15	0.20	0.30	0.40	0.70	1.00	1.30
Note: V Permissible impact velocity E Max. impact energy m ₁ Moving mass (drive) m ₂ Moving payload	Permissible impact speed: $V = \sqrt{\frac{2 \times E}{m_1 + m_2}}$				Maximum permissible mass: $m_2 = \frac{2 \times E}{V^2} - m_1$				
These specifications represent the maximum values that can be achieved. Observe the maximum permissible impact energy.									

Structure diagram

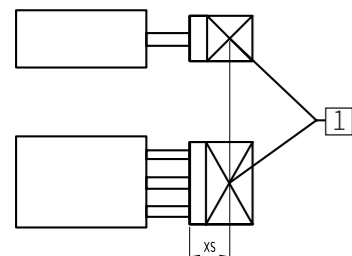


Number	Names	Material
[1]	Guide column	45#
[2]	Hole retaining ring	65Mn
[3]	Rear cover	6061
[4]	O-ring	NBR
[5]	Hole with circle	NBR
[6]	Piston rod riveting	-
[7]	Cylinder barrel	6061-T5
[8]	Bumper	PU

Number	Names	Material
[9]	Combination circle	NBR
[10]	Front cover	6061
[11]	Flange	Q345B
[12]	Soket head cap screw	Level 8.8
[13]	Bushing	ZQSn10-1
[14]	Retaining ring for reverse hole	-
[15]	Hexagon socket set screws with cup point	304

Maximum payload F [N]

Plain-bearing guide GF and recirculating ball bearing guide KF



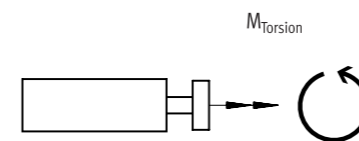
[1]Payload center of gravity

Diameter	10	12	16	20	25	32	40	50	63
XS[mm]	5	25	50	50	50	50	50	50	50

Stroke [mm]		Diameter								
		10	12	16	20	25	32	40	50	63
5	GF	3.7	-	-	-	-	-	-	-	-
10	GF	3.0	28	63	-	-	-	-	-	-
	KF	-	28	45	-	-	-	-	-	-
15	GF	2.5	-	-	-	-	-	-	-	-
20	GF	2.1	24	56	67	121	188	-	-	-
	KF	-	24	41	46	110	155	-	-	-
25	GF	-	23	53	64	116	180	180	257	257
	KF	-	23	39	44	105	149	149	235	235
30	GF	-	21	51	61	112	173	-	-	-
	KF	-	21	37	42	102	144	-	-	-
40	GF	-	31	73	110	123	161	-	-	-
	KF	-	31	82	108	119	135	-	-	-
50	GF	-	28	67	103	115	150	150	216	216
	KF	-	28	77	102	112	126	126	202	202
80	GF	-	22	55	86	96	166	166	234	234
	KF	-	23	64	86	95	151	151	233	233
100	GF	-	19	49	77	86	150	150	212	212
	KF	-	20	58	78	86	138	138	214	214
125	GF	-	-	-	-	-	168	168	229	229
	KF	-	-	-	-	-	161	161	238	238
160	GF	-	-	-	-	-	146	146	200	200
	KF	-	-	-	-	-	143	143	212	212
200	GF	-	-	-	-	-	127	127	174	174
	KF	-	-	-	-	-	127	127	189	189

Permissible torque load M [Nm]

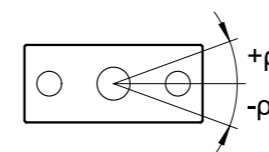
Plain-bearing guide GF and recirculating ball bearing guide KF



Stroke [mm]		Diameter								
		10	12	16	20	25	32	40	50	63
5	GF	0.057	-	-	-	-	-	-	-	-
10	GF	0.046	0.60	1.44	-	-	-	-	-	-
	KF	-	0.88	2.19	-	-	-	-	-	-
15	GF	0.039	-	-	-	-	-	-	-	-
20	GF	0.034	0.50	1.30	1.85	4.15	7.30	-	-	-
	KF	-	0.72	1.79	2.43	6.14	9.62	-	-	-
25	GF	-	0.48	1.23	1.75	3.95	7.00	7.90	14.15	15.90
	KF	-	0.66	1.64	2.24	5.77	9.08	10.25	19.35	21.98
30	GF	-	0.45	1.18	1.70	3.80	6.70	-	-	-
	KF	-	0.61	1.52	2.08	5.43	8.60	-	-	-
40	GF	-	0.65	1.68	3.00	4.20	6.20	-	-	-
	KF	-	0.81	2.92	4.64	5.94	7.77	-	-	-
50	GF	-	0.60	1.56	2.80	3.90	5.80	6.55	11.85	13.30
	KF	-	0.73	2.63	4.23	5.43	7.09	8.00	15.51	17.62
80	GF	-	0.45	1.28	2.35	3.25	6.40	7.25	12.85	14.45
	KF	-	0.56	2.03	3.36	4.33	7.71	8.70	16.43	18.67
100	GF	-	0.40	1.14	2.10	2.90	5.80	6.55	11.65	13.10
	KF	-	0.48	1.77	2.95	3.81	6.86	7.74	14.76	16.77
125	GF	-	-	-	-	-	6.50	7.35	12.55	14.10
	KF	-	-	-	-	-	7.66	8.64	15.77	17.92
160	GF	-	-	-	-	-	5.70	6.40	11.00	12.30
	KF	-	-	-	-	-	6.64	7.49	13.78	15.66
200	GF	-	-	-	-	-	5.00	5.55	9.60	10.70
	KF	-	-	-	-	-	5.76	6.50	12.04	13.68

Torsional backlash p

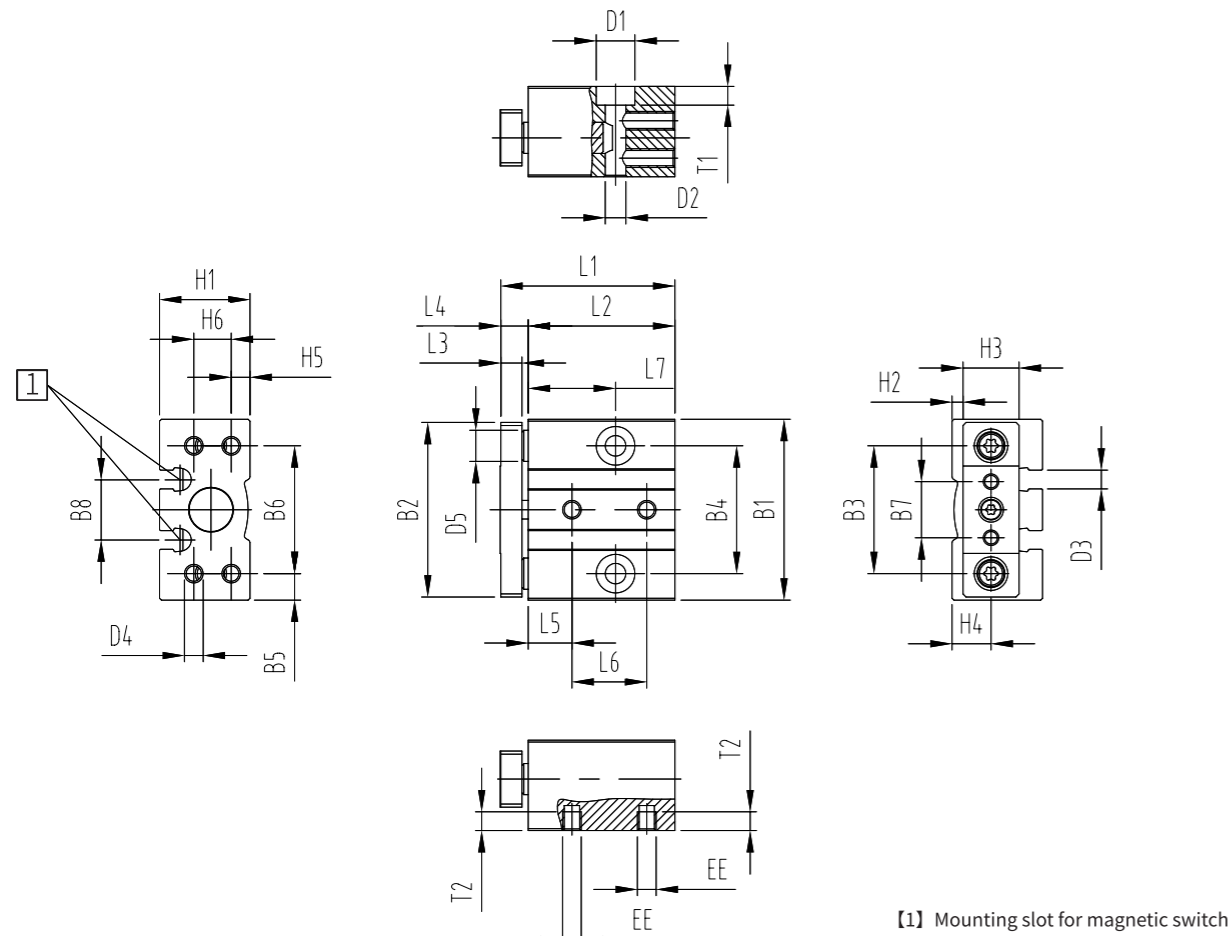
Plain-bearing guide GF and recirculating ball bearing guide KF in retracted state, without load



Diameter		10	12	16	20	25	32	40	50	63
Average torsional backlash [°]	GF	±0.1	±0.06	±0.06	±0.05	±0.04	±0.04	±0.03	±0.03	±0.02
Torsional backlash [°]	KF	-	±0.03	±0.02	±0.02	±0.02	±0.01	±0.01	±0.02	±0.02

Dimensions

Diameter $\phi 10\text{mm}$



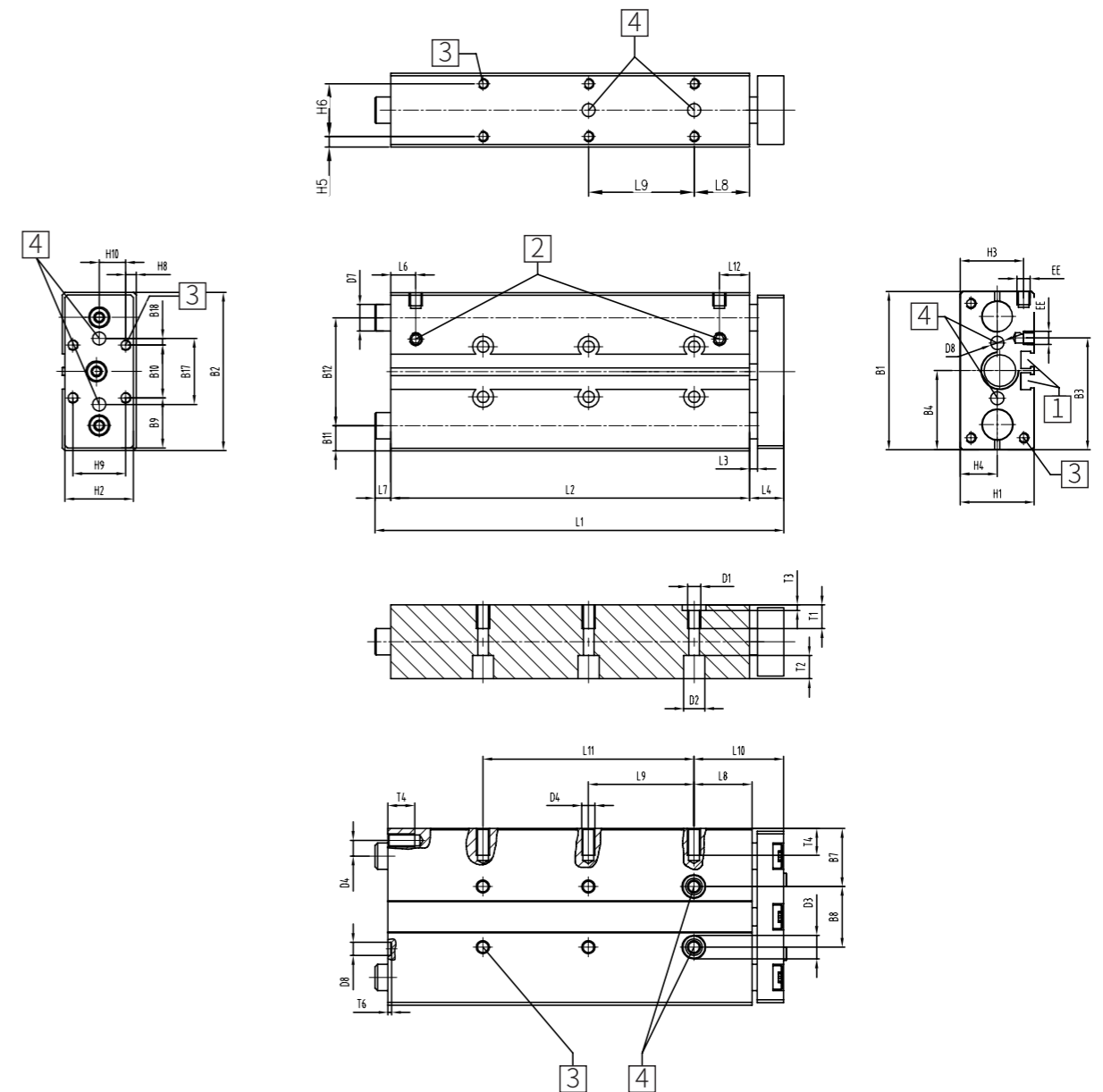
[1] Mounting slot for magnetic switch

ϕmm	B1	B2	B3	B4	B5	B6	B7	B8	D1 ϕ	D2 ϕ	D3	D4	D5 ϕH8	EE	H1	H2	H3	H4	H5	H6
10	33	32	23	23	5	23	11	10	8	4.3	M3	M4	6	M3	17	2	10	7	3.5	8

ϕmm	Stroke mm	L1	L2	L3	L4	L5	L6	L7	T1	T2
10	5	30	24	5	6	8.5	11.1	15.5	2.5	3
	10	35	29				16.1	20.5		
	15	40	34				21.1	25.5		
	20	45	39				26.1	30.5		

-Dimensions

Diameter $\phi 12\sim 16\text{mm}$



[1] Mounting slot for magnetic switches
[2] Compressed air supply port optionally at the side or on top

[3] Mounting thread
[4] Tolerance between the centring holes $\pm 0.02\text{ mm}$

ϕmm	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16	B17	B18	D1	D2 ϕ
12	60	58	42.4	30	4.5	51	20.5	19	20	20	9.5	41	19.5	21	8.5	41	25	2.5	M5	8
16	67	65	45.9	33.5	4.5	58	22	23	23.5	20	10.5	46	21.3	24.4	-	-	28	4	M5	7.5

-Dimensions

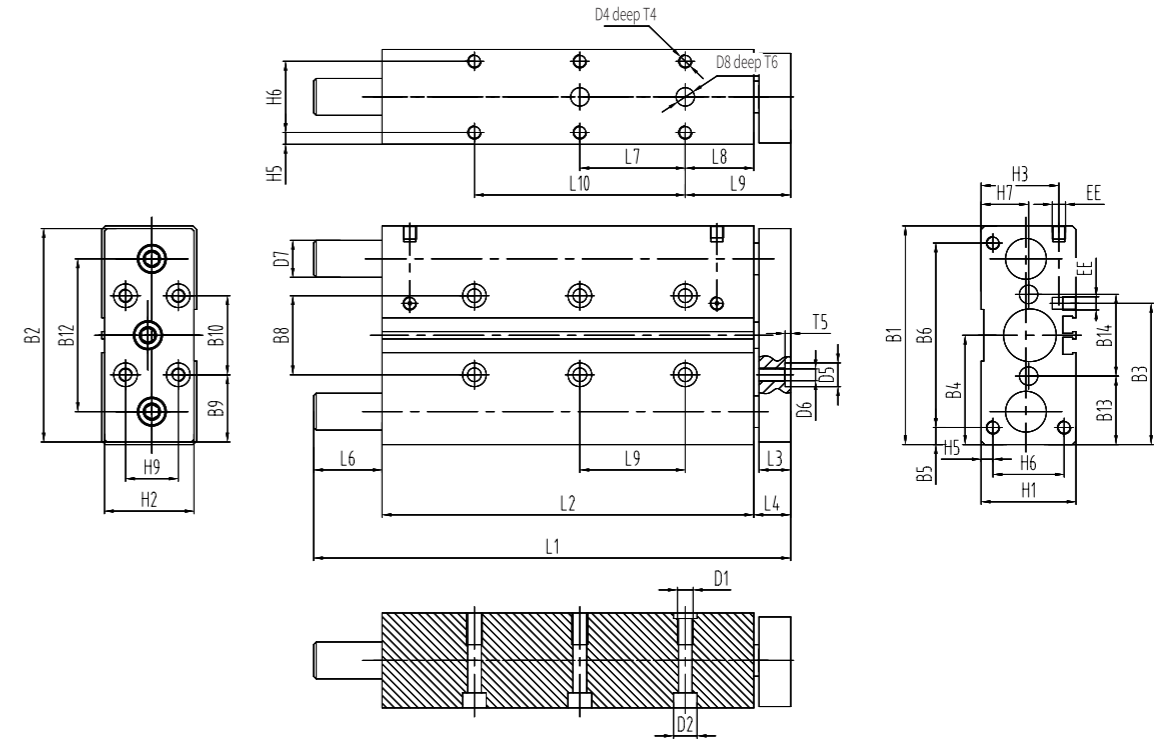
-Diameter $\phi 12\sim 16\text{mm}$

ϕmm	D3 ϕH8	D4	D5 ϕH8	D6	D7 ϕ		D8 ϕH8	D9	EE	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10
					GFh8	KFh7													
12	9	M4	5	M4	10	8	5	M4	M5	28	26	24	14	4	20	14	4	20	10
16	9	M5	5	M5	12	10	5	-	M5	32	30	26.5	16	4	24	16	7.4	20	10

ϕmm	Stroke mm	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	T1	T2	T3	T4	T5	T6	T7
12	10	59	46	10	13	11.4	9.5	-	21	-	34	-	11.4	5	9	9.4	2.1	8	1.2	1	8
	20	69	56					-		-		-									
	25	74	61					-		-		20									
	30	79	66					-		-		20									
	40	95	76					6		-		20									
	50	105	86					6		-		40									
	80	135	116					6		-		40									
100	155	136	6	-	40																
16	10	60	48	10	12	11.9	10.6	-	22	-	34	-	11.9	-	9	4.6	2.1	10	1.2	1	-
	20	70	58					-		-		-									
	25	75	63					-		-		20									
	30	80	68					-		-		20									
	40	107	78					17		-		20									
	50	117	88					17		-		40									
	80	147	118					17		-		40									
100	167	138	17	-	40																

-Dimensions

Diameter $\phi 20\sim 25\text{mm}$



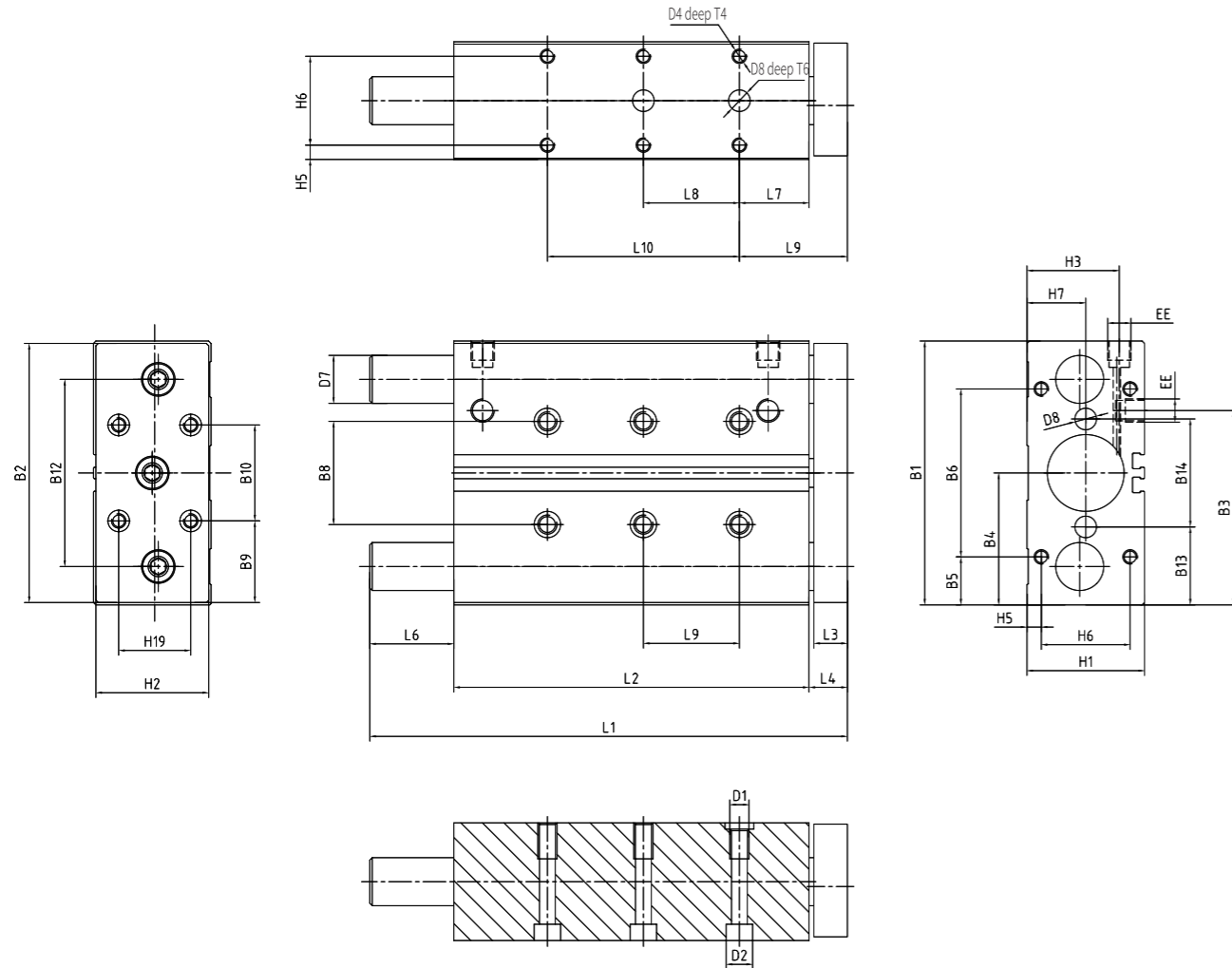
ϕmm	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	D1	D2 ϕ	D3 ϕH8	D4
20	83	81	53.6	41.5	6.5	70	26.5	30	26.5	30	12.5	58	26	31	M6	9	9	M5
25	95	93	70	47.5	15.5	64	30	35	27.5	40	13.5	68	29	37	M6	9	9	M6

ϕmm	D5 ϕH8	D6	D7 ϕ		D8 ϕH8	EE	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10
			GFh8	KFh7												
20	9	M5	14	12	7	M5	36	34	29.5	17	4.5	27	18	7	20	10
25	9	M6	16	14	7	G1/8	44	42	34.8	19	4.5	35	22	12	20	10

ϕmm	Stroke mm	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	T1	T2	T3	T4	T5	T6
20	20	75	61	12	14	14	10.5	-	26	-	40	-	14	12	5.7	2.1	10	2.1	1.6
	25	80	66					-		20		-							
	30	85	71					-		20		-							
	40	121	81					26		20		-							
	50	131	91					26		40		-							
	80	161	121					26		40		-							
	100	181	141					26		40		80							
25	20	93	65.6	12	14	17.5	9.5	13.4	26	-	40	-	15	14	5.7	2.1	12	2.1	1.6
	25	98	70.6					13.4		20		-							
	30	103	75.6					13.4		20		-							
	40	123	85.6					23.4		20		-							
	50	133	95.6					23.4		40		-							
	80	163	125.6					23.4		40		-							
	100	183	145.6					23.4		40		80							

-Dimensions

Diameter $\phi 32\sim 63\text{mm}$



ϕmm	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	D1	D2 ϕ	D3 ϕH8
32	110	108	81	55	20	70	33.5	43	35	40	16	78	32.5	45	M8	11	12
40	120	118	94	60	15	90	34.5	51	35	50	16	88	32.5	55	M8	11	12
50	148	146	116.5	74	19	110	42	64	44	60	19	110	40	68	M8	11	12
63	162	160	139	81	9	144	41	80	41	80	18.5	125	39.5	83	M10	15	12

-Dimensions

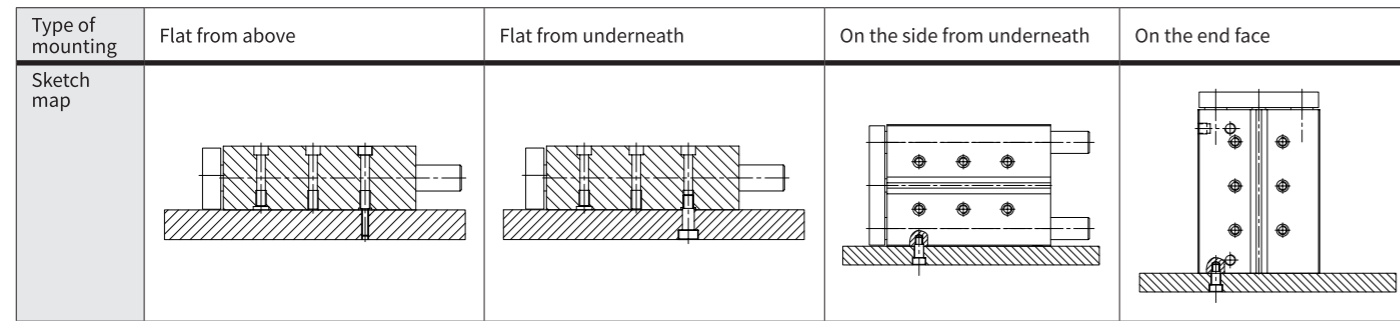
-Diameter $\phi 32\sim 63\text{mm}$

ϕmm	D4	D5 ϕH8	D6	D7 ϕ		D8 ϕH8	EE	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10
				GFh8	KFh7												
32	M6	9	M6	20	16	9	G1/8	49	47	38.5	22	6	37	24.5	8.5	30	15
40	M8	9	M6	20	16	9	G1/8	54	52	40.5	24	6	42	27	10	30	15
50	M8	12	M8	25	20	12	G1/4	64	62	50.5	29.5	7	50	32	12	40	20
63	M10	12	M8	25	20	12	G1/4	78	76	55	32	9	60	39	19	40	20

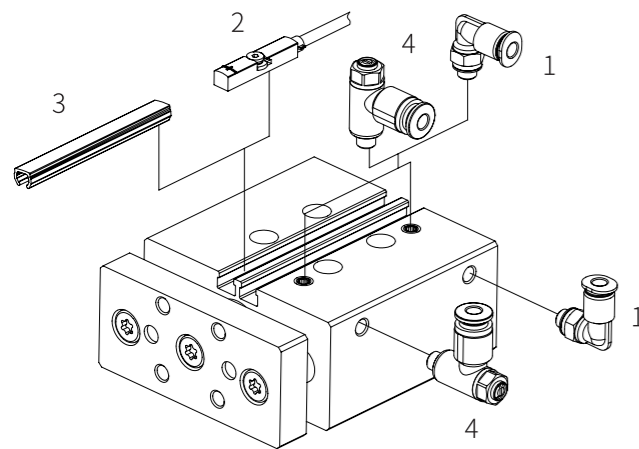
ϕmm	Stroke mm	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	T1	T2	T3	T4	T5	T6
32	20	101	68	14	16	17	12	17	29	-	45	-	17	15	6.8	2.6	12	2.1	2.1
	25	106	73					17		20		-							
	30	111	78					17		20		-							
	40	121	88					17		20		-							
	50	131	98					17		40		-							
	80	179	128					35		40		-							
	100	199	148					35		40		80							
	125	244	173					55		40		80							
	160	279	208					55		40		120							
200	319	248	55	40	160														
40	25	106	76	14	16	17.8	13.1	14	29	20	45	-	17.8	15	6.8	2.6	16	2.1	2.1
	50	131	101					14		40		-							
	80	179	131					32		40		-							
	100	199	151					32		40		80							
	125	244	176					52		40		80							
	160	279	211					52		40		120							
	200	319	251					52		40		160							
50	25	118	77	16	18	17.8	14.2	23	32	20	50	-	17.8	15	6.8	2.6	16	2.6	2.6
	50	143	102					23		40		-							
	80	194	132					44		40		-							
	100	214	152					44		40		80							
	125	259	177					64		40		80							
	160	294	212					64		40		120							
200	334	252	64	40	160														
63	25	118	83	16	18	18.5	14.8	17	32	20	50	-	18.5	20	9	2.6	20	2.6	2.6
	50	143	108					17		40		-							
	80	194	138					38		40		80							
	100	214	158					38		40		80							
	125	259	183					58		40		120							
	160	294	218					58		40		160							
	200	334	258					58		40		200							

Type of mounting

· Mounting options



Peripherals overview



Accessories	Description
[1]	Push-in fitting For connecting compressed air tubing with standard O.D.
[2]	Proximity switch Can be integrated in the profile barre
[3]	Slot cover For protecting the sensor cable and the sensor slots from contamination
[4]	One-way flow control valve For speed regulation
-	Centering sleeves

Accessories

· C Magnetic sensing

Magnetic switch-reed type is used for T-groove						
	Type of mounting	Switching output	Connection	Length m	Type	For diameter ϕ
N/O	Insertable in the slot from above, flush with the cylinder profile.	PNP	Magneto-resistive, 3-wire	1.3	CDX-13P-1.3	10~63
		NPN	Magneto-resistive, 3-wire	1.3	CDX-13N-1.3	
		R	Tongue spring type, 2-wire	1.3	CDX-13R-1.3	
				2.5	CDX-13R-2.5	

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