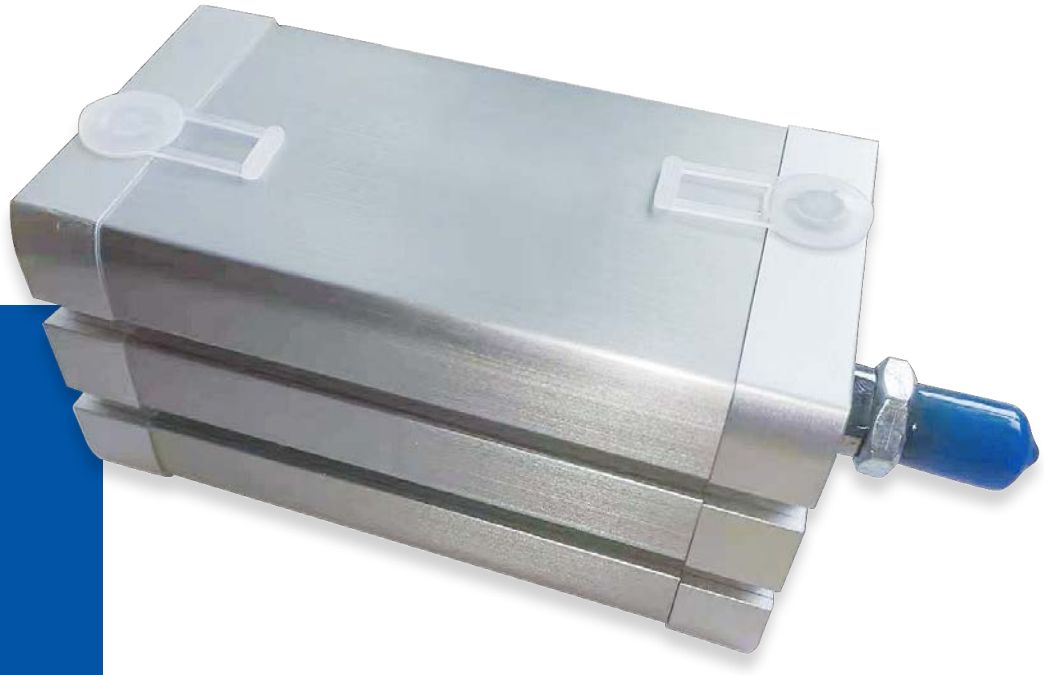


1.5 The DPSC Series compact dual-acting cylinder

This series of compact cylinders comply with the standard ISO 21287, with a cylinder diameter of ϕ 12~ ϕ 100, low friction coefficient, good cushioning characteristics, long service life, and easy installation.

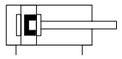
Summary

This series of compact cylinders comply with the standard ISO 21287, with a cylinder diameter of ϕ 12~ ϕ 100, low friction coefficient, good cushioning characteristics, long service life, and easy installation.

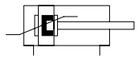
Product features

- Compacted，can effectively save the installation space;
- The drive has self-adjusting, pneumatic end-position cushioning;
- Sensor slots on three sides for flush mounting of proximity switches;
- Multiple fixed and non fixed brackets for customers to choose from.

Diagram



P buffer



PPS=Pneumatic buffering-self-adjusting

Model selection

DPSC	-32	×50	-P	A	-R
Compact cylinder	①	②	③	④	⑤
①	-Diameter:12 16 20 25 32 40 50 63 80 100				
②	×Stroke range：refer to datasheet				
③	-cushion：P=Elastic cushioning;PPS=cushioning（withoutϕ12、16）				
④	Position sensing：A=Via magnetic switch				
⑤	-Variants				

⑤	Piston rod type		Piston rod thread type		Temperature range
	At one end	F	Male thread		Standard
2	Through piston rod		Female thread	T	-40-80°C
				R	Heat-resistant seals max. 120 °C

Note1) TZ can cooperate with TA/TB

DATASHEET[mm]

Diameter	Standard stroke	Maximum stroke	Buffer stroke
12	5，10，15，20，25，30，40	300	-
16	5，10，15，20，25，30，40，50		-
20	5，10，15，20，25，30，40，50，60		3
25			3.5
32	5，10，15，20，25，30，40，50，60，70，80	400	4
40			5
50			6
63	10，15，20，25，30，40，50，60，70，80		7
80		500	7.5
100			10

Note: Please contact us for any other special trips.

Technical parameters

General technical date										
Piston Diameter ϕmm		12	16	20	25	32	40	50	63	80	100
Mode of operation		Double-acting									
Cushioning	P	Elastic cushioning rings/plates on both sides									
	PPS	-		Pneumatic cushioning, adjustable at both ends							
Cushioning length		-		3	3.5	4	5	6	7	7.5	10
Pneumatic connection		M5	M5	M5	M5	G1/8					
Position sensing		Via magnetic switch									
Type of mounting		☑ Through-hole ☑ Female thread ☑ Accessories									
Mounting position		Any									
Female piston rod thread		M3	M4	M6		M8		M10		M12	
Male piston rod thread		M5	M6	M8		M10x1.25		M12x1.25		M16x1.5	

-Technical parameters

Operating and environmental conditions										
Piston Diameter ϕmm	12	16	20	25	32	40	50	63	80	100
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]									
Operating pressure MPa	0.1~1	0.06~1								
Environmental and fluid temperature[1] ° C	-20 ～ 80									
Corrosion resistance class [2]	2									

Forces [N] and impact energy [J]										
Piston Diameter ϕmm	12	16	20	25	32	40	50	63	80	100
Theoretical force at 6 bar, advancing	68	121	188	295	483	754	1178	1870	3016	4712
Theoretical force at 6 bar, retracting	51	90	141	247	415	686	1057	1750	2827	4524
Max. impact energy in the end positions	0.07	0.15	0.2	0.3	0.4	0.7	1	1.3	1.8	2.5
For self-adjusting cushioning (PPS)	-	-	0.65	0.8	1	1.7	2.8	4.8	8	12

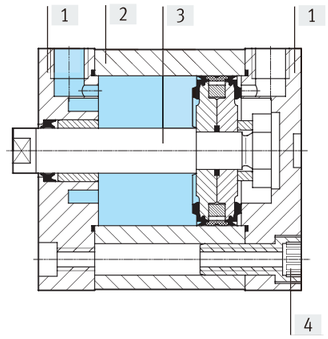
Note:
V Permissible impact velocity
E Max. impact energy
m_1 Moving mass (drive)
m_2 Moving payload

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.The maximum impact energy is still maintained in combination with the self-adjusting cushioning PPS

1) Note operating range of proximity switches
2) About Corrosion resistance class：
[1] No corrosion resistance: Suitable for small and inconspicuous standard parts such as usually phosphorylated or polished threaded pins, clamp springs and clamsleeves, and also for ball bearings and sliding bearings.
[2] Moderate corrosion resistance: applications where condensate may occur. External visual parts used for surface decoration requirements are in direct contact with the environmental climate of typical industrial applications.
[3] High corrosion resistance: outdoor exposure to moderate corrosion conditions. For external visual parts with main functional requirements, direct contact with conventional industrial environment.

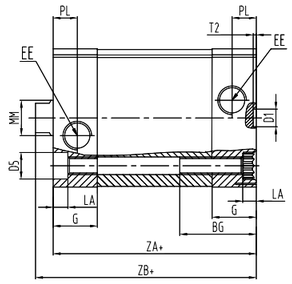
Structure Diagram



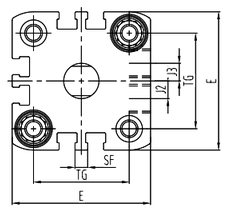
Compact cylinder		
[1]	Cover	
	ϕ 12 ... 80	Anodized aluminium
	100	Coated die-cast aluminium
[2]	Cylinder barrel	Anodized aluminium
[3]	Piston rod	High-alloy steel
[4]	Flange screws	
	ϕ 12 ... 16	High-alloy steel
	ϕ 20 ... 63	Galvanized steel
	ϕ 80 ... 100	Standard screws, galvanized steel
–	Seals	Polyurethane/Fluoro rubber

Dimensions

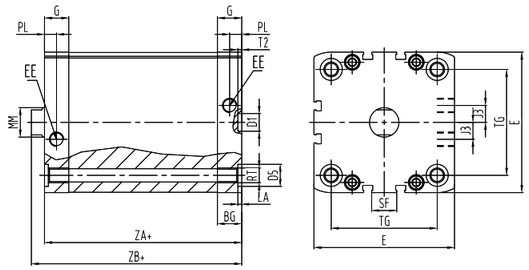
Diameter Φ12~63



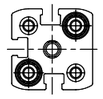
Diameter Φ32~63



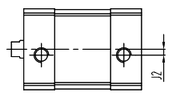
Diameter Φ80~100



Diameter Φ12~25



Diameter Φ12



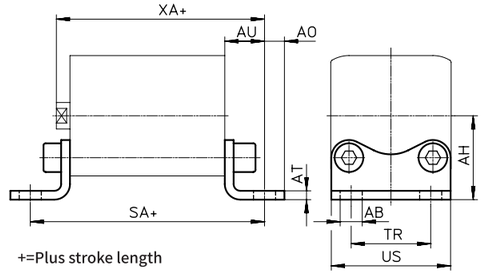
ϕ[mm]	BG min.	D1ϕH9	D5ϕ	E	EE	G	J2	J3	LA+0.2
12	17	9	6F9	27.5 +0.3	M5	10.5	2	–	3.5
16				29 +0.3		11	2.6		
20	19.5		9F9	35.5 +0.3		12			5
25				39.5 +0.3					
32	26			47 +0.3	G1/8	15	6		
40				54.5 +0.3			8		
50	27	12	12F9	65.5 +0.3			11.5		
63				75.5 +0.3					
80	17		15	95.5 +0.6		16.5			2.6
100	21.5			113.5 +0.6		21.5	20		

Φ[mm]	MM ϕ	PL +0.2	RT	SF h13	T2 +0.1	TG ±0.2	ZA ±0.3	ZB	
								+1.2	PPS +1.3
12	6	6	M4	5	2.1	16	35	39.2	–
16	8			7		18		39.7	
20	10		M5	9		22	37	42.5	42.5
25						26	39	44.5	45.3
32	12	8.2	M6	10		32.5	44	50	50.6
40						38	45	51.1	51.7
50	16		M8	13	2.6	46.5		52.7	53.2
63						56.5	49	56.5	57
80	20		M10	17		72	54	62.9	63.4
100		10.5				89	67	76	76.8

Type of mounting

LB Axial foundation Type

Material: Galvanized steel

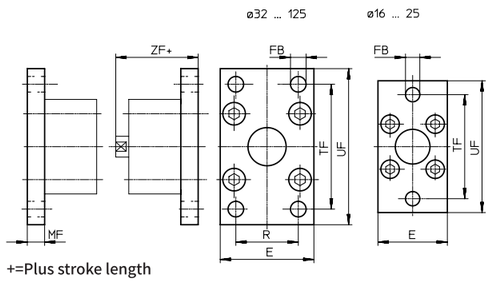


+=Plus stroke length

Dimensions									
Diameter ∅ [mm]	AB ∅ H14	AH JS14	AO	AT ±0.5	AU ±0.2	SA	TR ±0.2	US −0.5	XA
12	5.8	21	5	3	13	61	16	26	52.2
16		22	4.75				18	27.5	52.9
20	7	27	6.25	4	16	69	22	34.5	58.7
25		29				71	26	38.5	60.7
32		33.5	7			76	32	46	66.2
40	10	38	9		18	81	36	54	69.2
50		45	8	5	21	87	45	64	74.2
63		50				91	50	75	78.2
80	12	63	10.5	6	26	106	63	93	89
100	14.5	74	12.5		27	121	75	110	103

FA/FB Front Flange Type

Material: Galvanized steel



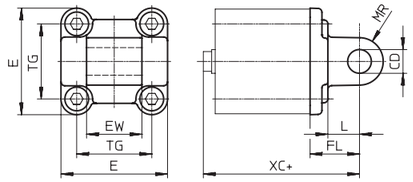
+=Plus stroke length

Diameter ∅ [mm]	E	FB ∅	MF	R	TF	UF ±1	ZF
12	28	5.5	8	–	40	50	47.2
16	29				43	55	47.9
20	36	6.6			55	70	50.7
25	40				60	76	52.7
32	45	7	10	32	64	80	60.2
40	54	9		36	72	90	61.2
50	65		12	45	90	110	65.2
63	75			50	100	120	69.2
80	93	12	16	63	126	150	79
100	110	14		75	150	175	92

-Type of mounting

CA Single Ear Carrier Form

Material:
ϕ 12 ... 25: Wrought aluminium alloy
ϕ 32 ... 100: Compressed Cast Aluminum

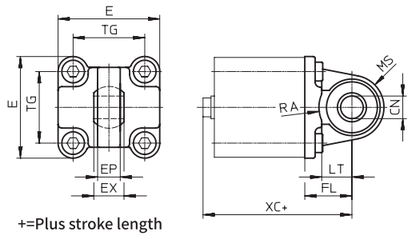


+=Plus stroke length

Dimensions								
Diameter ∅ [mm]	CD ∅ H9	E	EW	FL ±0.2	L	MR	TG	XC
12	6	25–0.6	12h12	16	10	6	16	55.2
16		27.5–0.6					18	55.9
20	8	34.5–0.6	16h12	20	14	8	22	62.7
25		38.5–0.6					26	64.7
32	10	45+0.2/–0.5	26–0.2/–0.6	22	13	10	32.5	72.2
40	12	54–0.5	28–0.2/–0.6	25	16	12	38	75.2
50		64–0.6	32–0.2/–0.6	27			46.5	80.2
63	16	75–0.6	40–0.2/–0.6	32	21	16	56.5	89.2
80		93–0.8	50–0.2/–0.6	36	22		72	99
100	20	110–+0.3/–0.8	60–0.2/–0.6	41	27	20	89	117

Swivel flange CAQ

Material:
ϕ 32 ... 50: Compressed Cast Aluminum
Φ 63 ... 100: Wrought aluminium alloy



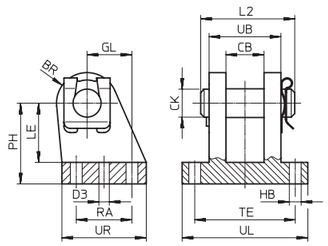
+=Plus stroke length

Dimensions										
Diameter ∅ [mm]	CN ∅	E	EP ±0.2	EX	FL ±0.2	LT	MS	RA +1	TG	XC
32	10+0.013	45+0.2/–0.5	10.5	14	22	13	15+0.5	14.5	32.5	72.2
40	12+0.015	54–0.5	12	16	25	16	17+0.5	17.5	38	75.2
50	16+0.015	64–0.6	15	21	27	16	20+0.5	18.5	46.5	80.2
63	16+0.015	74.5±0.5	15	21	32	21	23–0.5	23	56.5	89.2
80	20+0.018	92.2±0.8	18	25	36	22	28–0.5	25	72	99
100	20+0.018	109+1/–0.7	18	25	41	27	30±0.5	95	89	117

-Type of mounting

Clevis foot CBG

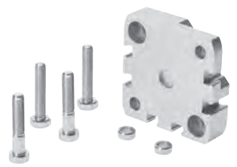
Material:
CBG 32 ... 63: Stainless steel casting
CBG 80 ... 100: S Spheroidal graphite cast iron
The pivot pin is secured against rotation
with a spring pin

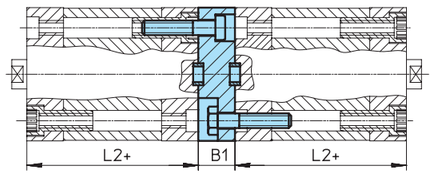


Dimensions														
Diameter ∅ [mm]	BR	CB	CK ∅	D3 ∅	GL	HB ∅	L2	LE	PH	RA	TE	UB	UL	UR
32	12	14.1	10	4.8	16	6.8	35	24	32	20	42	28	56	36
40	14	16.1	12	5.8	20	6.8	39	26	36	26	44	30	58	41.5
50	15	21.1	16	5.8	25	9.2	50	33	45	31	56	40	70	47
63	17	21.1	16	7.8	25	9.2	50	38	50	31	56	40	70	49
80	17	25.1	20	7.8	30	11	60	49	63	36	70	50	89	55
100	20	25.1	20	9.8	41	11	60	56	71	46	70	50	89	65

Multi-position kit DW

Material:
Flange: Wrought aluminium alloy
Screws: Galvanised steel





+=Plus stroke length

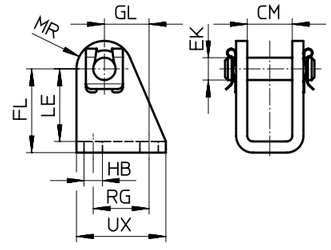
For Diameter ∅ [mm]	L2	B1	Max. overall stroke length[mm]
12	35	13	600
16			
20	37		
25	39		
32	44	15	800
40	45		
50			
63	49		
80	54	17	1000
100	67	19.5	

Note:The maximum total stroke length must not be exceeded when combining cylinders and multi-position kits.

-Type of mounting

Clevis foot

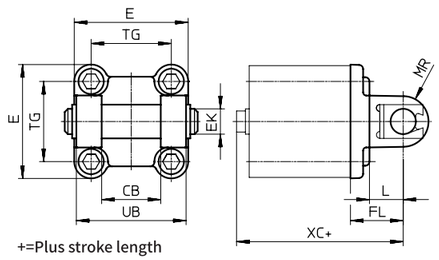
Material: Galvanised steel



Dimensions									
For Diameter ∅ [mm]	CM	EK ∅	FL	GL	HB ∅	LE	MR	RG	UX
12/16	12.1	6	27 +0.3/–0.2	13	5.5	24	7	15	25
20/25	16.1	8	30 +0.4/–0.2	16	6.6	26	10	20	32

CB Double-Ear Carrier Form

Material: Compressed Cast Aluminum



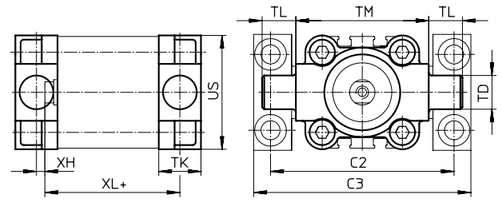
+=Plus stroke length

Dimension									
For Diameter ∅ [mm]	CB H14	E	EK ∅ H9/e8	FL ±0.2	L	MR –0.5	TG	UB h14	XC
32	26	45+0.2/–0.5	10	22	13	8.5	32.5	45	72
40	28	54–0.5	12	25	16	12	38	52	76
50	32	64–0.6	12	27	16	12	46.5	60	80
63	40	75–0.6	16	32	21	16	56.5	70	89
80	50	93–0.8	16	36	22	16	72	90	99
100	60	110+0.3/–0.8	20	41	27	20	89	110	117

-Type of mounting

TA/TB front axle end pin seat type

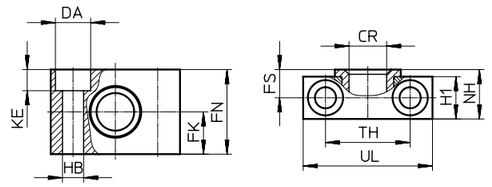
Material: Stainless steel casting



Dimensions									
For Diameter ∅ [mm]	C2	C3	TD ∅ e9	TK	TL	TM	US	XH	XL
32	71	86	12	16	12	50	45	2	58
40	87	105	16	20	16	63	54	4	61.1
50	99	117	16	24	16	75	64	4	64.7
63	116	136	20	24	20	90	75	4	68.5
80	136	156	20	28	20	110	93	5	76.9
100	164	189	25	38	25	132	110	10	95

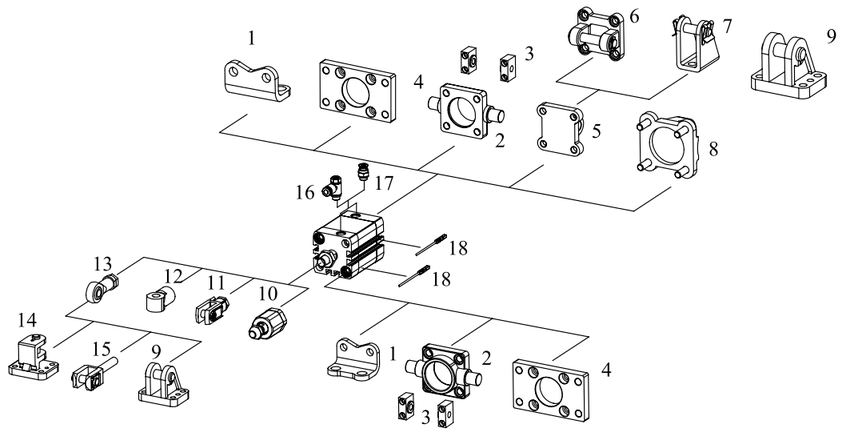
Trunnion support TZ

Material:
Trunnion support: Anodized aluminium
Plainbearing: Plastic



Dimensions											
For Diameter ∅ [mm]	CR ∅ D11	DA ∅ H13	FK ∅ ±0.1	FN	FS	H1	HB ∅ H13	KE	NH	TH ±0.2	UL
32	12	11	15	30	10.5	15	6.6	6.8	18	32	46
40, 50	16	15	18	36	12	18	9	9	21	36	55
63, 80	20	18	20	40	13	20	11	11	23	42	65
100	25	20	25	50	16	24.5	14	13	28.5	50	75

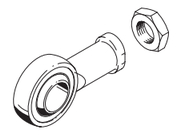
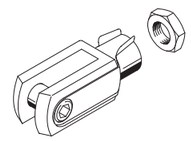
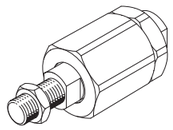
Peripherals overview



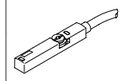
Mounting attachments and accessories			
Number	Code	Named	Description
1	LB	Axial Foundation	For bearing or end caps
2	TA/TB	Axle pin seat	For bearing or end caps
3	TZ	Trunnion support	For Axle pin seat
4	FA/FB	Front / rear flange	For bearing or end caps
5	CA	Single-ear	For caps
6	CB	Double-ear	For bearing or end caps
7	U	Clevis foot	For bearing or end caps
8	CAQ	Single Ear with spherical bearing	For end caps
9	CBG	Clevis foot	For bearing or end caps
10	FD	Floating junction	For compensating radial and angular deviations
11	Y	Y joint	Permits a swivelling movement of the cylinder in one plane
12	I	I joint	Permits a swivelling movement of the cylinder in one plane
13	YY	Fish eye joint	With spherical bearing
14	CBZ	Right-angle clevis foot	For Fish eye joint
15	YF	Y joint	With male thread
16	NSE	One-way flow control valve	For speed regulation
17	PC	Push-in fitting	For connecting compressed air tubing with standard O.D.
18	-	Magnetic switch	Can be integrated in the cylinder profile barrel

Accessories

· Piston rod accessories

Name	For Diameter ∅	Type	Name	For Diameter ∅	Type
Fish eye joint YY			I joint		
	16	YY-M6		32	I-M10*1.25
	20, 25	YY-M8		40	I-M12*1.25
	32, 40	YY-M10x1.25		50, 63	I-M16*1.5
	50, 63	YY-M12x1.25		80, 100	I-M20*1.5
	80, 100	YY-M16x1.5		125	I-M27*2
	125	YY-M20x1.5			
Y joint			Floating junction FD		
	12	–		12	FD-M5
	16	Y-M6		16	FD-M6
	20, 25	Y-M8		20, 25	FD-M8
	32, 40	Y-M10x1.25		32, 40	FD-M10x1.25
	50, 63	Y-M12x1.25		50, 63	FD-M12x1.25
	80, 100	Y-M16x1.5		80, 100	FD-M16x1.5
	125	Y-M20x1.5		125	FD-M20x1.5

· C Magnetic switch

Magnetic switch-reed type is used for T-groove						
	Type of mounting	Switching output	Connection	Cable of length m	Code	Diameter ϕ
Normal open						
	Insertable in the slot from above, flush with the cylinder profile.	PNP	Magnetoresistive, 3-wire	1.3	CDX-32P-1.3	12~100
		NPN	Magnetoresistive, 3-wire	1.3	CDX-32N-1.3	
		R	Tongue spring type, 2-wire	1.3	CDX-32R-1.3	
				2.5	CDX-32R-2.5	

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