

## 1.9 Round cylinders DPSR

The series of round cylinder meets the standard ISO 6432, the cylinder diameter is  $\phi 8\sim\phi 63$ , the cylinder adopts high precision stainless steel pipe, the surface of the piston rod is treated with advance rolling hardening treatment, the rod with external thread or internal thread, after hard chromium, fine grinding treatment, has good rust prevention, wear resistance and other characteristics.



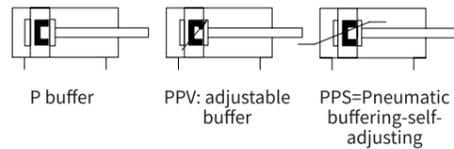
**Summary**

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**Product features**

- Stainless steel
- Low priming pressure and rapid response
- Good running performance and long service life
- Extensive range of accessories makes it possible to install the cylinder virtually anywhere

**Diagram**



**Model selection**

DPSR	-32	×50	P	A	-EMAR
Round cylinder	①	②	③	④	⑤
①	-Diameter : 8 10 12 16 20 25 32 40 50 63				
②	× Stroke <sup>1)</sup> :1...500, Refer to Datasheet				
③	Cushion <sup>2)</sup> : P=Elastic cushioning pads at both ends; PPV= adjustable at both ends; PPS= self-adjusting at both ends				
④	Position sensing: A: With magnetic switch; None=Without magnetic switch				
⑤	- Variant				
	Piston rod		Type of operating		Temperature range
	One side	Double-acting	Standard	Standard	Standard type
	2 Through piston rod	E Single-action (Only MA, buffer P)	MA Axial supply port, short end cap	T	-40-80°C
	Male thread		MQ Lateral supply port, short end cap	R	Heat-resistant seals max. 120 °C
F Female thread		MH Direct mounting			

**1) Datasheet[mm]**

Diameter $\phi$	Standard stroke	Max stroke
8, 10	10 15 20 25 30 40 50 60 80 100	1...100
12	10 15 20 25 30 40 50 60 80 100 125 160 200	1...200
16	10 15 20 25 30 35 40 50 60 70 80 100 125 150 160 200	1...200
20	10 15 20 25 30 35 40 50 60 70 80 100 125 150 160 200 250 300 320	1...320
25	10 15 20 25 30 35 40 50 60 70 80 100 125 150 160 200 250 300 320 400 500	1...500
32、40、50、63	25 40 50 80 100 125 160 200 250 320	1...500

Note: Please contact us for any other special stroke

**2) Refer to the following table for the cushion configuration:**

	P	PPV	PPS
DPSR	■	≥ $\phi 12$	≥ $\phi 16$
MQ	■	≥ $\phi 16$	≥ $\phi 16$

	P	PPV	PPS
MA	≥ $\phi 32$	--	—
MH	■	≥ $\phi 32$	—

**Technical parameter**

General technical data											
Diameter $\phi$ mm	8	10	12	16	20	25	32	40	50	63	
Based on standard	ISO 6432						-				
Pneumatic connection	M5	M5	M5	M5	G1/8	G1/8	G1/8	G1/4	G1/4	G3/8	
Piston rod thread	M4	M4	M6	M6	M8	M10x1.25	M10x1.25	M12x1.25	M16x1.5	M16x1.5	
Stroke <sup>1)</sup> [mm]	1 ... 100		1 ... 200		1 ... 320		1 ... 500				
Design	Piston/piston rod/cylinder barrel										

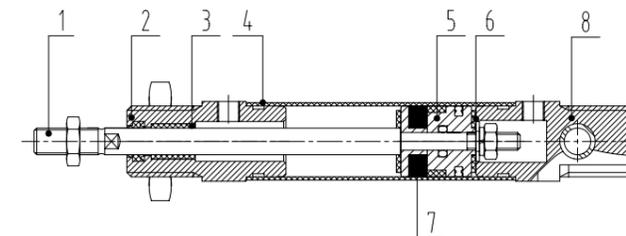
1) The cylinder with position sensing requires a minimum travel of 10 mm to customize longer travel

**- Technical parameter**

Cushioning										
Diameter $\phi$ mm	8	10	12	16	20	25	32	40	50	63
DPSR-...-P	Elastic cushioning rings/pads at both ends									
DPSR-...-PPV	Cushioning, adjustable at both ends									
DPSR-...-PPS	Cushioning, self-adjusting at both ends									
Cushioning length										
DPSR-...-PPV [mm]	-		9	12	15	17	14	18	20	21
DPSR-...-PPS [mm]	-			12	15	17	14	18	20	21
Position sensing	Via magnetic switch									
Type of mounting	With accessories									
	Direct mounting (Only derived type of MH)									
Mounting position	Any									

Operating and environmental conditions										
Diameter $\phi$ mm	8	10	12	16	20	25	32	40	50	63
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]									
Operating pressure MPa	0.15~1		0.1~1							
Ambient and fluid temperature °C	-20 ~ 80									
Corrosion resistance class	2									
Speed [mm/s]	Measurements of less than 1 mm/s were not conducted									
Speed with stick-slip-free operation, horizontal, without load, at 0.6 MPa (6 bar)	-	-	-	10 ... 100			8 ... 100		5 ... 100	
Minimum speed, propulsion	-	-	-	2.7	5.3	< 1				
Minimum speed, and return	-	-	-	3.2	4.7	< 1				
Forces [N] and impact energy [J]	1) At 80 °C, these values will decrease by about 50%									
Theoretical force at 0.6 MPa (6 bar), advancing	30	47	68	121	189	295	483	753	1178	1870
Theoretical force at 0.6 MPa (6 bar), retracting	23	40	51	104	158	247	415	633	990	1682
Impact energy in the end positions for P cushioning	0.03	0.05	0.07	0.15	0.20	0.30	0.40	0.70	1.00	1.30

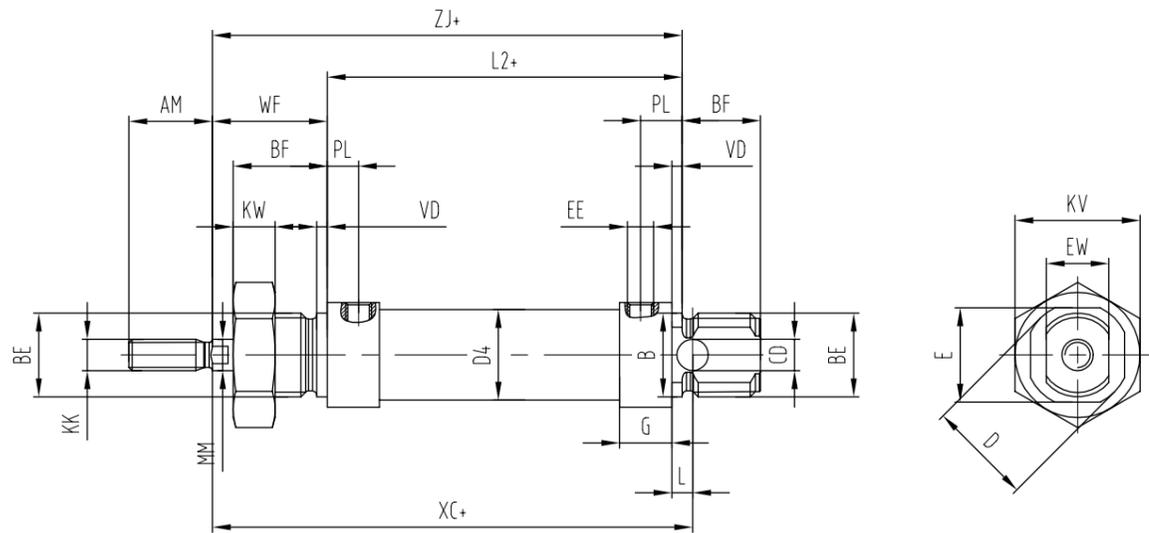
**Structure Diagram**



Round cylinder -		
[1]	Piston Rod	304
[2]	Front cylinder head	6061
[3]	Open copper	
[4]	Cylinder barrel	304
[5]	Piston	6061

Round cylinder -		
[6]	Buffer	PU
[7]	Magnet ring	
[8]	Rear cylinder	6061
-	Seals	TPE-U(PU), NBR

Dimensions (φ8 ~ 25)

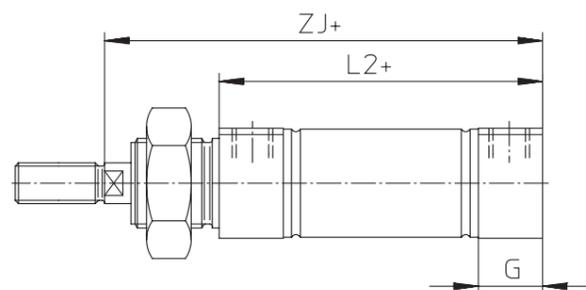


φ[mm]	AM	Bφh9	BE	BF	CDφH9	Dφ	D4φ	EE	EW	G	KK	KV
8	12	12	M12x1.25	12	4	15	9.3	M5	8	10	M4	19
10							11.3					
12	16	16	M16x1.5	17	6	20	13.3		12			
16							17.3					
20	20	22	M22x1.5	20	8	27	21.3	G1/8	16	16	M8	32
25	22			22			26.5					

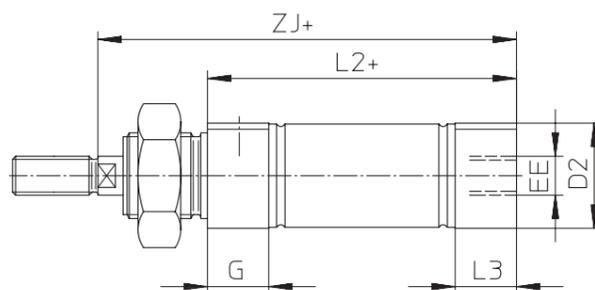
φ[mm]	KW	L	L2	MMφ	PL	VD	WF	XC±1	ZJ	⊖G1
8	6	6	46	4	6	2	16	64	62	-
10			50	6			22	75	72	5
12	8	9	56	8	8.2		24	95	92	7
16			68	10	28		104	97.5	9	
25	11	12	69.5	10	8.2	28	104	97.5	9	

DPSR-8 ... 25

MQ - Lateral supply port, short end cap



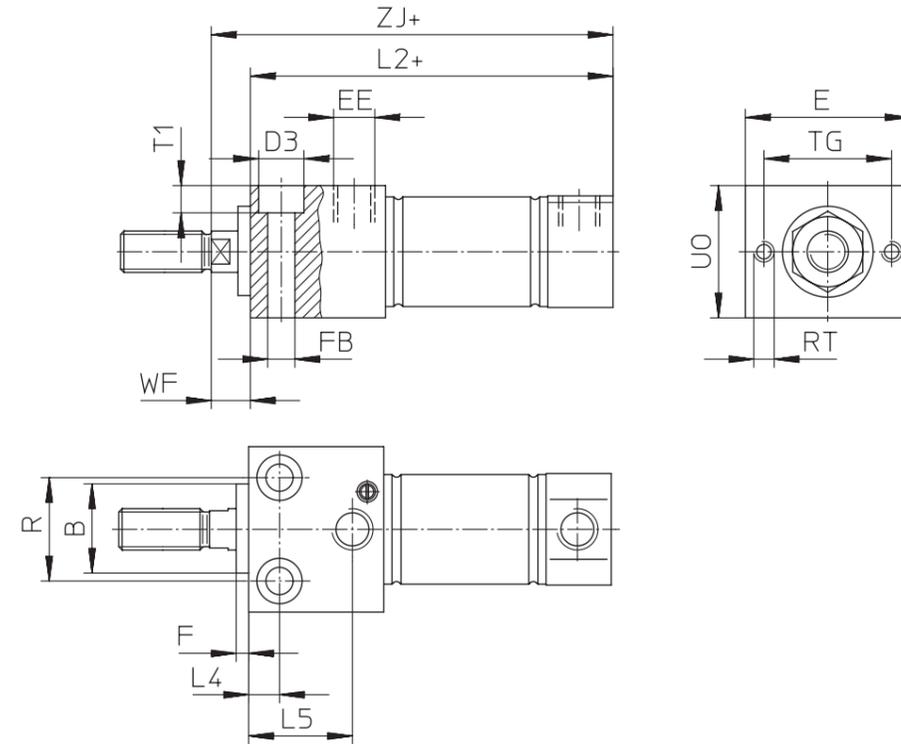
MA - Axial supply port, short end cap



-Dimensions (φ8 ~ 25)

-DPSR-8 ... 25

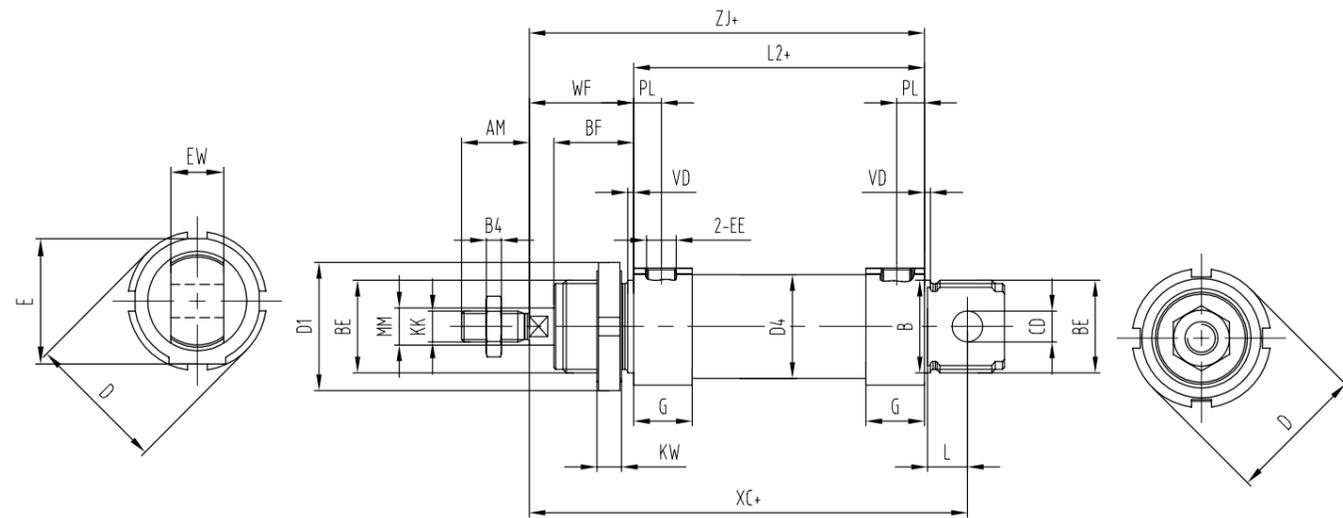
MH - With direct mounting



φ[mm]	B φ h9	D2 φ	D3 φ	E	EE	F	FB φ	G	L2		
									DPSR-...		
									-MQ	-MA	-MH
8	12	10.5	6	24	M5	3	3.4	10	46	43.6	53.5
10		12.5							43.1	53.8	
12	16	14.5	8	30			4.5	56	47.7	62	
16		17.5							53.7	67.5	
20	22	21.7	10	40	G1/8	5.5	16	68	66.5	81.5	
25		26.7	11					69.5	68.5	86.2	

φ[mm]	L3	L4	L5	R	RT	TG	T1	UO	WF	ZJ		
										DPSR-...		
										-MQ	-MA	-MH
8	7.6	5	14	12	M3	18	3.4	16	8	62	59.6	61.5
10	7.1									59.1	61.8	
12	7.7	6	18.1	16	M4	23	4.5	22	10	72	69.7	72
16										78	75.7	77.8
20	14.5	7.5	22.4	22	M5	31	5.5	28	11	92	90.5	91.5
25	14		25.2							25	97.5	96.5

Dimensions (φ32~63)



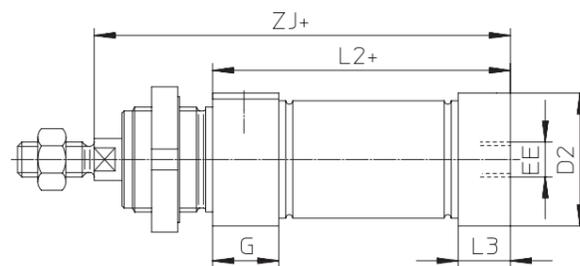
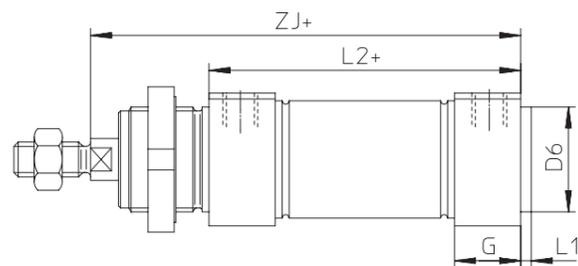
φ[mm]	AM	Bφh9	B4	BE	BF	CDφE10	Dφ	D1φ	D4φ	EE	EW	G
32	22	30	5	M30x1.5	26	10	38	42	33.6	G1/8	16	19
40	24	38	6	M38x1.5	30	12	46	50	41.6	G1/4	18	25
50	32	45	8	M45x1.5	33	16	57	60	52.4		21	
63							70	65.4	G3/8	28		

φ[mm]	KK	KW	L	L2	MMφ	PL	VD	WF	XC±1	ZJ	≡C1	≡C2
32	M10x1.25	8	13	69.5	12	9	2	34	117.5	103.5	10	16
40	M12x1.25	10	15	84.6	16	12	3	39	139.6	123.6	13	18
50	M16x1.5		16	86.2	20			17	24			
63		94.2	13	45	156.2	139.2						

DPSR-32 ... 63

MQ – Lateral supply port, short end cap

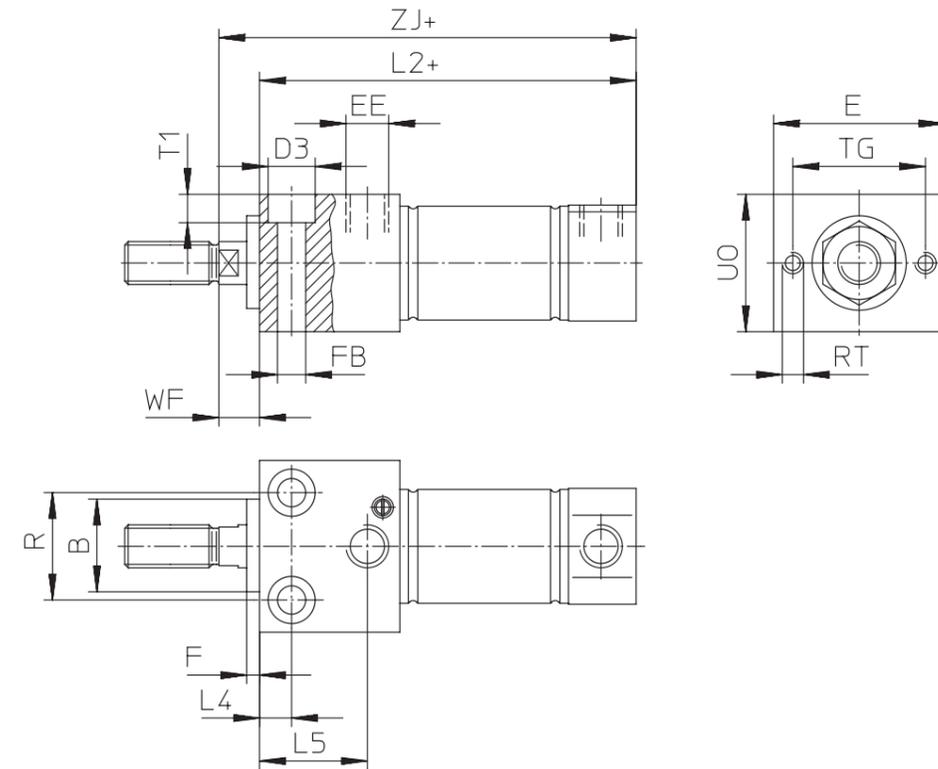
MA – Axial supply port, short end cap



-Dimensions (φ32~63)

-DPSR-32 ... 63

MH – With direct mounting



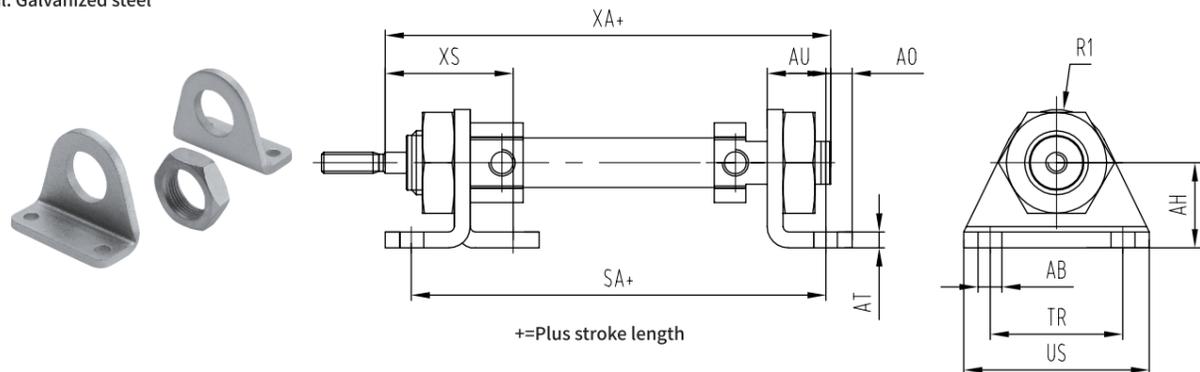
φ [mm]	B φh9	B2	E	EE	G	F	FB φ	D2 φ	D3	D5 φ	D6 φ	L1	L2		
													DPSR-...		
													-MQ	-MA	-MH
32	30	1	48	G1/8	19	4	6.6	34	11	9	30	3	69.5	65.5	85.5
40	38		54	G1/4	25		9	42	14	12	38	4	84.6	77.6	104.6
50	45	2	64	G3/8	28	11	66	53	18	15	45	4	86.2	86.2	109.2
63			72					94.2					94.2	117.2	

φ [mm]	L3	L4	L5	R	RT	TO	T1	T2	TG	UO	WF	ZJ		
												DPSR-...		
												-MQ	-MA	-MH
32	15	12	25	30	M5	19	6.6	2.1	38	40	12	103.5	99.5	97.5
40	18	15	32	38		24	9	2.6	42	48		123.6	116.5	116.6
50	25		35	42	M6	32	15	11	3.1	50	58	130.2	130.2	124.2
63	28	36	44	M8	36	52				72	139.2	139.2	132.2	

### Type of mounting

#### LB Axial foundation Type

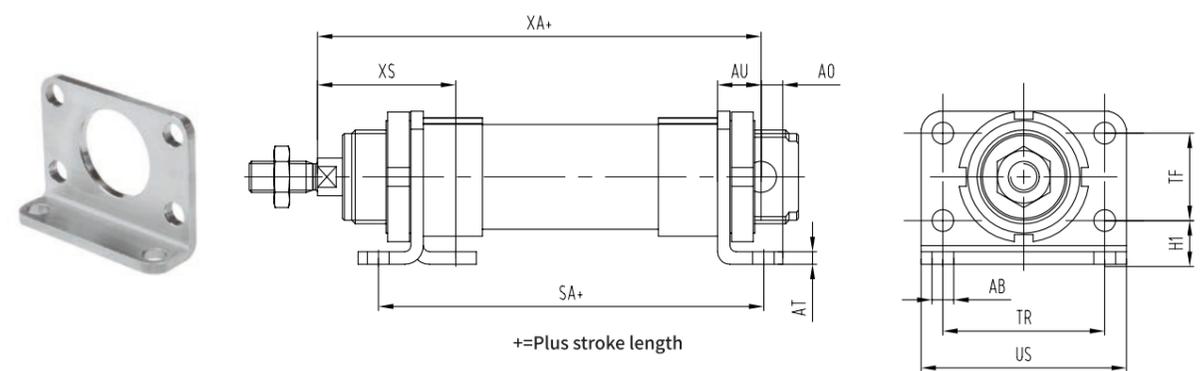
Material: Galvanized steel



Diameter $\phi$ [mm]	AB $\phi$	AH	AO	AT	AU	R1	SA	TR	US	XA	XS	Code
8, 10	4.5	16	5	3	11	10	68	25	35	73	24	LB-8/10×1
12	5.5	20	6	4	14	13	78	32	42	86	32	LB-12/16×1
16	5.5	20	6	4	14	13	84	32	42	92	32	LB-12/16×2
20	6.6	25	8	5	17	20	102	40	54	109	36	LB-20/25×1
25	6.6	25	8	5	17	20	103.5	40	54	114.5	40	LB-20/25×2

#### LBN Axial foundation Type

Material: Galvanized steel

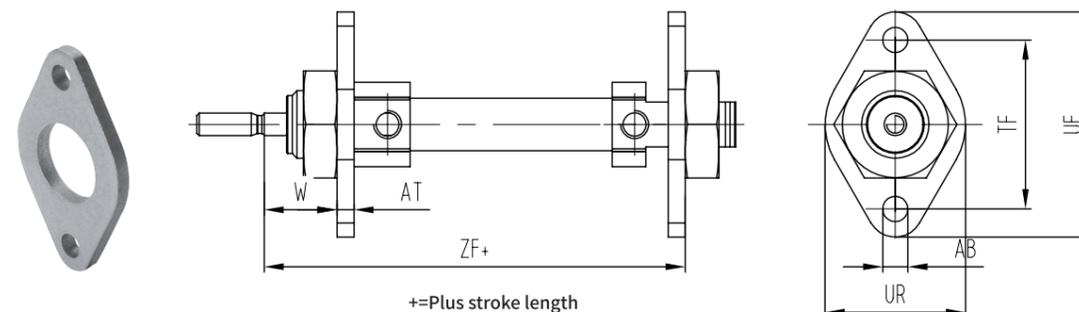


Diameter $\phi$ [mm]	AB $\phi$	AT	H1	TF	TR	US	W	ZF	Code
32	7	4	14	28	52	66	30	107.5	LBN-32
40	9	5	18	30	60	80	29	123.6	LBN-40
50	9	6	20	40	70	90	38	136.2	LBN-50
63	9	6	20	50	76	96	39	145.2	LBN-63

### - Type of mounting

#### FA/FB Front Flange Type

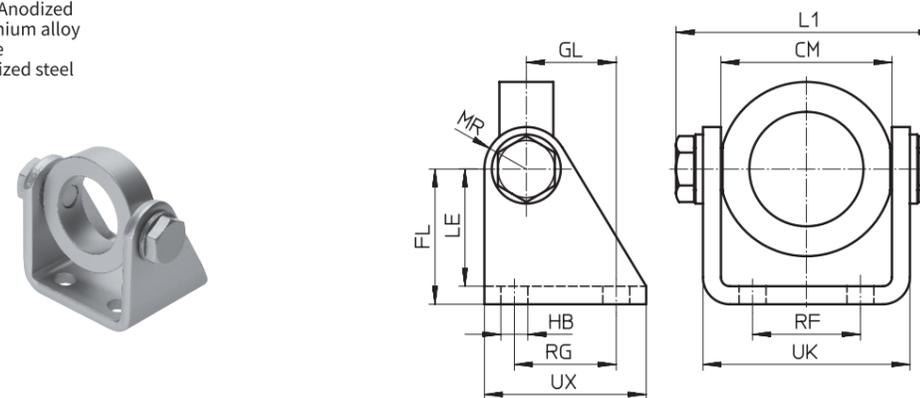
Material: Galvanized steel



Diameter $\phi$ [mm]	AB $\phi$	AT	TF	UF	UR	W	ZF	Code
8, 10	4.5	3	30	40	25	13	65	FB-8/10
12	5.5	4	40	53	30	18	76	FB-12/16
16	5.5	4	40	53	30	18	82	
20	6.6	5	50	66	40	19	97	FB-20/25
25	6.6	5	50	66	40	23	102.5	

#### Swivel mounting SBN

Material:  
Retaining ring: Anodized wrought aluminium alloy  
Bearing: Bronze  
Screws: Galvanized steel  
Bracket: Steel

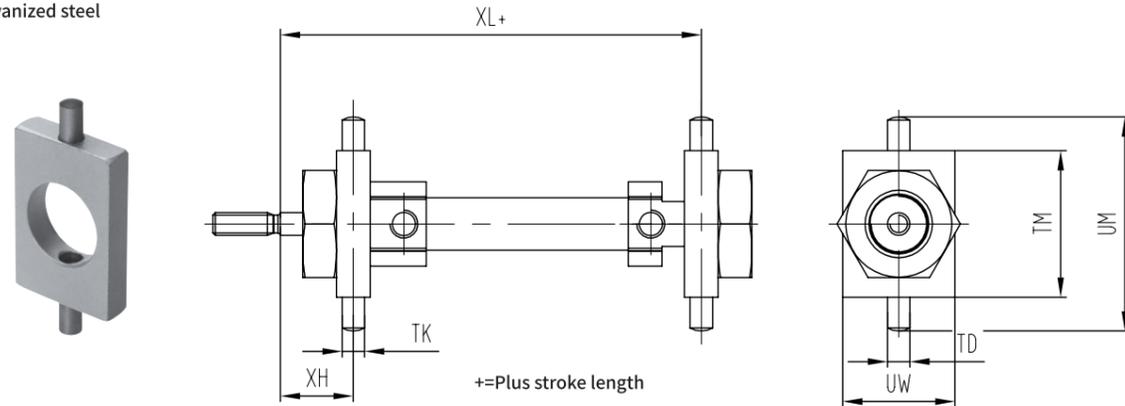


Diameter $\phi$ [mm]	CM	FL	GL	HB	L1max.	LE	MR	RF	RG	UK	UX	Code
20/25	38.1+0.4	35	20	7	60.2	31	12	20	24	46.1	40	SBN-20/25
32	46.1+0.2	40	27	9	72.2	35	13	28	30	56.1	50	SBN-32
40	57.1+0.2	45	30	9	88.2	39	14	36	34	69.1	54	SBN-40
50/63	70.1+0.4	50	34	9	102.2	44	16	42	35	82.1	65	SBN-50/63

- Type of mounting

TA/TB Front/Rear Form

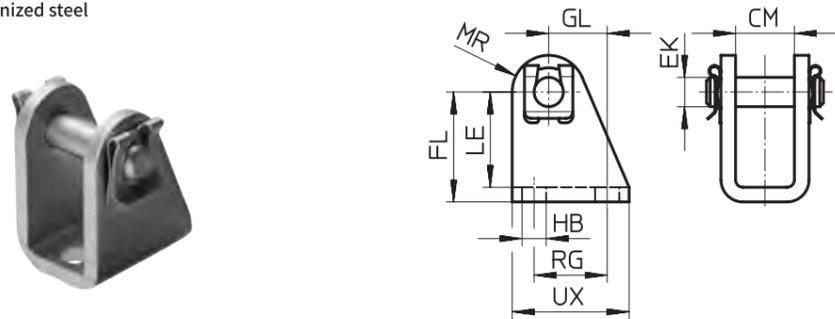
Material: Galvanized steel



Diameter $\phi$ [mm]	TD $\phi$ -0.01/-0.05	TK	TM	UM	UW	XH	XL	Code
8, 10	4	6	26	38	20	13	65	TA-8/10
12	6	8	38	58	25	18	76	TA-12/16
16	6	8	38	58	25	18	82	TA-12/16
20	6	8	46	66	30	20	96	TA-20/25
25	6	8	46	66	30	24	101.5	TA-20/25
32	8	12	50	76	40	28	109.5	TA-32
40	10	15	60	92	50	31.5	126.1	TA-40
50	12	20	80	116	65	34	140.2	TA-50/63
63	12	20	80	116	65	35	149.2	TA-50/63

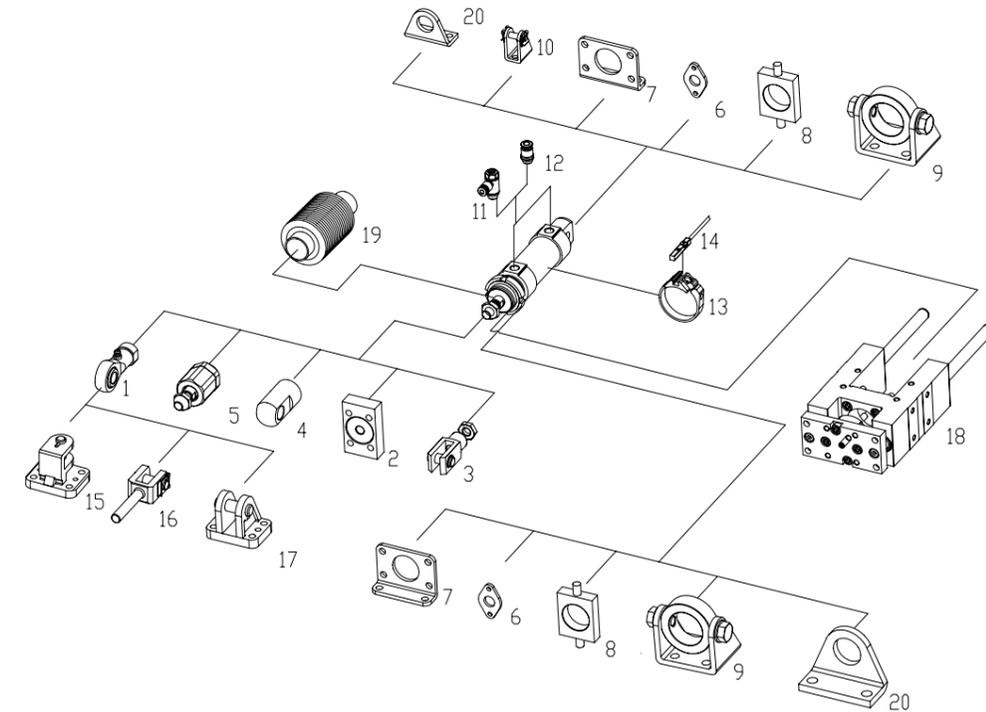
Clevis foot

Material: Galvanized steel



Diameter $\phi$ [mm]	CM	EK $\phi$	FL	GL	HB	LE	MR	RG	UX	Code
8, 10	8.1	4	24 +0.3/-0.2	13.8	4.5	21.5	5	12.5	20	U-8/10
12, 16	12.1	6	27 +0.3/-0.2	13	5.5	24	7	15	25	U-12/16
20, 25	16.1	8	30 +0.4/-0.2	16	6.6	26	10	20	32	U-20/25
32	16.1	10	35 +0.4/-0.2	18.5	6.6	31	11	24	35	U-32
40	18.1	12	40 +0.4/-0.2	24.5	9	35	13	30	45	U-40
50, 63	21.1	16	45 +0.5/-0.2	28	9	39	14	34	50	U-50/63

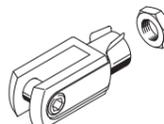
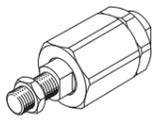
Peripherals overview



List of installation components and accessories							
Number	Code	Name	Diameter $\phi$	DPSR	MA	MQ	MH
[1]	YY	Fish eye joint	8 ... 63	■	■	■	■
[2]	KSG	Hex nut	12 ... 63	■	■	■	■
[3]	Y	Y joint	8 ... 63	■	■	■	■
[4]	I	I joint	8 ... 63	■	■	■	■
[5]	FD	Floating junction	8 ... 63	■	■	■	■
[6]	FB	rear flange	8 ... 63	■	■	■	-
[7]	LBN	Axial Foundation	8 ... 63	■	■	■	-
[8]	TA/TB	Front / rear axle pin seat	8 ... 63	■	■	■	-
[9]	SBN	Swivel mounting	20 ... 63	■	■	■	-
[10]	U	Clevis foot	8 ... 63	■	-	-	-
[11]	NSE	One-way flow control valve	8 ... 63	■	■	■	■
[12]	PC	Push-in fitting	8 ... 63	■	■	■	■
[13]	CJ	assembly	8 ... 63	■	■	■	■
[14]	C	Magnetic switch	8 ... 63	■	■	■	■
[15]	CBZ	Right-angle clevis foot	32 ... 63	■	■	■	■
[16]	YF	Y joint (With male thread)	32 ... 63	■	■	■	■
[17]	CBG	Clevis foot	32 ... 63	■	■	■	■
[18]	DX	Guide unit	8 ... 25	■	■	■	-
[19]	FCZ	Dust Cover	12 ... 63	■	■	■	-
[20]	LB	Axial Foundation	8 ... 63	■	■	■	-

## Accessories

### ·Piston rod attachments

Name	For Diameter Ø	Type	Name	For Diameter Ø	Type
Fish eye joint YY			I joint		
	8,10	YY-M4		32	I-M10*1.25
	12,16	YY-M6		40	I-M12*1.25
	20,	YY-M8		50, 63	I-M16*1.5
	25, 32	YY-M10x1.25			
	40	YY-M12x1.25			
	50, 63	YY-M16x1.5			
Y joint			Floating junction FD		
	8	Y-M4		8	FD-M4
	10			10	FD-M6
	12, 16	Y-M6		12, 16	FD-M8
	20	Y-M8		20	FD-M10x1.25
	25, 32	Y-M10x1.25		25, 32	FD-M12x1.25
	40	Y-M12x1.25		40	FD-M16x1.5
	50, 63	Y-M16x1.5		50, 63	

### ·C magnetic switch

Magnetic switch is used for T-groove(With switch mounting assembly)						
	Type of mounting	Switching output	Connection	Cable length m	Type	Diameter φ
Normal open						
	Tighten the hoop and screws	PNP	Magneto-resistive, 3-wire	1.3	CDX-15P-1.3	8-63
		NPN	Magneto-resistive, 3-wire	1.3	CDX-15N-1.3	
		R	Tongue spring type, 2-wire	1.3	CDX-15R-1.3	
				2.5	CDX-15R-2.5	

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