

**Features**

1. Stainless barrel ensures better abrasion and corrosion proof.
2. Use unlubricated seals for high speed actuation.
3. Anodized Aluminium alloy end cover ensures better corrosion proof.
4. Use unlubricated bush for durable service life.
5. Reed switches can be applied.
6. Wider range of models allow selection of the idea cylinder for almost any application
7. Standard sizes in stock.



**Specifications**

Series	MSR					
Action	Double acting type					
Bore	ø12	ø16	ø20	ø25	ø32	ø40
Operating fluid	Air					
Proof pressure	1.5MPa {15kgf/cm <sup>2</sup> }					
Operating pressure	0.07~0.97MPa {0.7~9.9kgf/cm <sup>2</sup> }					
Piston speed range	50~500mm/sec					
Temperature range	-10°C~+70°C (Not freezing)					
Cushion	ø12~ø25PUPad , ø32~ø40 Adjustment cushion					
Lubrication	Not required (Lubrication is available)					

**How to order**

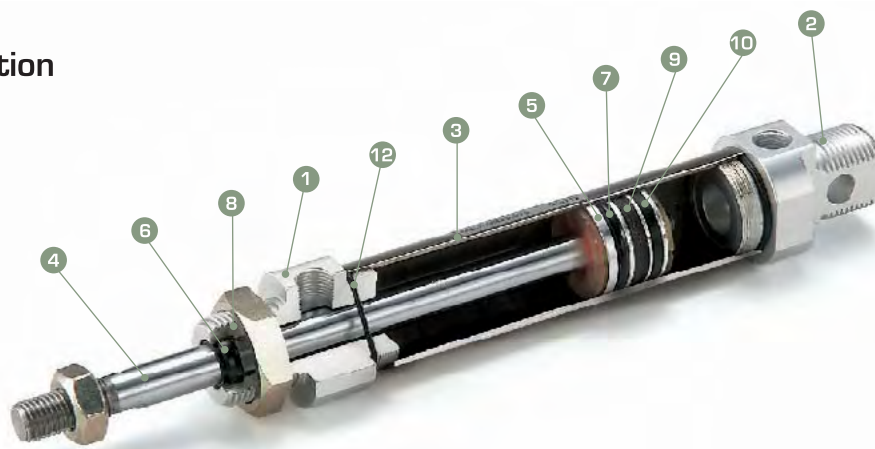
Series	Bore	Stroke	Mounting type	Reed switch	Switch quantity	
MSR	20	X	100	LB	MT	2
MSR Standard type	ø12	15~100mm	LB Bracket	MT-22	1:1PC 2:2PCS	
MSRP Short type	ø16	15~150mm	FA/FB Flange	MT-22L		
MSW Twin-Rod type (bore20~40)	ø20	15~300mm	SDB Rear hinge	Weak sense	Switch band	
	ø25	15~300mm	T Hanger			
	ø32	25~300mm	Y clevis			
	ø40	25~300mm	P Rod end			

● For other sensor, please refer to 4 series.

## Standard stroke

Stroke \ Bore	15	25	40	50	60	75	100	125	150	200	250	300
ø12	●	●	●	●	●	●	●					
ø16	●	●	●	●	●	●	●	●	●			
ø20	●	●	●	●	●	●	●	●	●	●	●	●
ø25	●	●	●	●	●	●	●	●	●	●	●	●
ø32		●		●		●	●	●	●	●	●	●
ø40		●		●		●	●	●	●	●	●	●

## Internal construction



## Part lists

NO	Description	Material	Qty
1	Front end cover	Anodized aluminium alloy	1
2	Rear end cover	Anodized aluminium alloy	1
3	Barrel	ø12~ø25 stainless barrel	1
		ø32~ø40 aluminium alloy barrel	
4	Piston rod	Hard chrome plated carbon steel	1
5	Piston	Aluminium alloy	ø12,16:2
			ø20~40:1
6	Piston rod seal	NBR	1
7	Piston	NBR	ø12,16:2
			ø20~40:1
8	Bush	Oil filled, sintered bronze	1
9	Magnet	Resinous magnet	1
10	Wear ring	Synthetic resin	ø12,16:
			ø20~40:1
11	Cushion pad	NBR	2
12	End cover seal	NBR	1

## Seal lists

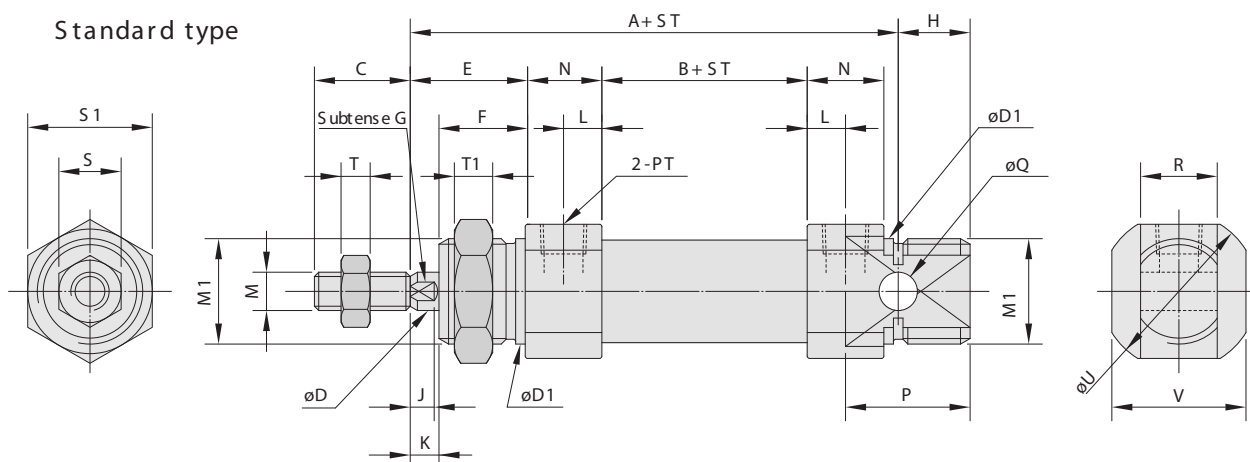
Description \ Bore	6	7	12	Cushion ring	Cushion ring
	Piston rod seal	Piston seal	End cover seal		
ø12	EL6	DYP12	SM8X2	-	-
ø16	EL6	DYP16	SM10X2	-	-
ø20	DRP8	APA20	SM16X2	-	-
ø25	DRP10	APA25	SM22X2	-	-
ø32	DRP12	APA32	SM28X2	DF14	SM6X2
ø40	DRP16	APA40	SM36X2	DF20	SM6X2

## Standard stroke by weight

Unit:g

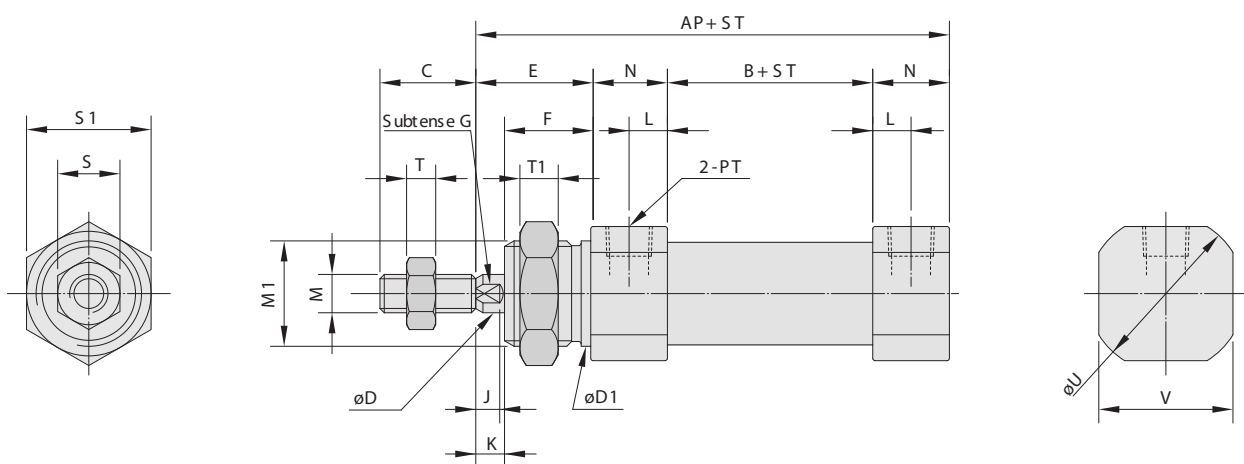
Stroke \ Bore	15	25	40	50	60	75	100	Over 100mm
ø12	78	79	80	81	82	83	85	25mm add2g
ø16	96	101	108	113	118	125	137	25mm add12g
ø20	169	175	185	191	197	207	223	25mm add16g
ø25	223	235	254	267	279	298	329	25mm add31g
ø32	-	376	-	416	-	456	496	25mm add40g
ø40	-	636	-	699	-	762	825	25mm add63g

Standard type



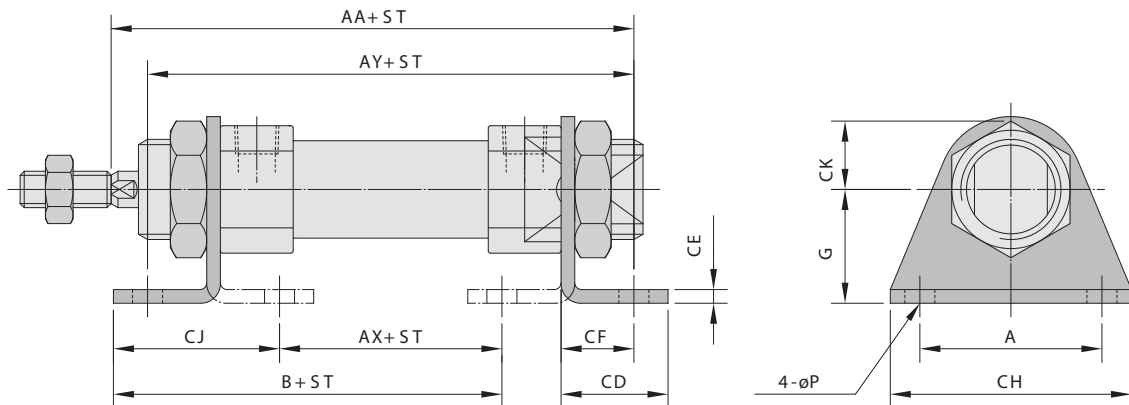
Bore	A	B	C	øD1	øD	E	F	G	H	J	K	L	M1	M	N	P	øQ	R	S1	S	T1	T	øU	PT	V
ø12	75	27	16	16	6	22	17	-	14	-	5	5.5	M16X1.5	M6X1.0	11.5	22	6	12	22	10	6	4	20	M5	18
ø16	82	33	16	16	6	22	17	-	13	-	5	5.5	M16X1.5	M6X1.0	11.5	22	6	12	22	10	6	4	20	M5	18
ø20	96.5	36	20	22	8	25.5	18	7	15	6	7.5	8	M22X1.5	M8X1.25	16	26	8	16	27	13	8	5	28	1/8"	24
ø25	104	36	22	22	10	28	20	9	12	6	8	8	M22X1.5	M10X1.25	16	25	8	16	27	17	8	6	33.5	1/8"	30
ø32	120	40	22	24	12	30	20	10	10	7	10	8	M24X1.5	M10X1.25	17	26	10	16	32	17	10	6	40	1/8"	37
ø40	129	48	24	30	16	29	20	13	12	8	9	8	M30X1.5	M12X1.25	18	28	12	20	41	19	10	7	49	1/8"	46

Short type (MSRP)



Bore	AP	B	C	øD1	øD	E	F	G	J	K	L	M1	M	N	S1	S	T1	T	øU	PT	V
ø12	72	27	16	16	6	22	17	-	-	5	5.5	M16X1.5	M6X1.0	11.5	22	10	6	4	20	M5	18
ø16	78	33	16	16	6	22	17	-	-	5	5.5	M16X1.5	M6X1.0	11.5	22	10	6	4	20	M5	18
ø20	93.5	36	20	22	8	25.5	18	7	6	7.5	8	M22X1.5	M8X1.25	16	27	13	8	5	28	1/8"	24
ø25	96	36	22	22	10	28	20	9	6	8	8	M22X1.5	M10X1.25	16	27	17	8	6	33.5	1/8"	30
ø32	104	40	22	24	12	30	20	10	7	10	8	M24X1.5	M10X1.25	17	32	17	8	6	40	1/8"	37
ø40	113	48	24	30	16	29	20	13	8	9	8	M30X1.5	M12X1.25	18	41	19	10	7	49	1/8"	46

## Foot mounting (LB)

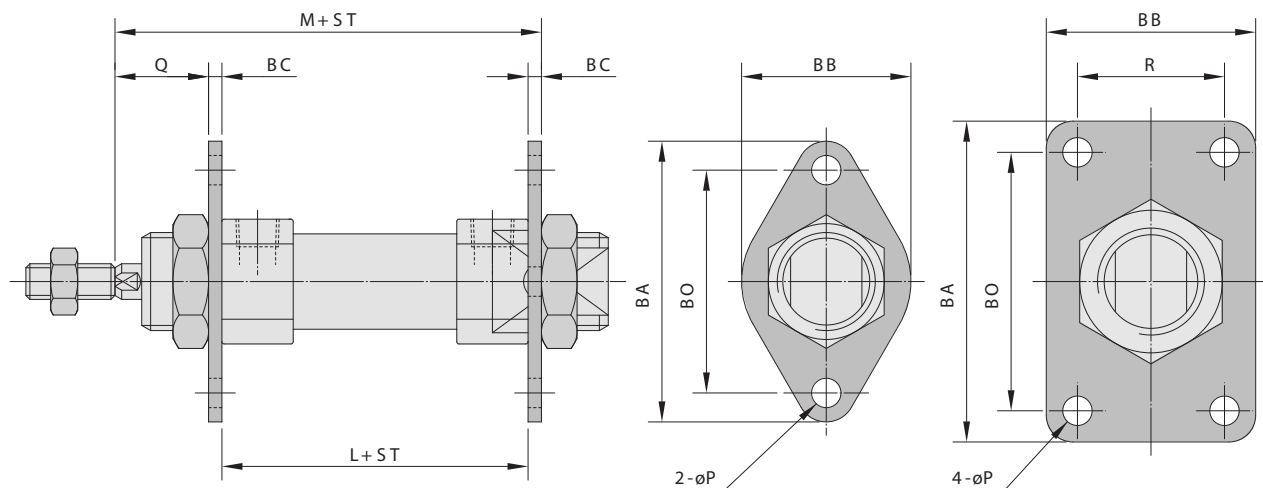


Bore	AA	AX	AY	B	CJ	CD	CF	CE	CH	CK	A	G	øP
ø12	85	30	76	59	29	19	13	3	43	12	32	20	5.5
ø16	91	36	82	65	29	19	13	3	43	12	32	20	5.5
ø20	109.5	42	100	78.5	36.5	23.5	16	3	53	16	40	25	6.6
ø25	112	42	100	78.5	36.5	23.5	16	3	53	16	40	25	6.6
ø32	129	32	124	86	54	33	25	4	59	19	45	32	6.6
ø40	138	42	134	96	54	33	25	4	64	23	50	36	6.6

## Front flange (FA) and rear flange (FB)

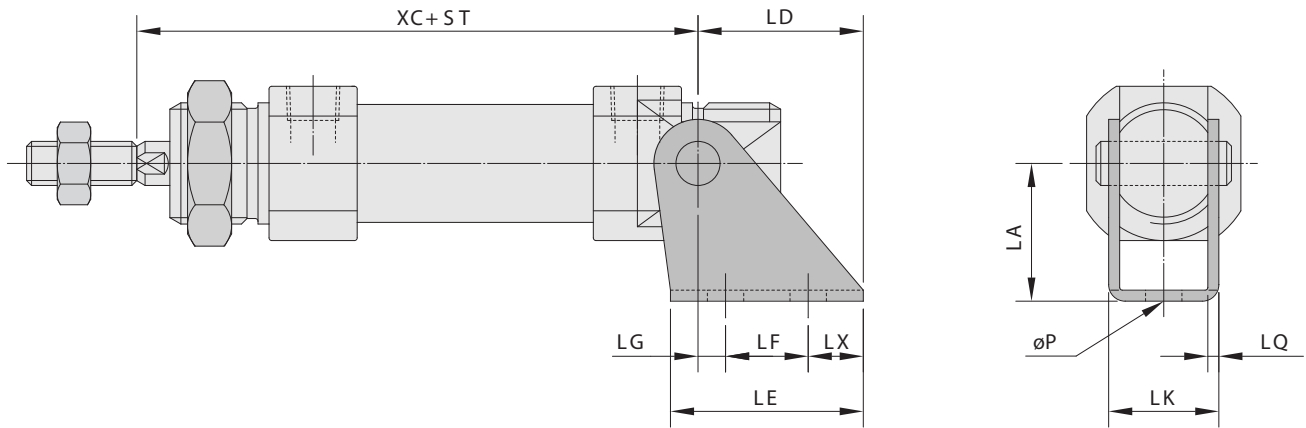
ø12 ~ ø25

ø32, ø40



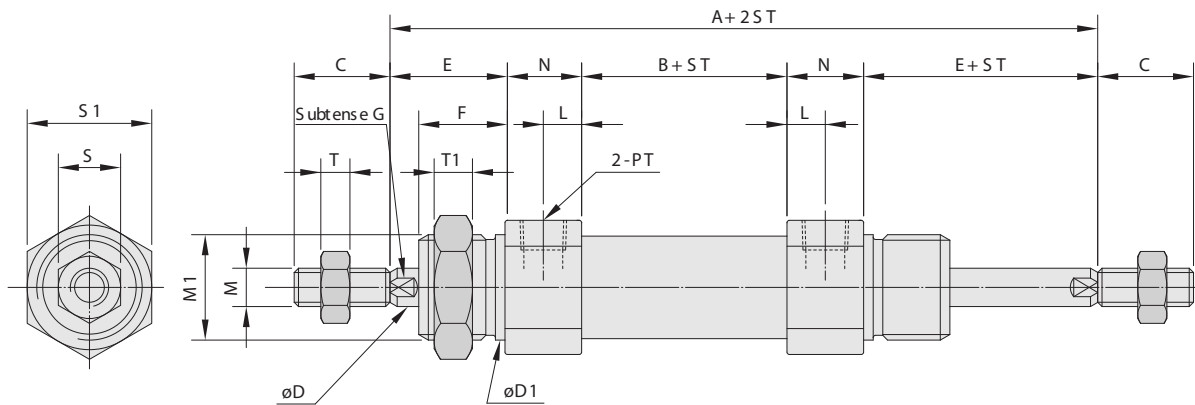
Bore	BA	BB	BC	M	BO	P	Q	R	L
ø12	51	28	3	75	40	5.5	19	-	50
ø16	51	28	3	81	40	5.5	19	-	56
ø20	66	40	5	98.5	50	6.6	20.5	-	68
ø25	66	40	5	101	50	6.6	23	-	68
ø32	72	47	5	109	58	6.6	25	33	74
ø40	84	50	5	118	70	7	24	36	84

## Rear hinge mounting (SDB)



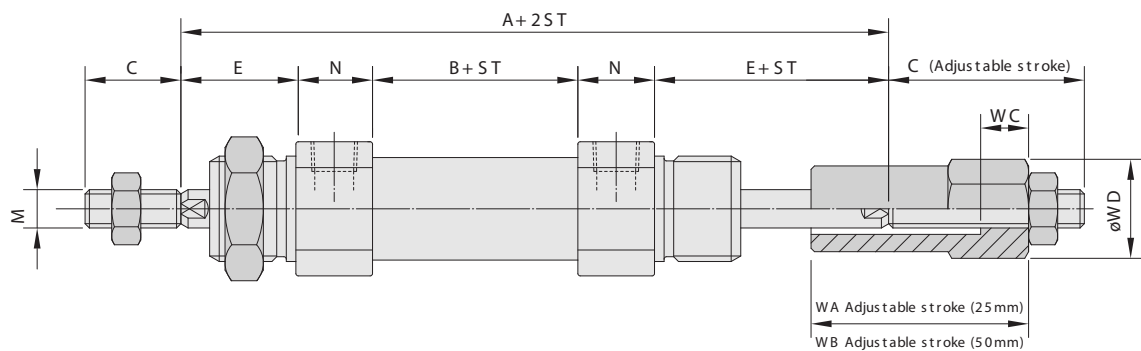
Bore	XC	LD	LG	LF	LX	LE	LA	$\phi P$	LK	LQ
$\phi 12$	75	26.5	3.5	15	8	30	27	5.5	15.2	1.6
$\phi 16$	82	26.5	3.5	15	8	30	20	5.5	15.2	1.6
$\phi 20$	96.5	26	5	15	10	36	30	6.6	24	4
$\phi 25$	104	26	5	15	10	36	30	6.6	24	4
$\phi 32$	120	28	-	18	10	40	32	6.6	32	8
$\phi 40$	129	32	-	20	12	45	36	6.6	40	10

Twin-rod (standard) MSW □□X□□



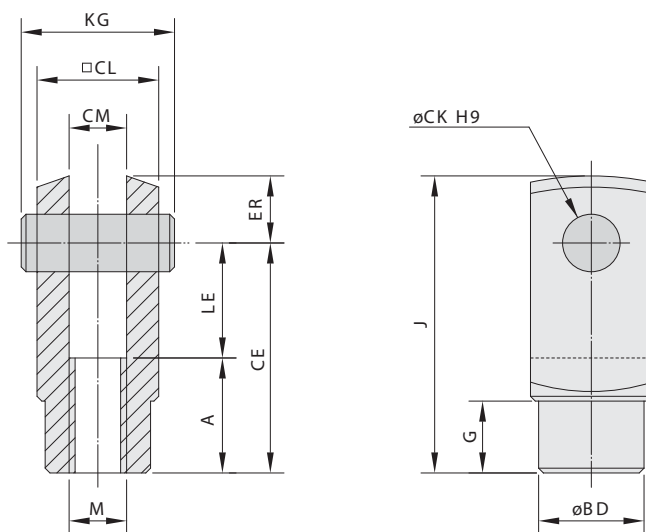
Bore	A	B	C	øD	øD1	E	F	G	L	M	M1	N	S	S1	T	T1	PT
ø20	119	36	20	8	22	25.5	18	7	8	M8X1.25	M22X1.25	16	13	27	5	8	1/8"
ø25	124	36	22	10	22	28	20	9	8	M10X1.25	M22X1.25	16	17	27	6	8	1/8"
ø32	134	40	22	12	24	30	20	10	8	M10X1.25	M24X1.5	17	17	32	6	8	1/8"
ø40	142	48	24	16	30	29	20	13	8	M12X1.25	M30X1.5	18	19	41	7	10	1/8"

Twin-rod (adjustable type) MSW □□X□□Y□□



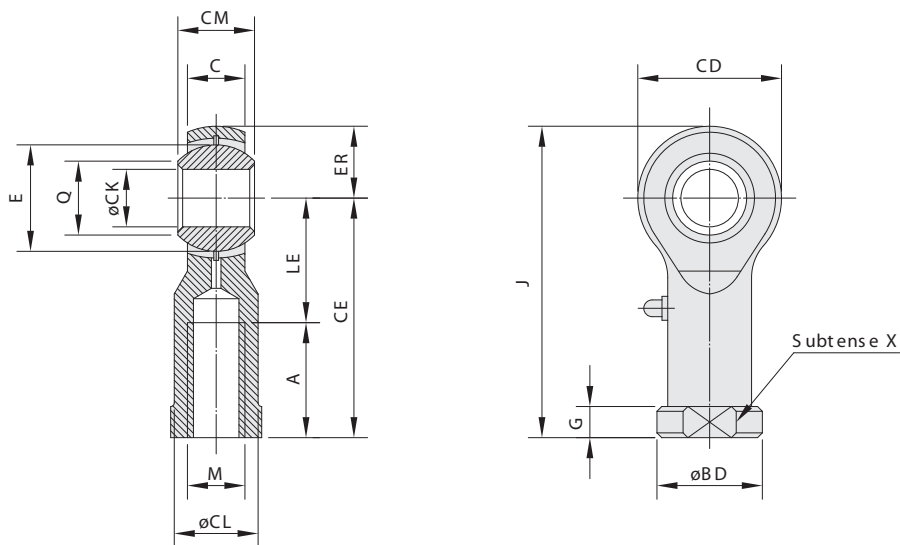
Bore	A	B	C	E	N	M	WA	WB	WC	øWD
ø20	119	36	20	25.5	16	M8X1.25	45	70	10	23
ø25	124	36	22	28	16	M10X1.25	45	70	10	23
ø32	134	40	22	30	17	M10X1.25	45	70	10	23
ø40	142	48	24	29	18	M12X1.25	55	80	15	32.5

Y clevis



Bore	A	M	CE	øCK	□CL	CM	ER	KG	LE	øBD	G	J
ø12	12	M6X1.0	24	6	12	6	7	17	12	10	9	31
ø16	12	M6X1.0	24	6	12	6	7	17	12	10	9	31
ø20	16	M8X1.25	32	8	16	8	10	21	16	14	13	42
ø25	20	M10X1.25	40	10	19	10	12	26	20	17	15	52
ø32	20	M10X1.25	40	10	19	10	12	26	20	17	15	52
ø40	24	M12X1.25	48	12	24	12	12	32.5	24	22	15	60

Rod end (P)



Bore	A	M	CE	øCK	øCL	CM	CD	ER	LE	øBD	C	E	G	J	Q	X
ø12	14	M6X1.0	30	6	10	9	18	9	16	13	7	12.7	5	39	8.96	11
ø16	14	M6X1.0	30	6	10	9	18	9	16	13	7	12.7	5	39	8.96	11
ø20	17	M8X1.25	36	8	12.5	12	22	11	19	16	9	15.8	5	47	10.4	14
ø25	21	M10X1.25	43	10	15	14	26	13	22	19	11	19.1	6.5	56	12.9	17
ø32	21	M10X1.25	43	10	15	14	26	13	22	19	11	19.1	6.5	56	12.9	17
ø40	24	M12X1.25	50	12	17.5	16	30	15	26	22	12	22.2	6.5	65	15.4	19