

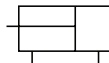
# KHP series



### Features

- Cushion level adjustable in 360° direction with rotary relief valve.
- Excellent cushioning capacity with relief valve.

### Symbol



## How to Order

① KHP - ② B ③ 40 ④ - S ⑤ 700 - ⑥ - ⑦ - ⑧

### ① Series

KHP	High power cylinder
-----	---------------------

### ② Mounting style

B	Standard
LB	Foot
FA	Rod side flange
FB	Head side flange

### ③ Tube size

	20	25	32	40
Bore size	Ø20	Ø25	Ø32	Ø40
	50	63	80	100
Bore size	Ø50	Ø63	Ø80	Ø100

### ④ Port thread

Nil	Rc(PT)
N	NPT

### ⑤ Cylinder stroke(mm)

Bore size	Standard stroke	Max. stroke
Ø20	250~700	1500
Ø25		
Ø32	250~1000	1500
Ø40		
Ø50	250~1200	1500
Ø63		
Ø80	250~1400	1500
Ø100		

### ⑥ Auto switch

Nil	None		
Reed A/S	Model	Solid state A/S	Model
C72	D-C72K	H7A1	D-H7A1K
C73	D-C73K	H7A2	D-H7A2K
C76	D-C76K	H7B	D-H7BK
C80	D-C80K		

- ※ Only for auto switch attached type.
- ※ Refer to Auto Switch Catalogue for more information.

### ⑦ Number of auto switches

Nil	2 pcs
S	1 pc
N	N pcs (N: 3, 4, 5...)

- ※ Only for auto switch attached type.

### ⑧ Special order

Nil	None
SS	Stainless steel piston rod

## Specifications

Bore size (mm)	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
Fluid	Compressed air							
Proof pressure	15.3kgf/cm <sup>2</sup> (1.5MPa)							
Max. operating pressure	10.2kgf/cm <sup>2</sup> (1.0MPa)							
Min. operating pressure	0.5kgf/cm <sup>2</sup> (0.05MPa)							
Ambient & fluid temperature	-10 ~ 60°C							
Operating piston speed	50~3000mm/sec							
Cushion	Both side air cushion							
Maximum energy absorption(J)	7	12	21	33	47	84	127	196
Effective cushioning stroke(mm)	50							
Lubrication	Not required (Non-lube)							
Tolerance of stroke	~1000st <sup>+1.4</sup> <sub>0</sub>				1001~1500st <sup>+1.8</sup> <sub>0</sub>			
Mounting style	Standard, Foot, Flange (Rod / Head side)							

## Stroke

Bore size (mm)	Minimum stroke <sup>1)</sup>	Standard stroke	Max. stroke
Ø20	250	~700	1,500
Ø25		~700	
Ø32		~1,000	
Ø40		~1,000	
Ø50		~1,200	
Ø63		~1,200	
Ø80		~1,400	
Ø100		~1,500	

※ 1) It is possible to manufacture the stroke shorter than Min. stroke but, cushioning capability may not be satisfied.

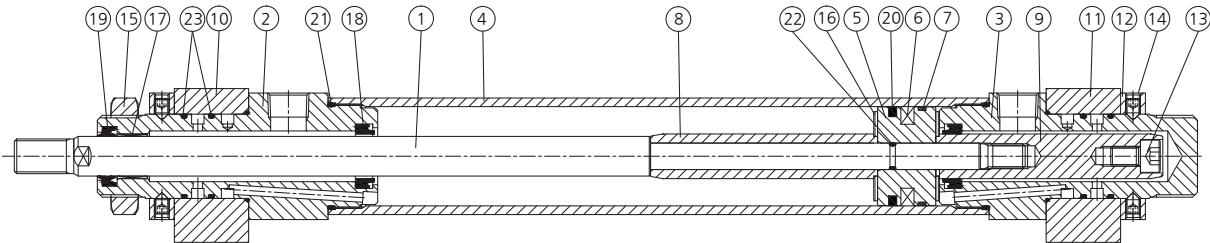
## Mounting Style

Bore size	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Parts
Foot	LB20	LB25	LB32	LB40	LB50	LB63	LB80	LB100	Ø20~Ø40: Foot x2, Mounting nut x1 Ø50~Ø100: Foot x2, Bracket mounting bolt x8, Spring washer x8
Flange	FA/FB20	FA/FB25	FA/FB32	FA/FB40	FA/FB50	FA/FB63	FA/FB80	FA/FB100	Ø20~Ø40: Flange x1 Ø50~Ø100: Flange x1, Bracket mounting bolt x4, Spring washer x4

※ For foot brackets, order 2 pieces per cylinder.

Structure

Standard(Ø20~Ø40)



No	Parts	Material	Remark
1	Piston rod	Carbon steel	Hard chrome plated
2	Rod cover	Aluminum alloy	Clear anodized
3	Head cover	Aluminum alloy	Clear anodized
4	Cylinder tube	Aluminum alloy	Clear anodized
5	Piston	Aluminum alloy	-
6	Magnet	-	-
7	Wear ring	Resin	-
8	Cushion ring (Rod side)	Carbon steel	Hard chrome plated
9	Cushion ring (Head side)	Carbon steel	Hard chrome plated
10	Relief valve (Rod side)	-	-
11	Relief valve (Head side)	-	-
12	Stopper	Aluminum alloy	Clear anodized
13	Hexagon socket screw	Carbon steel	-
14	Hexagon socket head set screw	Carbon steel	-
15	Cover nut	Carbon steel	-

No	Parts	Material	Remark
16	Cushion damper	Urethane	-
17	Rod bush	Carbon steel	-
18	Cushion P	Special resin	-
19	Rod packing	NBR	-
20	Piston packing	NBR	-
21	Tube O-ring	NBR	-
22	Rod O-ring	NBR	-
23	Cover O-ring	NBR	-

**⚠ Caution**

**Disassembly method** (Bore size Ø20, Ø25, Ø32 and Ø40)

1. Grip the double flat part of either rod cover (or head cover) with a vise.
2. Loosen head cover (or rod cover) with a wrench.
3. Remove the cover.

**Reassembly** tighten approximately 2 degrees more than the original position.

Mass

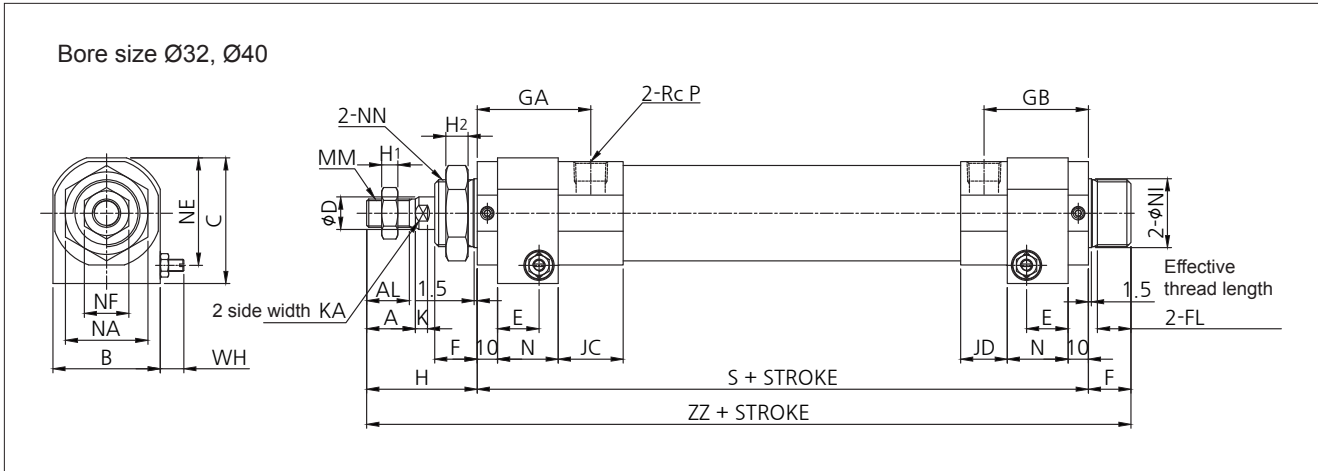
Unit: kg

Bore size		Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100
Basis weight (500 stroke basis)	Standard	1.2	1.62	2.04	3.2	4.9	6.08	8.93	13.6
	Foot	1.44	1.88	2.44	3.72	5.95	7.32	11.04	16.67
	Flange	1.29	1.79	2.23	3.47	5.68	6.97	10.57	15.92
Additional mass per each 50mm of stroke		0.06	0.08	0.09	0.15	0.22	0.25	0.35	0.51

Calculation:

Ex)  
Bore size : Ø40  
Stroke: 700mm  
Additional stroke: 200mm  
  
Basic weight: 3.23kg  
Additional weight per 1 stroke: 0.15/50kg  
  
 $3.23+(0.15/50 \times 200) = 3.83\text{kg}$

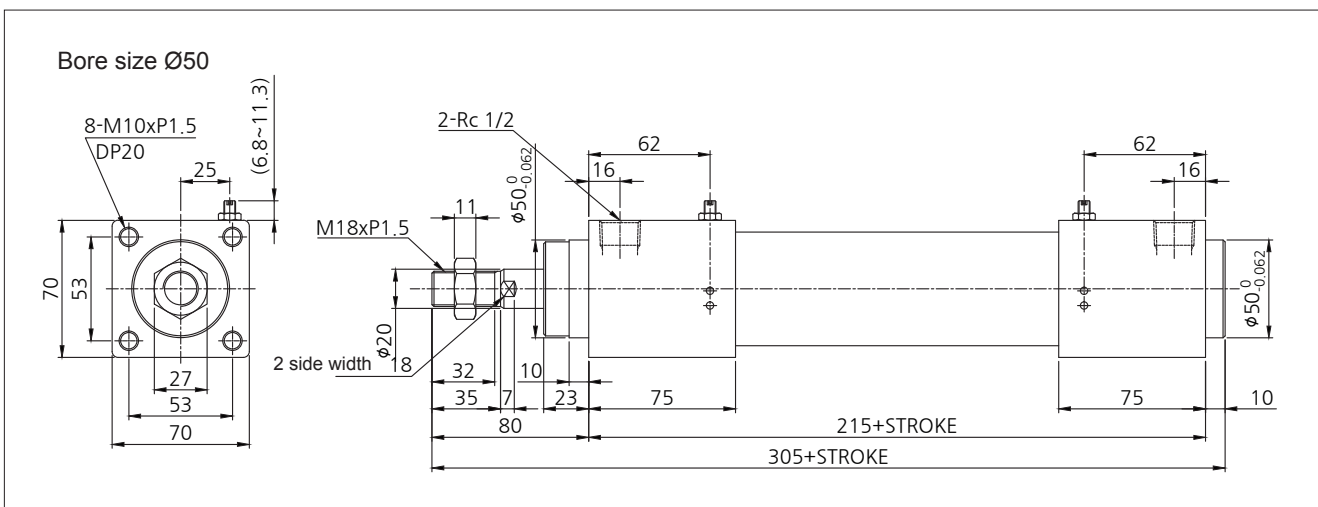
Dimensions-Standard (B)



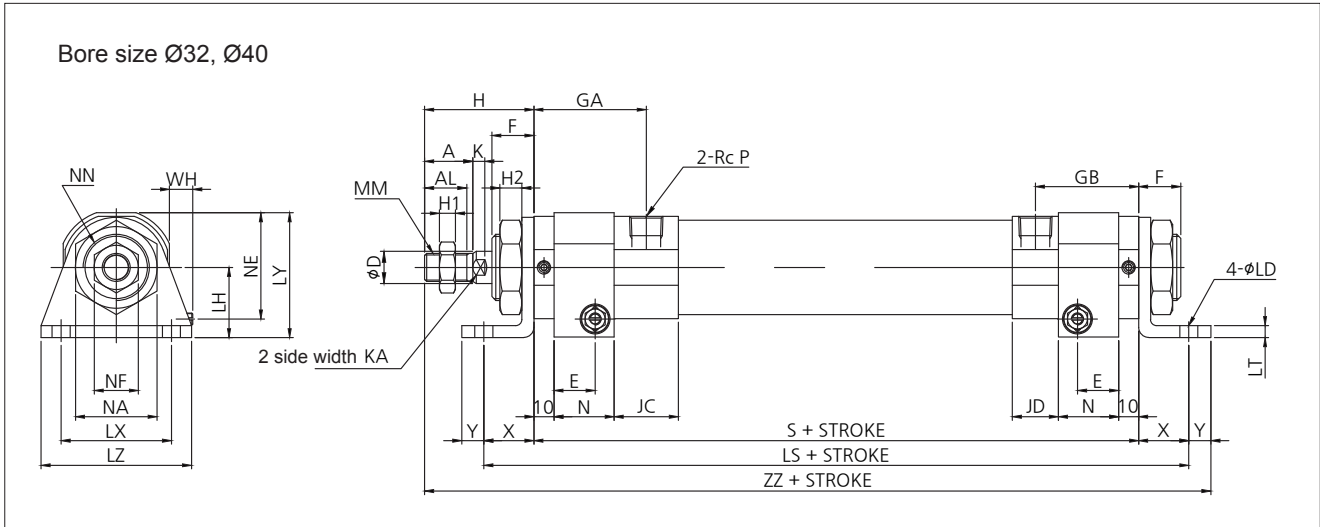
Unit:mm

Bore size	A	AL	B	C	D	E	F	FL	GA	GB	H	H1	H2
Ø32	22	19.5	44	51.5	12	18	19	14.5	55	51.5	51	6	9
Ø40	24	21	53	62	16	20.5	21	16.5	56	51.5	54.5	8	11

Bore size	JC	JD	K	KA	MM	N	NE	NA	NF	NI	NN	P	S	WH	ZZ
Ø32	36	28.5	5.5	10	M10xP1.25	27	43.5	38	17	31 <sup>-0.025</sup> <sub>-0.064</sub>	M30xP1.5	3/8	195	5.8~8.8	265
Ø40	32	23	7.5	14	M14xP1.5	30	53	41	22	34 <sup>-0.025</sup> <sub>-0.064</sub>	M33xP2.0	3/8	201.5	8.5~11.5	277



Dimensions-Foot (LB)

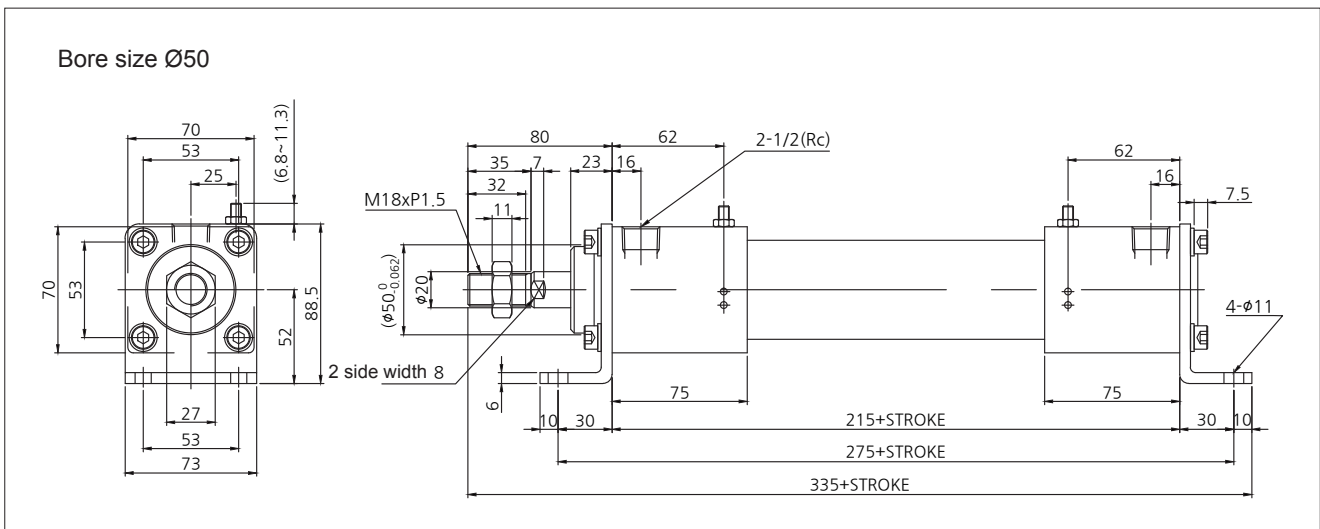


Unit:mm

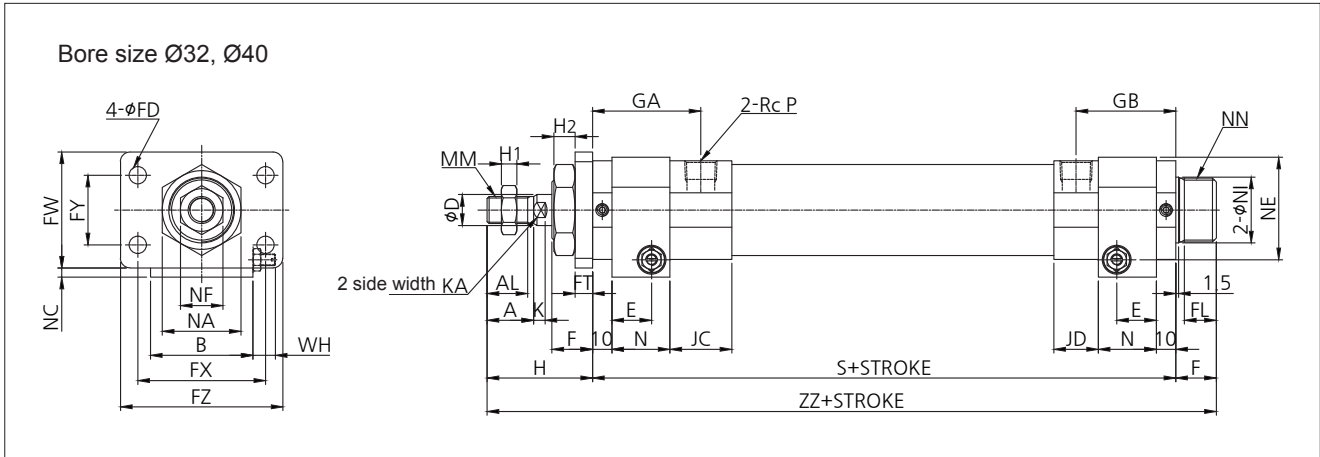
Bore size	A	AL	D	E	F	GA	GB	H	H1	H2	JC	JD	K	KA	LD	LH
Ø32	22	19.5	12	18	19	55	51.5	51	6	9	36	28.5	5.5	10	7	30
Ø40	24	21	16	20.5	21	56	51.5	54.5	8	11	32	23	6	14	9	35

Bore size	LS	LT	LX	LY	LZ	MM	N	NA	NE	NF	NN	P	S	WH	X	Y	ZZ
Ø32	241	6	45	53	60	M10xP1.25	27	38	43.5	17	M30xP1.5	3/8	195	5.8~8.8	23	9	278
Ø40	251.5	6	55	62.3	75	M14xP1.5	30	41	53	22	M33xP2.0	3/8	201.5	8.5~11.5	25	11	292



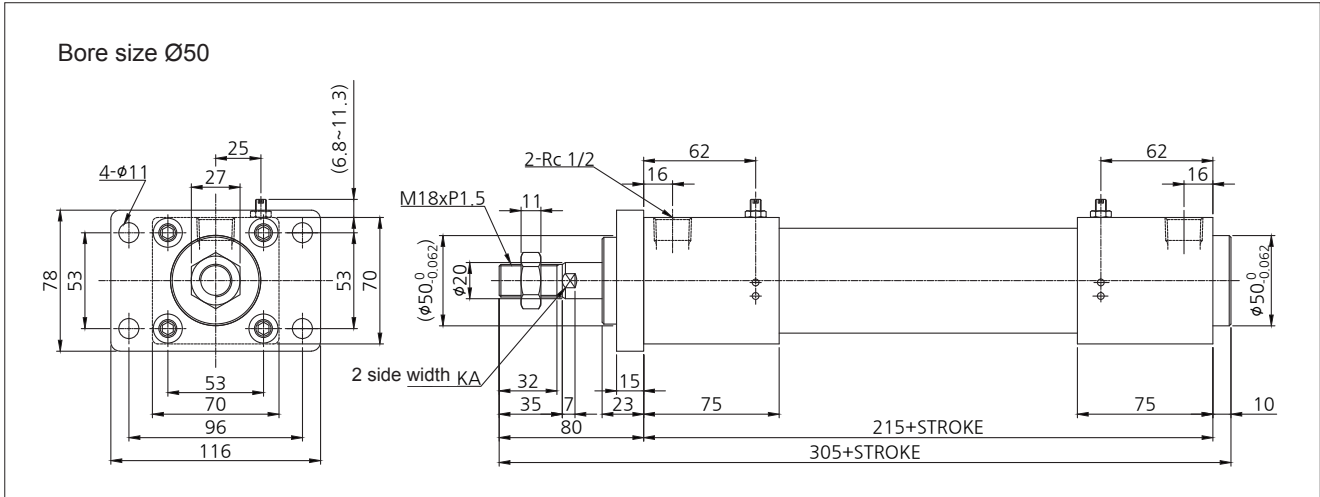
Dimensions-Rod Side Flange (FA)



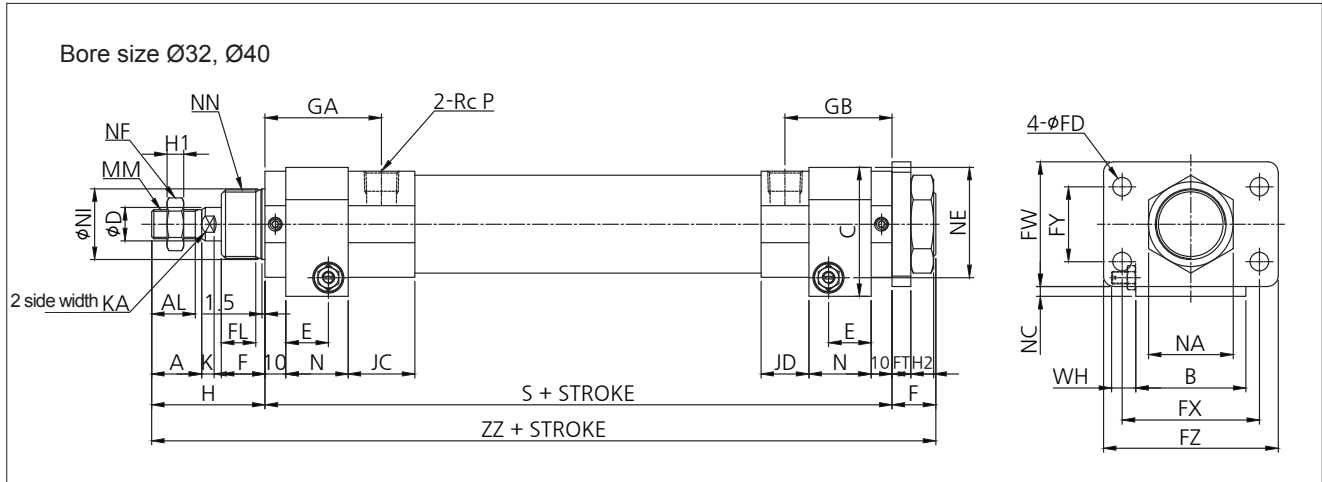
Unit:mm

Bore size	A	AL	B	D	E	F	FL	FD	FT	FX	FY	FW	FZ	GA	GB	H1	H2
$\varnothing 32$	22	19.5	44	12	18	19	14.5	7	9	55	33	50	72	55	51.5	6	9
$\varnothing 40$	24	21	53	16	20.5	21	16.5	9	9	66	36	60	84	56	51.5	8	11

Bore size	H	JC	JD	K	KA	MM	N	NA	NC	NE	NF	NI	NN	P	S	WH	ZZ
$\varnothing 32$	51	36	28.5	5.5	10	M10xP1.25	27	38	4.5	43.5	17	31 <sup>-0.025</sup> <sub>-0.064</sub>	M30xP1.5	3/8	195	5.8~8.8	265
$\varnothing 40$	54.5	32	23	7.5	14	M14xP1.5	30	41	4.5	53	22	34 <sup>-0.025</sup> <sub>-0.064</sub>	M33xP2.0	3/8	201.5	8.5~11.5	277



Dimensions-Head Side Flange (FB)



Unit:mm

Bore size	A	AL	B	C	D	E	F	FL	FD	FT	FX	FY	FW	FZ	GA	GB	H1	H2
Ø32	22	19.5	44	51.5	12	18	19	14.5	7	9	55	33	50	72	55	51.5	6	9
Ø40	24	21	53	62	16	20.5	21	16.5	9	9	66	36	60	84	56	51.5	8	11

Bore size	H	JC	JD	K	KA	MM	N	NA	NC	NE	NF	NI	NN	P	S	WH	ZZ
Ø32	51	36	28.5	5.5	10	M10xP1.25	27	38	4.5	43.5	17	31 <sup>-0.025</sup> <sub>-0.064</sub>	M30xP1.5	3/8	195	5.8~8.8	265
Ø40	54.5	32	23	7.5	14	M14xP1.5	30	41	4.5	53	22	34 <sup>-0.025</sup> <sub>-0.064</sub>	M33xP2.0	3/8	201.5	8.5~11.5	277

