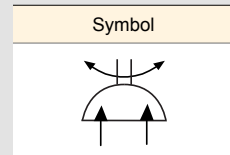


# KP35R series



### Features

- Rack-and-pinion rotary cylinder.
- Rotary cylinder for 35kgf/cm<sup>2</sup> with bore sizes from Ø30 to Ø80.
- The rotating angle can be adjusted with a range of ±5°
- Various mounting styles available. (SD, FA, FB)



### How to Order

KP35R - ① ② FA ③ ④ 40 - ⑤ 90 ⑥ A ⑦ B

#### ① Series

KP35R	Rotary cylinder (35kgf/cm <sup>2</sup> )
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#### ④ Bore size

30	Ø30
40	Ø40
50	Ø50
63	Ø63
80	Ø80

#### ⑦ Cushion valve position

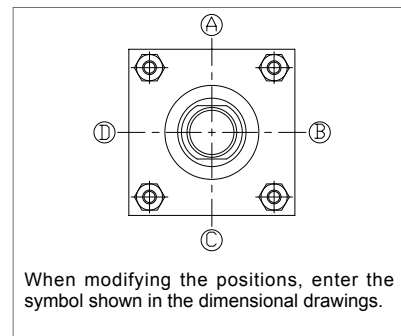
B	Standard
A,C,D	Refer to figure below

#### ② Type

1	Standard
2	With magnet

#### ⑤ Rotating angle

90	90°
180	180°



#### ③ Mounting style

SD	Standard
FA	Top flange
FB	Bottom flange

#### ⑥ Port position

A	Standard
B,C,D	Refer to figure below

**Specifications**

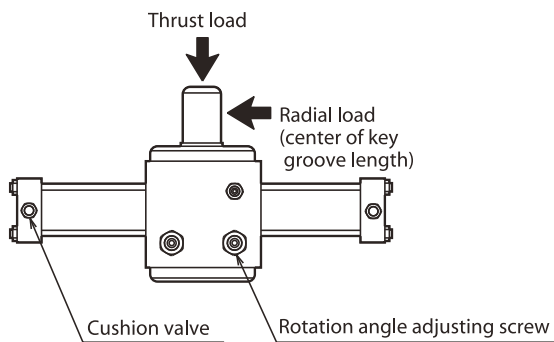
Type	KP35R
Bore size	Ø30, Ø40, Ø50, Ø63, Ø80
Variation	Rack and pinion type
Rotating angle	90°, 180°
Angle adjustment	±5°
Rated torque (at 35kgf/cm <sup>2</sup> )	Ø30:60N·m, Ø40:106N·m, Ø50:220N·m, Ø63:436N·m, Ø80:840N·m,
Max. operating pressure	35kgf/cm <sup>2</sup> (3.5MPa)
Proof pressure	50kgf/cm <sup>2</sup> (5MPa)
Min. operating pressure	5kgf/cm <sup>2</sup> (0.5MPa)
Ambient & fluid temperature	10 ~ 60°C
Working oil	Petroleum-based fluid
Tolerance of thread	KS class 2
Mounting style	SD, FA, FB

**Volume of Fluid Required for Rotation**

Unit : ml

Rotating angle / Bore size (mm)	90°	180°
Ø30	28.3	53.4
Ø40	51.9	99.5
Ø50	104.3	202.6
Ø63	203.8	399.9
Ø80	410.5	788.3

**Precautions**



**Allowable Radial and Thrust Loads**

Load(kgf)	Bore size(mm)	
	Radial Load	Thrust Load
Ø30	70	40
Ø40	145	80
Ø50	190	110
Ø63	250	150
Ø80	300	180

- ※ Avoid from applying a greater load (than those listed above) directly to the shaft.
- ※ At the rotating end of the rotary actuator, bring the shaft into contact with the rotation angle adjusting screw under the condition of sufficient cushioning effect. If the cushion is not effective, the rotation angle adjusting screw may be damaged.

**Mass**

Unit : kg

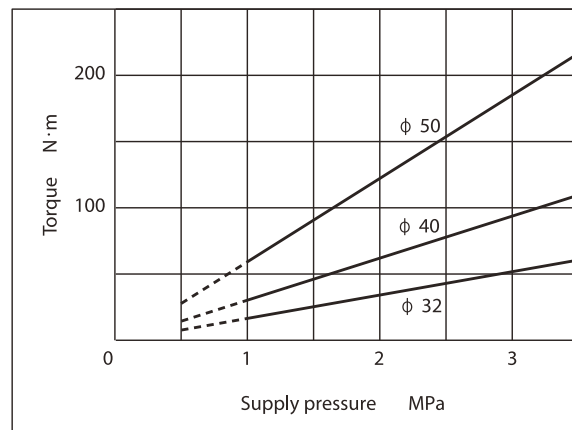
Bore size	Basic mass(SD)	Mounting mass
	Standard	FA, FB
Ø30-90°	5.0	0.94
Ø30-180°	5.2	
Ø40-90°	8.8	1.57
Ø40-180°	9.2	
Ø50-90°	13.9	2.09
Ø50-180°	14.7	
Ø63-90°	24.2	3.56
Ø63-180°	25.8	
Ø80-90°	41.0	6.54
Ø80-180°	44.1	

Calculation:

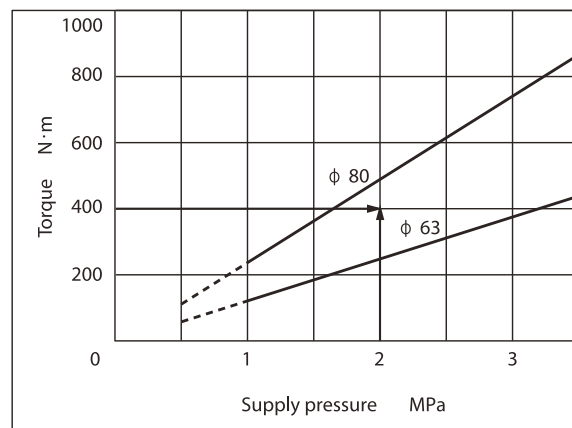
Ex.) KP35R-1 FA40-180A B  
Basic mass: 9.2  
FA mounting: 1.57  
9.2 + 1.57 = 10.77kg

**Theoretical Output Torque Charts**

Bore size Ø32, Ø40, Ø50



Bore size Ø63, Ø80



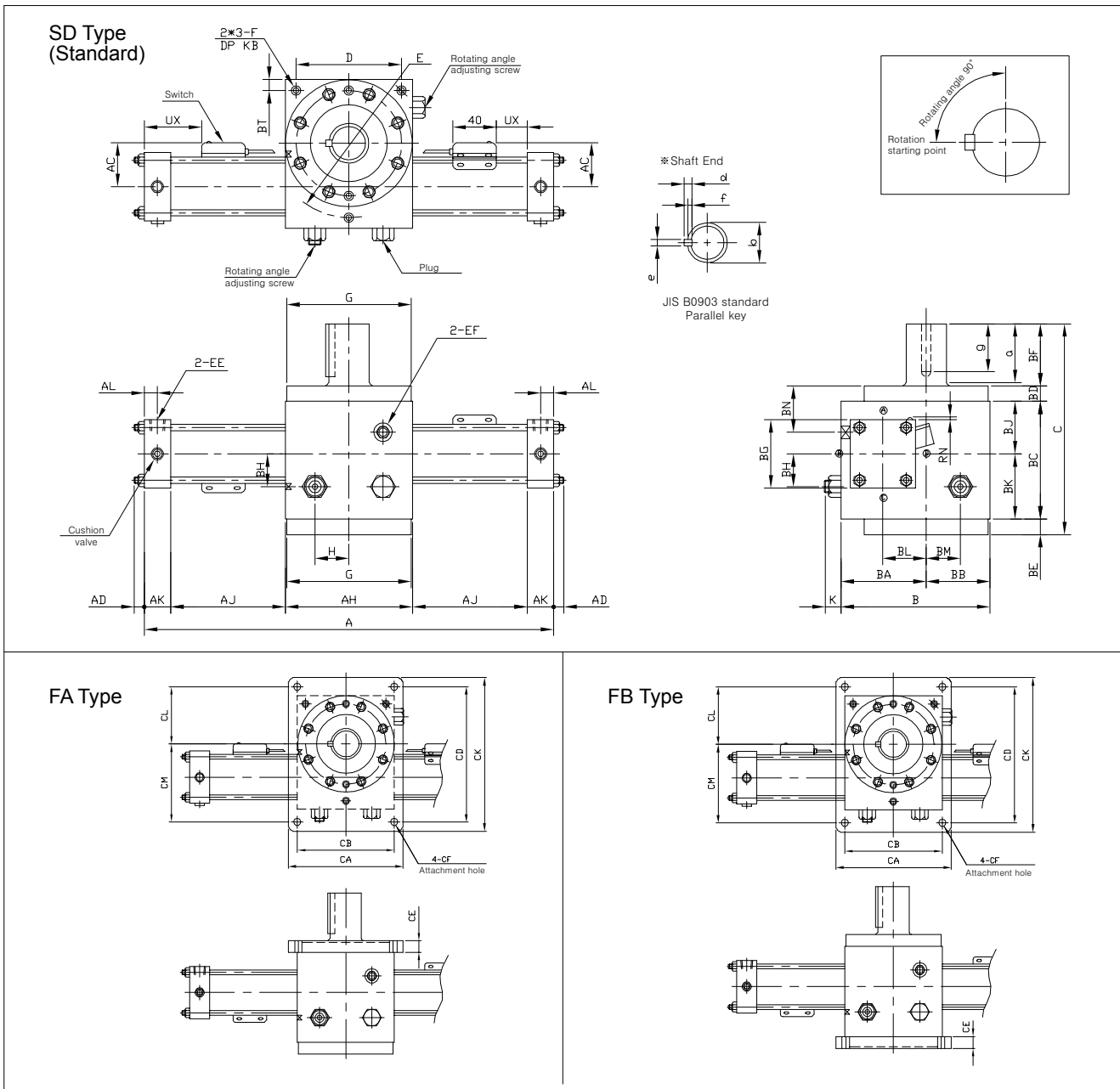
※ 1MPa=10.2kgf/cm<sup>2</sup>, 100N·m=10.2kgf·m

**How to Read the Graph**

When a torque of 400N·m is required at a working pressure of 2MPa, determine the intersection of the lines extended from the vertical axis of supply pressure and the horizontal axis of torque. Find the bore above this intersection, and the bore of 80mm can be selected.

Note) Determine the effective torque based on the following data.  
When the inertia force is low: 60-80%  
When the inertia force is high: 25-35%

**Dimensions-Rotating Angle 90°**

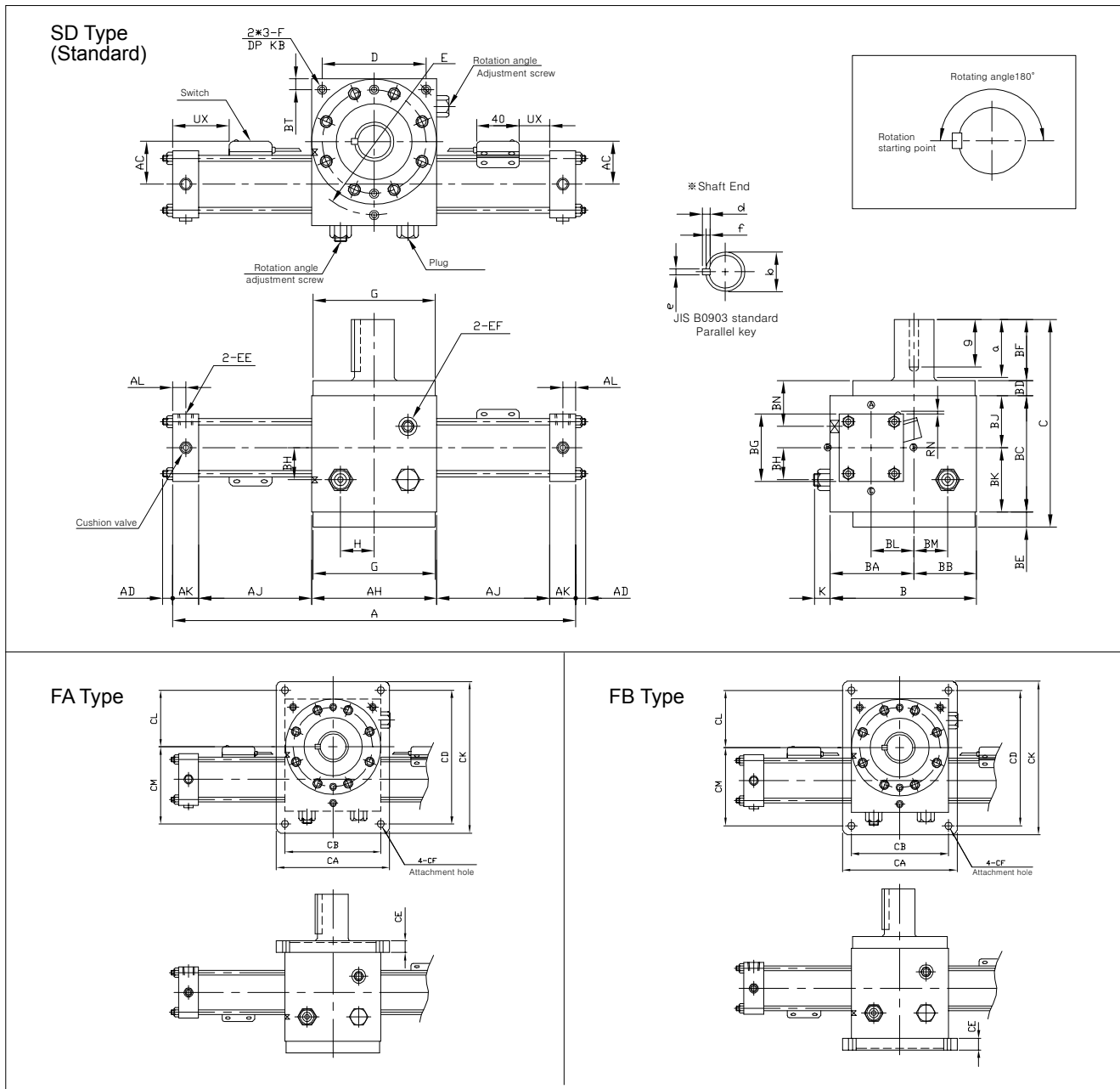


Unit : mm

Bore size	A	AC	AD	AH	AJ	AK	AL	B	BA	BB	BC	BD	BE	BF	BG	BH	BJ	BK	BL	BM	BN	BT	C	CA	CB	CD
302	43	10	88	85	22	10	102	58	44	82	12	12	38	□55	22	36	46	24	20	24.5	20	144	105	85	125	
Ø40	333	47	15	106	87.5	26	13	125	72	53	97	13	14	60	□65	30	43	54	30	27	27	27	184	125	100	150
Ø50	383	53	15	120	101.5	30	15	140	80	60	112	15	15	60	□75	34	50	62	40	33	30	33	202	145	120	170
Ø63	455	59	17	144	125.5	30	15	168	96	72	133	14	16	84	□90	40	60	73	50	40	34	40	247	175	140	210
Ø80	518	67	20	168	139	36	18	200	116	84	156	18	20	84	□110	53	68	88	59	48	35	48	278	210	170	250

Bore size	CE	CF	CK	CL	CM	D	E	EE	EF	F	G	H	K	KB	RN	UX	Shaft end					
																	a	b	d	e	f	g
Ø30	13	Ø9	145	55	70	71.4	101	Rc(PT)1/4	Rc(PT)1/4	M8×P1.25	Ø83h7	20	10	16	7	23	36	Ø22h7	6	6	3	32
Ø40	15	Ø9	180	65	85	86.3	122	Rc(PT)3/8	Rc(PT)3/8	M10×P1.25	Ø104h7	27	12	16	6	27	58	Ø30h7	7	8	4	50
Ø50	16	Ø11	195	75	95	98.3	139	Rc(PT)1/2	Rc(PT)3/8	M10×P1.25	Ø117h7	33	14	20	6	30	58	Ø38h7	8	10	5	50
Ø63	18	Ø14	240	90	120	116.7	165	Rc(PT)1/2	Rc(PT)3/8	M12×P1.5	Ø140h7	40	16	18	4	39	82	Ø50h7	9	14	5.5	70
Ø80	22	Ø16	290	110	140	137.9	195	Rc(PT)3/4	Rc(PT)1/2	M16×P1.5	Ø164h7	48	19	21	3	40	82	Ø55h7	10	16	6	70

**Dimensions-Rotating Angle 180°**



Hydraulic Cylinder
Reference Data
KP140H
KP210H
KPC70/140H
KPC210H
KTC70HP
KP140HS
KP125/160A
<b>KP35R</b>

KH

Unit : mm

Bore size	A	AC	AD	AH	AJ	AK	AL	B	BA	BB	BC	BD	BE	BF	BG	BH	BJ	BK	BL	BM	BN	BT	C	CA	CB	CD
Ø30	369	43	10	88	118.5	22	10	102	58	44	82	12	12	38	□55	22	36	46	24	20	24.5	20	144	105	85	125
Ø40	409	47	15	106	125.5	26	13	125	72	53	97	13	14	60	□65	30	43	54	30	27	27	27	184	125	100	150
Ø50	483	53	15	120	151.5	30	15	140	80	60	112	15	15	60	□75	34	50	62	40	33	30	33	202	145	120	170
Ø63	581	59	17	144	188.5	30	15	168	96	72	133	14	16	84	□90	40	60	73	50	40	34	40	247	175	140	210
Ø80	668	67	22	168	214	36	18	200	116	84	156	18	20	84	□110	53	68	88	59	48	35	48	278	210	170	250

Bore size	CE	CF	CK	CL	CM	D	E	EE	EF	F	G	H	K	KB	RN	UX	Shaft end					
																	a	b	d	e	f	g
Ø30	13	Ø9	145	55	70	71.4	101	Rc(PT)1/4	Rc(PT)1/4	M8×P1.25	Ø83h7	20	10	16	7	23	36	Ø22h7	6	6	3	32
Ø40	15	Ø9	180	65	85	86.3	122	Rc(PT)3/8	Rc(PT)3/8	M10×P1.25	Ø104h7	27	12	16	6	27	58	Ø30h7	7	8	4	50
Ø50	16	Ø11	195	75	95	98.3	139	Rc(PT)1/2	Rc(PT)3/8	M10×P1.25	Ø117h7	33	14	20	6	30	58	Ø38h7	8	10	5	50
Ø63	18	Ø14	240	90	120	116.7	165	Rc(PT)1/2	Rc(PT)3/8	M12×P1.5	Ø140h7	40	16	18	4	39	82	Ø50h7	9	14	5.5	70
Ø80	22	Ø16	290	110	140	137.9	195	Rc(PT)3/4	Rc(PT)1/2	M16×P1.5	Ø164h7	48	19	21	3	40	82	Ø55h7	10	16	6	70