



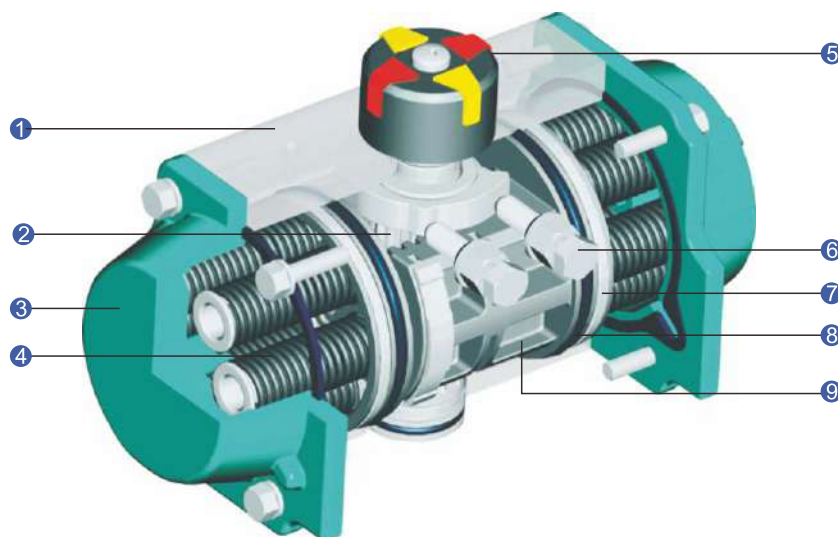
Pneumatic Actuators

Pneumatic Actuator KP Series

➤ Introduction

KI pneumatic actuators offer Double-acting type and Single-acting type (spring return). Superior aluminum extruded body with hard anodized polish internally and externally enhances its ability in corrosion-resistance and wear-proof, and extends life-cycle. KI pneumatic actuators equipped with brilliant performance of rack and pinion provide high output torque and flexible on/off to suit a wide range of ball valves, butterfly valves, and other valves for automation solutions.

➤ Design Features



1. ACTUATOR BODY

Aluminum extruded body with normal or hard anodized polish internally and externally offers beautiful appearance, lasting life-cycle and hard wear.

2. PINION

Alloy steel pinion machined precisely and nickel plated provides utmost wear proof and corrosion resistance.

3. END CAPS

Heavy duty die-cast aluminum end caps with polyester coating enhance corrosion resistance.

4. HEAVY DUTY SPRINGS

Springs produced by imported and quality alloy steel bring high performance and long lifespan.

5. INDICATOR

All types are equipped with a disc open/close indicator.

6. TRAVEL ADJUSTMENT

Adjustment between $+5^\circ$ and -5° through two external screws is available.

7. PISTON GUIDES

“ACETAL” self-lubricating piston guides greatly increase life cycle of Actuator Body.

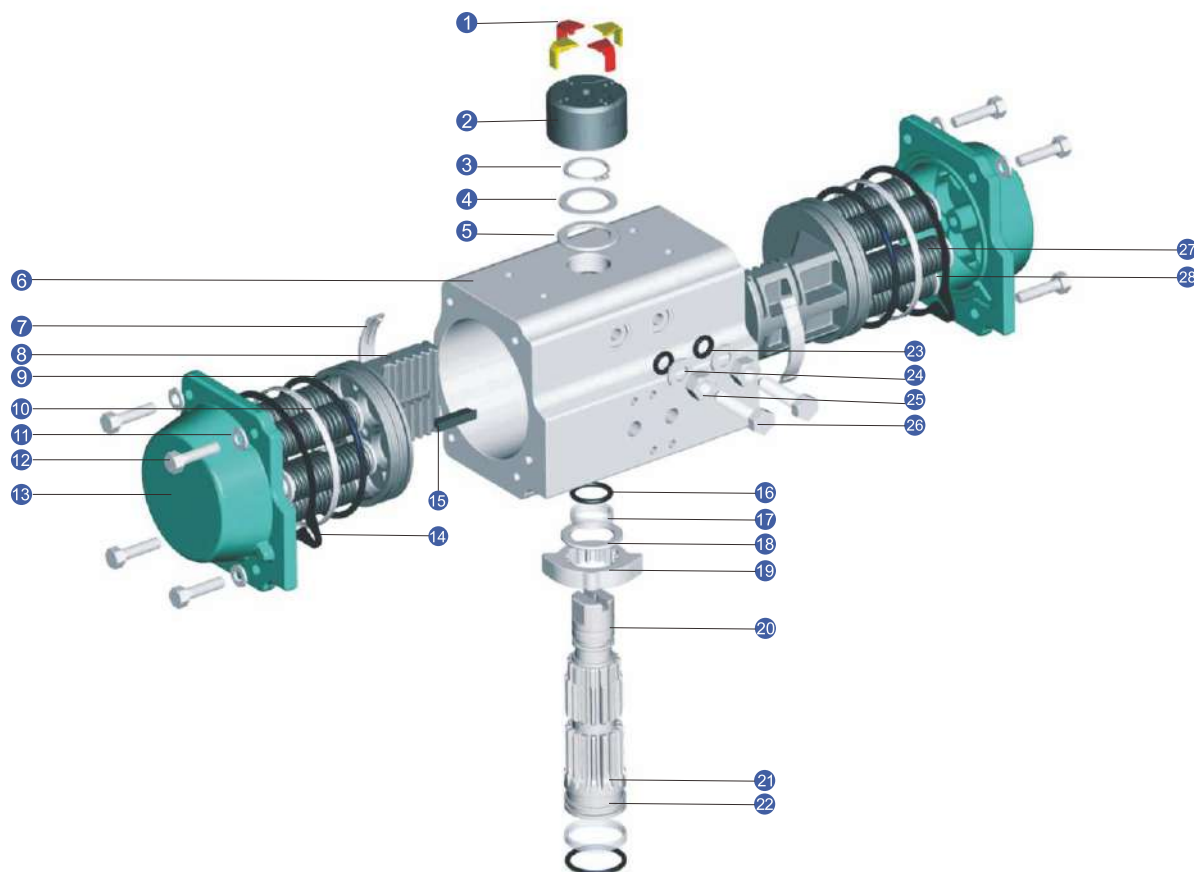
8. PISTON SEALS

Original Japan-made NBR-70 rubber seal rings of piston seals ensure top reliability at working operations.

9. PISTON

Heavy duty die-cast aluminum pistons with hard-wear treatment on the surface and driven by double racks greatly enhance efficiency and constant torque during transmission.

Parts



Materials

PART NO	PART DESCRIPTION	STANDARD MATERIAL	UNIT Q'TY	OPTIONAL MATERIAL
1	Position indicator	Polypropylene+GF	4	—
2	Position indicator holder	Polypropylene+GF	1	—
3	Spring clip (pinion)	Stainless Steel, KP-160, 200 Nickel plated	1	—
4	Thrust washer (pinion)	Stainless Steel	1	—
5	Thrust bearing (pinion)	Polyphthalamide	1	—
6	Body	Extruded Aluminium alloy, Anodized	1	—
7	Bearing (piston back)	Polyphthalamide	2	—
8	Piston	Die cast Aluminium, Hard anodized	2	—
9	" O " Ring (piston)	Nitrile (NBR70)	2	FKM/Silicon Viton
10	Bearing (piston head)	Polyphthalamide	2	—
11	Cap bolt washer	Stainless Steel	8	—
12	Cap bolt (end cap)	Stainless Steel	2	—
13	Right and left end cap	Die cast Aluminium, Chromate+Polyester coated	2	—
14	" O " Ring (end cap)	Nitrile (NBR70)	2	FKM/Silicon Viton
15	Piston guide	Polypropylene+GF	2	—
16	" O " Ring (pinion top)	Nitrile (NBR70)	1	FKM/Silicon Viton
17	Bearing (piston top)	Nylon46	1	—
18	Thrust bearing (pinion)	Polyphthalamide	1	—
19	Open.Close cam (stop arrangement)	Stainless Steel	1	—
20	Drive shaft	Steel alloy, Nickel planted	1	—
21	Bearing (piston bottom)	Nylon46	1	—
22	" O " Ring (pinion bottom)	Nitrile (NBR70)	1	FKM/Silicon Viton
23	" O " Ring (stop screw)	Nitrile (NBR70)	1	FKM/Silicon Viton
24	Stop bolt washer	Stainless Steel	2	—
25	Stop nut	Stainless Steel	2	—
26	Stop bolt	Stainless Steel	2	—
27	Spring (catridge)	High alloy Spring Steel, Epoxy coated	Min.5/max.12	—
28	Spring holder	Polypropylene+GF	1	—

➤ KP Series Torque Outputs

Double Acting Actuator

Output torque (Nm) for double acting actuators

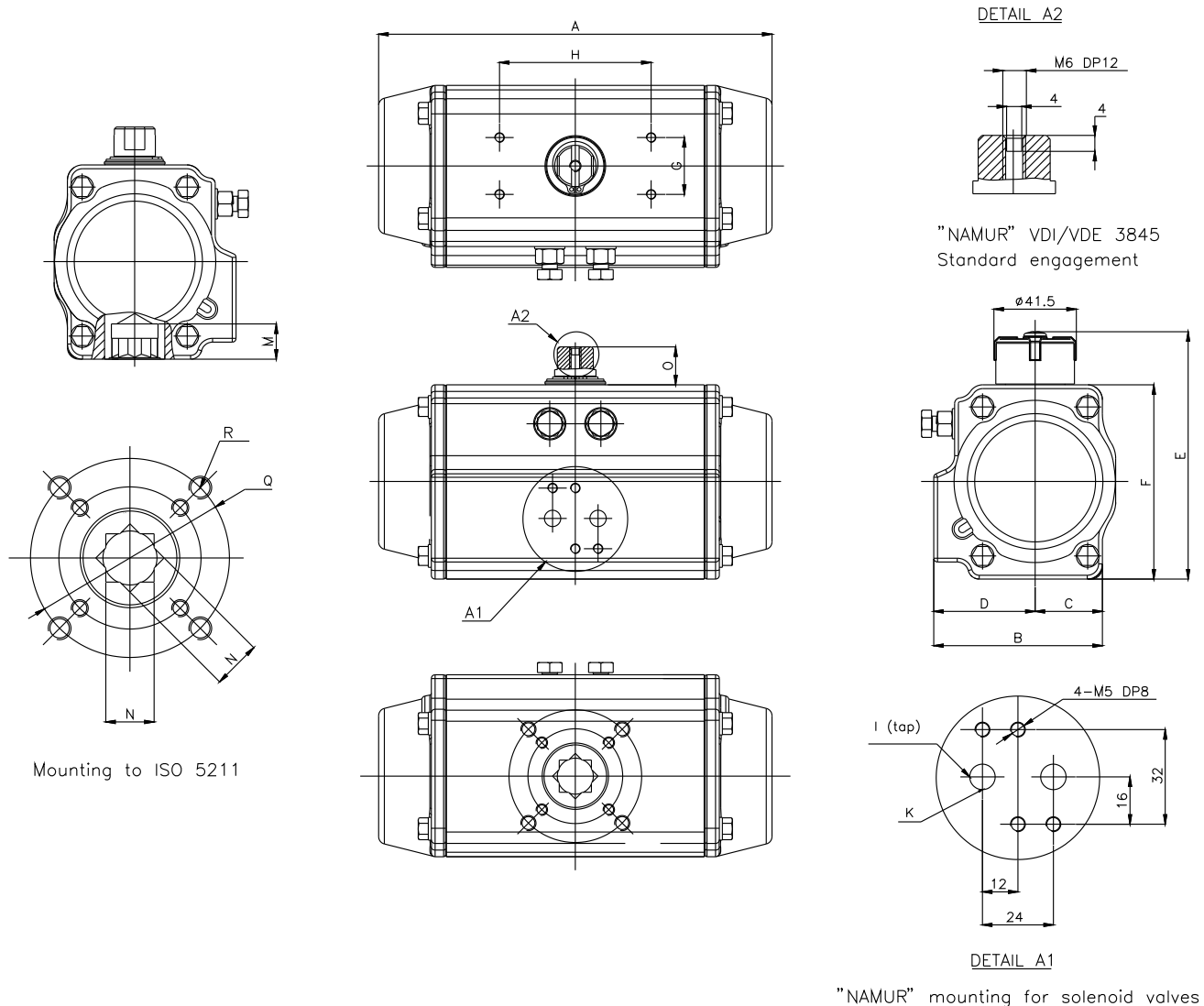
Model	Air supply	0.25 MPa	0.3 MPa	0.35 MPa	0.4 MPa	0.45 MPa	0.5 MPa	0.55 MPa	0.6 MPa	0.7 MPa	0.8 MPa
KP - 35		3.6	4.3	5.0	5.7	6.4	7.3	8.0	8.7	10.0	11.6
KP - 50		8.4	10.1	11.7	13.5	15.1	16.7	18.4	20.0	23.4	26.7
KP - 63		14.8	17.7	20.6	23.6	26.5	29.4	32.3	35.3	41.1	47.0
KP - 75		29.2	35.0	40.8	46.6	52.5	58.3	64.1	69.9	81.5	93.2
KP - 88		45.9	55.0	64.2	73.3	82.5	91.6	101.1	110.1	128.1	146.1
KP - 100		66.8	80.1	93.4	106.3	120.3	133.3	146.3	160.3	186.3	213.3
KP - 125		139.0	167.0	195.0	223.0	250.0	278.0	306.0	333.0	389.0	444.0
KP - 160		285.0	341.0	398.0	455.0	512.0	577.0	625.0	682.0	795.0	909.0
KP - 200		533.0	639.0	746.0	852.0	976.0	1065.0	1171.0	1277.0	1490.0	1703.0

Single Acting Actuator

Output torque (Nm) for single acting (spring return) actuators

Model No. (spring weight)		0.25 MPa		0.3 MPa		0.35 MPa		0.4 MPa		0.45 MPa		0.5 MPa		0.55 MPa		0.6 MPa		0.7 MPa		0.8 MPa		Spring Torque		
	S.set	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E	
KP - 50S	5	5.0	3.5	6.7	5.2	8.4	6.9	10.0	8.5	11.7	10.2	13.3	11.8									5.0	3.5	
	6	4.4	2.6	6.0	4.2	7.7	5.9	9.4	7.5	11.0	9.2	12.7	10.9	14.3	12.5							5.9	4.1	
	7			5.4	3.2	7.0	4.9	8.7	6.6	10.3	8.2	12.0	9.9	13.7	11.6	15.3	13.2					6.9	4.8	
	8					6.3	3.9	8.0	5.6	9.7	7.3	11.3	8.9	13.0	10.6	14.7	12.2	18.0	15.6			7.9	5.5	
	9							7.3	4.6	9.0	6.3	10.7	7.9	12.3	9.6	14.0	11.3	17.3	14.6	20.6	17.9	8.9	6.2	
	10									8.3	5.3	10.0	7.0	11.6	8.6	13.3	10.3	16.6	13.6	19.9	16.9	9.8	6.8	
	11											9.3	6.0	11.0	7.7	12.6	9.3	16.0	12.6	19.3	16.0	10.8	7.5	
	12													10.3	6.7	12.0	8.3	15.3	11.7	18.6	15.0	11.8	8.1	
KP - 63S	5	9.2	6.3	12.1	9.3	15.1	12.2	18.0	15.1	20.9	18.0	23.9	21.0									8.5	5.6	
	6	8.1	4.6			11.0	7.6	14.0	10.5	16.9	13.4	19.8	16.4	22.8	19.3	25.7	22.2					10.2	6.8	
	7					9.9	5.9	12.9	8.8	15.8	11.7	18.7	14.7	21.6	17.6	24.6	20.5	27.5	23.5			11.9	7.9	
	8							11.7	7.1	14.7	10.1	17.6	13.0	20.5	15.9	23.5	18.8	26.4	21.8	32.3	27.6		13.6	9.0
	9							13.6	8.4	16.5	11.3	19.4	14.2	22.4	17.2	25.3	20.1	31.2	26.0	38.0	31.8	15.3	10.1	
	10									15.4	9.6	18.3	12.54	21.2	15.5	24.2	18.4	30.0	24.3	35.9	30.1	17.0	11.2	
	11											17.2	10.9	20.1	13.8	23.1	16.7	28.9	22.6	34.8	28.4	18.7	12.3	
	12													19.0	12.1	22.0	15.0	27.8	20.9	33.7	26.8	20.3	13.4	
KP - 75S	5	18.1	11.9	23.9	17.7	29.8	23.5	35.6	29.3	41.4	35.1	47.2	41.0									17.4	11.2	
	6	15.9	8.4	21.7	14.2	27.6	20.0	33.4	25.9	39.2	31.7	45.0	37.5	50.8	43.3							20.9	13.4	
	7			19.5	10.8	25.3	16.6	31.2	22.4	37.0	28.2	42.8	34.0	48.6	39.9	54.4	45.7					24.3	15.6	
	8					23.1	13.1	28.9	18.9	34.8	24.8	40.6	30.6	46.4	36.4	52.2	42.2	63.8	53.8			27.8	17.8	
	9							26.7	15.5	32.6	21.3	38.4	27.1	44.2	32.9	52.0	38.7	61.6	50.4	73.3	62.0	31.3	20.0	
	10									30.3	17.8	36.2	23.7	42.0	29.5	47.8	35.3	59.4	46.9	71.1	58.6	34.7	22.2	
	11											33.9	20.2	39.8	26.0	45.6	31.8	57.2	43.5	68.8	55.1	38.2	24.4	
	12													37.6	22.5	43.4	28.4	55.0	40.0	66.6	51.6	41.6	26.6	
KP - 88S	5	27.5	17.0	36.7	26.1	45.8	35.3	55.0	44.4	64.1	53.6	73.3	62.7									29.0	18.4	
	6	23.9	11.2	33.0	20.4	42.2	29.5	51.3	38.7	60.5	47.8	69.6	57.0	78.8	66.1							24.8	22.1	
	7			29.3	14.6	38.5	23.7	47.6	32.9	56.8	42.0	65.9	51.2	75.1	60.3	84.32	69.5					40.5	25.8	
	8					34.8	18.0	44.0	27.1	53.1	36.3	62.3	45.4	71.4	54.6	80.6	63.7	98.9	82.0			46.3	29.4	
	9							40.3	21.3	49.5	30.5	58.6	39.6	67.8	48.8	76.9	57.9	95.2	76.2	113.0	94.6	52.1	33.1	
	10									45.8	24.7	54.9	33.9	64.1	43.0	73.2	52.2	91.6	70.5	110.0	88.8	57.9	36.8	
	11											51.3	28.1	60.4	37.2	69.6	46.4	87.9	64.7	106.0	83.0	63.6	40.4	
	12													56.8	31.5	65.9	40.6	84.2	58.9	102.0	77.2	69.4	44.1	
KP - 100S	5	41.2	27.2	54.5	40.5	67.8	53.8	81.1	67.1	94.4	80.4	108.0	93.7									39.5	25.4	
	6	36.2	19.3	49.5	32.6	62.8	45.9	76.1	59.2	89.4	72.5	103.0	85.8	116.0	99.1							47.4	30.5	
	7			44.4	24.7	57.7	38.0	71.0	51.3	84.3	64.6	97.6	77.9	111.0	91.2	124.0	104.0					55.2	35.6	
	8					52.6	30.1	65.9	43.4	79.2	56.7	92.5	70.0	106.0	83.3	119.0	96.6	146.0	123.0			63.1	40.6	
	9							60.9	35.6	74.1	48.9	87.4	62.2	101.0	75.4	114.0	88.7	141.0	115.0	167.0	142.0	71.0	45.7	
	10									69.1	41.0	82.4	54.3	95.7	67.6	109.0	80.9	135.0	107.0	162.0	134.0	78.9	50.8	
	11											77.3	46.3	90.6	59.7	104.0	73.0	130.0	99.1	157.0	126.0	86.8	55.8	
	12													85.5	51.8	98.8	65.1	125.0	92.1	152.0	118.0	94.6	60.9	
KP - 125S	5	86.1	56.2	113.7	84.0	141.0	111.0	169.0	139.0	197.0	167.0	224.0	195.0									82.1	52.6	
	6	75.6	39.7	103.2	67.4	131.0	95.1	159.0	123.0	186.0	150.0	214.0	178.0	242.0	206.0							99.1	63.1	
	7			92.8	50.9	120.5	78.6	148.0	106.0	176.0	134.0	203.0	162.0	231.0	189.0	259.0	217.0					115.0	73.6	
	8					110.0	62.1	137.6	89.8	165.0	117.0	193.0	145.0	221.0	173.0	248.0	201.0	304.0	256.0			132.0	84.1	
	9							127.0	73.4	155.0	101.0	182.0	129.0	210.0	156.0	238.0	184.0	293.0	239.0	349.0	295.0	148.0	94.6	
	10									144.0	84.6	172.0	112.0	200.0	140.0	227.0	168.0	283.0	223.0	338.0	278.0	165.0	105.0	
	11											161.0	95.8	189.0	123.0	217.0	151.0	272.0	206.0	328.0	262.0	181.0	116.0	
	12													179.0	107.0	206.0	135.0	262.0	109.0	317.0	245.0	198.0	126.0	
KP - 160S	5	171.0	118.0	228.0	174.0	285.0	231.0	342.0	288.0	398.0	344.0	455.0	401.0									166.0	112.0	
	6	149.0	84.4	206.0	141.0	262.0	198.0	319.0	255.0	376.0	311.0	433.0	368.0	489.0	425.0							199.0	135.0	
	7			183.0	108.0	240.0	165.0	297.0	221.0	353.0	278.0	410.0	335.0	467.0	391.0	524.0	448.0					233.0	157.0	
	8					218.0	131.0	274.0	188.0	331.0	245.0	388.0	302.0	444.0	358.0	501.0	415.0	615.0	528.0			266.0	180.0	
	9							252.0	155.0	309.0	212.0	365.0	268.0	422.0	325.0	479.0	382.0	592.0	495.0	706.0	609.0	299.0	202.0	
	10									286.0	178.0	343.0	235.0	400.0	292.0	456.0	349.0	570.0	462.0	683.0	575.0	332.0	224.0	
	11											320.0	202.0	377.0	259.0	434.0	315.0	547.0	429.0	661.0	542.0	365.0	247.0	
	12													355.0	225.0	411.0	282.0	525.0	396.0	638.0	509.0	399.0	269.0	
KP - 200S	5	319.0	217.0	426.0	323.0	532.0	430.0	638.0	536.0	745.0	642.0	851.0	792.0									315.0	213.0	
	6	277.0	154.0	383.0	260.0	489.0	367.0	596.0	473.0	702.0	579.0	808.0	686.0	915.0	792.0							378.0	255.0	
	7			341.0	197.0	447.0	304.0	553.0	410.0	660.0	516.0	766.0	623.0	872.0	729.0	979.0	835.0					441.0	298.0	
	8					404.0	241.0	511.0	347.0	617.0	453.0	723.0	560.0	830.0	666.0	936.0	772.0	1149.0	985.0			504.0	340.0	
	9							468.0	284.0	575.0	390.0	681.0	497.0	787.0	603.0	894.0	709.0	1106.0	922.0	1319.0	1135.0	567.0	383.0	
	10									532.0	327.0	638.0	434.0	745.0	540.0	851.0	646.0	1064.0	859.0	1277.0	1072.0	630.0	425.0	
	11											596.0	371.0	702.0	477.0	809.0	583.0	1021.0	769.0	1234.0	1009.0	693.0	468.0	
	12													660.0	414.0	766.0	520.0	979.0	733.0	1192.0	946.0	756.0	510.0	

› Dimensional Drawing

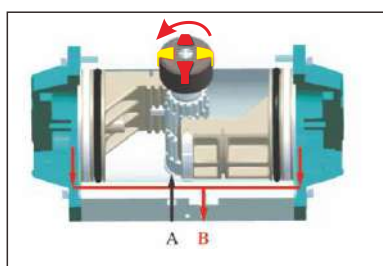


› Dimension

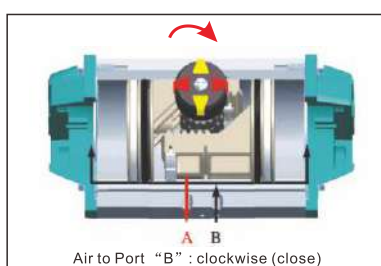
Unit:mm

Model	FLANGE L (ISO 5211)	R	M	N	A	B	C	D	E	F	G	H	I	O	K	Weight (kg)
	Q															
KP - 35	F03/F05 ø36/ø50	M5/M6	10	9	125	54	24.0	30.0	76	48	25	50	PF	20	1/8"	0.55
KP - 50	F03/F05 ø36/ø50	M5/M6	12	11	142	72	30.0	42.0	100	72	30	80	PF	20	1/8"	1.15
KP - 63	F05/F07 ø50/ø70	M6/M8	16	14	162	84	37.0	47.0	113	85	30	80	PF	20	1/8"	1.70
KP - 75	F05/F07 ø50/ø70	M6/M8	19	17	208	96	42.5	53.5	131	103	30	80	PF	20	1/8"	2.90
KP - 88	F05/F07 ø50/ø70	M6/M8	19	17	246	108	49.5	58.5	144	116	30	80	PF	20	1/8"	4.30
KP - 100	F07/F10 ø70/ø102	M8/M10	19	17	266	123	56.0	67.0	156	128	30	80	PF	20	1/4"	5.95
KP - 125	F7/F10 ø70/ø102	M8/M10	24	22	347	151	69.0	82.0	196	159	30	80	PF	30	1/4"	11.20
KP - 160	F10/F12 ø102/ø125	M10/M12	29	27	475	202	101.0	101.0	233	197	30	130	PF	30	1/4"	24.25
KP - 200	F14 ø140	M16	38	36	570	232	116.0	116.0	274	246	30	130	PF	50	1/4"	38.50

Double Acting Operation



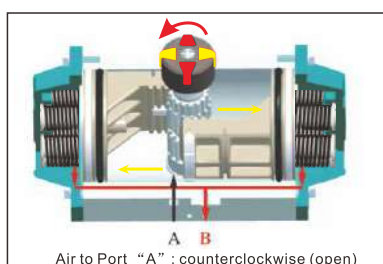
Air to Port "A" : counterclockwise (open)



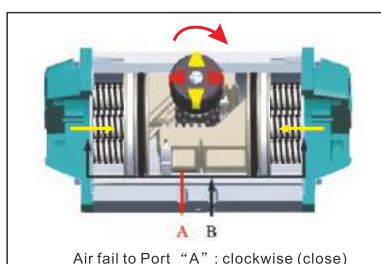
Air to Port "B" : clockwise (close)

* Pistons must be inverted to reverse actuator rotation

Spring Return Operation



Air to Port "A" : counterclockwise (open)



Air fail to Port "A" : clockwise (close)

* Spring force makes the actuator clockwise when the air is exhausted at port "A"

* When air fail to counterclockwise is required, the pistons must be inverted

KP Series Spring Set

Set #5		
Set #6		
Set #7		
Set #8		

Set #9		
Set #10		
Set #11		
Set #12		

Bracket Namur Standard

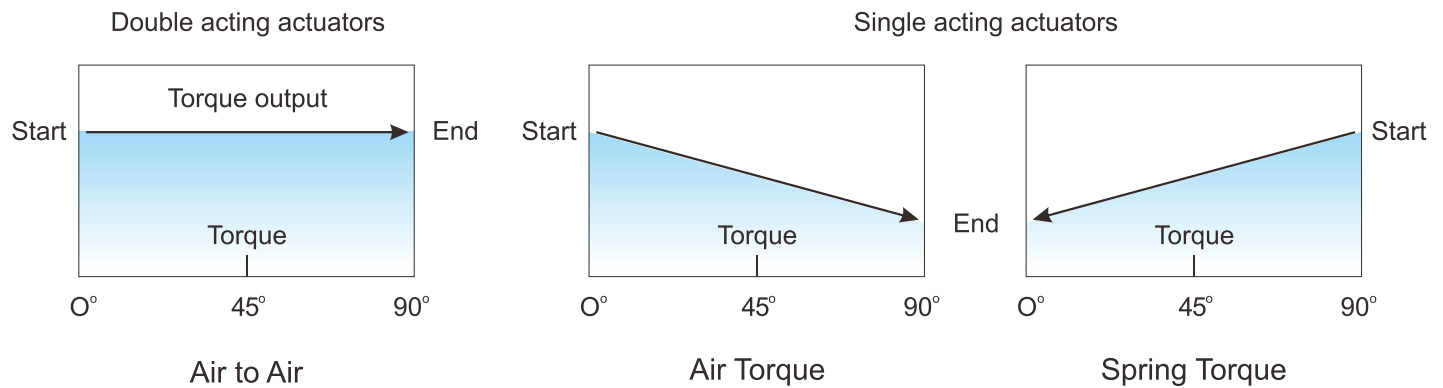
K-UB		K-CB	
Part No. Type	K-UB (L*W*H)	K-CB (L*W*H)	
A	50 X 25 X 20	80 X 30 X 20	
B	80 X 30 X 20	80 X 30 X 30	
C	80 X 30 X 30	130 X 30 X 30	
D	130 X 30 X 30	130 X 30 X 50	

➤ Specification

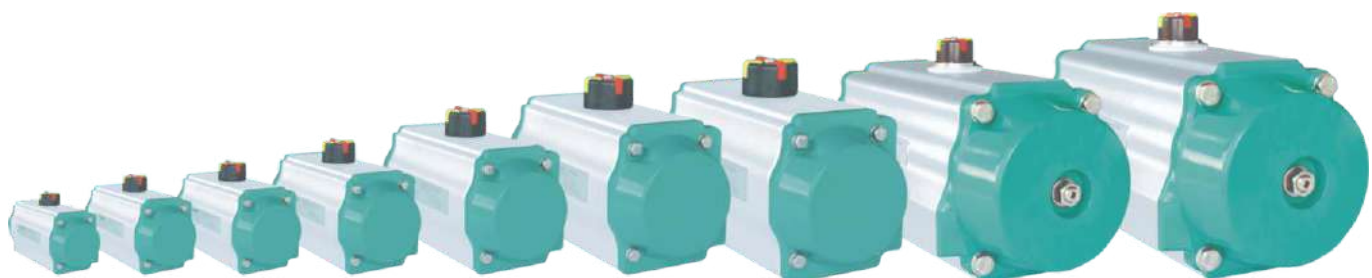
- Media: Dry or lubricated air, inert gas or non-corrosive gas
- Pressure Range: 0.25MPa~0.8MPa
- Temperature Range: Standard -20°C~80°C
- Option: -35°C~80°C or -20°C~150°C
- Movement: $90^\circ \pm 5^\circ$
- Lubrication: No need for lubricant under normal conditions.
- Life-Cycle Test on Actuator: 1,000,000 Operations
- Life-Cycle Test on Springs: 1,000,000 Operations



➤ Torque Diagram



➤ Models Available



KP-35

KP-50 ~ KP-125

KP-160 ~ KP-200



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