



Specifications

Bore size	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63
Fluid	Compressed air					
Rod size	Ø12	Ø12	Ø16	Ø16	Ø20	Ø20
Port size	M5x0.8		Rc(PT)1/8		Rc(PT)1/4	
Cylinder stroke(mm)	Rotation section	9.5		15		19
	Clamp	10,20,30		10,20,30,50		
	Tolerance	-0.4~+0.6				
Cushion method	Rubber cushion (Without head side)					
Acting type	Double acting type (Standard)					
Operation pressure	1.5MPa(14.7kgf/cm ²)					~0.6MPa(5.8kgf/cm ²)
Proof pressure	0.1~1.0MPa(9.8kgf/cm ²)					
Temperature	-10~70°C(No freezing)					
Lubrication	Non-lubrication					
Operating piston speed	50~200mm/sec					
Clamp angle tolerance	±1.2°		±0.9°		±0.7°	
Unclamp angle tolerance	90° ±10°					

Theoretical output table

Tube size(mm)	Rod size(mm)	Direction of operation	Projected net area(cm ²)	Operation pressure(kgf/cm ²)									
				2	3	4	5	6	7	8	9	10	
20	12	CLAMP	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	
		UNCLAMP	3.1	6.2	9.3	12.4	15.5	18.6	21.7	24.8	27.9	31.0	
25	12	CLAMP	3.8	7.6	11.4	15.2	19.0	22.8	26.6	30.4	34.2	38.0	
		UNCLAMP	4.9	9.8	14.7	19.6	24.5	29.4	34.3	39.2	44.1	49.0	
32	16	CLAMP	6.0	12.0	18.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0	
		UNCLAMP	8.0	16.0	24.0	32.0	40.0	48.0	56.0	64.0	72.0	80.0	
40	16	CLAMP	10.6	21.2	31.8	42.4	53.0	63.6	74.2	84.8	95.4	106.0	
		UNCLAMP	12.6	25.2	37.8	50.4	63.0	75.6	88.2	100.8	113.4	126.0	
50	20	CLAMP	16.5	33.0	49.5	66.0	82.5	99.0	115.5	132.0	148.5	165.0	
		UNCLAMP	19.6	39.2	58.8	78.4	98.0	117.6	137.2	156.8	176.4	196.0	
63	20	CLAMP	28.0	56.0	84.0	112.0	140.0	-	-	-	-	-	
		UNCLAMP	31.2	62.4	93.6	124.8	156.0	-	-	-	-	-	

Weight table

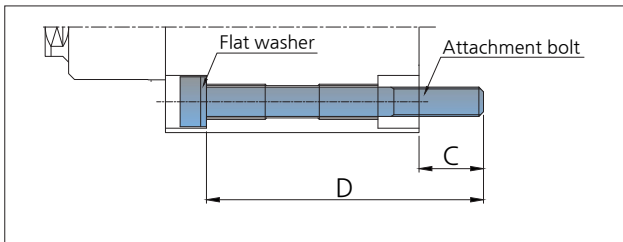
Clamp stroke (mm)	Tube size						Unit : g
	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	
10	224	283	446	518	922	1258	
20	250	320	495	570	1000	1365	
30	280	356	543	624	1080	1470	
50	-	-	640	730	1240	1688	

Bracket	Unit : g						
	Tube size	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63
ARM	100	100	200	200	350	1.25	
Flange (Include bolt)	130	150	175	210	370	580	

Optional parts

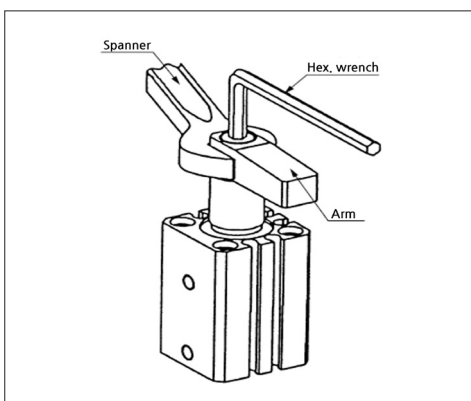
Tube size(mm)	ARM		Mounting type(FA/FB)	
	Item	Accessory parts	Item	Accessory parts
20	KRC-A020	Clamp bolt Hex. nut Hex. hole attachment bolt Spring washer	KRC-FA020	Hex. hole attachment bolt *4
25	KRC-A025		KRC-FA025	
32	KRC-A032		KRC-FA032	
40	KRC-A040		KRC-FA040	
50	KRC-A050		KRC-FA050	
63	KRC-A063		KRC-FA063	

Be sure to use a flat washer when attaching the cylinder through the hole.



- When installing for through holes
 - Please order a bolt (including flat washer) as the item number below.
 - If you purchase and install it separately, make sure to use flat washer.

Cylinder type		Item and size			Cylinder type		Item and size				
Bore size	Stroke	Item	C	D	Bore size	Stroke	Item	C	D		
KRC20-	10	BT-SHL1BM05075	9	75	KRC40-	10	BT-SHL1BM05080	11	80		
	20	BT-SHL1BM05085		85		20	BT-SHL1BM05090		90		
	30	BT-SHL1BM05095		95		30	BT-SHL1BM05100		100		
KRC25-	10	BT-SHL1BM05075	8	75		KRC50-	50		BT-SHL1BM05120	10.5	120
	20	BT-SHL1BM05085		85			10		BT-SHL1BM06090		90
	30	BT-SHL1BM05095		95	20		BT-SHL1BM06100	100			
KRC32-	10	BT-SHL1BM05085	9.5	85	KRC63-	30	BT-SHL1BM06110	10.5	110		
	20	BT-SHL1BM05095		95		50	BT-SHL1BM06130		130		
	30	BT-SHL1BM05105		105		10	BT-SHL1BM08095		95		
	50	BT-SHL1BM05125		125	20	BT-SHL1BM08105	105				
								14.1	115		
									135		



Caution

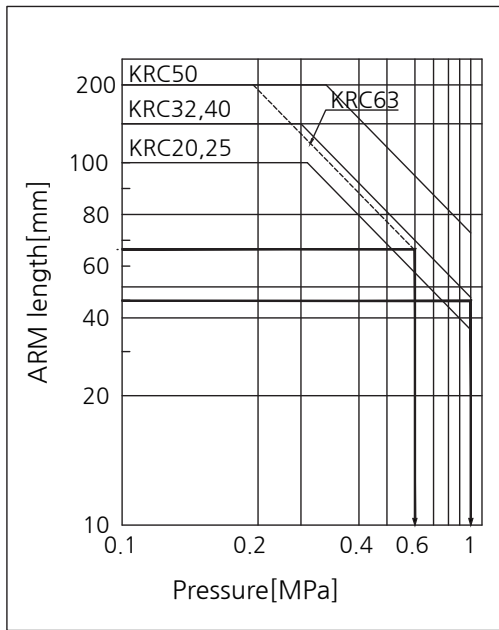
- Detaching the ARM from the rod may cause internal part damage. Make sure to fix the ARM with a spanner, etc. as shown on the left and with a hexagonal wrench tighten or loosen it.
- When disconnecting and reassembling the ARM, use screw sealing to prevent loosening.
- When tightening the flange mounting bolts tightened with excessive torque may damage the screw.

ARM Cautions for production

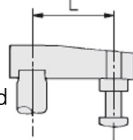
When creating ARM separately, note the following.

1. Permissible bending moment

Set the usage pressure for each ARM length within the graph range on the allowable bending moment graph that is applied to the load.

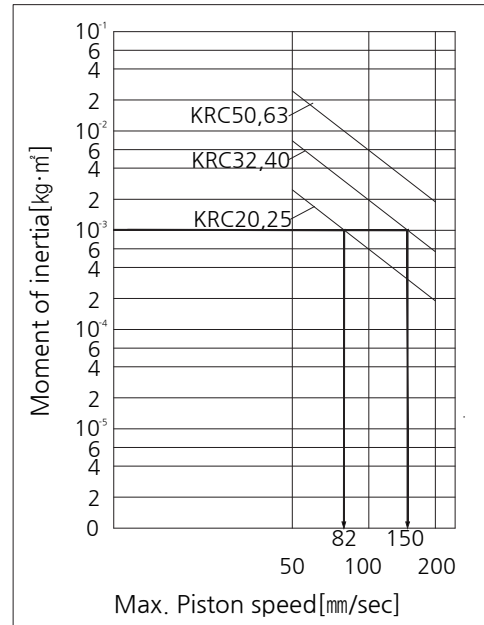


- For KRC63 the pressure used for ARM length 65 as 0.6 MPa Please use within 0.1~0.6MPa.
- For KRC32, 40, when ARM length 45 It can be used up to 1MPa maximum pressure.
- By ARM length if ARM is manufactured and used Set the usage pressure within the graph range.



2. Moment of inertia

Calculate the moment of inertia according to the condition of the ARM, and Consider the piston speed and use within the graph range.



- If the moment of inertia of ARM is 1×10^{-3} [kg·m²], the cylinder speed is
 - 82 mm/s or less in KRC20 and 25
 - Use at 150mm/s or below at KRC32, 40.
- To calculate the moment of inertia, see the following example of calculating the moment of inertia:
Note) The maximum speed reference for the piston is 1.6 times the average speed.

moment of inertia

- When using ARM other than the standard product

* Moment of inertia in ARM

$$I1 = m1 * \frac{A^2 + B^2}{12} + m1 * \left(\frac{A}{2} - S\right)^2$$

$$I2 = m2 * \frac{D^2}{8} + m2 * L^2$$

[e.g. Calculation] For cylinder internal diameter Ø20,25

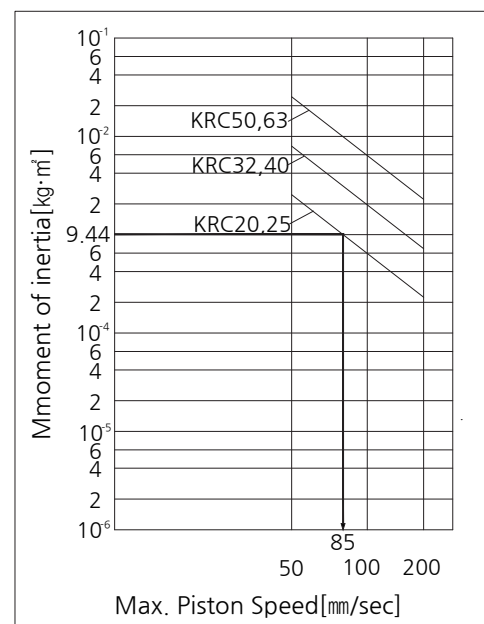
A=0.08	D=0.02
B=0.02	m1=0.25
S=0.01	m2=0.06
L=0.062	

$$I1 = 0.25 * \frac{0.08^2 + 0.02^2}{12} + 0.25 * \left(\frac{0.08}{2} - 0.01\right)^2 = 3.67 * 10^{-4}$$

$$I2 = 0.06 * \frac{0.02^2}{8} + 0.06 * 0.068^2 < 4.66 * 10^{-4}$$

Total moment of inertia is

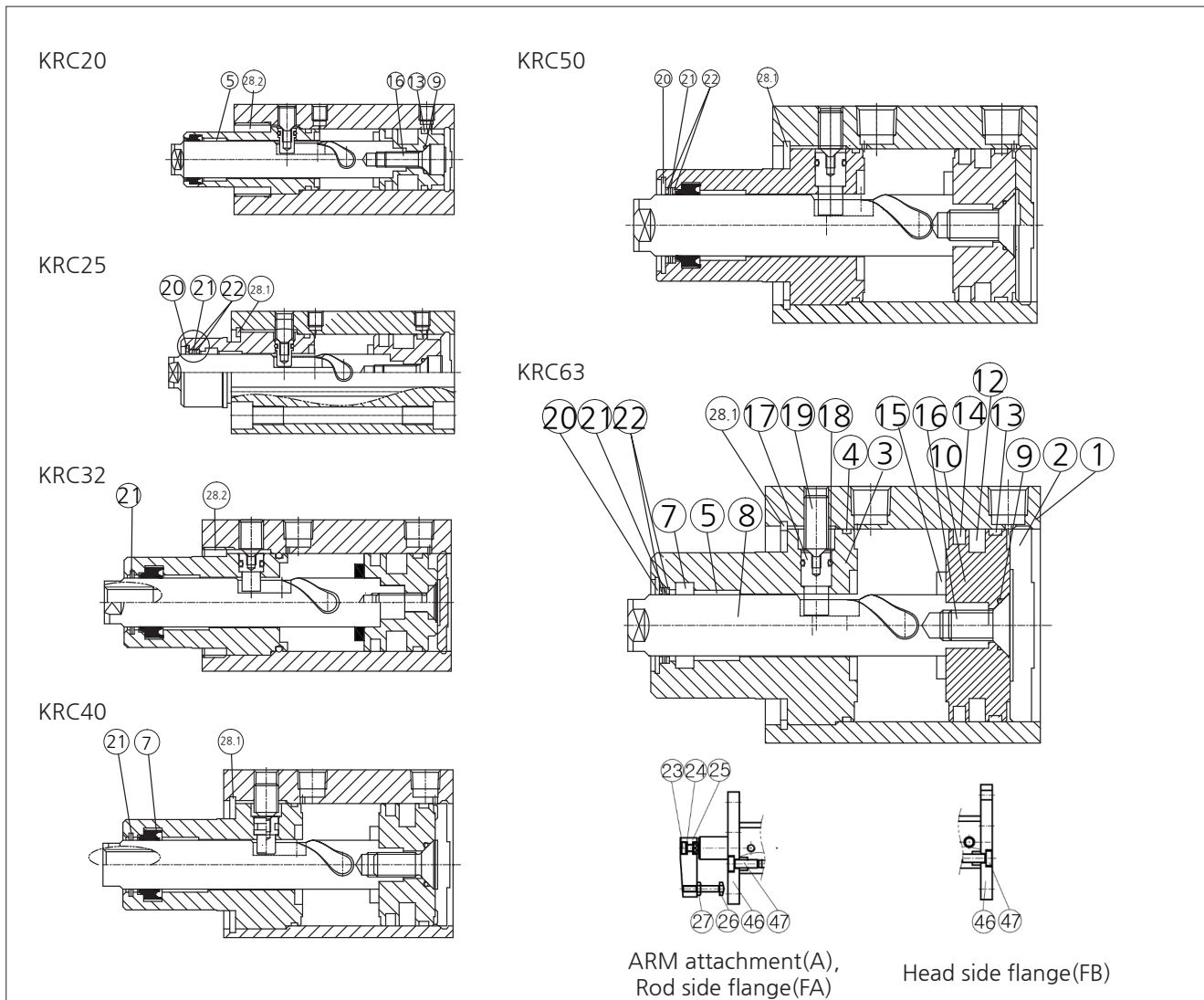
$$H0 * H1 < (2.565.77) * 10^{-4} = 9.44 * 10^{-4}$$



Model	Piston speed(mm/s)		Stroke	
	Max.	Avg.	Total	Time
KRC	85	53	17.5mm	0.33Sec

- ※ Average piston speed = Minimum speed/1.6
- ※ Total stroke = Clamp stroke + Rotation stroke
- ※ Please use it more than stroke time.

Structure(Standard)

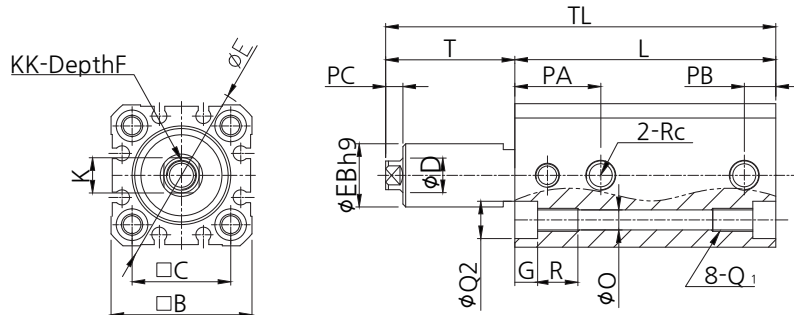


No.	Parts	Material	Notes
1	Tube	Aluminum alloy	Hard Anodizing
2	Cap cover	Aluminum alloy	Hard Anodizing
3	Rod cover	Aluminum alloy	Anodizing
4	Tube O-ring	Nitrile rubber	Special order(KB6) Fluorine Rubber
5	Rod bush	Rolled steel plate	
7	Rod packing	Nitrile rubber	Special order(KB6) Fluorine Rubber
8	Rod	Carbon steel Stainless steel	Ø32~Ø63 Ø20~Ø25
9	Rod O-ring	Nitrile rubber	Special order(KB6) Fluorine Rubber
10	Piston	Aluminum alloy	
12	Magnet	-	
13	Wear ring	Plastic resin	
14	Piston packing	Nitrile rubber	Special order(KB6) Fluorine Rubber
15	Damper(Up)	Urethane rubber	
15.1	Damper(Down)	Urethane rubber	
16	Piston bolt	Chrome molybdenum steel	

No.	Parts	Material	Notes
17	Guide pin	Carbon steel	Heat nitride treatment
18	Guide pin O-ring	Nitrile rubber	Special order(KB6) Fluorine Rubber
19	Guide pin fix bolt	Stainless steel	Cone set screw
20	Scraper stopping ring	Carbon tool steel	Ø25, Ø50, Ø63 Apply only
21	Scraper	Phosphor bronze	Ø20~Ø25 is not applied
22	Scraper retainer	Stainless steel	Ø25, Ø50, Ø63 Apply only
23	ARM Bolt	Chrome molybdenum steel	
24	Spring washer	Hard steel	
25	ARM	Rolled steel	
26	Clamp bolt	Chrome molybdenum steel	
27	Hex. nut	Rolled steel	
28.1	Stopping ring	Stainless steel	Ø20, Ø32 Apply only
28.2	Rod cover Stopping ring	Carbon tool steel	Ø20, Ø32 Exclude Apply
46	Flange	Rolled steel	
47	Flange attachment bolt	Chrome molybdenum steel	

Dimensions - Ø20, Ø25

Standard

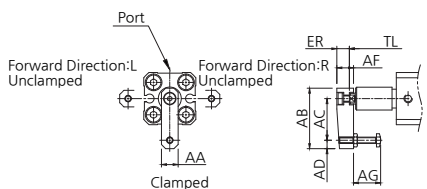


Unit:mm

Tube size	B	C	D	E	EB h9	EC	F	G	K	KK	O	PA	PB	PC	Q1	Q2	R	Rc
Ø20	36	25.5	12	47	18 _{-0.043}	17.9	11	7	10	M8X1.25	5.5	28	9	4	M6X1.0	9	10	M5
Ø25	40	28	12	52	23 _{-0.062}	22.5	11	7	10	M8X1.25	5.5	27.5	10.5	4	M6X1.0	9	10	M5

Tube size	Rod Status	Clamp stroke								
		10mm			20mm			30mm		
		L	T	TL	L	T	TL	L	T	TL
Ø20	Reverse	72	20.5	92.5	30.5	82	112.5	92	40.5	132.5
	Forward			112						142
Ø25	Reverse	73	20.5	93.5	30.5	83	113.5	93	40.5	133.5
	Forward			113						143

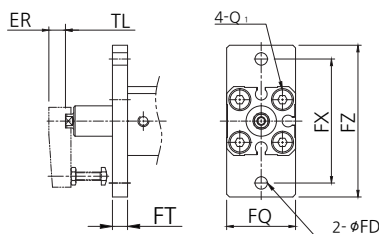
ARM type



Unit:mm

Tube size	ARM attachment dimensions						
	AA	AB	AC	AD	AF	AG	ER
Ø20	16	51	35	7	14	12~22	11.5
Ø25							

Flange type

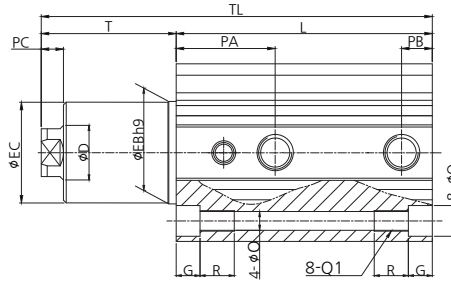
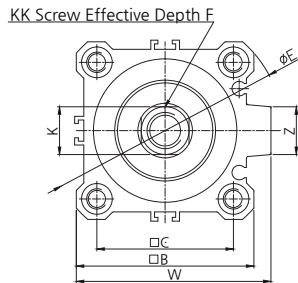


Unit:mm

Tube size	Flange attachment dimensions						
	FD	FQ	FT	FX	FY	FZ	Q1
Ø20	6.6	39	8	48	-	60	M6
Ø25		42		52		64	

Dimensions - Ø32, Ø40, Ø50, Ø63

Standard

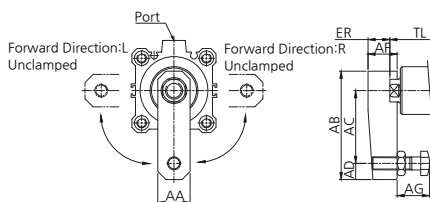


Unit:mm

Tube size	B	C	D	E	EB h9	EC	F	G	K	KK	O	PA	PB	PC	Q1	Q2	R	Rc	W	Z
Ø20	45	34	16	60	30 ⁰ _{-0.062}	29.5	12	7	14	M10X1.5	5.5	31.5	10.5	6.5	M6X1.0	9	10	1/8	49.5	14
Ø25	52	40		69								29	9						57	
Ø20	64	50	20	86	37 ⁰ _{-0.062}	36.5	15	8	17	M12X1.75	6.8	34	11.5	7.5	M8X1.25	11	14	1/4	71	18
Ø25	77	60		103								48 ⁰ _{-0.062}	47.5						10.5	

Tube size	Rod status	Clamp stroke											
		10mm			20mm			30mm			50mm		
		L	T	TL	L	T	TL	L	T	TL	L	T	TL
Ø20	Reverse	81.5	32	113.5	91.5	42	133.5	101.5	52	153.5	121.5	72	193.5
	Forward			138.5			168.5			198.5			258.5
Ø25	Reverse	75	39.5	114.5	85	49.5	134.5	95	59.5	154.5	115	79.5	194.5
	Forward			139.5			169.5			199.5			259.5
Ø20	Reverse	86.5	45.5	132	96.5	55.5	152	106.5	65.5	172	126.5	85.5	212
	Forward			161			191			221			281
Ø25	Reverse	90	45	135	100	55	155	110	65	175	130	85	215
	Forward			164			194			224			284

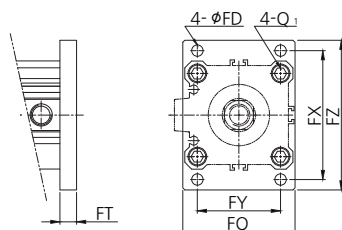
ARM type



Unit:mm

Tube size	ARM attachment dimensions						
	AA	AB	AC	AD	AF	AG	ER
Ø32	20	67	45	10	18	15~25	13.5
Ø40							
Ø50	22	88	65	10	22	30~40	17.5
Ø63							

Flange type



Unit:mm

Tube size	Flange attachment dimensions						
	FD	FQ	FT	FX	FY	FZ	Q1
Ø32	5.5	48	8	56	34	65	M6
Ø40		54		62	40	72	
Ø50	6.6	67	9	76	50	89	M8
Ø63	9	80		92	60	108	M10