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WWW.C-JAC.COM WeChat public account Alibaba

Our company are subject to change without prior notice

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CJAC

SHOCK ABSORBERS /

2023/09

C-JAC INDUSTRIAL CO. LTD.

SHOCK ABSORBERS

Outstanding Motion Controls

Speed Up & Protection

C-JAC INDUSTRIAL CO., LTD.

Taiwan C-JAC Industrial Co., Ltd. was established in 1987. The Group currently has two production sites and over 200 people employees. The main products include heavy-duty and super-large damping cylinder shock absorbers, shock absorbers for circuit breakers, precision speed stabilizers, and pneumatic-driven check valves, among others. Shock absorbers are used in a wide range of industries, including heavy-duty stacking equipment, railroad stoppers, automation equipment, vacuum breakers, and other industries as a booster component for manufacturing. In addition to the domestic market, the Group actively expanded our overseas market in 1999 by establishing Dongguan and Shanghai Qingpu factories in China. To strengthen the company's research and development capabilities and expand its production capacity for the international market, C-JAC Industrial Co., Ltd. established its headquarters in Taichung Industrial Park in 2005 to grasp the global pulse and lead the company to the scale of a worldwide factory.

In 2013, Taiwan C-JAC Industrial Co., Ltd. established C-JAC Industrial Co., LLC. in Suzhou. Meanwhile, it also dedicated efforts to enhance the research, development, and production capabilities of the Taichung plant to serve as a benchmark for all the factories, continuously elevating the depth and breadth of CJAC Group.

Since its establishment, Taiwan C-JAC Industrial Co., Ltd. has continuously strived for excellence and made remarkable progress over the past 30 years. We have established our own brand CJAC and provide the industry with high-quality and reasonable-price components, playing an important role in industrial automation and upgrading. Furthermore, we have expanded our presence into the international market, receiving significant recognition. "With a steadfast approach rooted in its foundation while reaching outwards," CJAC has progressed steadily, step by step, and will be poised to enter a new era similarly.

Sustainable business management is the springhead of corporate survival and growth. Only by continuously improving product quality, meeting customer needs, and enhancing productivity can a company achieve its development goals. Our development goals are "technology as the guide, striving for excellence;" "prioritizing quality and pursuing perfection;" "innovation as the driving force, practicing pragmatic management;" and "treating customers with integrity and aiming for mutually beneficial outcomes."

"Customer foremost, quality first."

▲ C-JAC INDUSTRIAL CO. LTD.

▼ SZHOU C-JAC INDUSTRIAL CO., LTD

Why do we need a shock absorber?

At the present days, the competition in the market is getting bigger, and the acceleration of the production schedule is the fundamental way for enterprises to survive. Therefore, the easiest way to increase production volume is to increase the speed of the production machine, but this can easily lead to excessive vibration and noise, which may damage the machinery. Therefore, in this case, product verification would often render unqualified result, and because of the speed of the machine, excessive impact will also cause a significant drop in safety, which may cause irreparable damages.
CJAC's industrial shock absorber reduces vibration and noise in automated machinery and converts the kinetic energy generated by moving objects into heat energy, and that is later released into the air. Therefore, it is possible to effectively balance the object during the operation, thereby increasing the efficiency of the machine, and increasing the productivity and prolonging the life of the machine. As a result, it can reduce the maintenance cost, stabilize the mechanical operation, and improve the product quality. This design makes the operation of the machine safer, reducing accident rates, making the working environment comfortable; therefore improves personnel efficiency and ultimately, it help increase the competitive advantage of the enterprise.

The benefits of industrial shock absorber?

Reduce equipment wear and extend machine life.
Reduce maintenance costs and absorb impact energy.
Reduce vibration noise and make working environment quiet and comfortable.
Speed up machine frequency and improve productivity.
Enhance production capacity and improve enterprise competitiveness

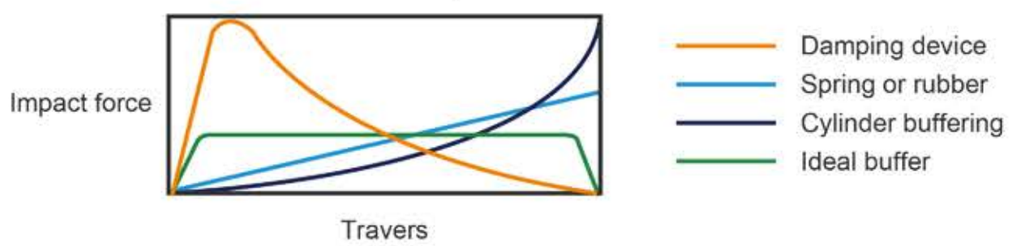
The buffering effect of the shock absorber?

The impact resistance does not produce rebound force.
The noise is small when colliding, the vibration is weak.
The cushioning process is smooth. These are the old cushion, such as spring cushions or PU cushions cannot do.

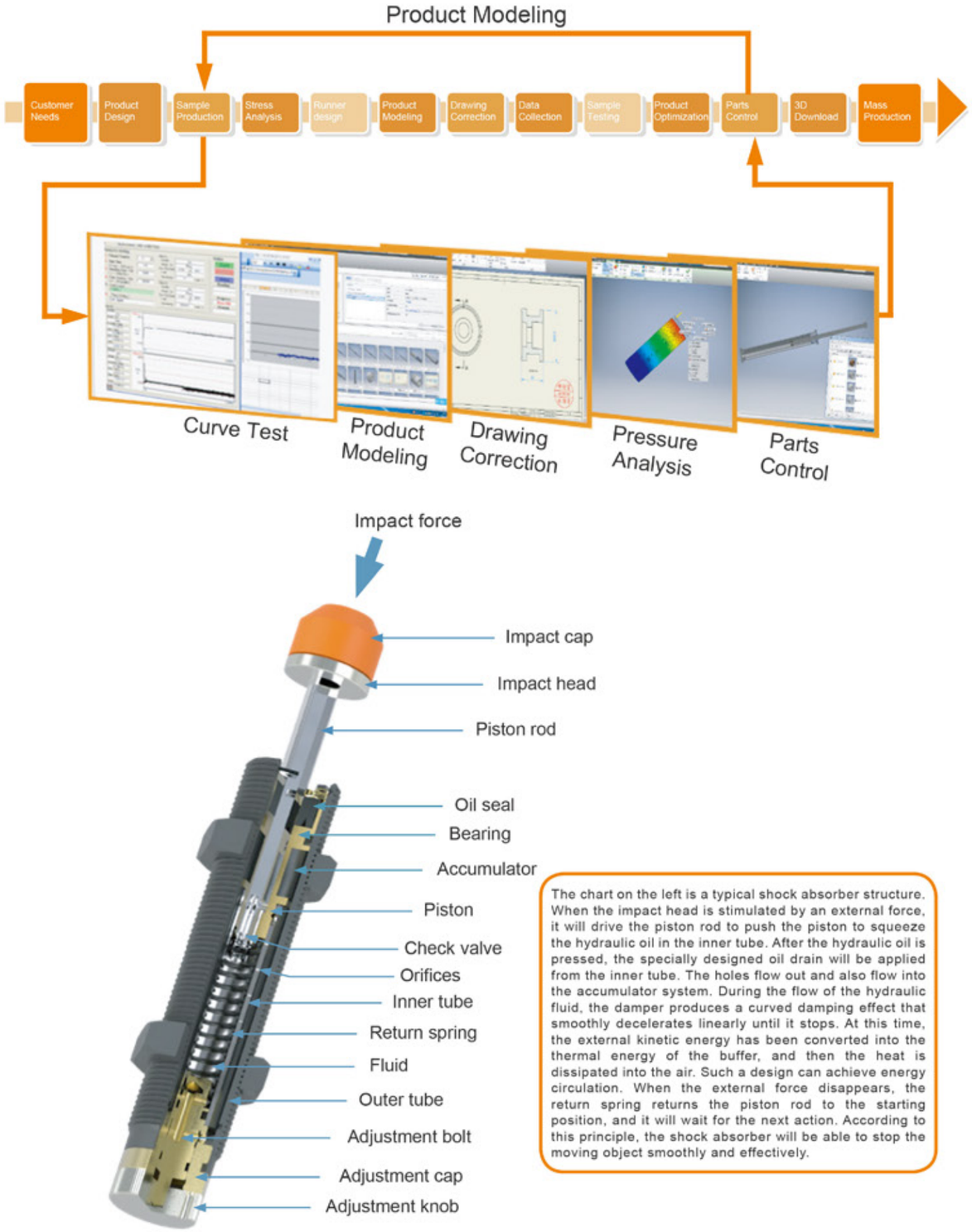
Online calculation and selection of products?

WWW.C-JAC.COM

Buffer effects comparison

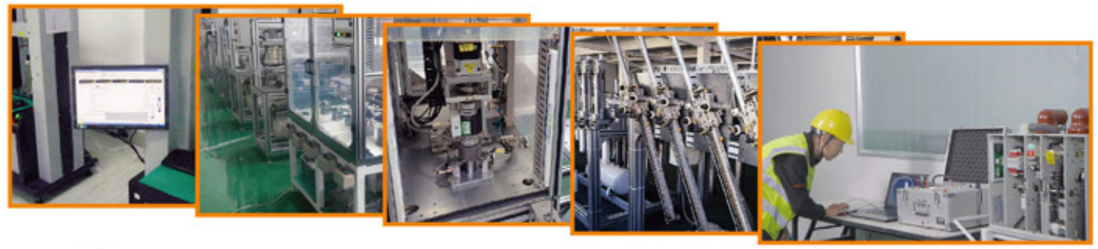


CJAC Shock Absorber Research and Analysis System



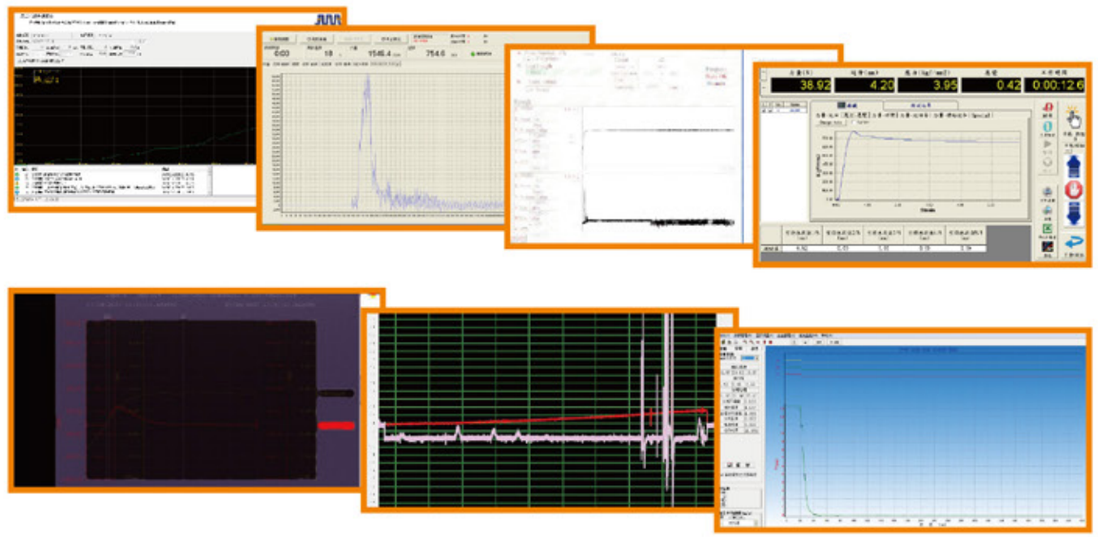
The chart on the left is a typical shock absorber structure. When the impact head is stimulated by an external force, it will drive the piston rod to push the piston to squeeze the hydraulic oil in the inner tube. After the hydraulic oil is pressed, the specially designed oil drain will be applied from the inner tube. The holes flow out and also flow into the accumulator system. During the flow of the hydraulic fluid, the damper produces a curved damping effect that smoothly decelerates linearly until it stops. At this time, the external kinetic energy has been converted into the thermal energy of the buffer, and then the heat is dissipated into the air. Such a design can achieve energy circulation. When the external force disappears, the return spring returns the piston rod to the starting position, and it will wait for the next action. According to this principle, the shock absorber will be able to stop the moving object smoothly and effectively.

CJAC Testing Equipment



CJAC Testing Equipment

The quality of the shock absorber has always been the highest guiding principle of CJAC's business operations. Through industry-university cooperation, we continue to break through the cooperation with professional testing manufacturers to meet the important demands of CJAC's standard of shock absorber operation, which includes function testing, product lifespan testing, new product development, safety confirmation, etc. All of our tests are thoroughly checked by quality assurance personnel, and the process is accurate and objective. All the shock absorbers' performance data such as impact force, energy absorption, impact velocity, and force-stroke relationship diagrams can be obtained.



CONTENTS

▼ Vibration Control

Air Compressor, Processing Facility, Precision Device

▼ Safe and Controllable

Amusement facility, Outdoor cable car, Port facility, Paper making machine, Railroad blocker, Steel & iron smelting, etc.

▼ Movement Control

Oil seal trimming machine, Woodworking machine, Switch door, High speed railroad, Power drilling machine, heavy-duty stacking equipment, etc.

▼ Vibration Control

Automation, fluid transmission & hydraulic pneumatic, printing technology - screen printing & pad printing machine, handling & clamping technology - robotic arm, blow molding machines, automobile production line, lithium battery production line, assembly production line, medical drug machine laser cutting, high-pressure switches - vacuum breakers, wooden house beams, brick and tile machinery, testing machine, metal processing machinery, tire machinery - vulcanizing machine & molding machine, truck & overhead crane, casting equipment, food packaging machine, etc.

Calculation Example

Common calculation formulae
Energy: $E_K=mv^2/2$
Driving energy: $E_D=F\cdot S$
Free fall velocity: $v=\sqrt{2g\cdot H}$
Pneumatic cylinder propelling force: $F=0.0785Pd^2$
Maximum impact force (estimated): $F_m=1.2\cdot E_T/S$
Propelling force generated by electric motor: $F=kW\cdot 2.5/v$
Total energy absorbed per hour: $E_{TC}=E_T\cdot C$

Before we decide the size specifications, we have to know four parameters:

1. Total weight of moving objects m(Kg)
2. Speed of the impact v(m/s)
3. Propelling force F(N)
4. Impacting times per hour C (/hr)

Symbols	Unit	Description
μ		Friction variables
α	(rad)	Inclined angle
θ	(rad)	Impacted angle while moving
ω	(rad/s)	Angle speed
A	(m)	Width
B	(m)	Thickness
C	(/hr)	Impacting times per hour
d	(mm)	Cylinder Inner Diameter
E_D	(Nm)	Driving energy
E_K	(Nm)	Kinetic energy
E_T	(Nm)	Energy
E_{TC}	(Nm)	Total energy per hour
F	(N)	Propelling force
F_m	(N)	Maximum impacting force
g	(m/s^2)	Acceleration of gravity
H	(m)	Height
HM		Motor braking variables (normal value is 2.5)
kW	(kW)	Power of the electric motor
m	(Kg)	Total weight of moving objects
Me	(Kg)	Counted weight
P	(bar)	Activation pressure
R	(m)	Radius
Rs	(m)	Distance between shock absorber and rotational axis
S	(m)	Stroke
T	(Nm)	Driving torque
t	(s)	Deceleration time
v	(m/s)	Speed of the impact

1. Horizontal Impact

Conditions	Formulae and calculation demonstration
m=300Kg	$E_K=\frac{mv^2}{2}=\frac{300\cdot 1.0^2}{2}=150Nm$
v=1.0m/s	$E_T=E_K=150Nm$
S=0.05m	$E_{TC}=E_T\cdot C=150\cdot 300=45000Nm/hr$
C=300/hr	$Me=\frac{2E_T}{v^2}=\frac{2\cdot 150}{1.0^2}=300Kg$

The result of the calculation suggests the use of one AD3650 shock absorber

2. Horizontal impacts with propelling force

Conditions	Formulae and calculation demonstration
m=300Kg	$E_K=\frac{mv^2}{2}=\frac{300\cdot 1.2^2}{2}=216Nm$
v=1.2m/s	$E_D=F\cdot S=0.0785Pd^2\cdot S=0.0785\cdot 4\cdot 100^2\cdot 0.05=157Nm$
S=0.05m	$E_T=E_K+E_D=216+157=373Nm$
P=4bar	$E_{TC}=E_T\cdot C=373\cdot 300=111900Nm/hr$
d=100mm	$Me=\frac{2E_T}{v^2}=\frac{2\cdot 373}{1.2^2}=518Kg$
C=300/hr	

The result of the calculation suggests the use of one AD4250 shock absorber

3. Free fall impact

Conditions	Formulae and calculation demonstration
m=40Kg	$v=\sqrt{2g\cdot H}=\sqrt{2\cdot 9.81\cdot 0.4}=2.8m/s$
H=0.4m	$E_K=\frac{mv^2}{2}=\frac{40\cdot 2.8^2}{2}=157Nm$
S=0.06m	$E_D=F\cdot S=mg\cdot S=40\cdot 9.81\cdot 0.06=23.5Nm$
C=200/hr	$E_T=E_K+E_D=157+23.5=180.5Nm$
	$E_{TC}=E_T\cdot C=180.5\cdot 200=36100Nm/hr$
	$Me=\frac{2E_T}{v^2}=\frac{2\cdot 180.5}{2.8^2}=46Kg$

The result of the calculation suggests the use of one AC3660 shock absorber

4. Free fall with propelling force

Conditions	Formulae and calculation demonstration
m=40Kg	$E_K=\frac{mv^2}{2}=\frac{40\cdot 1.0^2}{2}=20Nm$
S=0.025m	$E_D=F\cdot S=(mg+0.0785Pd^2)\cdot S$
P=5bar	$=(40\cdot 9.81+0.0785\cdot 5\cdot 50^2)\cdot 0.025=34.3Nm$
d=50mm	$E_T=E_K+E_D=20+34.3=54.3Nm$
C=200/hr	$E_{TC}=E_T\cdot C=54.3\cdot 200=10860Nm/hr$
v=1.0m/s	$Me=\frac{2E_T}{v^2}=\frac{2\cdot 54.3}{1.0^2}=108.6Kg$

The result of the calculation suggests the use of one AD2525 shock absorber

5. Horizontal impacts with motor driven

Conditions	Formulae and calculation demonstration
m=400Kg	$E_K=\frac{mv^2}{2}=\frac{400\cdot 1.0^2}{2}=200Nm$
v=1.0m/s	$E_D=F\cdot S=\frac{kW\cdot HM}{v}\cdot S=\frac{1500\cdot 2.5}{1.0}\cdot 0.075=281Nm$
kW=1.5kW	$E_T=E_K+E_D=200+281=481Nm$
HM=2.5	$E_{TC}=E_T\cdot C=481\cdot 60=28860Nm/hr$
S=0.075m	$Me=\frac{2E_T}{v^2}=\frac{2\cdot 481}{1.0^2}=962Kg$
C=60/hr	

The result of the calculation suggests the use of one AD4275 shock absorber

6. Tilt impact

Conditions	Formulae and calculation demonstration
m=150Kg	$v=\sqrt{2g\cdot H}=\sqrt{2\cdot 9.81\cdot 0.3}=2.43m/s$
H=0.3m	$E_K=\frac{mv^2}{2}=\frac{150\cdot 2.43^2}{2}=443Nm$
S=0.075m	$E_D=F\cdot S=m\cdot g\cdot S\cdot \sin\alpha=150\cdot 9.81\cdot 0.075\cdot \sin 30°$
α =30°	$=55.2Nm$
C=200/hr	$E_T=E_K+E_D=443+55.2=498.2Nm$
	$E_{TC}=E_T\cdot C=498.2\cdot 200=99640Nm/hr$
	$Me=\frac{2E_T}{v^2}=\frac{2\cdot 498.2}{2.43^2}=168.7Kg$

The result of the calculation suggests the use of one AD4275 shock absorber

7. Horizontal revolving door

Conditions	Formulae and calculation demonstration
m=20Kg	$I=\frac{m(4A^2+B^2)}{12}=\frac{20(4\cdot1.0^2+0.05^2)}{12}=6.67Kg\cdot m^2$
ω=2.0rad/s	$E_K=\frac{I\omega^2}{2}=\frac{6.67\cdot2.0^2}{2}=13.34Nm$
T=20Nm	$\theta=\frac{S}{R_s}=\frac{0.016}{0.8}=0.02rad$
R_s=0.8m	$E_D=T\cdot\theta=20\cdot0.02=0.4Nm$
A=1.0m	$E_T=E_K+E_D=13.34+0.4=13.74Nm$
B=0.05m	$E_{TC}=E_T\cdot C=13.74\cdot100=1374Nm/hr$
S=0.016m	$v=\omega\cdot R_s=2.0\cdot0.8=1.6m/s$
C=100/hr	$Me=\frac{2E_T}{v^2}=\frac{2\cdot13.74}{1.6^2}=10.73Kg$

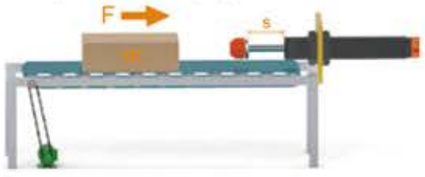
The result of the calculation suggests the use of one AD2016 shock absorber

8. Rotational index with propelling force

Conditions	Formulae and calculation demonstration
m=200Kg	$I=\frac{mR^2}{2}=\frac{200\cdot0.5^2}{2}=25Kg\cdot m^2$
ω=1.0rad/s	$E_K=\frac{I\omega^2}{2}=\frac{25\cdot1.0^2}{2}=12.5Nm$
T=100Nm	$\theta=\frac{S}{R_s}=\frac{0.025}{0.4}=0.0625rad$
R=0.5m	$E_D=T\cdot\theta=100\cdot0.0625=6.25Nm$
R_s=0.4m	$E_T=E_K+E_D=12.5+6.25=18.75Nm$
S=0.025m	$E_{TC}=E_T\cdot C=18.75\cdot100=1875Nm/hr$
C=100/hr	$v=\omega\cdot R_s=1.0\cdot0.4=0.4m/s$
	$Me=\frac{2E_T}{v^2}=\frac{2\cdot18.75}{0.4^2}=234.4Kg$

The result of the calculation suggests the use of one AD3625 shock absorber

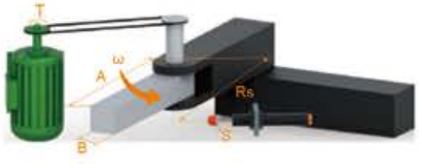
9. Conveyer with a horizontal force



Conditions	Formulae and calculation demonstration
m=150Kg	$E_K=\frac{mv^2}{2}=\frac{150\cdot0.5^2}{2}=18.75Nm$
v=0.5m/s	$E_D=F\cdot S=mg\mu\cdot S$
μ=0.25	$=150\cdot9.81\cdot0.25\cdot0.02=7.35Nm$
S=0.02m	$E_T=E_K+E_D=18.73+7.35=26.1Nm$
C=120/hr	$E_{TC}=E_T\cdot C=26.1\cdot120=3132Nm/hr$
	$Me=\frac{2E_T}{v^2}=\frac{2\cdot26.1}{0.5^2}=208.8Kg$

The result of the calculation suggests the use of one AC2020-3 shock absorber

10. Rotational arm with propelling force



Conditions	Formulae and calculation demonstration
m=40Kg	$I=\frac{m(4A^2+B^2)}{12}=\frac{40(4\cdot0.5^2+0.05^2)}{12}=3.34Kg\cdot m^2$
ω=2.0rad/s	$E_K=\frac{I\omega^2}{2}=\frac{3.34\cdot2.0^2}{2}=6.68Nm$
T=10Nm	$\theta=\frac{S}{R_s}=\frac{0.016}{0.4}=0.04rad$
R_s=0.4m	$E_D=T\cdot\theta=10\cdot0.04=0.4Nm$
A=0.5m	$E_T=E_K+E_D=6.8+0.4=7.08Nm$
B=0.05m	$E_{TC}=E_T\cdot C=7.08\cdot50=354Nm/hr$
S=0.016m	$v=\omega\cdot R_s=2.0\cdot0.4=0.8m/s$
C=50/hr	$Me=\frac{2E_T}{v^2}=\frac{2\cdot7.08}{0.8^2}=22.13Kg$

The result of the calculation suggests the use of one AC1416-2 shock absorber

Applications

* We only provide shock absorbers

CJAC's shock absorber for cylinder application table

Cylinder I.D	ø6	ø10	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80
5Kg/cm² Cylinder propulsive force Kgf	1.4	3.9	5.7	10	15.7	24.5	40	62.8	98	155	251
AC0604-S	●	●	●								
AC0806		●	●	●							
AC1005		●	●	●							
AC1008		●	●	●							
AC1210			●	●	●						
AC1412			●	●	●						
AC1416			●	●	●	●					
AC1420			●	●	●	●					
AC2020				●	●	●	●	●			
AC2030				●	●	●	●	●			
AC2050					●	●	●	●			
AC2525						●	●	●	●	●	●
AC2540						●	●	●	●	●	●
AC2580						●	●	●	●	●	●
AC3680							●	●	●	●	●

Cylinder I.D	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø160	ø200	ø250
5Kg/cm² Cylinder propulsive force Kgf	10	15.7	24.5	40	62.8	98	155	251	393	613	1005	1570	2454
AD1410	●	●	●	●									
AD1425	●	●	●	●									
AD2016		●	●	●	●								
AD2025		●	●	●	●								
AD2525			●	●	●	●	●						
AD2530			●	●	●	●	●						
AD2540			●	●	●	●	●						
AD2550			●	●	●	●	●						
AD2580			●	●	●	●	●						
AD3625				●	●	●	●	●	●				
AD3650				●	●	●	●	●	●				
AD4225						●	●	●	●	●			
AD4250						●	●	●	●	●			
AD4275						●	●	●	●	●			
AD64050									●	●	●	●	
AD64100									●	●	●	●	
AD64150									●	●	●	●	
AD85050										●	●	●	●
AD85090										●	●	●	●
AD85125										●	●	●	●

AC Series

Self compensation type shock absorber

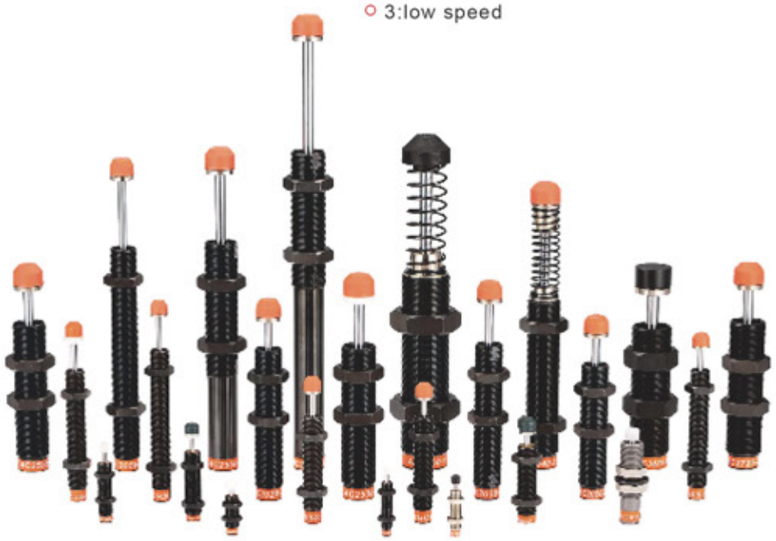
The AC series is designed for fixed construction. Linear deceleration of moving objects is maintained through specially designed and tested oil holes and alignment. From high-speed light loads to low speeds and high loads, this shock absorber absorbs the appropriate energy without adjustment. After the load is removed, the axis is pushed to the original position by the return spring. The AC series has three models of high speed, medium speed, and low speed to meet your different requirements.

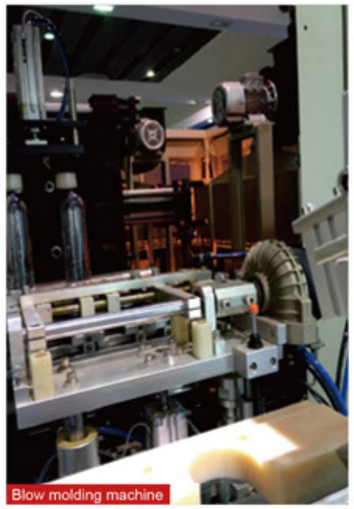
- Material —— Outer pipe: AISI1215 and STKM11A oxidized black, nickel plating treatment, and Nitriding blasting enhances rust resistance. Some models are made of SUS303 stainless steel, which has a stronger rust resistance.
  Piston rod: hard chromium plating treatment and special seals for longer lifespans.
  Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning.
- Speed range —— 0.5~4.0m/s
- Temperature range —— -10~+80°C
- Installation —— CJAC offers customers a variety of mounting options such as nut (NUT), flange (F), positioning stop nut (SC), angle adapter (SLA), and more. In addition, customers can also customize services according to their own requirements.
- Special demands —— CJAC can customize solutions based on your requirements.

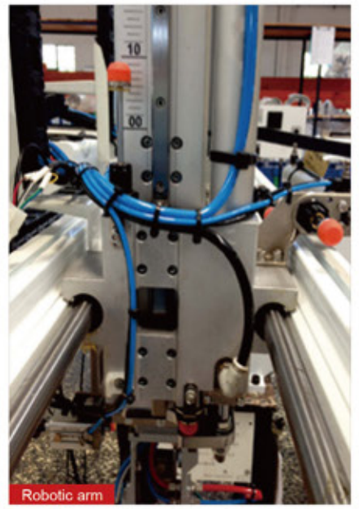
Model Description

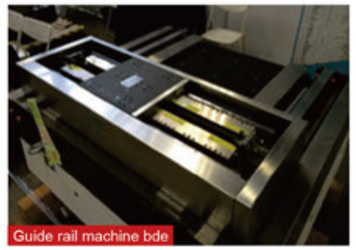
AC 08 – 06 – 1 – □

- AC: Model
- 08: outer diameter (mm)
- 06: Buffer stroke (mm)
- 1: 1:high speed; 2:medium speed; 3:low speed
- □: Blank:With impact head; N:Without impact head

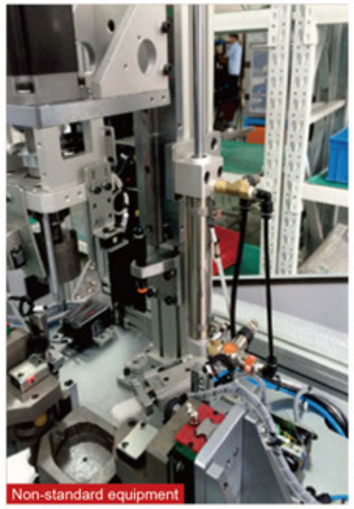


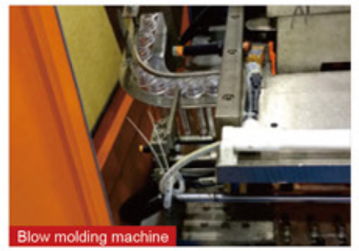

Blow molding machine

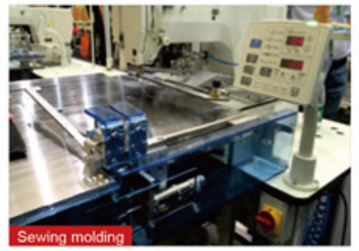

Robotic arm

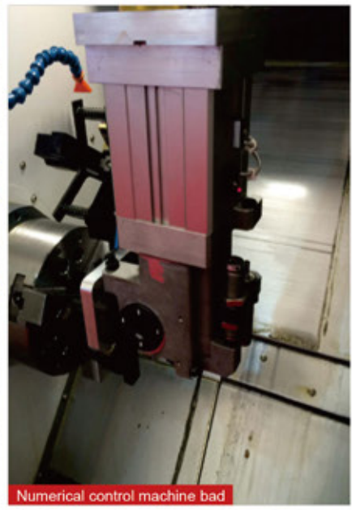

Guide rail machine bde


Robotic arm

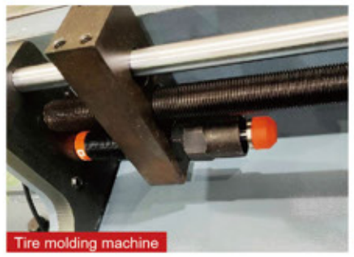

Non-standard equipment


Blow molding machine


Sewing molding


Numerical control machine bad


Rubber molding machine

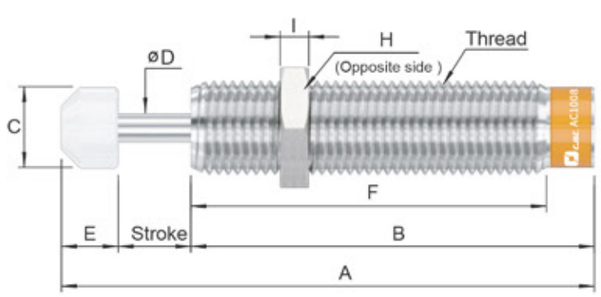

Tire molding machine


Non-standard equipment


Baeaker switch

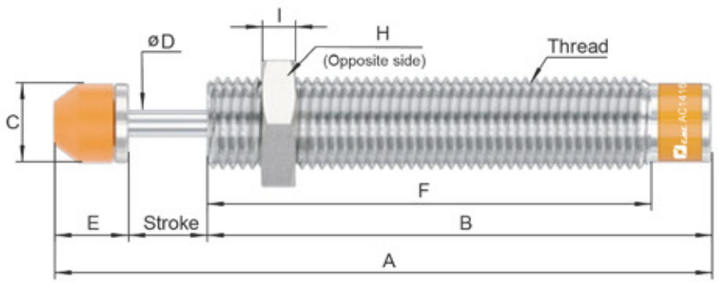
Model	Stroke (mm)	Maximum absorbed energy Nm(ET)	Absorbed energy per hour Nm(ETC)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Without impact head	With impact hea	Positioning nut (SC)	Operating temperature (Non-frozen) (℃)	Weight (g)
AC0805	5	1.8	7,800	0.5	2.0	o	o	o	-10~+80	10
AC0806-1	6	2	8,800	0.5	2.0	o	o	o	-10~+80	11
AC0806-2	6	2	8,800	2.0	1.0	o	o	o	-10~+80	11
AC0806-3	6	2	8,800	6.0	0.5	o	o	o	-10~+80	11
AC1005-1	5	3	10,800	1.0	3.0	o	o	o	-10~+80	14
AC1005-2	5	3	10,800	3.0	1.5	o	o	o	-10~+80	14
AC1005-3	5	3	10,800	7.0	0.8	o	o	o	-10~+80	14
AC1008-1	8	4	15,200	2.0	3.0	o	o	o	-10~+80	20
AC1008-2	8	4	15,200	4.0	1.5	o	o	o	-10~+80	20
AC1008-3	8	4	15,200	9.0	0.8	o	o	o	-10~+80	20
AC1210-1	10	5	17,640	5.0	3.0	o	o	o	-10~+80	31.5
AC1210-2	10	5	17,640	10.0	1.5	o	o	o	-10~+80	31.5
AC1210-3	10	5	17,640	30.0	0.8	o	o	o	-10~+80	31.5
AC1408	8	12	22,000	6	3.0	o	o	o	-10~+80	65
AC1412-1	12	15	30,000	8	3.0	o	o	o	-10~+80	80
AC1412-2	12	15	30,000	50	1.5	o	o	o	-10~+80	80
AC1412-3	12	15	30,000	100	0.8	o	o	o	-10~+80	80
AC1416-1	16	20	35,000	10	3.0	o	o	o	-10~+80	85
AC1416-2	16	20	35,000	70	1.5	o	o	o	-10~+80	85
AC1416-3	16	20	35,000	150	0.8	o	o	o	-10~+80	85

FIG. 1



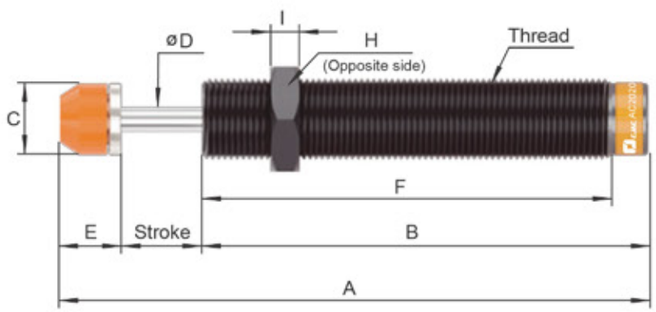
Model	Thread	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	H (mm)	I (mm)	Illustration
AC0805	M8x1.0	5	42	32	6	2.8	5	27.3	11	3	1
AC0806-1	M8x1.0	6	50	38	6.6	3	6	33	11	3	1
AC0806-2	M8x1.0	6	50	38	6.6	3	6	33	11	3	1
AC0806-3	M8x1.0	6	50	38	6.6	3	6	33	11	3	1
AC1005-1	M10x1.0	5	38.7	27.7	8.6	2.8	6	22.9	12.7	3	1
AC1005-2	M10x1.0	5	38.7	27.7	8.6	2.8	6	22.9	12.7	3	1
AC1005-3	M10x1.0	5	38.7	27.7	8.6	2.8	6	22.9	12.7	3	1
AC1008-1	M10x1.0	8	57	43	8.6	3	6	38	12.7	3	1
AC1008-2	M10x1.0	8	57	43	8.6	3	6	38	12.7	3	1
AC1008-3	M10x1.0	8	57	43	8.6	3	6	38	12.7	3	1
AC1210-1	M12x1.0	10	68.8	50	10.3	3	8.8	45.5	14	4	2
AC1210-2	M12x1.0	10	68.8	50	10.3	3	8.8	45.5	14	4	2
AC1210-3	M12x1.0	10	68.8	50	10.3	3	8.8	45.5	14	4	2
AC1408	M14x1.5	8	73.5	55	12	4	11.2	50.5	19	5	2
AC1412-1	M14x1.5	12	99.2	76	12	4	11.2	67	19	5	2
AC1412-2	M14x1.5	12	99.2	76	12	4	11.2	67	19	5	2
AC1412-3	M14x1.5	12	99.2	76	12	4	11.2	67	19	5	2
AC1416-1	M14x1.5	16	122.2	95	12	4	11.2	86	19	5	2
AC1416-2	M14x1.5	16	122.2	95	12	4	11.2	86	19	5	2
AC1416-3	M14x1.5	16	122.2	95	12	4	11.2	86	19	5	2

FIG. 2



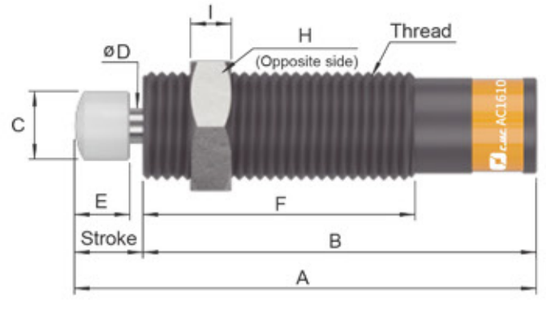
Model	Stroke (mm)	Maximum absorbed energy Nm(E1)	Absorbed energy per hour Nm(E3C)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Without impact head	With impact hea	Positioning nut (SC)	Operating temperature (Non-frozen) (°C)	Weight (g)
AC1416-1C	16	20	35,000	10	3.0	o	o	o	-10~+80	80
AC1416-2C	16	20	35,000	70	1.5	o	o	o	-10~+80	80
AC1416-3C	16	20	35,000	150	0.8	o	o	o	-10~+80	80
AC1420-1	20	24	36,000	15	3.0	o	o	o	-10~+80	95
AC1420-2	20	24	36,000	90	1.5	o	o	o	-10~+80	95
AC1420-3	20	24	36,000	180	0.8	o	o	o	-10~+80	95
AC1425-1	25	28	37,000	20	3.0	o	o	o	-10~+80	105
AC1425-2	25	28	37,000	150	1.5	o	o	o	-10~+80	105
AC1425-3	25	28	37,000	250	0.8	o	o	o	-10~+80	105
AC1610	10	16	42,000	30	3.5	o	o	o	-10~+80	165
AC2020-1	20	40	40,000	30	3.5	o	o	o	-10~+80	215
AC2020-2	20	40	40,000	200	2.0	o	o	o	-10~+80	215
AC2020-3	20	40	40,000	700	1.0	o	o	o	-10~+80	215
AC2030-1	30	50	48,000	30	3.5	o	o	o	-10~+80	220
AC2030-2	30	50	48,000	200	2.0	o	o	o	-10~+80	220
AC2030-3	30	50	48,000	700	1.0	o	o	o	-10~+80	220
AC2050-1	50	60	60,000	60	3.5	o	o	o	-10~+80	300
AC2050-2	50	60	60,000	400	2.0	o	o	o	-10~+80	300
AC2050-3	50	60	60,000	1,200	1.0	o	o	o	-10~+80	300
AC2525-1	25	80	54,000	200	4.0	o	o	o	-10~+80	330
AC2525-2	25	80	54,000	800	2.5	o	o	o	-10~+80	330
AC2525-3	25	80	54,000	1,500	1.0	o	o	o	-10~+80	330
AC2530-2	30	92	62,100	900	2.0	o	o	o	-10~+80	350

FIG. 1



Model	Thread	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	H (mm)	I (mm)	Illustration
AC1416-1C	M14x1.5	16	103.2	76	12	4	11.2	67	19	5	1
AC1416-2C	M14x1.5	16	103.2	76	12	4	11.2	67	19	5	1
AC1416-3C	M14x1.5	16	103.2	76	12	4	11.2	67	19	5	1
AC1420-1	M14x1.5	20	126.2	95	12	4	11.2	86	19	5	1
AC1420-2	M14x1.5	20	126.2	95	12	4	11.2	86	19	5	1
AC1420-3	M14x1.5	20	126.2	95	12	4	11.2	86	19	5	1
AC1425-1	M14x1.5	25	146.2	110	12	4	11.2	101	19	5	1
AC1425-2	M14x1.5	25	146.2	110	12	4	11.2	101	19	5	1
AC1425-3	M14x1.5	25	146.2	110	12	4	11.2	101	19	5	1
AC1610	M16x1.5	10	68	58	10	5	8	40	19	6	2
AC2020-1	M20x1.5	20	145.3	110	17.8	6	15.3	101	26	7	1
AC2020-2	M20x1.5	20	145.3	110	17.8	6	15.3	101	26	7	1
AC2020-3	M20x1.5	20	145.3	110	17.8	6	15.3	101	26	7	1
AC2030-1	M20x1.5	30	158.3	113	17.8	6	15.3	104	26	7	1
AC2030-2	M20x1.5	30	158.3	113	17.8	6	15.3	104	26	7	1
AC2030-3	M20x1.5	30	158.3	113	17.8	6	15.3	104	26	7	1
AC2050-1	M20x1.5	50	232.8	167	17.8	6	15.8	158	26	7	1
AC2050-2	M20x1.5	50	232.8	167	17.8	6	15.8	158	26	7	1
AC2050-3	M20x1.5	50	232.8	167	17.8	6	15.8	158	26	7	1
AC2525-1	M25x1.5	25	155	111	22	8	19	101	32	9	1
AC2525-2	M25x1.5	25	155	111	22	8	19	101	32	9	1
AC2525-3	M25x1.5	25	155	111	22	8	19	101	32	9	1
AC2530-2	M25x1.5	30	160	111	22	8	19	101	32	9	1

FIG. 2



Model	Stroke (mm)	Maximum absorbed energy Nm(E$_T$)	Absorbed energy per hour Nm(E$_{TC}$)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Without impact head	With impact hea	Flange F	Positioning nut (SC)	Operating temperature (Non-frozen) (°C)	Weight (g)
AC2540-1	40	120	75,000	300	4.0	—	o	—	o	-10~+80	430
AC2540-2	40	120	75,000	1,200	2.5	—	o	—	o	-10~+80	430
AC2540-3	40	120	75,000	2,000	1.0	—	o	—	o	-10~+80	430
AC2550-1	50	135	90,000	200	4.0	o	o	—	o	-10~+80	435
AC2550-2	50	135	90,000	900	2.5	o	o	—	o	-10~+80	435
AC2550-3	50	135	90,000	1,680	1.0	o	o	—	o	-10~+80	435
AC2580-1	80	150	120,000	150	4.0	o	o	—	o	-10~+80	535
AC2580-2	80	150	120,000	600	2.5	o	o	—	o	-10~+80	535
AC2580-3	80	150	120,000	1,200	1.0	o	o	—	o	-10~+80	535
AC2725-1	25	80	54,000	200	4.0	o	o	—	o	-10~+80	380
AC3025-1	25	180	60,000	300	3.0	—	o	—	o	-10~+80	950
AC3025-2	25	180	60,000	700	2.0	—	o	—	o	-10~+80	950
AC3025-3	25	180	60,000	1,300	1.0	—	o	—	o	-10~+80	950
AC3660-1	60	250	120,000	400	4.0	—	o	o	o	-10~+80	1,030
AC3660-2	60	250	120,000	1,500	2.5	—	o	o	o	-10~+80	1,030
AC3660-3	60	250	120,000	2,400	1.0	—	o	o	o	-10~+80	1,030

FIG. 1

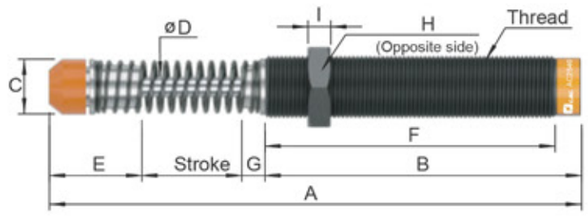
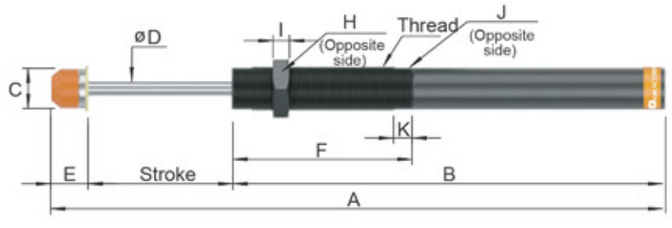


FIG. 2



Model	Thread	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)	K (mm)	Illustration
AC2540-1	M25x1.5	40	214	127	22	8	37	117	10	32	9	—	—	1
AC2540-2	M25x1.5	40	214	127	22	8	37	117	10	32	9	—	—	1
AC2540-3	M25x1.5	40	214	127	22	8	37	117	10	32	9	—	—	1
AC2550-1	M25x1.5	50	239.5	170.5	22	8	19	100	—	32	9	22.8	11	2
AC2550-2	M25x1.5	50	239.5	170.5	22	8	19	100	—	32	9	22.8	11	2
AC2550-3	M25x1.5	50	239.5	170.5	22	8	19	100	—	32	9	22.8	11	2
AC2580-1	M25x1.5	80	336	237	22	8	19	100	—	32	9	22.8	11	2
AC2580-2	M25x1.5	80	336	237	22	8	19	100	—	32	9	22.8	11	2
AC2580-3	M25x1.5	80	336	237	22	8	19	100	—	32	9	22.8	11	2
AC2725-1	M27x1.5	25	155	111	22	8	19	101	—	32	9	—	—	3
AC3025-1	M30x1.5	25	151	106.5	27	10	19.5	96.5	—	36	14	—	—	3
AC3025-2	M30x1.5	25	151	106.5	27	10	19.5	96.5	—	36	14	—	—	3
AC3025-3	M30x1.5	25	151	106.5	27	10	19.5	96.5	—	36	14	—	—	3
AC3660-1	M36x1.5	60	248	162	35.5	10	26	134	17	46	15	—	—	4
AC3660-2	M36x1.5	60	248	162	35.5	10	26	134	17	46	15	—	—	4
AC3660-3	M36x1.5	60	248	162	35.5	10	26	134	17	46	15	—	—	4

FIG. 3

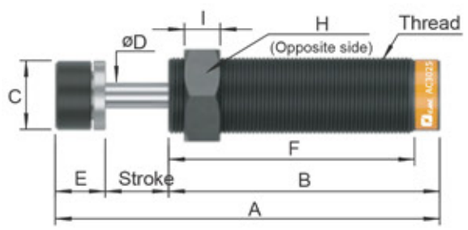
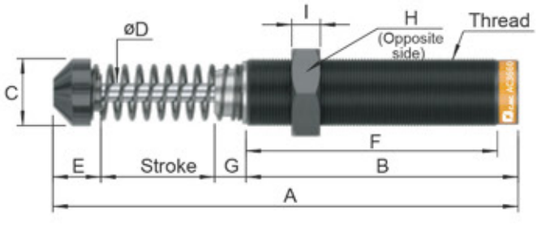


FIG. 4



AC-S Series

High-performance shock absorber

The AC series is designed for fixed automatic compensation type construction. Compared with the AC series, the AC-S series has the advantages of smaller installation length, higher frequency of use, greater energy absorption, stronger product structure, and higher safety. This model is suitable for equipment with a compact structure and smaller space. The bottom of the product is provided with a six-shaped slot for easy installation.

- Material —— Outer pipe: AISI 1215 and STKM11A nitriding sandblasting treatment enhances rust resistance. Some models adopt SUS303 stainless steel material, offering stronger anti-rust performance. Axis: hard chromium plating treatment + special seals for longer lifespan. Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning.
- Speed range —— 0.3~5.0m
- Temperature range —— -10~+80°C
- Installation —— CJAC offers customers a variety of mounting options such as nut (NUT) and flange. In addition, customers can also customize services according to their own requirements.
- Special demands —— CJAC can customize solutions based on your requirements.

Model Description

AC — 04 — 04 — -S

- AC: Model
- 04: Outer (mm)
- 04: Buffer stroke (mm)
- -S: With impact head
- -SN: Without impact head

Model	Stroke (mm)	Maximum absorbed energy Nm(ET)	Absorbed energy per hour Nm(ETC)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Without impact head	With impact head	Positioning nut (SC)	Operating temperature (Non-frozen) (°C)	Weight (g)
AC0404-S	4	0.1	270	1.5	0.3-1.0	o	o	o	-10~+80	2.6
AC0604-S	4	0.5	720	3	0.3-1.0	o	o	o	-10~+80	4.0
AC0806-S	6	3	7,000	6	0.3-2.5	o	o	o	-10~+80	14
AC1007-S	7	6	12,400	12	0.3-3.5	o	o	o	-10~+80	28
AC1210-S	10	12	22,500	22	0.3-4.0	o	o	o	-10~+80	36
AC1412-S	12	20	33,000	40	0.3-5.0	o	o	o	-10~+80	67
AC1412-SM	12	14	24,000	25	0.3-5.0	o	o	o	-10~+80	60
AC2015-S	15	59	38,000	120	0.3-5.0	o	o	o	-10~+80	160
AC2525-S	25	80	60,000	180	0.3-5.0	o	o	o	-10~+80	295
AC2725-S	25	147	72,000	270	0.3-5.0	o	o	o	-10~+80	375

Model	Thread	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	Illustration
AC0404-S	M4x0.5	4	32.7	24.7	2.9	1.2	4	19.7	0.5	7	2	1
AC0604-S	M6x0.75	4	36.5	28.5	4.5	1.8	4	22.5	2	8	3	1
AC0806-S	M8x1.0	6	55.2	40.6	6.6	2.9	8.6	33.6	2	11	3	2
AC1007-S	M10x1.0	7	62.6	47	8.6	3	8.6	39	3	12.7	3	2
AC1210-S	M12x1.0	10	71.3	52.5	10.3	3	8.8	44	3	14	4	2
AC1412-S	M14x1.5	12	93.2	70	12	4	11.2	61	4	19	5	2
AC1412-SM	M14x1.5	12	81.2	58	12	4	11.2	49.5	3.5	19	5	2
AC2015-S	M20x1.5	15	106.3	76	17.8	6	15.3	65	4	26	7	2
AC2525-S	M25x1.5	25	136	92	22	8	19	82	—	32	9	2
AC2725-S	M27x1.5	25	146	102	22	8	19	86	5	32	6	2

FIG. 1

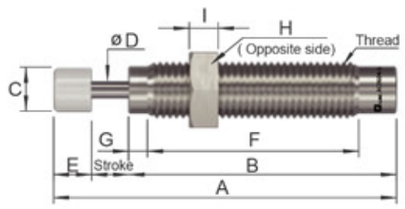
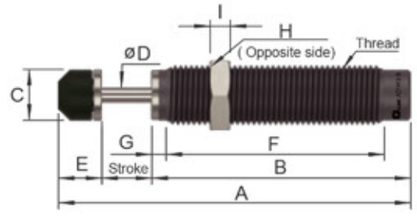


FIG. 2



AC-RSN

Patented product

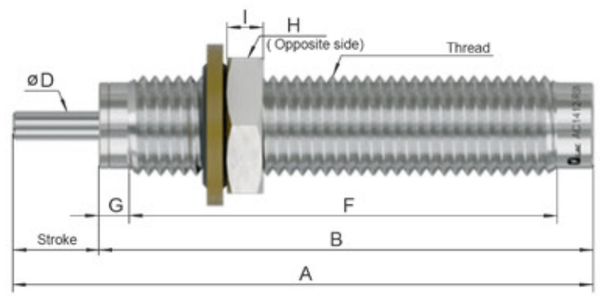
Shock absorber for rotating cylinder

- Material ——— Outer pipe: AISI 1215 nitriding sandblasting treatment or SUS303 enhances rust resistance.
  Axis: hard chromium plating treatment + special seals for longer lifespan
  Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning
- Installation ——— CJAC offers customers a variety of mounting options such as nut (NUT), flange (F), and angle adapter (SLA). In addition, customers can also customize services according to their own requirements.
- Speed range ——— 0.3~5.0m/s
- Temperature range — -10~+80°C
- Special demands —— CJAC can customize solutions based on your requirements.

AC-RSN series is designed for rotary cylinders. Two different sealing parts are integrated inside to deal with different internal and external media. It is used in a positive-pressure environment. Compared to conventional AC-S products, its life expectancy is dramatically increased. It also has the same advantages as the AC-S series, smaller size, higher operating frequency, greater energy absorption, and stronger product structure. Hexagonal locking holes are provided at the bottom for more convenient installation.

Model	Stroke (mm)	Maximum absorbed energy Nm(ET)	Absorbed energy per hour Nm(ETC)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Without impact head	With impact head	Positioning nut (SC)	Operating temperature (Non-frozen) (°C)	Weight (g)
AC0806-RSN	6	3	7,000	6	0.3-2.5	o	o	o	-10~+80	12
AC1007-RSN	7	6	12,400	12	0.3-3.5	o	o	o	-10~+80	22
AC1210-RSN	10	12	22,500	22	0.3-4.0	o	o	o	-10~+80	34
AC1412-RSN	12	20	33,000	40	0.3-5.0	o	o	o	-10~+80	56
AC2015-RSN	15	59	38,000	120	0.3-5.0	o	o	o	-10~+80	138
AC2725-RSN	25	147	72,000	270	0.3-5.0	o	o	o	-10~+80	345

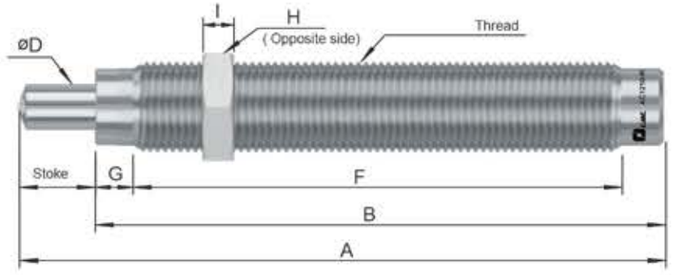
Model	Thread	Stroke (mm)	A (mm)	B (mm)	D (mm)	F (mm)	G (mm)	H (mm)	I (mm)
AC0806-RSN	M8xP1.0	6	48.2	42.2	2.9	35.2	2	11	3
AC1007-RSN	M10xP1.0	7	58.4	51.4	3	43.4	3	12.7	3
AC1210-RSN	M12xP1.0	10	64.5	54.5	3	46	3	14	4
AC1412-RSN	M14xP1.5	12	81	69	4	60	4	19	5
AC2015-RSN	M20xP1.5	15	91	76	6	65	4	26	7
AC2725-RSN	M27xP1.5	25	129.5	104.5	8	91.5	5	32	9



AC-R Series

Shock absorber for rotating cylinder

- Material —— Outer pipe: AISI 1215 nitriding sandblasting treatment or SUS303 enhanced rust resistance.Piston rod: hard chromium plating treatment and special seals for longer lifespan
  Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning
- Installation —— CJAC offers customers a variety of mounting options such as nut (NUT), flange (F), and positioning stop nut (SC). In addition, customers can also customize services according to their own requirements.
- Speed range —— 0.3~5.0m/s
- Temperature range — -10~+80°C
- Special demands —— CJAC can customize solutions based on your requirements.



Model	Stroke (mm)	Maximum absorbed energy Nm(ET)	Absorbed energy per hour Nm(ET)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Operating temperature (Non-frozen) (℃)	Weight (g)
AC1412-R	12	12	22,500	22	0.3-4.0	-10~+80	47

Model	Thread	Stroke (mm)	A (mm)	B (mm)	D (mm)	F (mm)	G (mm)	H (mm)	I (mm)
AC1412-R	M14x1.0	12	105.4	93.2	8	79.9	8.5	14	5

AC-K Series

Shock absorber for robotic arms

AC-K series products can effectively absorb the vibration and noise generated by high-speed motion, and can convert kinetic energy into heat energy and release it into the air. Therefore, this product can stop the items smoothly and effectively in each movement. In the past, many conventional manufacturers used to utilize PU rubber, springs, and other materials as buffers to save costs. However, this often results in poor performance, and the noise issue is still and the machine is not efficient, while the mechanical equipment is prematurely depleted. The adoption of CJAC's shock absorber will effectively solve the disadvantages caused by bad buffers, improving mechanical efficiency, increasing production capacity, and protecting the lifespan of the machine. Both AC-K and ACD are suitable for high-speed impact working environments, and their long-traverse mobile devices are mostly used for robotic arms.

- Material —— Outer pipe: AISI1215 and STKM11A oxidized black treatment enhances rust resistance.
  Piston rod: hard chromium plating treatment and special seals for longer lifespan
  Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning
- Speed range —— 1.0~6.8m/s
- Temperature range — -10~+80℃
- Installation —— CJAC offers customers a variety of mounting options such as nut (NUT), flange (F), and positioning stop nut (SC). In addition, customers can also customize services according to their own requirements.
- Special demands —— CJAC can customize solutions based on your requirements.

Model Description

AC 14 — 15 — 6K

- AC: Model
- 14: Outer diameter (mm)
- 15: Buffer stroke (mm)
- 6K: The higher the speed, the higher the permitted collision speed.

Model	Stroke (mm)	Maximum absorbed energy Nm(ET)	Absorbed energy per hour Nm(ETC)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Without impact head	Positioning nut (SC)	Operating temperature (Non-frozen) (℃)	Weight (g)
AC1415-6K	15	9.8	35,280	30	1.0	o	o	-10~+80	80
AC1415-7K	15	9.8	35,280	15	1.5	o	o	-10~+80	80
AC2020-2K	20	36	22,000	27	2.0	o	o	-10~+80	170
AC2030-5K	30	44	26,460	60	1.2	o	—	-10~+80	185
AC2030-6K	30	44	26,460	30	1.7	o	—	-10~+80	185
AC2030-7K	30	44	26,460	15	2.4	o	—	-10~+80	185
AC2030-8K	30	44	26,460	8	2.8	o	—	-10~+80	185
AC2030-16K	30	44	26,460	5	4.2	o	—	-10~+80	205
AC2030-18K	30	44	26,460	3	6.0	o	o	-10~+80	205
AC2050-10K	50	59	35,280	30	2.0	o	o	-10~+80	250
AC2050-11K	50	59	35,280	22	2.4	o	o	-10~+80	250
AC2050-12K	50	59	35,280	15	2.8	o	o	-10~+80	250
AC2050-16K	50	59	35,280	5	5.0	o	o	-10~+80	250
AC2050-17K	50	59	35,280	3	6.8	o	o	-10~+80	250
AC2050D-13SK	50	59	35,280	8	3.8	o	o	-10~+80	275
AC2065-2KW	65	65	38,300	28	3.0	o	o	-10~+80	275

FIG. 1

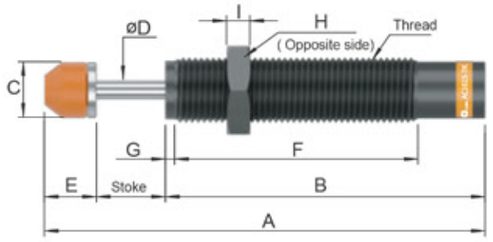


FIG. 2

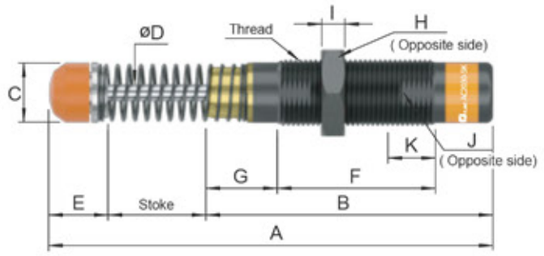
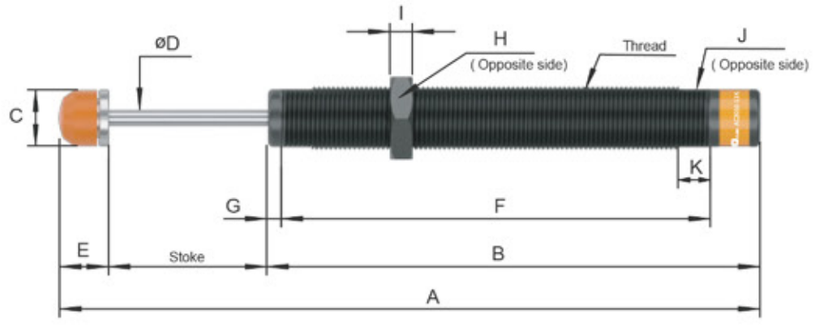


FIG. 3



Model	Thread	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)	K (mm)	Illustration
AC1415-6K	M14x1.5	15	95.6	69.4	12	4	11.2	52.7	2	19	5	—	—	1
AC1415-7K	M14x1.5	15	95.6	69.4	12	4	11.2	52.7	2	19	5	—	—	1
AC2020-2K	M20x1.5	20	128.8	93	17.8	5	15.8	74.5	3.8	26	7	—	—	1
AC2030-5K	M20x1.5	30	133.7	86	17.8	5	17.7	48	21	26	7	18.2	10	2
AC2030-6K	M20x1.5	30	133.7	86	17.8	5	17.7	48	21	26	7	18.2	10	2
AC2030-7K	M20x1.5	30	133.7	86	17.8	5	17.7	48	21	26	7	18.2	10	2
AC2030-8K	M20x1.5	30	133.7	86	17.8	5	17.7	48	21	26	7	18.2	10	2
AC2030-16K	M20x1.5	30	146.5	97.8	17.8	5	17.7	48	32.8	26	7	18.2	10	2
AC2030-18K	M20x1.5	30	146.5	97.8	17.8	5	17.7	48	32.8	26	7	18.2	10	2
AC2050-10K	M20x1.5	50	221.8	156	17.8	5	15.8	136.5	4	26	7	18.2	10	3
AC2050-11K	M20x1.5	50	221.8	156	17.8	5	15.8	136.5	4	26	7	18.2	10	3
AC2050-12K	M20x1.5	50	221.8	156	17.8	5	15.8	136.5	4	26	7	18.2	10	3
AC2050-16K	M20x1.5	50	221.8	156	17.8	5	15.8	136.5	4	26	7	18.2	10	3
AC2050-17K	M20x1.5	50	221.8	156	17.8	5	15.8	60	4	26	7	18.2	10	5
AC2050D-13SK	M20x1.5	50	195	120.7	17.8	5	17.7	70.6	32.7	26	7	18.2	10	4
AC2065-2KW	M20x1.5	65	267.3	186.5	17.8	6	15.8	64.5	3.5	26	7	18.2	10	5

FIG. 4

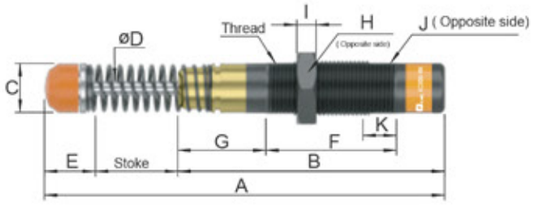
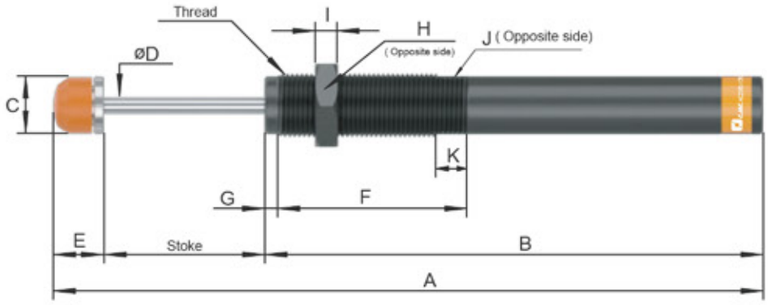


FIG. 5



ACD Series

Shock absorber (Two-way damper) for robotic arms

The ACD series adopt a two-way buffer structure, so they have different damping effects at both ends. They are suitable for high-speed places, and they are commonly used in mechanical arms to eliminate equipment noise and vibration, which can greatly improve the operating speed of the robotic arm.

- Material —— Outer pipe: AISI1215 and STKM11A oxidized black treatment enhances rust resistance
  Piston rod: hard chromium plating treatment + special seals for longer lifespan
  Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning
- Speed range —— 1.0~3.5m/s
- Temperature range —— -10~+80°C
- Installation —— CJAC offers customers a variety of mounting options such as nut (NUT) and positioning stop nut (SC).
  In addition, customers can also customize services according to their own requirements.
- Special demands —— CJAC can customize solutions based on your requirements.

Model	Stroke (mm)	Maximum absorbed energy Nm(Et)	Absorbed energy per hour Nm(Etc)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Operating temperature (Non-frozen) (℃)	Weight (g)
ACD2050-2(WY)	50	70	72,000	530	3.5	-10~+80	470
ACD2050-2(WY)X	50	70	72,000	530	3.5	-10~+80	450
ACD2050-2(WY)X-A	50	70	72,000	530	3.5	-10~+80	470
ACD2050-2(WY)X-B	50	70	72,000	530	3.5	-10~+80	460

Model	Thread	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E1 (mm)	E2 (mm)	F (mm)	H (mm)	I (mm)	M (mm)	Illustration
ACD2050-2(WY)	M20x1.5	50	313.8	172.8	17.8	6	20.5	20.5	12.5	26	7	32	1
ACD2050-2(WY)X	M20x1.5	50	313.8	172.8	17.8	6	20.5	20.5	12.5	26	7	27	1
ACD2050-2(WY)X-A	M20x1.5	50	317.8	172.8	17.8	6	20.5	24.5	13	26	7	27	2
ACD2050-2(WY)X-B	M20x1.5	50	313.8	172.8	17.8	6	20.5	20.5	13.5	26	7	27	1

FIG. 1

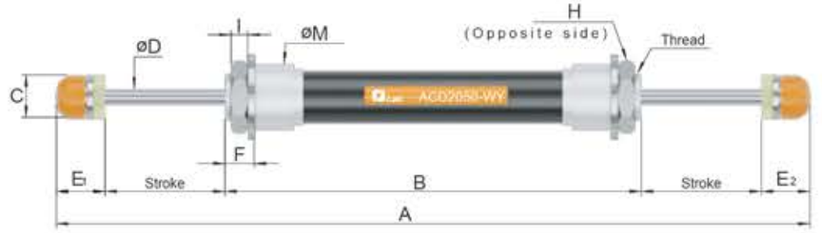
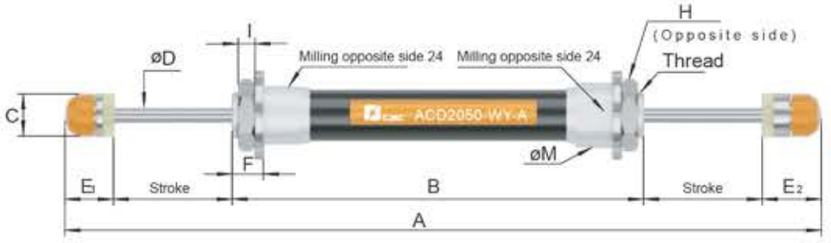


FIG. 2



AC/AD Series

Shock absorber for stopper cylinder

The shock absorber for the stopper cylinder can be divided into two types of structures: automatic compensation type and adjustable type. It can be installed inside the stopper cylinder to provide smooth deceleration and stoppage for moving objects.
Automatic compensation model: The design of the external pressure cylinder is composed of a one-piece structure; the structure is compact and safe, so as to avoid deformation of the piston rod caused by the oblique angle impact during machine operation. In order to reduce the friction between the end face of the piston rod, it is recommended that the interface surface be designed for rolling friction.
Adjustable model: In order to avoid the adverse effects caused by the off-angle impact, the piston rod adopts a two-stage structure. The impact end face adopts a rounded design. In this structure, there is a unilateral eccentricity adjustment ranging from 0° to 270°, which can effectively increase the adjustment range, making it more adaptable to a wider range

- Material —— Outer pipe: AISI1215 and STKM11A oxidized black, and the nickel plating treatment enhances rust resistance
  Piston rod: hard chromium plating treatment and special seals for longer lifespan
  Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning.
- Temperature range —— -10~+85°C
- Installation —— The users can use the threaded mounting method, or directly put it in the cylinder.
- Special demands —— CJAC can customize solutions based on your requirements.

Model	Stroke (mm)	Maximum absorbed energy Nm(ET)	Absorbed energy per hour Nm(ETC)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Operating temperature (Non-frozen) (℃)	Weight (g)
HC2010-N	10	25	15,000	120	3.0	-10~+80	123.5
SFC2010-N	10	25	15,000	120	3.0	-10~+80	118
YAD1408-N	8	16	12,000	40	4.0	-10~+80	56.5
AD2207-N	7	28	18,000	230	3.5	-10~+80	170.5
AD2208-N	8	30	19,000	240	3.5	-10~+80	178.5
AD2911-N	11	40	35,000	300	3.0	-10~+80	373
AD3615-N	15	50	45,000	450	3.0	-10~+80	812.5

Model	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)	L (mm)	Illustration
YAD1408-N	8	70.9	53.5	15.6	4	8	4.4	—	4.6	14	13.5	—	1
AD2207-N	7	102.1	72.3	25	8	15.5	5	3.3	8	22	21.6	14	2
AD2208-N	8	102	73	24	8	12.2	4.8	—	8	22	21.6	—	1
AD2911-N	11	129.5	93.5	34	8	13.5	14.4	—	8	28.9	—	—	1
AD3615-N	15	161	116.5	42	10	17.5	19	—	10	35.9	—	—	1

HC2010-N

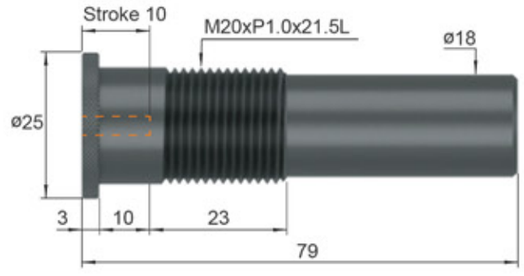
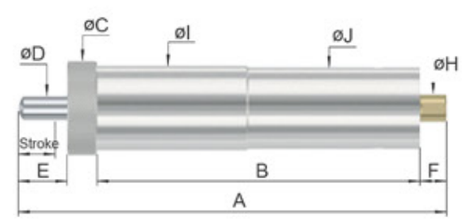
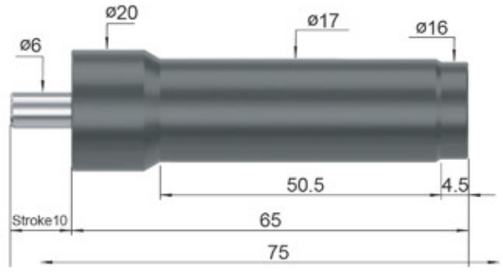


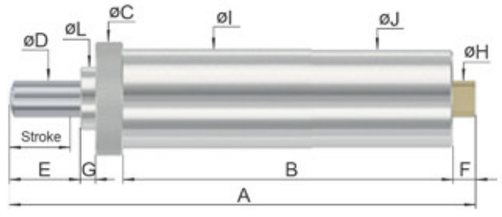
FIG. 1



SFC2010-N

FIG. 2





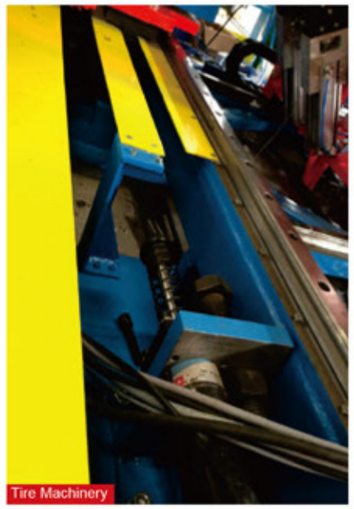
AD Series

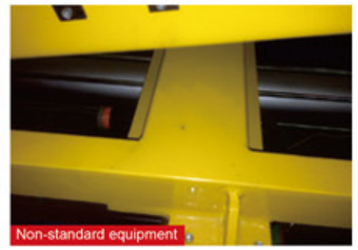
Shock absorber (Adjustable damper)

The AD series is designed with an adjustable structure. When encountered with different loading, and different impact speeds, users can adjust the adjustment knob to modify the most appropriate scale, and perfectly absorb the energy generated by the objects. Compared to the AC series, the AD series has a higher energy absorption capacity and a larger range of applications.

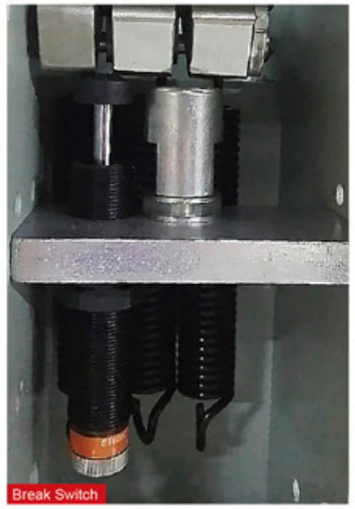
- Material —— Outer pipe: AISI1215 and STKM11A oxidized black, and the nickel plating treatment enhances rust resistance. Some models adopt SUS303 stainless steel material, offering stronger anti-rust performance.
  Piston rod: hard chromium plating treatment and special seals for longer lifespan
  Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning
- Speed range —— 0.3~4.5m/s
- Temperature range — -10~+80°C
- Installation —— CJAC offers customers a variety of mounting options such as nut (NUT), flange (F), positioning stop nut (SC), angle adapter (SLA), and more. In addition, customers can also customize services according to their own requirements.
- RoHS Certificates —— All the AD1410, AD1425, AD2016, AD2025, AD2525, AD2540, AD2550, AD2580, AD3625, AD3650 have received the RoHS certifications. CJAC can customize
- Special demands —— CJAC can customize solutions based on your requirements.


Non-standard equipment


Tire Machinery


Non-standard equipment


Workbench


Break Switch

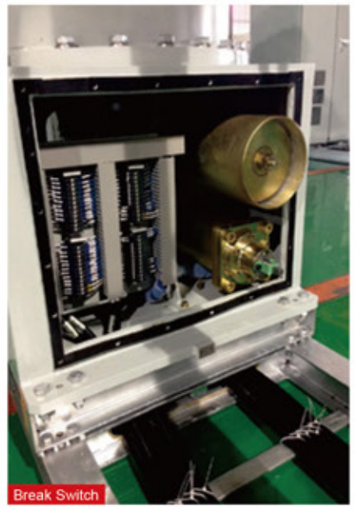

Break Switch


Break Switch


Tire Machinery


Non-standard equipment


Overhead crane


Break Switch


Blow molding machine

Model	Stroke (mm)	Maximum absorbed energy Nm(Er)	Absorbed energy per hour Nm(Erc)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Without impact head	With impact hea	Flange F	Positioning nut (SC)	Operating temperature (Non-frozen) (°C)	Weight (g)
EAD1007	7	6	12,400	25	3.0	o	o	—	o	-10~+80	28
EAD1210	10	12	22,000	35	3.0	o	o	—	o	-10~+80	66
AD1410	10	20	25,000	80	3.0	o	o	—	o	-10~+80	90
AD1415	15	24	26,000	100	3.0	o	o	—	o	-10~+80	120
AD1425	25	28	27,500	140	3.0	o	o	—	o	-10~+80	194
AD1612	12	22	27,500	130	3.0	o	o	—	o	-10~+80	200
AD2016	16	28	28,500	200	3.5	o	o	—	o	-10~+80	245
AD2016-C	16	28	28,500	200	3.5	o	o	—	o	-10~+80	215
AD2020	20	34	29,000	298	3.5	o	o	—	o	-10~+80	235
AD2025	25	39	30,000	312	3.5	o	o	—	o	-10~+80	240
AD2050	50	69	52,000	420	3.5	o	o	—	o	-10~+80	330
AD2525	25	85	54,000	400	3.5	o	o	—	o	-10~+80	350
AD2530	30	95	60,000	480	3.5	o	o	—	o	-10~+80	365
AD2540	40	100	80,000	700	3.5	—	o	—	o	-10~+80	455
AD2550	50	120	90,000	720	4.0	o	o	—	o	-10~+80	510
AD2580	80	150	120,000	800	4.0	o	o	—	o	-10~+80	585
AD2725	25	85	54,000	400	3.5	o	o	—	o	-10~+80	403
AD3326	26	195	75,700	1400	3.3	—	o	—	—	-10~+80	482
AD3352	52	385	98,962	2400	3.3	—	o	—	—	-10~+80	708

FIG. 1

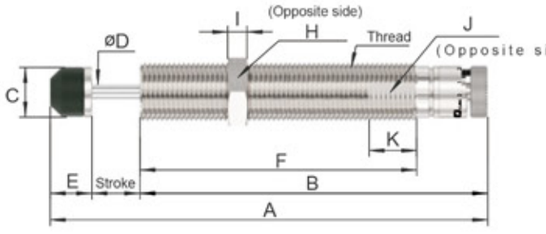


FIG. 2

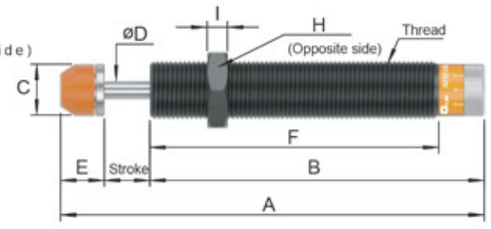
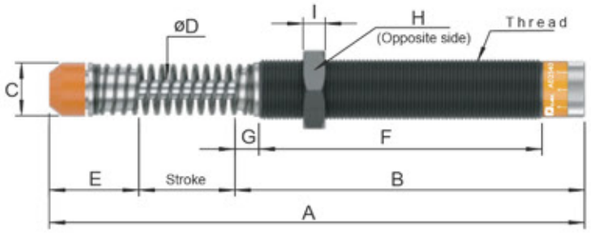


FIG. 3



Model	Thread	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	J (mm)	K (mm)	Illustration
EAD1007	M10x1.0	7	65	49.4	10.3	3	8.6	35.5	3.6	12.7	3	—	—	1
EAD1210	M12x1.0	10	90.3	71.7	10.3	3	8.6	57.3	—	14	4	—	10	1
AD1410	M14x1.5	10	109.7	88.5	12	4	11.2	72.5	—	19	5	—	—	2
AD1415	M14x1.5	15	128.2	102	12	4	11.2	86	—	19	5	—	—	2
AD1425	M14x1.5	25	153.2	117	12	4	11.2	101	—	19	5	—	—	2
AD1612	M16x1.5	12	99	76.5	14	4	11.2	54.9	—	19	6	—	—	2
AD2016	M20x1.5	16	148.3	117	17.8	6	15.3	101	—	26	7	—	—	2
AD2016-C	M20x1.5	16	127.3	96	17.8	6	15.3	80	—	26	7	—	—	2
AD2020	M20x1.5	20	152.3	117	17.8	6	15.3	101	—	26	7	—	—	2
AD2025	M20x1.5	25	157.3	117	17.8	6	15.3	101	—	26	7	—	—	2
AD2050	M20x1.5	50	239.3	174	17.8	6	15.3	158	—	26	7	—	—	2
AD2525	M25x1.5	25	162.5	118.5	22	8	19	101	—	32	9	—	—	2
AD2530	M25x1.5	30	167.5	118.5	22	8	19	101	—	32	9	—	—	2
AD2540	M25x1.5	40	221.5	144.5	22	8	37	117	10	32	9	—	—	3
AD2550	M25x1.5	50	247	178	22	8	19	100	—	32	9	22.8	11	4
AD2580	M25x1.5	80	343.5	244.5	22	8	19	100	—	32	9	22.8	11	4
AD2725	M27x1.5	25	162.5	118.5	22	8	19	101	—	32	9	—	—	2
AD3326	M33x1.5	26	150.3	110.5	28.5	10	13.8	77.9	19.1	45	11	29.7	16	5
AD3352	M33x1.5	52	217.3	151.5	28.5	10	13.8	118.7	19.1	45	11	29.7	16	5

FIG. 4

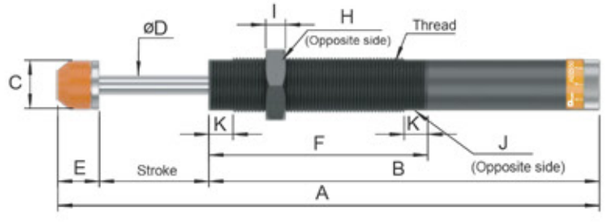
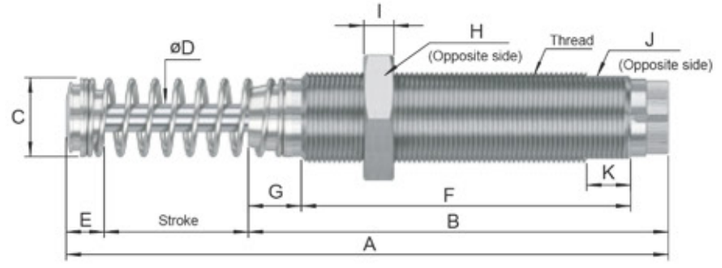


FIG. 5



Model	Stroke (mm)	Maximum absorbed energy Nm(E1)	Absorbed energy per hour Nm(E1C)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Without impact head	With impact hea	Flange F	Positioning nut (SC)	Operating temperature (Non-frozen) (℃)	Weight (g)
AD3625	25	150	81,000	1400	3.0	—	o	o	o	-10~+80	940
AD3650	50	300	100,000	2400	3.0	—	o	o	o	-10~+80	1,120
AD4225	25	260	125,000	3,000	3.5	—	o	o	—	-10~+80	1,260
AD4225-W	25	260	125,000	3,000	3.5	—	o	o	—	-10~+80	1,150
AD4225-NH-AI	25	260	125,000	3,000	3.5	—	o	o	—	-10~+80	1,140
AD4250	50	500	150,000	4,000	4.5	—	o	o	—	-10~+80	1,480
AD4250-W	50	500	150,000	4,000	4.5	—	o	o	—	-10~+80	1,350
AD4250-NH-AI	50	500	150,000	4,000	4.5	—	o	o	—	-10~+80	1,340
AD4275	75	750	180,000	6,000	4.5	—	o	o	—	-10~+80	1,700
AD4275-W	75	750	180,000	6,000	4.5	—	o	o	—	-10~+80	1,600
AD64050(-B)	50	1,200	150,500	12,727	1.5	—	o	o	—	-10~+80	4,050
AD64050(-B)-W	50	1,200	150,000	12,727	1.5	—	o	o	—	-10~+80	3,500
AD64100(-B)	100	2,400	200,000	18,181	1.5	—	o	o	—	-10~+80	5,150
AD64100(-B)-W	100	2,400	200,000	18,181	1.5	—	o	o	—	-10~+80	4,400
AD64150(-B)	150	3,600	250,000	23,636	1.5	—	o	o	—	-10~+80	6,700
AD64150(-B)-W	150	3,600	250,000	23,636	1.5	—	o	o	—	-10~+80	5,970
AD85050-W	50	2,300	372,000	16,800	4.3	—	o	o	—	-10~+80	6,370
AD85090-W	90	4,000	652,000	30,000	4.3	—	o	o	—	-10~+80	7,510
AD85125-W	125	5.700	933,000	42,000	4.3	—	o	o	—	-10~+80	8,000

FIG. 1

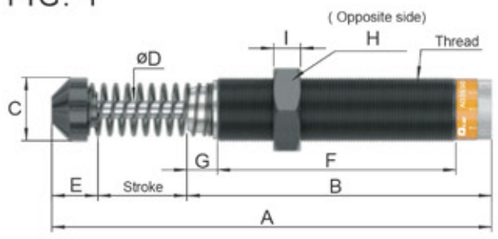


FIG. 2

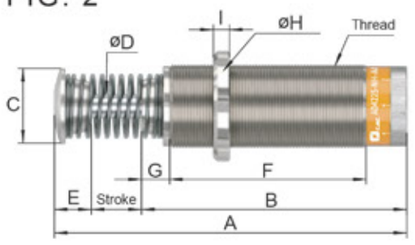
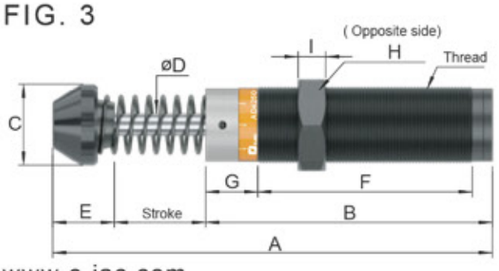


FIG. 3



Model	Thread	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (mm)	Illustration
AD3625	M36x1.5	25	184	133	35.5	10	26	103	10	46	15	1
AD3650	M36x1.5	50	247	171	35.5	10	26	134	17	46	15	1
AD4225	M42x1.5	25	186.5	127.5	44.5	12	34	99	28.5	50	15	3
AD4225-W	M42x1.5	25	166.3	95.3	44.5	12	34	29.3	37.9	—	—	5
AD4225-NH-AI	M42x1.5	25	176.1	132.6	37.5	12	18.5	98.5	14.1	55	8	2
AD4250	M42x1.5	50	241	157	44.5	12	34	117.5	28.5	50	15	3
AD4250-W	M42x1.5	50	219.6	123.6	44.5	12	34	47	48.2	—	—	5
AD4250-NH-AI	M42x1.5	50	230.6	162.1	37.5	12	18.5	128	14.1	55	8	2
AD4275	M42x1.5	75	301.5	187.5	44.5	12	39	148	28.5	50	15	3
AD4275-W	M42x1.5	75	284.1	158.1	44.5	12	39	63	67.2	—	—	5
AD64050(-B)	M64x2.0 *(-B)UNF2 1/2 -12	50	247.8	146	59	20	51.8	26	24	76.2	9.4	4
AD64050(-B)-W	M64x2.0 *(-B)UNF2 1/2 -12	50	243.8	140	59	20	51.8	50	50	—	—	5
AD64100(-B)	M64x2.0 *(-B)UNF2 1/2 -12	100	347.8	196	59	20	51.8	26	24	76.2	9.4	4
AD64100(-B)-W	M64x2.0 *(-B)UNF2 1/2 -12	100	345.8	192	59	20	51.8	76	76	—	—	5
AD64150(-B)	M64x2.0 *(-B)UNF2 1/2 -12	150	467.8	256	59	20	61.8	26	24	76.2	9.4	4
AD64150(-B)-W	M64x2.0 *(-B)UNF2 1/2 -12	150	455.8	242	59	20	61.8	76	76	—	—	5
AD85050-W	M85x2.0	50	245	140	76	22	47	51	51	—	—	5
AD85090-W	M85x2.0	90	322.5	179	76	22	47	71	71	—	—	5
AD85125-W	M85x2.0	125	397.6	217	76	22	47	71	71	—	—	5

Note: With " * " for non-standard tooth pitch, please contact CJAC for more installation methods

FIG. 4

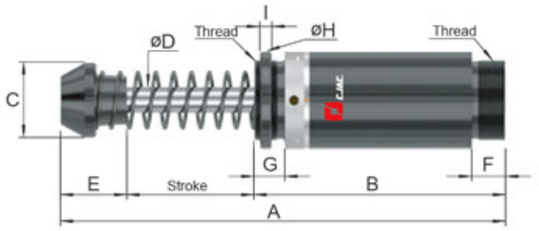
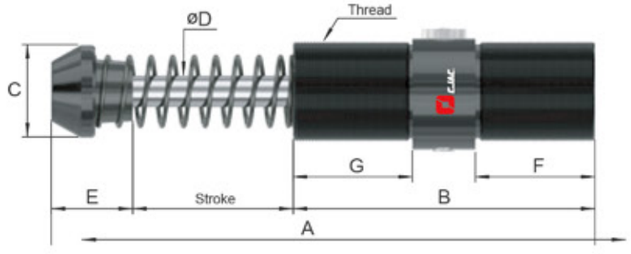


FIG. 5



D L Series

Shock absorber for circuit breaker

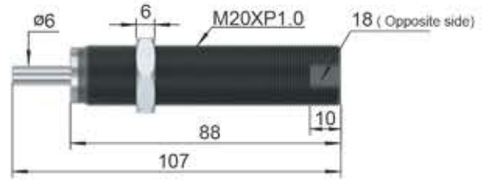
Among the high-voltage circuit breakers, the shock absorber is a very important core component. There are many reasons for this wide application. Firstly, when the circuit breaker is opened and closed, themechanism moves the open end of the arc extinguishing chamber to a limited position, and the high-speedmotion will produce a violent collision, so the metal collision will inevitably rebound. The rebound reducesthe opening distance of the fracture, so that the withstand voltage of the fracture will be reduced, and theclosing of the fracture will fail in critical circumstances.
CJAC designed a specific shock absorber for the circuit breaker. The shock absorber dedicated to the circuit breaker canabsorb the collision energy generated during the machine opening, so it will minimize the rebound. In order to reduce the arcing time, the circuit breaker requires a faster opening speed. Moreover, in order to reduce the impact on the opening speed of the circuit breaker, we have designed the front section of the softer damping.

- ○ Material —— Outer pipe: AISI1215 and STKM11A oxidized black, and the nickel plating treatment enhances rust resistance
  Piston rod: hard chromium plating treatment and special seals for longer lifespan
  Piston: We adopt materials with excellent wear resistance to ensure a long-lasting and stable cushioning effect
- ○ Speed range —— 0.5~5.0m/s (Can be customized to 20m/s)
- ○ Temperature range —— -20~+85°C (Can be customized to range from -40 to +85°C)
- ○ Installation —— CJAC offers you a variety of mounting options such as nuts (NUT) and flanges (F).
  CJAC can also customize solutions according to your demands
- ○ Special demands —— CJAC can customize solutions based on your requirements.

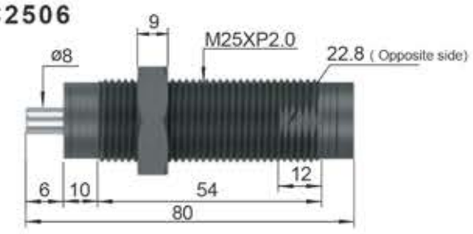
Passed Dutch KEMA test verification

Model	Stroke (mm)	Maximum absorbed energy Nm(Et)	Absorbed energy per hour Nm(Etc)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Without impact head	Without impact head	Operating temperature (Non-frozen) (°C)	Weight (g)
DLC2019	19	160	162,000	36	3.0	o	—	-30~+85	165
DLC2506	6	19.6	13,000	9.8	2.0	o	—	-30~+85	195
DLC2511	11	35	23,200	120	3.0	o	—	-30~+85	200
DLC2512	12	38	25,900	100	4.0	—	o	-40~+85	220
DLC3010	10	90	100,000	201	3.0	o	o	-20~+85	337
DLC3012	12	65	54,000	143	3.0	—	o	-20~+85	410
DLC3613	13	78	70,200	270	3.8	—	o	-20~+85	540

DLC2019

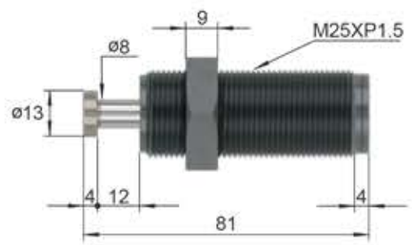


DLC2506

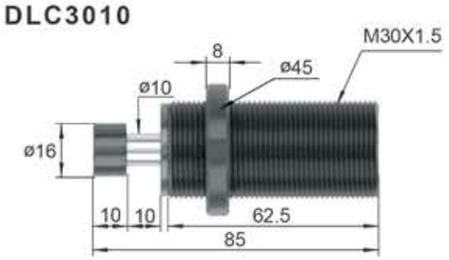


DLC2511

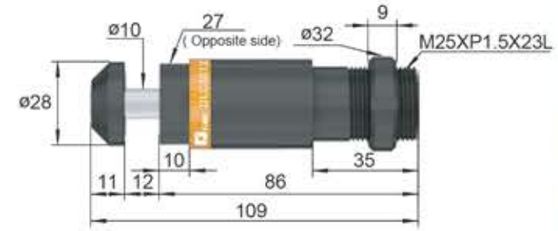
DLC2512



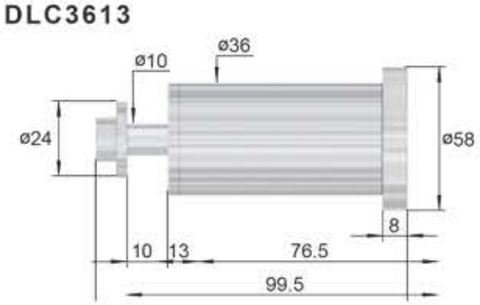
DLC3010

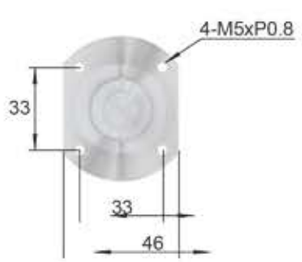


DLC3012



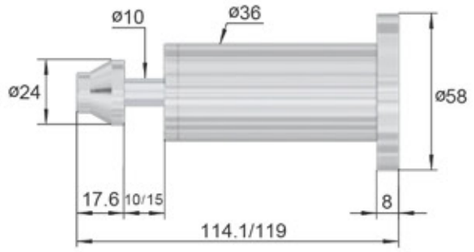
DLC3613

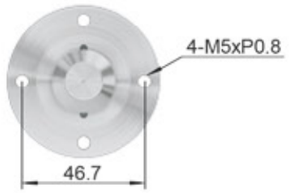




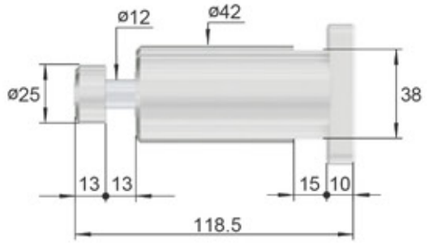
Model	Stroke (mm)	Maximum absorbed energy Nm(ET)	Absorbed energy per hour Nm(ETC)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Operating temperature (Non-frozen) (℃)	Weight (g)
DLC3610	10	60	54,000	260	3.5	-20~+85	634
DLC3615	15	84	75,600	400	4.0	-20~+85	650
DLC4213	13	155	186,000	1,240	1.0	-20~+85	890
DLC10010	10	1050	1260,000	10	15	-40~+85	8800

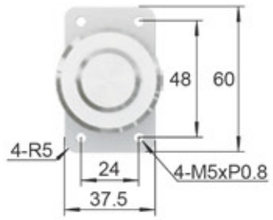
DLC3610/DLC3615



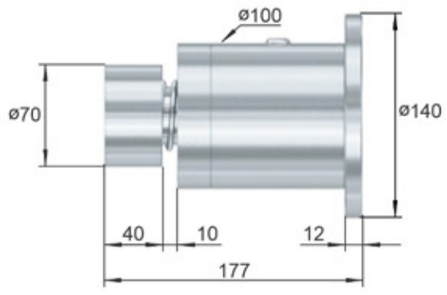


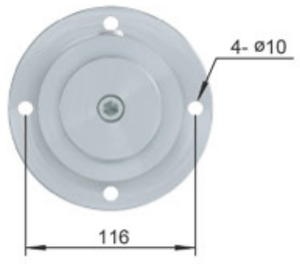
DLC4213





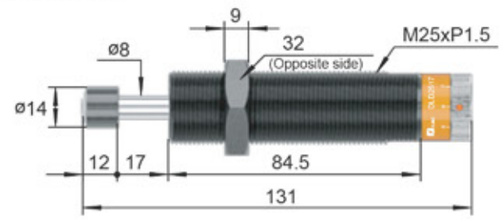
DLC10010



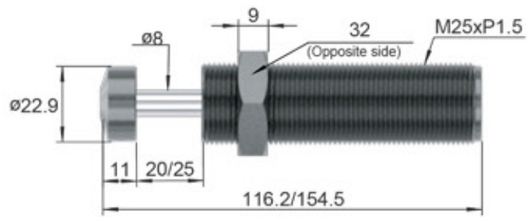


Model	Stroke (mm)	Maximum absorbed energy Nm(ET)	Absorbed energy per hour Nm(ETC)	Maximum effective weight kg(Me)	Highest impact speed m/s(v)	Positioning nut (SC)	Operating temperature (Non-frozen) (℃)	Weight (g)
DLD2517	17	55	37,200	300	1.5	o	-20~+85	337
DLD2520	20	68	43,200	200	4.5	o	-20~+85	269
ET300	25	84	75,600	240	4.0	o	-20~+85	364
DLD3010	10	65	54,000	143	3.0	—	-20~+85	342
DLD3015	15	98	81,400	250	3.0	—	-20~+85	368
DLD3607	7.5	65	85,800	240	4.0	—	-20~+85	667
DLD3608	8	75	99,000	306	4.0	—	-20~+85	620
DLD4212	12	140	168,000	1,100	8.0	—	-40~+85	1610

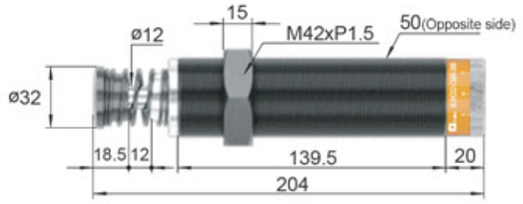
DLD2517



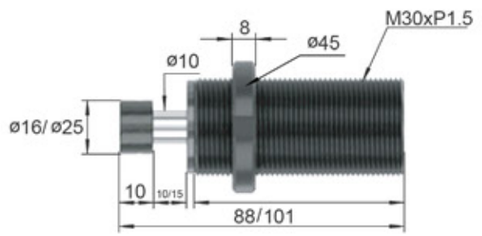
DLD2520/ET300



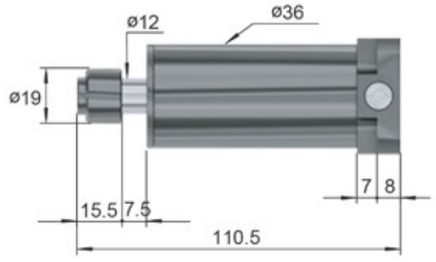
DLD4212

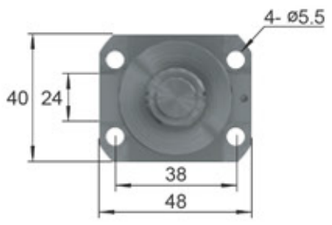


DLD3010/DLD3015

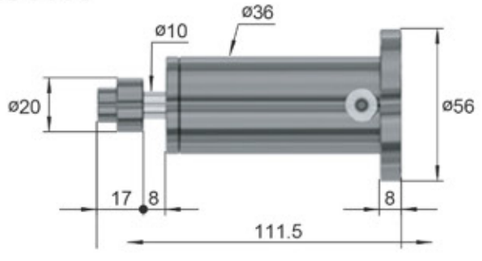


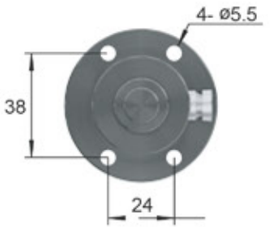
DLD3607





DLD3608





Accessories

Performance and Parameters

Positioning Locknut

Model	W (mm)	L (mm)	D (mm)	M	Illustration
SC08	11	14	—	M8xP1.0	1
SC10	12.7	16	—	M10xP1.0	1
SC12	14	20	__	M12xP1.0	1
SC14	19	27	18	M14xP1.5	2
SC20	26	35	25	M20xP1.5	2
SC25	32	45	31.3	M25xP1.5	2
SC25-25L	32	25	31.3	M25xP1.5	2
SC25-65L	32	65	31.3	M25xP1.5	2
SC27	32	45	31.3	M27xP1.5	2
SC36	46	80	45	M36xP1.5	2

FIG. 1

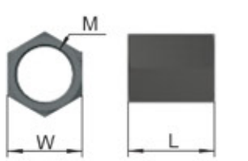
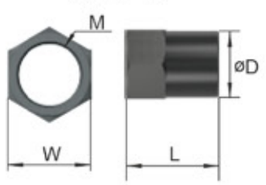
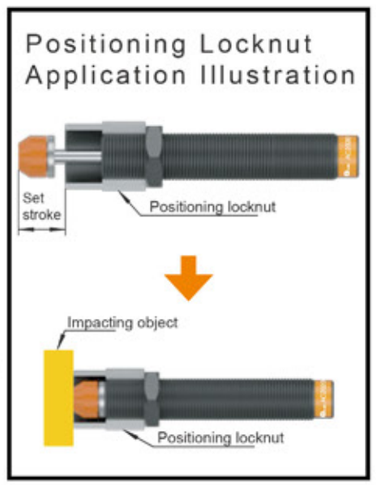


FIG. 2





Flange

FIG. 1

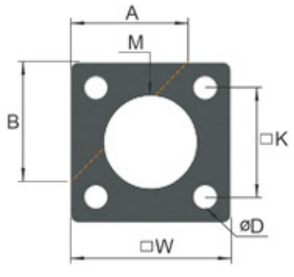
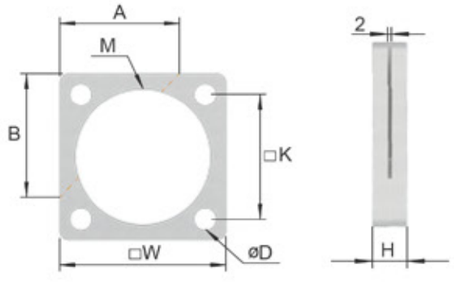


FIG. 2



Model	A (mm)	B (mm)	H (mm)	W (mm)	K (mm)	D (mm)	M	Weight (g)	Illustration
F36	45	45	16	60	41	8.5	M36xP1.5	282	1
F42	45	45	16	60	41	8.5	M42xP1.5	236	1
F64	55	55	16	89	70	10.5	M64xP2.0 2 1/2 -12UNF	540	1
F85	75	75	19	101.6	76.2	13.5	M85xP2.0	590	2

HR Series

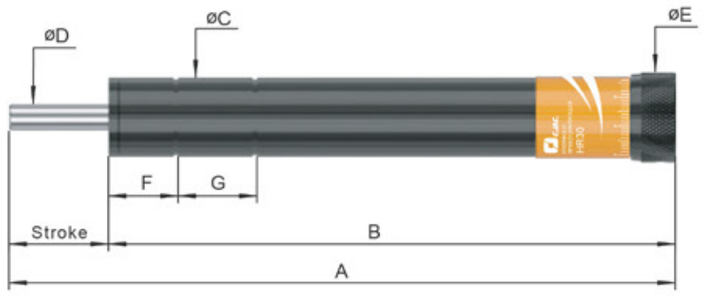
Hydraulic speed controller

The HR hydraulic speed controller can continuously and steadily control the moving speed of an object for a long time. The design of the product is carried out in a spring and pneumatic movement. In order to be appropriate for use in various environments, an external dust cover is also designed to ensure the service life and stability of the product in addition to dust-proof devices inside the product. The HR series also uses special hydraulic oil so that it does not cause a rise in the propulsion speed due to the warming of the moving load. The product is small in size and easy to install and has 0~30 scale of options to allow the user to adjust the speed of the controlled object.

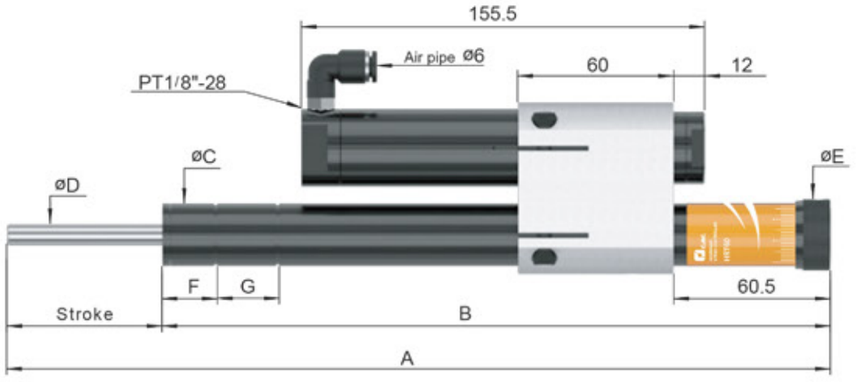
- Material —— Outer pipe: AISI1215 and STKM11A oxidized black, and the nickel plating treatment enhances rust resistance
  Piston rod: hard chromium plating treatment and special seals for longer lifespan
  Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning
- Temperature range — 0~+60°C
- Special demands —— CJAC can customize solutions based on your requirements.

Model	Stroke (mm)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	Operating temperature (Non-frozen) (℃)	Maximum Load (kgf)	Weight (g)
HR15	15	152	137	24	8	27.3	21	24	0~60	15-350	385
HR15-L	15	172.5	157.5	24	8	27.3	21	27	0~60	15-350	365
HR30	30	203	173	24	8	27.3	21	24	0~60	15-350	465
HR30-L	30	202.5	172.5	24	8	27.3	21	27	0~60	15-350	430
HR60	60	283.5	223.5	24	8	27.3	21	24	0~60	15-350	580
HR80	80	350.7	270.7	24	8	27.3	21	24	0~60	15-350	680
HR100	100	396.5	296.5	24	8	27.3	21	24	0~60	15-350	740
HR3160	60	331	271	30.8	12	36	37.2	43.5	0~60	30-420	1,000
HRT60	60	317.5	257	24	8	27.3	21	24	0~60	15-350	1,555
HRT100	100	389.5	289.5	24	8	27.3	21	24	0~60	15-350	1,635

HR/HR-L



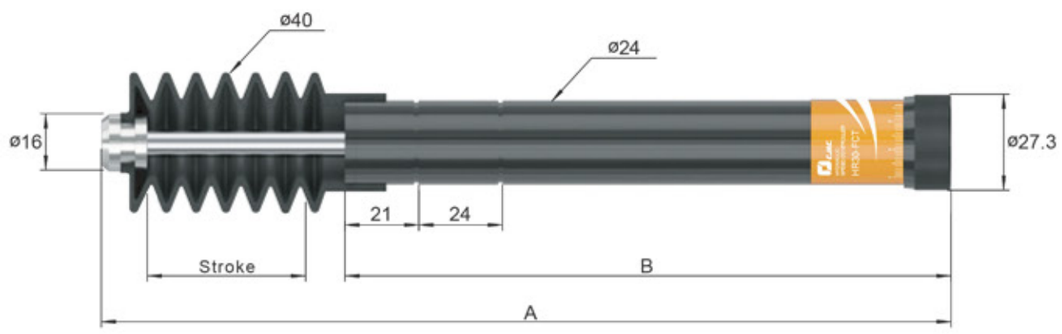
HRT



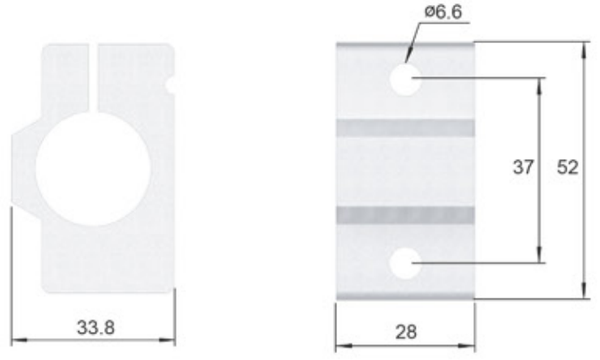
Dust Cover

- Prolong the lifetime of the hydraulic speed controller.
- The product uses organic polymer materials for greater durability。
- Removable design for easy replacement.
- This accessory adds dust protection to hydraulic speed controllers and provides extra security design for other complex environments.

Model	A (mm)	B (mm)	Maximum Load (kgf)	Operating temperature (Non-frozen) (℃)	Maximum Load (kgf)	Weight (g)
HR15-FCZ	179.1	138	15	0~60	15-350	490
HR30-FCZ	242.6	173	30	0~60	15-350	525

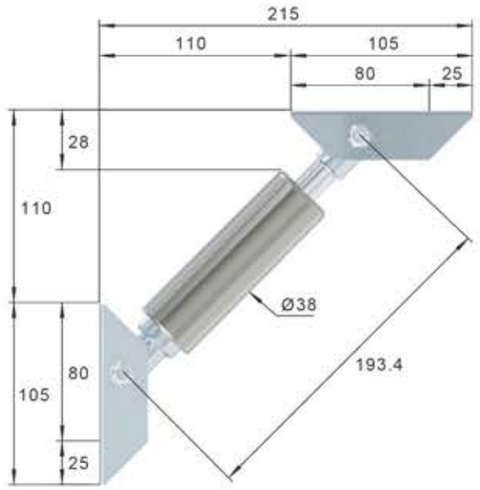


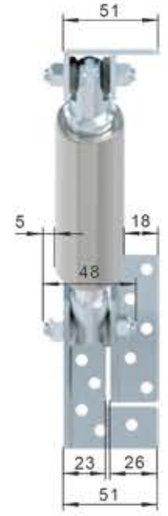
Fixed mount



ADA Series

Dual-side hydraulic damper





Model	Stroke (mm)	Maximum Load kg	Operating temperature (°C)	Weight (g)
ACD3831	±15	350-590	0~60	350

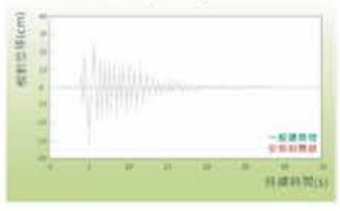
General Buildings

No shock absorber Maximum displacement 13 cm

Shock absorbers installation

Maximum displacement 8 cm
38 % reduction in maximum displacement

Great Hanshin-Awaji Earthquake (EW wave)



ACD3831 can be used in wooden houses to resist earthquakes and effectively improve structural safety. Compared with the existing quake-resistance method, the ACD series absorbs and mitigates the shaking caused by 1/3 of the earthquake events. (This is because the oil shock absorber absorbs the shock and increases the safety of the house.)
The superior attenuation effect and continuous quake-resistance effect of the ACD series (this is not only for the occurrence of major earthquakes but also subsequent earthquakes) apply to all wooden buildings (corresponding to the traditional three-story wooden shaft construction method and also for insulated buildings).
SMALL, SMART, LOW COST! (Small size and lightweight, compared to other methods, and it only needs low cost to be converted into a shock-resistance house)
High durability, no maintenance required (long durability, almost continuous effect, no need for maintenance after construction).

Model	Stroke (mm)	Maximum Load (n) Stretch	Maximum Load (n) Compression	Operating temperature (°C)	Weight (g)
ADA3030-A	30	350-590	590	-10~80	350

BZ Series

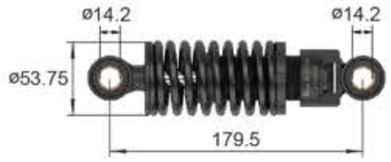
Vibration dampers

The BZ series is specifically designed for applications such as shock absorption and vibration isolation in mobile equipment Automated Guided Vehicles (AGVs) and amusement devices. It is divided into two structures: the BZC fixed model and the BZD adjustable model to meet the different needs of each application. The piston rod adopts a valve plate design, providing better consistency in damping characteristics."

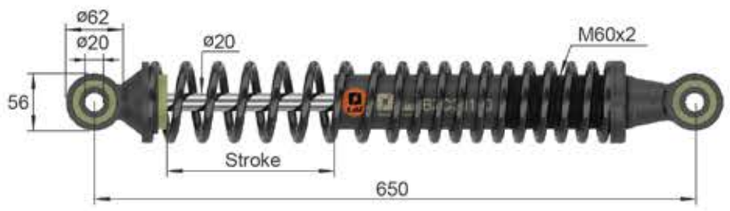
- Material —— Outer pipe: carbon steel oxidized black enhances rust resistance.
  Piston rod: hard chromium plating treatment and special seals for longer lifespan
  Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning.
- Temperature range —— -10~+80°C
- Installation —— CJAC offers customers a variety of fixing methods such as ear hooks, universal joints, and hole installation. In addition, customers can also customize services according to their own requirements.
- Special demands —— CJAC can customize solutions based on your requirements.

Model	Absorbing travel (mm)	Damping force (N)	Initial elastic force kg	End elastic force kg	speed m/s	Operating temperature (Non-frozen) (°C)
BZD1830	30	1600	90	140	0.52	-10~+80
BZC30180	180	4000	50	260	0.52	-10~+80
BZD55180-M	180	18000	—	—	0.52	-10~+80

BZD1830



BZC30180



BZD55180-M

HD Series

Heavy-duty shock absorber

HD heavy-duty shock absorber provides a safe working environment for large machinery. Under the premise of meeting industrial safety standards, CJAC has designed a large-scale hydraulic damper with a large bore diameter, long travel, and high absorption energy. It is suitable for various working conditions and realizes stable linear deceleration of large mechanical equipment.

- Material —— Outer pipe: Galvanized treatment enhances rust resistance
  Piston rod: hard chromium plating treatment and special seals for longer lifespan
  Piston: We adopt materials with excellent wear resistance to ensure long-lasting and stable cushioning
- Applications —— Automatic storage system, transmission system, gantry crane system, cement machinery system, paper machinery system, large production line, large robotic arm, rubber & plastic machinery, vehicle manufacturing, shipyard, petrochemical plant, steel & heavy industry, transportation, freight Cars, bulldozers & excavators, handling machines, cranes, mines, mine carts, railway blockers, railways, gates, port machinery, environmental protection facilities, etc.
- Temperature range —— -10~+80°C
- Installation —— CJAC provides you with flanged tripods and other installation methods.
- Special demands —— CJAC can customize solutions based on your requirements.

Model Description

HD 75 – 100 – F – UC – 00001

- HD — Model
- 75 — Piston diameter (mm)
- 100 — Absorbing travel (mm)
- F — Piston diameter
  - F Front flange
  - R Rear flange
  - FR Front and rear flange S
  - S Front tripod
  - SS Front and rear tripods
  - CM U-clamp
  - V Vertical installation
- UC — Accessories
  - SC Safety chain
  - UC Silencer sleeve
  - EH Enlarged impact head
  - CP Corrugated pipe
  - MC Metal Casing
  - PS Proximity switch
- 00001 — Production Serial No.

● HD Special customized products can be made for customers.
Please provide us with all the relevant information to meet your needs!

The HD series is filled with hydraulic oil and nitrogen, so when the impact head is hit by an external force, the piston rod is pressed into the cylinder, and the piston will force the hydraulic oil to flow out of the orifices of different sizes and enter the oil storage chamber. As the travel decreases, the orifice will be gradually closed, thereby achieving linear deceleration of the moving object.The moving speed of the moving object gradually decreases as the travel of the buffer decreases. After the hydraulic oil flows into the oil storage chamber, the nitrogen gas originally above the hydraulic oil is reduced in volume due to the press-in of the piston rod,and the pressure is continuously increased.When the load is evacuated, the piston will return the piston rod to its original position under the pressure of nitrogen.

1. Free fall

Conditions

m=1500Kg
H=0.5m
S=0.25m
C=1/hr

Formulas and calculation demonstration

$E_K = m \cdot g \cdot H = 7358Nm$
$E_D = m \cdot g \cdot S = 3679Nm$
$E_T = E_K + E_D = 11037Nm$
$E_{TC} = E_T \cdot C = 11037Nm/hr$

Model selection
HD40-250

2. Horizontal movement

Conditions

m=15000Kg
v=2.0m/s
F=4000N
S=0.25m
C=5/hr

Formulas and calculation demonstration

$E_K = \frac{mv^2}{2} = 30000Nm$
$E_D = F \cdot S = 1000Nm$
$E_T = E_K + E_D = 31000Nm$
$E_{TC} = E_T \cdot C = 155000Nm/hr$

Model selection
HD75-250

3. Horizontal moving object with absorber

Conditions

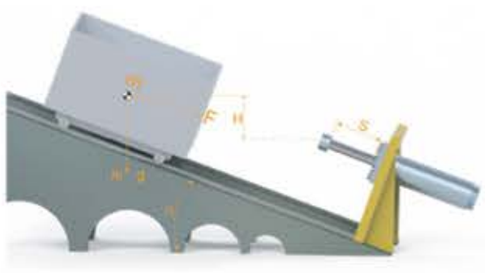
m=12000Kg
v=2.8m/s
F=5000N
S=0.5m
C=8/hr

Formulas and calculation demonstration

$E_K = \frac{mv^2}{2} \cdot \frac{1}{2} = 23520Nm$
$E_D = F \cdot S = 2500Nm$
$E_T = E_K + E_D = 26020Nm$
$E_{TC} = E_T \cdot C = 208160Nm/hr$

Model selection
HD50-500

4. Slope movement



Conditions

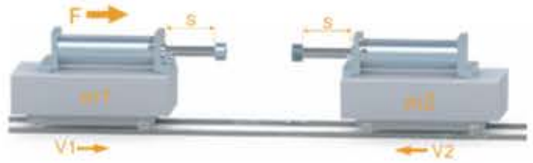
m=10000Kg
H=0.5m
∝=20°
S=0.5m
C=4/hr

Formulas and calculation demonstration

$E_K = m \cdot g \cdot H = 49050Nm$
$E_D = m \cdot g \cdot \sin\alpha \cdot S = 16776Nm$
$E_T = E_K + E_D = 65826Nm$
$E_{TC} = E_T \cdot C = 263304Nm/hr$

Model selection
HD75-500

5. Collision of two horizontally moving objects



Conditions

m1=18000Kg
m2=16000Kg
v1 =2.0m/s
v2 =1.8m/s
F=5000N
S=0.5m
C=10/hr

Formulas and calculation demonstration

$E_K = \frac{(m1 \cdot m2) \cdot (v1+v2)^2}{4(m1+m2)} = 30579Nm$
$E_D = F \cdot S = 2500Nm$
$E_T = E_K + E_D = 33079Nm$
$E_{TC} = E_T \cdot C = 330790Nm/hr$

Model selection
HD50-500

6. Collision of two horizontally moving objects

Conditions

m1=10000Kg
m2=20000Kg
v1 =1.5m/s
v2 =1.5m/s
F=6000N
S=0.5m
C=8/hr

Formulas and calculation demonstration

$E_K = \frac{(m1 \cdot m2) \cdot (v1+v2)^2}{2(m1+m2)} = 30000Nm$
$E_D = F \cdot S = 3000Nm$
$E_T = E_K + E_D = 33000Nm$
$E_{TC} = E_T \cdot C = 264000Nm/hr$

Model selection
HD50-500

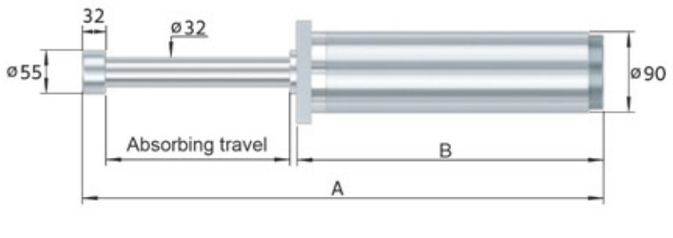
Symbols	Unit	Description
E_D	(Nm)	Driving energy
E_K	(Nm)	Energy
E_T	(Nm)	Total energy
E_{TC}	(Nm)	Total energy per hour
F	(N)	Propelling force
g	(m/s²)	Acceleration of gravity (9.81m/s²)
H	(m)	Height
m	(Kg)	Weight
M_e	(Kg)	Counted weight
S	(m)	Traverse
C	(/hr)	Impacting times per hour
v	(m/s)	impact speed
v_e	(m/s)	Effective impact speed
F_N	(N)	Reactive force
a	(m/s²)	Deceleration
t	(s)	Deceleration time

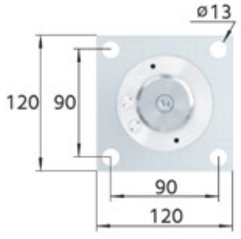
Formula

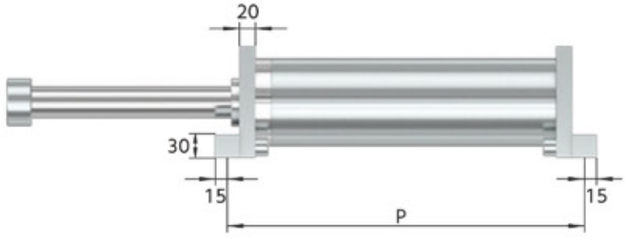
Reactive force	Deceleration time	Deceleration	Traverse
$F_N = \frac{E_T \cdot 1.5^*}{S}$	$t = \frac{2 \cdot S}{v_e} \cdot 1.2^*$	$a = \frac{v_e^2}{2 \cdot S} \cdot 1.2^*$	$S = \frac{v_e^2}{2 \cdot a} \cdot 1.2^*$

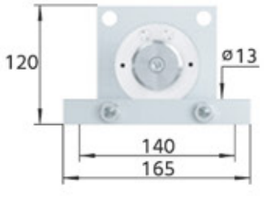
*Calculate the most suitable model with a safety margin!

Model	Absorbing travel (mm)	Piston diameter (mm)	Maximum absorbed energy (Nm)	Maximum reaction force (N)	Maximum absorbed energy per hour (Nm)	Horizontal installation A mm	Horizontal installation B mm	Horizontal installation P mm	Vertical installation A mm	Vertical installation B mm	Vertical installation P mm	Maximum deflection angle Emergency location	Maximum deflection angle Constant load
HD40-050	50	40	3,000	80,000	90,000	298	206	236	298	206	236	2.5°	2.5°
HD40-100	100	40	6,000	80,000	180,000	398	256	286	448	306	336	2.5°	2.0°
HD40-150	150	40	9,000	80,000	270,000	498	306	336	548	356	386	2.5°	2.0°
HD40-200	200	40	12,000	80,000	360,000	598	356	386	648	406	436	2.5°	2.0°
HD40-250	250	40	16,000	80,000	480,000	698	406	436	798	506	536	2.5°	1.0°
HD40-300	300	40	19,000	80,000	570,000	798	456	486	908	566	596	2.5°	1.0°
HD40-350	350	40	22,000	80,000	660,000	898	506	536	998	606	636	2.0°	1.0°
HD40-400	400	40	25,000	80,000	750,000	1008	566	596	1128	686	716	2.0°	0.5°
HD40-450	450	40	28,000	80,000	840,000	1118	626	656	1298	806	836	1.5°	0.5°
HD40-500	500	40	32,000	80,000	960,000	1228	686	716	1348	806	836	1.5°	0.5°
HD40-600	600	40	38,000	80,000	950,000	1448	806	836	1568	926	956	1.0°	0.5°
HD40-650	650	40	41,000	80,000	1025,000	1558	866	896	1738	1046	1076	1.0°	0.5°
HD40-700	700	40	44,000	80,000	1100,000	1668	926	956	1848	1106	1136	1.0°	0.5°
HD40-750	750	40	48,000	80,000	1200,000	1778	986	1016	1958	1166	1196	1.0°	0.5°
HD40-800	800	40	51,000	80,000	1275,000	1888	1046	1076	2068	1226	1256	1.0°	0.5°
HD40-900	900	40	50,000	80,000	1000,000	2108	1166	1256	2283	1341	1371	1.0°	0.5°
HD40-1000	1000	40	48,000	80,000	960,000	2328	1286	1316	2568	1526	1556	1.0°	0.5°
HD40-1100	1100	40	45,000	80,000	900,000	2548	1406	1436	2788	1646	1676	1.0°	0.5°
HD40-1200	1200	40	43,000	80,000	860,000	2768	1526	1556	2993	1751	1781	1.0°	0.5°

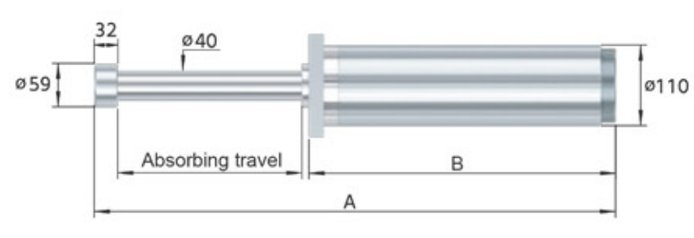


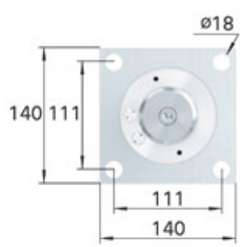


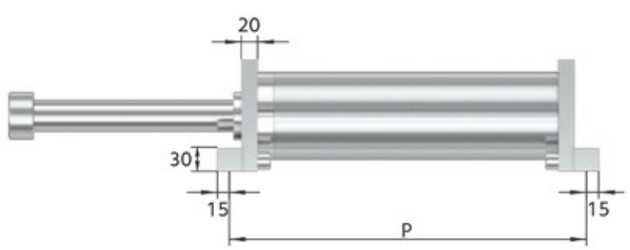


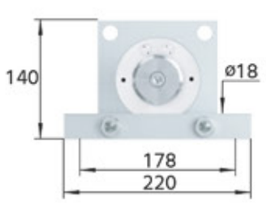


Model	Absorbing travel (mm)	Piston diameter (mm)	Maximum absorbed energy (Nm)	Maximum reaction force (N)	Maximum absorbed energy per hour (Nm)	Horizontal installation A mm	Horizontal installation B mm	Horizontal installation P mm	Vertical installation A mm	Vertical installation B mm	Vertical installation P mm	Maximum deflection angle Emergency location	Maximum deflection angle Constant load
HD50-050	50	50	4,000	120,000	120,000	310	218	248	310	218	248	2.5°	2.5°
HD50-100	100	50	9,000	120,000	270,000	409	267	297	459	317	347	2.5°	2.0°
HD50-150	150	50	14,000	120,000	420,000	509	317	347	544	352	382	2.5°	2.0°
HD50-200	200	50	19,000	120,000	570,000	609	367	397	659	417	447	2.5°	2.0°
HD50-250	250	50	24,000	120,000	720,000	709	417	447	809	517	547	2.5°	1.0°
HD50-300	300	50	28,000	120,000	840,000	809	467	497	909	567	597	2.5°	1.0°
HD50-350	350	50	33,000	120,000	990,000	909	517	547	1019	627	657	2.0°	1.0°
HD50-400	400	50	38,000	120,000	1140,000	1009	567	597	1129	687	717	2.0°	0.5°
HD50-450	450	50	43,000	120,000	1290,000	1119	627	657	1299	807	837	1.5°	0.5°
HD50-500	500	50	48,000	120,000	1440,000	1229	687	717	1409	867	897	1.5°	0.5°
HD50-600	600	50	57,000	120,000	1425,000	1449	807	837	1629	987	1017	1.0°	0.5°
HD50-700	700	50	67,000	120,000	1675,000	1669	927	957	1849	1107	1137	1.0°	0.5°
HD50-800	800	50	76,000	120,000	1700,000	1889	1047	1077	2129	1287	1317	1.0°	0.5°
HD50-900	900	50	72,000	100,000	1440,000	2109	1167	1197	2369	1427	1457	1.0°	0.5°
HD50-1000	1000	50	72,000	90,000	1080,000	2329	1287	1317	2569	1527	1557	1.0°	0.5°
HD50-1100	1100	50	68,000	80,000	1020,000	2569	1427	1457	2819	1677	1707	1.0°	0.5°
HD50-1200	1200	50	64,000	67,000	960,000	2769	1527	1557	3169	1927	1957	1.0°	0.5°
HD50-1300	1300	50	61,000	60,000	915,000	3019	1677	1707	3419	2077	2107	1.0°	0.5°
HD50-1400	1400	50	57,000	56,000	855,000	3369	1927	1957	3669	2227	2257	1.0°	0.5°

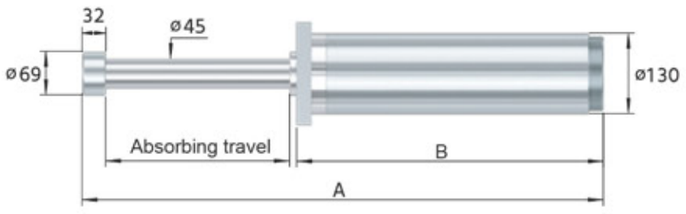


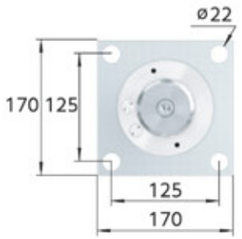


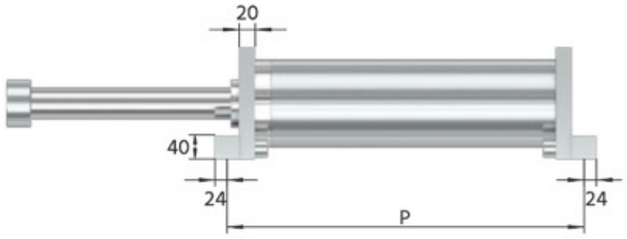


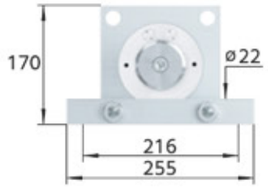


Model	Absorbing travel (mm)	Piston diameter (mm)	Maximum absorbed energy (Nm)	Maximum reaction force (N)	Maximum absorbed energy per hour (Nm)	Horizontal installation A mm	B mm	P mm	Vertical installation A mm	B mm	P mm	Maximum deflection angle Emergency location	Constant load
HD75-050	50	75	9,600	240,000	288,000	318	226	258	318	226	258	2.0°	2.0°
HD75-100	100	75	19,200	240,000	576,000	418	276	308	418	276	308	2.0°	1.5°
HD75-150	150	75	28,800	240,000	864,000	540	348	380	540	348	380	2.0°	1.5°
HD75-200	200	75	38,400	240,000	1152,000	618	376	408	718	476	508	1.5°	1.0°
HD75-250	250	75	48,000	240,000	1440,000	718	426	458	868	576	608	1.5°	0.5°
HD75-300	300	75	57,600	240,000	1728,000	818	476	508	918	576	608	1.5°	0.5°
HD75-350	350	75	67,200	240,000	2016,000	968	576	608	1070	678	710	1.5°	0.5°
HD75-400	400	75	76,800	240,000	2304,000	1069	627	659	1171	729	761	1.5°	0.5°
HD75-450	450	75	86,400	240,000	2592,000	1170	678	710	1322	830	862	1.5°	0.5°
HD75-500	500	75	94,000	235,000	2350,000	1271	729	761	1474	932	964	1.5°	0.5°
HD75-600	600	75	112,800	235,000	2820,000	1472	830	862	1675	1033	1065	1.0°	0.5°
HD75-700	700	75	136,900	230,000	3420,000	1674	932	964	1924	1182	1214	1.0°	0.5°
HD75-800	800	75	134,000	195,000	2680,000	1875	1033	1065	2024	1182	1214	1.0°	0.5°
HD75-900	900	75	134,000	185,000	2680,000	2124	1182	1214	2424	1482	1514	1.0°	0.5°
HD75-1000	1000	75	134,000	170,000	2010,000	2324	1282	1314	2604	1562	1594	1.0°	0.5°
HD75-1100	1100	75	134,000	160,000	2010,000	2524	1382	1414	2874	1732	1764	1.0°	0.5°
HD75-1200	1200	75	134,000	150,000	2010,000	2724	1482	1514	3140	1898	1930	1.0°	0.5°
HD75-1400	1400	75	134,000	140,000	2010,000	3274	1832	1864	3624	2182	2214	0.8°	0.3°
HD75-1500	1500	75	130,000	140,000	1300,000	3490	1948	1980	3874	2332	2364	0.8°	0.3°
HD75-1600	1600	75	120,000	140,000	1200,000	3724	2082	2114	4074	2432	2464	0.6°	0.2°
HD75-1800	1800	75	120,000	140,000	1200,000	4174	2332	2364	4574	2732	2764	0.5°	0.2°

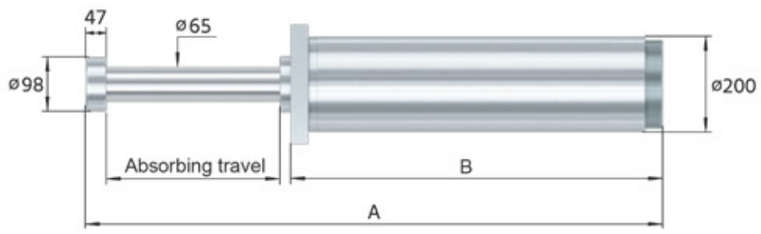


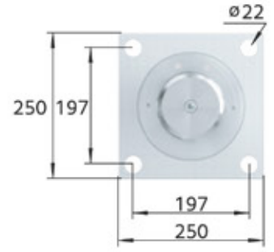


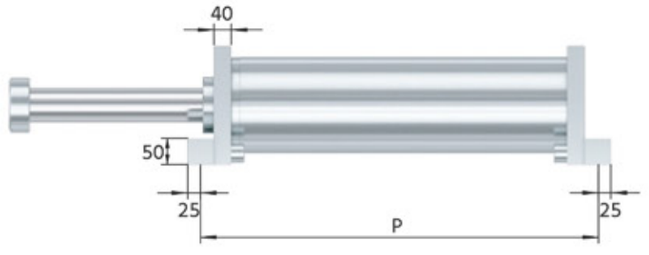


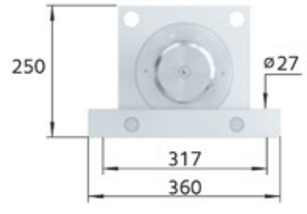


Model	Absorbing travel (mm)	Piston diameter (mm)	Maximum absorbed energy (Nm)	Maximum reaction force (N)	Maximum absorbed energy per hour (Nm)	Horizontal installation A mm	B mm	P mm	Vertical installation A mm	B mm	P mm	Maximum deflection angle Emergency location	Constant load
HD100-050	50	100	15,500	360,000	465,000	425	313	363	425	313	363	2.0°	2.0°
HD100-100	100	100	31,000	360,000	930,000	525	363	413	525	363	413	2.0°	1.5°
HD100-150	150	100	46,500	360,000	1395,000	625	413	463	625	413	463	2.0°	1.5°
HD100-200	200	100	62,000	360,000	1860,000	725	463	513	755	493	543	1.5°	1.0°
HD100-250	250	100	77,500	360,000	2325,000	825	513	563	865	553	603	1.5°	0.5°
HD100-300	300	100	93,000	360,000	2790,000	1000	638	688	1000	638	688	1.5°	0.5°
HD100-400	400	100	124,000	360,000	3720,000	1200	738	788	1200	738	788	1.5°	0.5°
HD100-500	500	100	155,000	360,000	4650,000	1405	843	893	1405	843	893	1.5°	0.5°
HD100-600	600	100	186,000	360,000	4650,000	1605	943	993	1635	973	1023	1.5°	0.5°
HD100-700	700	100	217,000	360,000	5425,000	1805	1043	1093	1845	1083	1133	1.0°	0.5°
HD100-800	800	100	248,000	360,000	4960,000	2015	1153	1203	2065	1203	1253	1.0°	0.5°
HD100-900	900	100	279,000	360,000	5580,000	2215	1253	1303	2295	1333	1383	1.0°	0.5°
HD100-1000	1000	100	250,000	300,000	5000,000	2415	1353	1403	2515	1453	1503	1.0°	0.5°
HD100-1200	1200	100	212,000	212,000	3180,000	2815	1553	1603	2965	1703	1753	1.0°	0.5°

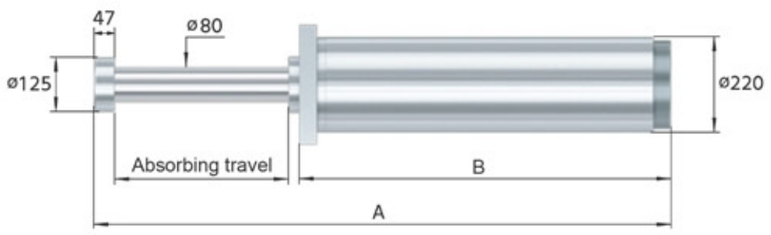


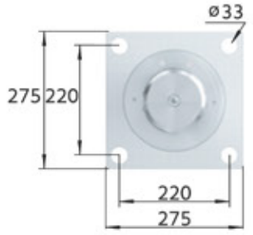


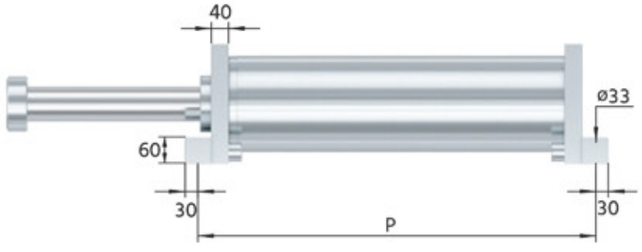


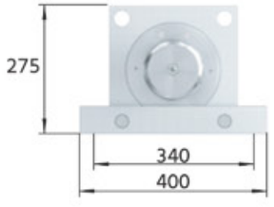


Model	Absorbing travel (mm)	Piston diameter (mm)	Maximum absorbed energy (Nm)	Maximum reaction force (N)	Maximum absorbed energy per hour (Nm)	Horizontal installation A mm	Horizontal installation B mm	Horizontal installation P mm	Vertical installation A mm	Vertical installation B mm	Vertical installation P mm	Maximum deflection angle Emergency location	Maximum deflection angle Constant load
HD125-050	50	125	23,000	552,000	690,000	447	325	385	447	325	385	2.0°	2.0°
HD125-100	100	125	46,000	552,000	1380,000	577	405	465	577	405	465	2.0°	1.5°
HD125-150	150	125	69,000	552,000	2070,000	712	490	550	712	490	550	2.0°	1.5°
HD125-200	200	125	92,000	552,000	2760,000	842	570	630	842	570	630	1.5°	1.0°
HD125-250	250	125	115,000	552,000	2875,000	977	655	715	977	655	715	1.5°	0.5°
HD125-300	300	125	138,000	552,000	3450,000	1117	745	805	1117	745	805	1.5°	0.5°
HD125-400	400	125	185,000	552,000	4625,000	1387	915	975	1387	915	975	1.5°	0.5°
HD125-500	500	125	231,000	552,000	5775,000	1657	1085	1145	1657	1085	1145	1.5°	0.5°
HD125-600	600	125	277,000	552,000	5540,000	1927	1255	1315	1927	1255	1315	1.5°	0.5°
HD125-700	700	125	325,000	552,000	6500,000	2142	1370	1430	2142	1370	1430	1.0°	0.5°
HD125-800	800	125	370,000	552,000	5550,000	2412	1540	1600	2412	1540	1600	1.0°	0.5°
HD125-900	900	125	415,000	552,000	6225,000	2672	1700	1760	2672	1700	1760	1.0°	0.5°
HD125-1000	1000	125	460,000	552,000	4600,000	2982	1910	1970	2982	1910	1970	1.0°	0.5°
HD125-1200	1200	125	410,000	410,000	4100,000	3462	2190	2250	3462	2190	2250	1.0°	0.5°

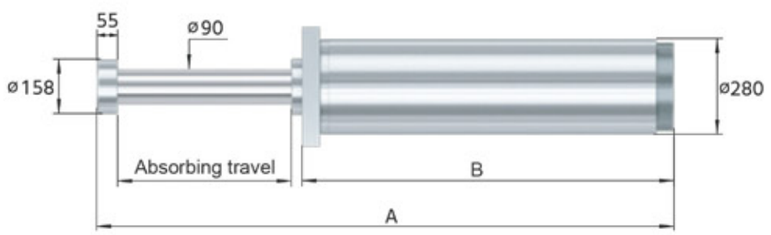


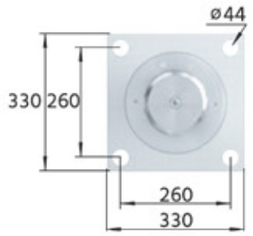


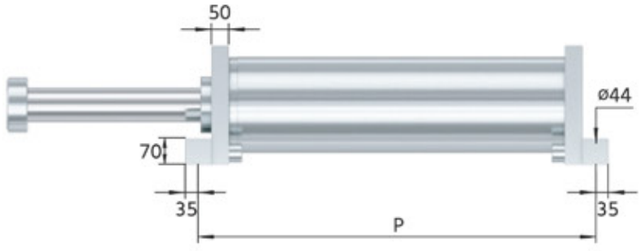


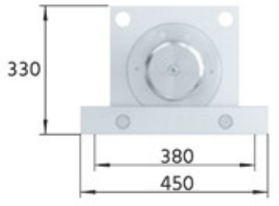


Model	Absorbing travel (mm)	Piston diameter (mm)	Maximum absorbed energy (Nm)	Maximum reaction force (N)	Maximum absorbed energy per hour (Nm)	Horizontal installation A mm	Horizontal installation B mm	Horizontal installation P mm	Vertical installation A mm	Vertical installation B mm	Vertical installation P mm	Maximum deflection angle Emergency location	Maximum deflection angle Constant load
HD160-050	50	160	37,000	900,000	270,000	472	352	422	472	352	422	2.0°	2.0°
HD160-100	100	160	75,000	900,000	750,000	572	402	472	572	402	472	2.0°	1.5°
HD160-150	150	160	112,000	900,000	1120,000	682	462	532	682	462	532	2.0°	1.5°
HD160-200	200	160	150,000	900,000	1500,000	802	532	602	802	532	602	1.5°	1.0°
HD160-250	250	160	190,000	900,000	1900,000	912	592	662	912	592	662	1.5°	0.5°
HD160-300	300	160	220,000	900,000	2200,000	1032	662	732	1032	662	732	1.5°	0.5°
HD160-400	400	160	300,000	900,000	3000,000	1252	782	852	1252	782	852	1.5°	0.5°
HD160-500	500	160	380,000	900,000	3800,000	1482	912	982	1482	912	982	1.5°	0.5°
HD160-600	600	160	455,000	900,000	4550,000	1712	1042	1112	1712	1042	1112	1.5°	0.5°
HD160-700	700	160	530,000	900,000	5300,000	1942	1172	1242	1942	1172	1242	1.0°	0.5°
HD160-800	800	160	605,000	900,000	3025,000	2172	1302	1372	2172	1302	1372	1.0°	0.5°
HD160-900	900	160	680,000	900,000	3400,000	2402	1432	1502	2402	1432	1502	1.0°	0.5°
HD160-1000	1000	160	795,000	900,000	3975,000	2632	1562	1632	2632	1562	1632	1.0°	0.5°
HD160-1200	1200	160	800,000	800,000	4000,000	3092	1822	1892	3092	1822	1892	1.0°	0.5°

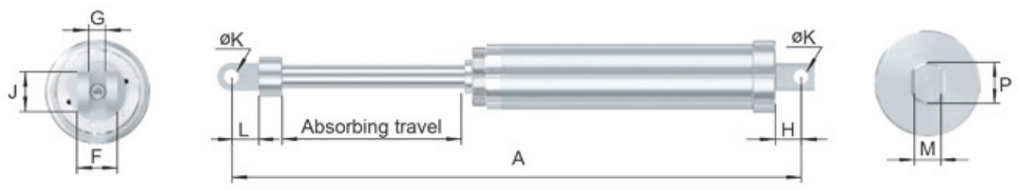








Model	A mm	F mm	G mm	H mm	J mm	K mm	L mm	M mm	P mm
HD40-050	382	38.1	16.3	35	38.1	20	38	25	38
HD40-100	482	38.1	16.3	35	38.1	20	38	25	38
HD40-150	582	38.1	16.3	35	38.1	20	38	25	38
HD40-200	682	38.1	16.3	35	38.1	20	38	25	38
HD40-250	782	38.1	16.3	35	38.1	20	38	25	38
HD40-300	882	38.1	16.3	35	38.1	20	38	25	38
HD50-050	398	55	25	34	40	20	40	25	40
HD50-100	497	55	25	34	40	20	40	25	40
HD50-150	597	55	25	34	40	20	40	25	40
HD50-200	697	55	25	34	40	20	40	25	40
HD50-250	797	55	25	34	40	20	40	25	40
HD50-300	897	55	25	34	40	20	40	25	40
HD75-050	432	90	38	32	60	25	45	38	60
HD75-100	520	90	38	32	60	25	45	38	60
HD75-150	642	90	38	32	60	25	45	38	60
HD75-200	736	90	38	32	60	25	45	38	60
HD75-250	838	90	38	32	60	25	45	38	60
HD75-300	940	90	38	32	60	25	45	38	60
HD100-050	570	140	65	50	100	50	70		
HD100-100	672	140	65	50	100	50	70		
HD100-150	772	140	65	50	100	50	70		
HD100-200	875	140	65	50	100	50	70		
HD100-250	976	140	65	50	100	50	70		
HD100-300	1143	140	65	50	100	50	70		
HD125-050	640	150	70	70	100	60	80		
HD125-100	751	150	70	70	100	60	80		
HD125-150	853	150	70	70	100	60	80		
HD125-200	955	150	70	70	100	60	80		
HD125-250	1055	150	70	70	100	60	80		
HD125-300	1157	150	70	70	100	60	80		



Installation


F: Front flange


FR: Front and rear flange


S: Front tripod

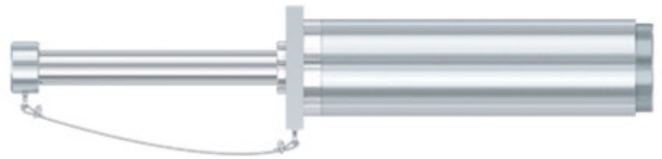

R: Rear flange


CM U-clamp


SS: Front and rear tripods

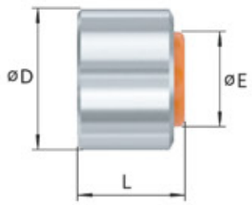
- When the buffering travel is longer than 300 mm, the rear flange is not suggested
- We also offer necessary components and accessories

Safety chain



! For safety reasons, we recommend the installation of an anti-fall safety chain when the HD Series heavy-duty shock absorber is mounted at a height greater than 2m.

Silencer



Model	D mm	L mm	E mm
HD40	55	45	40
HD50	59	45	40
HD75	69	45	48

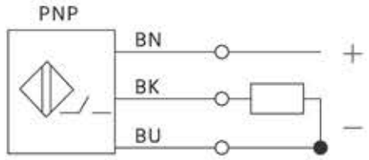
Accessories

Protection device

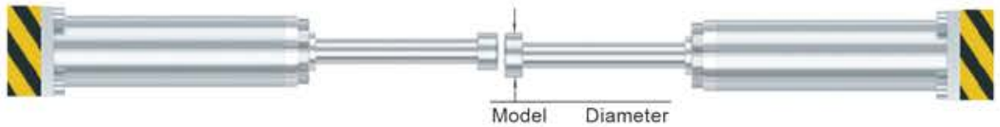
To protect the piston rod from high-temperature liquids and metal chips, we have made a metal sleeve for the piston rod which is stronger and less prone to deterioration and breakage.

To adapt the absorber to more harsh environments, we customized a protective ripple tube to protect the piston rod from external influences to extend the life of the buffer.

Proximity switch



Enlarged impact head



Model	Diameter
HD40	70
HD50	80
HD75	100
HD100	125
HD125	160

! Application: Absorber impact absorber

Instructions

Precautions

1.Ensure that the impact surface is perpendicular to the piston rod during installation.
2.The flange fixing bolt must not be smaller than 2mm from the mounting holes during installation.
3.To protect the piston rod, it is recommended to use the tripod or front and rear flange mounting method for the absorber stroke of 500mm and above.
4.Do not use the absorber outside the temperature range, otherwise, it may cause premature deterioration or damage to the absorber, which will result in system damage and mechanical accidents.
5.Keep corrosive fluids away from the absorber, and ensure the piston rod area is clean.
6.The absorber is filled with high-pressure gas, do not open it without authorization to avoid injury.！！！

Initial use checks

Before the initial use of the absorber, it should be checked for correct installation and operated with lower buffer speed and impact energy so that the actual operation of the absorber in the early stages keeps a certain discrepancy from the theoretical values. This approach helps to avoid system damage.

Inspection after large load impact

After experiencing a full load impact (e.g., during emergencies), HD needs to undergo another verification process for deceleration or weight reduction. This involves checking if the piston rod fully returns, inspecting for any oil leakage, and ensuring the secure installation of components.

Maintenance

HD is an absorber with a sealed system that does not require special maintenance. When the buffer is not regularly used (e.g., only prepared for emergency stop systems), it should undergo safety inspections at fixed intervals, with a frequency of no less than once a year. During inspections, pay attention to whether the piston rod can fully extend and remains intact. If the buffer is regularly used, it is recommended to conduct inspections every three months.

! HD is shipped with the accessories that the customer has chosen. When you receive the goods, please check whether the accessories are complete. Please ensure the product information is identical to the ordering information before use.

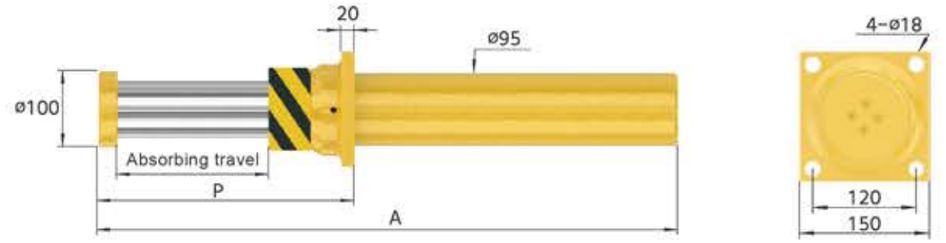
H I Series

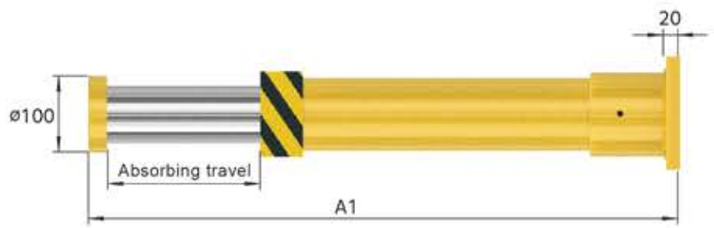
Heavy-duty shock absorber

The HI series of shock absorber is specially for the safety of heavy-duty mechanical equipment. They are air-liquid separated and are returned with nitrogen. This design facilitates maintenance. At the same time, the HI series also features large bore and high absorption energy to protect the safety of heavy machinery. It is used in port, railway, steel and other industries. Its characteristics are cylinder bore drilling and high energy absorption. It can effectively reduce the moving load of heavy-duty machinery and equipment. Its working principle is that when the impact head is impacted by external force, the piston rod moves downward and compresses the hydraulic oil to pass through the orifice to produce damping force. At the same time, the hydraulic oil squeezes the nitrogen in the air chamber. When the load is removed, the high-pressure nitrogen will press the hydraulic oil to push the piston to move up to reset the piston rod and complete a working cycle.

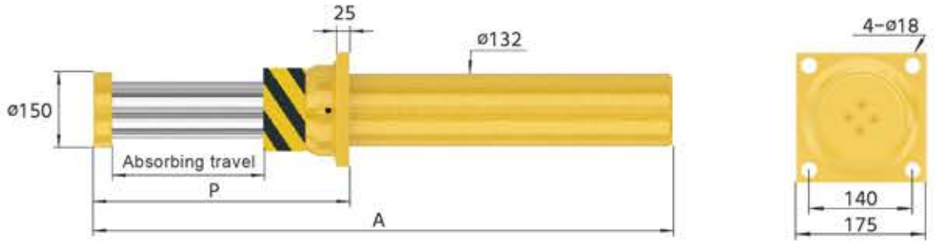
- Material ——— Outer pipe: carbon steel paint treatment to enhance rust resistance.
  Axis: Hard chromium treatment plus special seals for longer lifespan
- Temperatu ——— -10~+80°C
- Installation ——— CJAC provides you with flanged tripods and other installation methods.
  Moreover, CJAC can customize solutions based on your requirements.
- Special demand —— CJAC can customize solutions based on your requirements

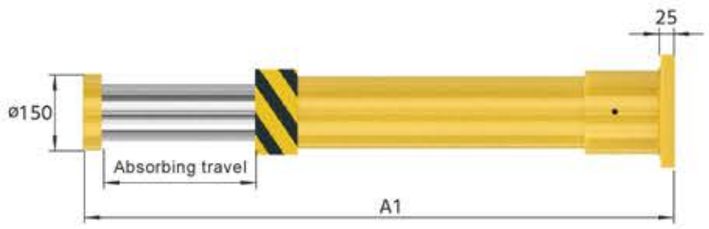
Model	Absorbing travel (mm)	Maximum absorbed energy (Nm)	Maximum impact (kN)	Restoring force Stretch (kN)	Restoring force Compress (kN)	Weight (g)	A mm	A1 mm	P mm
HI75-50	50	10000	250	1.65	18	-	312	322	212
HI75-100	100	20000	250	1.65	18	-	447	457	262
HI75-150	150	30000	250	1.65	18	-	593	603	312
HI75-200	200	40000	250	1.65	18	-	743	753	362
HI75-400	400	80000	250	1.65	18	-	1333	1343	562



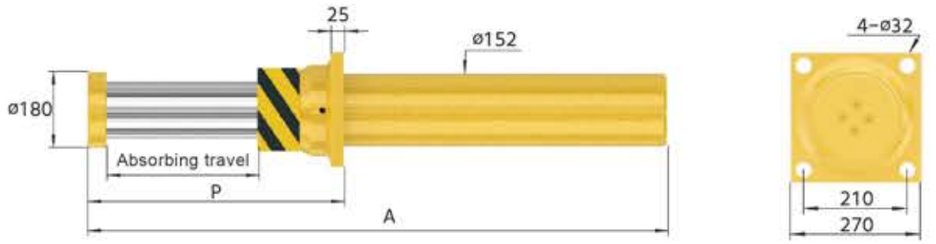


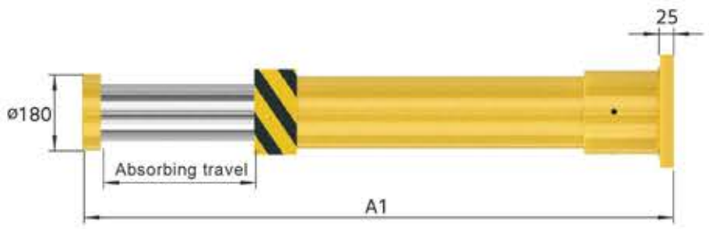
Model	Absorbing travel (mm)	Maximum absorbed energy (Nm)	Maximum impact (kN)	Restoring force Stretch (kN)	Restoring force Compress (kN)	Weight (g)	A mm	A1 mm	P mm
HI100-100	100	40000	500	3	45	-	464	479	282
HI100-200	200	80000	500	3	45	-	734	749	382
HI100-250	250	100000	500	3	45	-	864	879	440
HI100-300	300	120000	500	3	45	-	1004	1019	502
HI100-400	400	160000	500	3	45	-	1274	1289	602
HI100-500	500	200000	500	3	45	-	1534	1549	702





Model	Absorbing travel (mm)	Maximum absorbed energy (Nm)	Maximum impact (N)	Restoring force Stretch (kN)	Restoring force Compress (kN)	Weight (kg)	A mm	A1 mm	P mm
HI120-100	100	60000	645	4	60	-	458	473	292
HI120-150	150	82000	645	4	60	-	578	593	342
HI120-200	200	105000	645	4	60	-	708	723	392
HI120-500	500	275000	645	4	60	-	1478	1493	712
HI120-1000	1000	510000	600	4	60	-	2758	2773	1335





PC Series

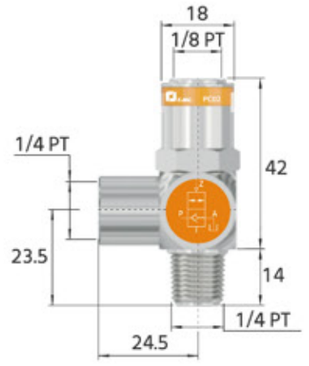
Pilot check valve air pressure check valve

Safety circuit for pressure preservation.
Prevention of self-driven situations after the stop of the cylinder.
The positioning of the sudden stop of the cylinder is highly accurate.
Special circuit design applications.

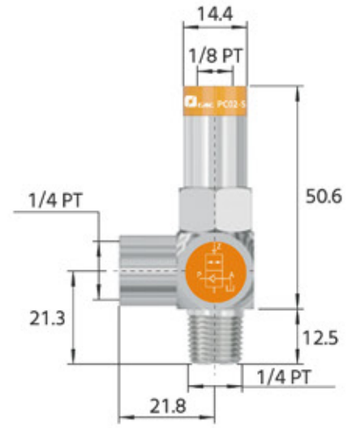
- Material —— Body frame: JIS C3604 nickel plating treatment enhances rust resistance.
  Body sleeve: aluminum alloy plus anodized primary color
- Pressure range —— 0.5~9.5Kg/cm²
- Temperature range —— -10~+70°C
- Frequency —— 40-60/min
- Specific demands —— CJAC can customize solutions based on your requirements.

Model	Pressure range (kg/cm²)	Temperature used (°C)	Effective cross-sectional area (mm²)	Operation frequency (times/min)	Weight (g)	Suggested cylinder
PC02	0.5~9.5	-10~+70	24	60	100	50 and below (50 included)
PC02-S	0.5~9.5	-10~+70	24	60	93	50 and below (50 included)
PC03	0.5~9.5	-10~+70	79	40	340	63~80

PC02

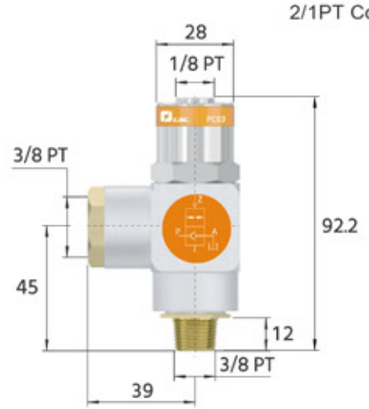


PC02-S

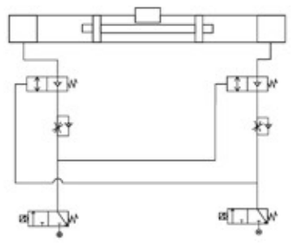


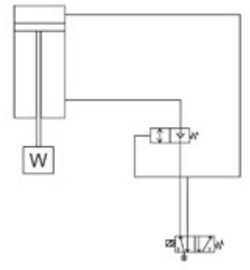
PC03

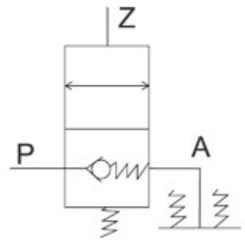
2/1PT Connector Conversion Diagram



Airway Usage Examples

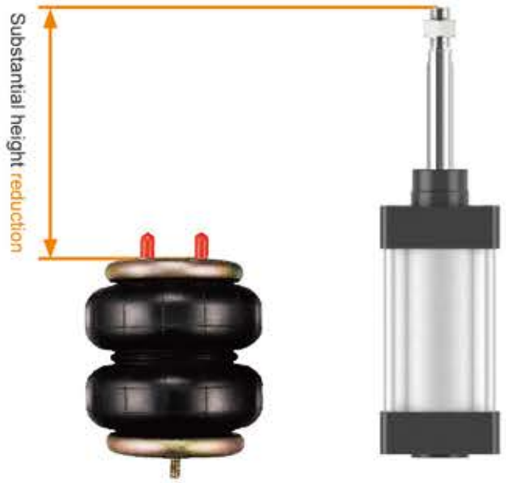






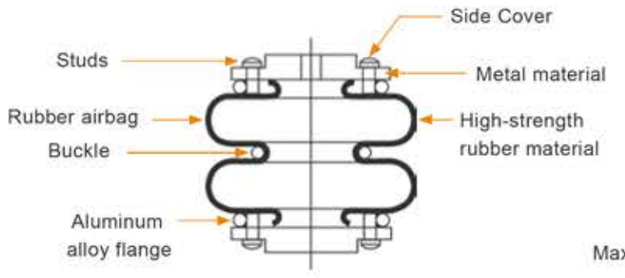
AS Series

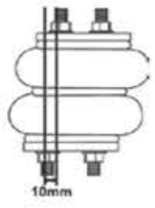
Air spring



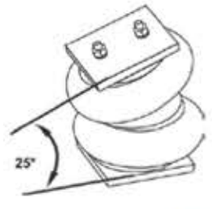
AS series air springs can be applied in mechanical shock, vibration, pressure, handling, and actuation. This product has small installation space requirements and features simple control load and is maintenance-free. It also provides excellent vibration isolation. It can be used to replace the jack, with the cylinder to provide thrust force.

- Material —— End cap: Galvanized carbon steel and nickel plating treatment increase rust resistance
  Rubber bag: neoprene plus fiber
- Frequency —— 3.0~5.0Hz
- Air pressure range —— 0~0.5Mpa
- Temperature range —— -35~70°C
- Installation —— CJAC provides you with standard threaded mounting installation, which can be fixed in both internal and external teeth. If you have specific demands, CJAC can also offer custom offers.
- Specific demands —— CJAC can customize solutions based on your requirements.





Maximum displacement 10mm



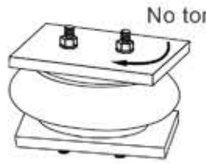
Maximum Tilt Angle 25°

The air spring is a convoluted capsule structure, usually with 1 to 3 convoluted capsules.
The connection method is a fixed flange, and the size of the connecting caps at both ends of the air spring is slightly smaller than the maximum outer diameter of the convoluted capsule, and the end caps and the air bag are tightly connected with a buckle. The operation principle is to fill a closed air spring with compressed air or an oil-air mixture, so that the pressure inside the convoluted capsule rises, and the force generated by multiplying the cross-sectional area of the convoluted capsule by the pressure (F=AxP) is utilized to connect the actuator with the function of the vibration isolator.

Installation Precautions

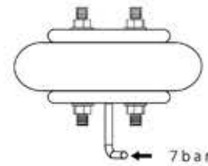
1. It is necessary to install the air spring with clearance from the machine because the convoluted capsules will expand after being filled with compressed gas.
2. Not to be twisted. (FIG. 1)
3. Air springs must not be subjected to excessive tilting or transverse forces during use.
4. Air springs should be installed as close as possible to the device's center of gravity.
5. Air springs are high-pressure products and are strictly prohibited from burning collision, and needling.
6. Use a guide post to protect the air spring.
7. Ambient temperature: -35°C ~70°C (-40°C ~90°C for specific manufacturing)
8. Only fill with compressed air if there is a load, maximum operating pressure: 7 bar. (FIG. 2)
9. When the ascending stroke is terminated, a fixing device should be provided to limit the height of use, to prevent exceeding the permissible maximum stroke height, which may cause the air spring to burst and be damaged. (FIG. 3)
10. When the descending stroke is terminated, a fixing device should be provided to limit the height of use and to prevent damage caused by the forcing of the air spring. (FIG. 4)

No torsion of air spring



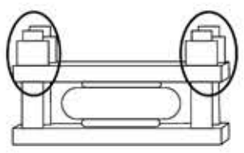
(FIG. 1)

Filled Pressure Value
Do not exceed the rated air pressure (7bar).

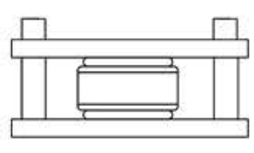


(FIG. 2)

When the ascending stroke is terminated, a fixing device should be provided.



Correct

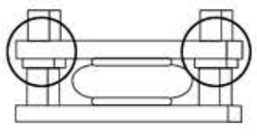


Wrong

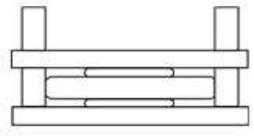
(FIG. 3)

When the descending stroke is terminated, a fixing device should be provided.

Correct



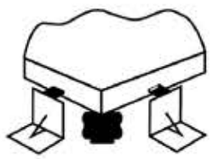
Wrong



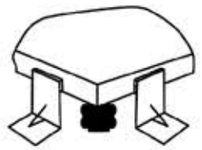
(FIG. 4)

The guidance method uses guide posts, rubber pads, steel cables, etc., on the side of the vibrating object as follows.

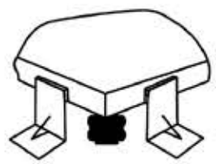
Install air spring on the side



Add rubber pads to the fixed bracket

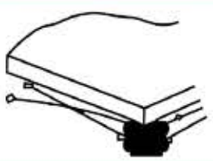


Add linear bearings to the fixed bracket

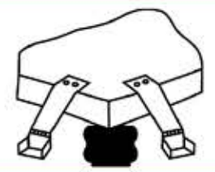


Install ball bearing and guide post

Secure by adding steel cables around the perimeter



Install rubber coupling brackets



Air spring calculation

	Actuator	Vibration Isolators
Internal pressure of air spring P(bar)	●	●
Required stroke(S,mm)	●	
Lifting weight (m,kg)	●	
Number of air springs (n)	●	●
Minimum height of the mounting structure (H,mm)	●	●
Minimum diameter of mounting structure (D,mm)	●	●
Temperature (T,°C)	●	●
Object Weight (m,kg)		●
Frequency of machine vibration (f,Hz)		●
Expected efficiency of vibration isolation (I,%)		●

Optional conditions for air springs (provided by the customer)

Order Example
Model Index
Calculation Example
AC
AC-S
AC-RSN
AC-R
AC-K
ACD
Stopper Cylinder AC/AD
AD
IR
ADA
BZ
HD
Calculation Example
RD Accessories
HI
PD
AS
RD
Instructions

Example 1: Air spring option (actuator)

Requirements			
Lifting weight	m(kg)	2200	
Required stroke	(S,mm)	220	The stroke of the selected air spring should be greater than the S value
Number of air springs	n	4	
Internal pressure of air spring	P(bar)	5.5	P is less than 7bar
Minimum height of mounting structure	H(mm)	100	The minimum height of the selected air spring should be less than the H value
	D(mm)	400	
Temperature range	T(°C)	25	The T value must be within the range of -35°C to 70°C.
Calculation result			
The respective load forces of each air spring (calculated using formula 1-1).	F	5390N	The actuating force of the selected air spring should be greater than the F value.

$$\text{Selected formula : } F = \frac{m \times g}{n} \qquad (1\text{-}1)$$

Example 2: Air spring option (actuator)

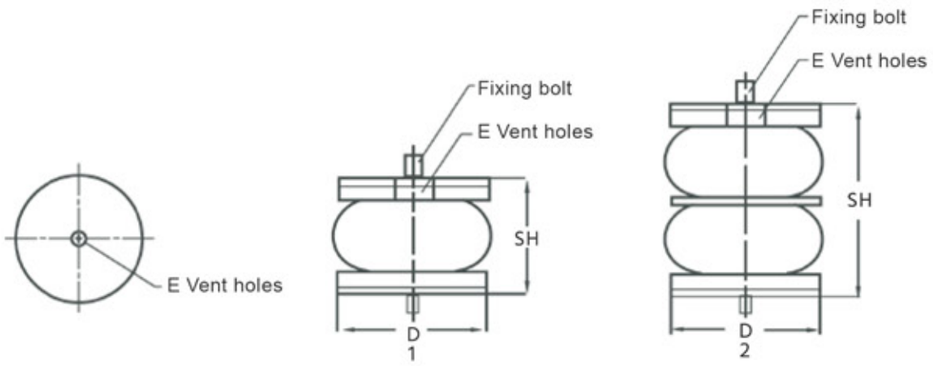
Requirements			
Object's Weight	m(kg)	2400	
Motor speed	RPM	870	
Expected efficiency of vibration isolation (%)	I(%)	90	
Number of air springs	n	6	
Internal pressure of air spring	P(bar)	5.5	P is less than 7bar
Minimum height of mounting structure	H(mm)	120	The minimum height of the selected air spring should be less than the H value
Minimum diameter of mounting structure	D(mm)	380	The pressurized diameter of the selected pneumatic spring should be smaller than the D value."
Temperature range	T(°C)	24	The T value must be within the range of -35°C to 70°C.Calculation result
Requirements			
Loading force of individual gas springs (Calculated using formula 2-1)	F	5100N	The selected pneumatic spring load should be greater than the F value.
Frequency of object vibration (Calculated using formula 2-2)	f (Hz)	14.5	
Air spring natural frequency (calculated using formula 2-3)	fo	4.37	Optional air spring with natural frequency less than 4.37

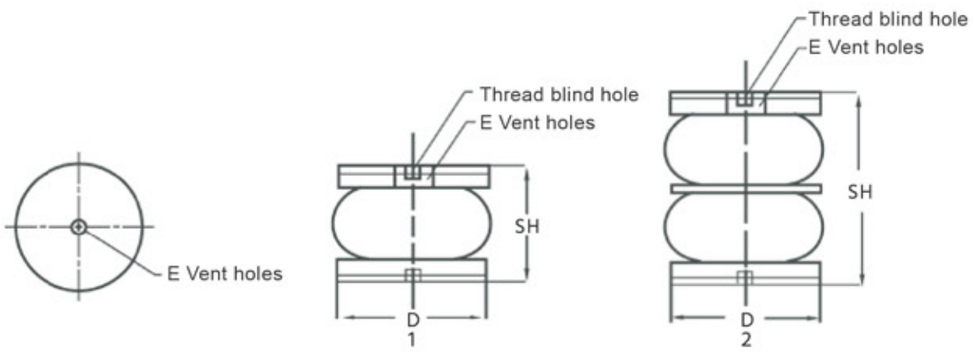
$$\text{Selected formula : } F = \frac{1.3 \times (m \times g)}{n} \qquad (2\text{-}1)$$

$$f = \frac{CPM \text{ or } RPM}{60} \qquad (2\text{-}2)$$

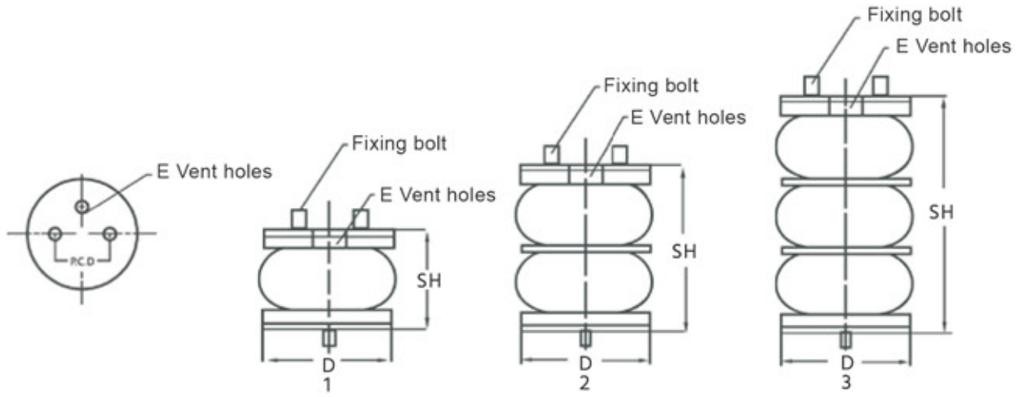
$$f = \frac{f}{\sqrt{\frac{2-I}{1-I}}} \qquad (2\text{-}2)$$

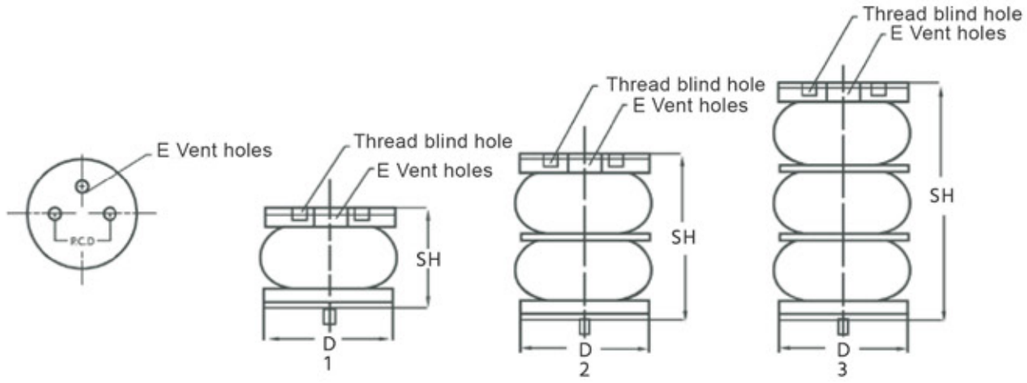
Specifications Static outer diameter - Numbers	Height (mm) Lowest height	Tallest height	Standard height SH	Stroke (mm)	Mounting block diameter 5bar	Maximum diameter (mm)	P.C.D (mm)	Vent hole (E)	Fixing bolt / Thread blind hole Specifications	Numbers
AS-130-1	44	100	50	56	104	142	\	1/4"PT	M10*P1.5	2
AS-130-1N	44	100	50	56	104	142	\	1/4"PT	M10*P1.5	2
AS-130-2	54	152	84	98	104	142	\	1/4"PT	M10*P1.5	2
AS-130-2N	54	152	84	98	104	142	\	1/4"PT	M10*P1.5	2



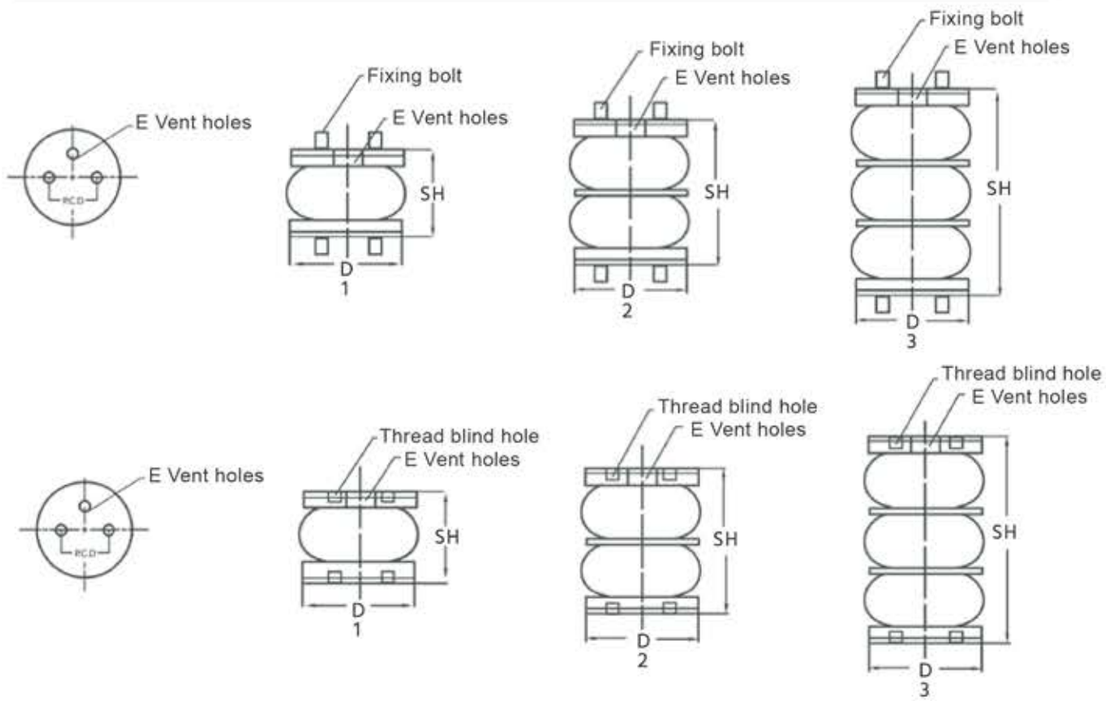


Specifications Static outer diameter - Numbers	Height (mm) Lowest height	Tallest height	Standard height SH	Stroke (mm)	Mounting block diameter 5bar	Maximum diameter (mm)	P.C.D (mm)	Vent hole (E)	Fixing bolt / Thread blind hole Specifications	Numbers
AS-135-1	55	90	80	35	109.5	140	44.5	3/8"PT	3/8"-19	3
AS-135-1N	55	90	80	35	109.5	140	44.5	3/8"PT	3/8"-19	3
AS-135-2	100	145	135	45	109.5	140	44.5	3/8"PT	3/8"-19	3
AS-135-2N	100	145	135	45	109.5	140	44.5	3/8"PT	3/8"-19	3
AS-155-2	75	175	155	100	109.5	160	44.5	3/8"PT	3/8"-19	3
AS-155-2N	75	175	155	100	109.5	160	44.5	3/8"PT	3/8"-19	3
AS-180-1	65	100	90	35	133	180	69	3/8"PT	3/8"-19	3
AS-180-2	90	185	165	95	133	180	69	3/8"PT	3/8"-19	3
AS-180-3	120	300	260	180	133	180	69	3/8"PT	3/8"-19	3





Specifications Static outer diameter - Numbers	Height (mm) Lowest height	Tallest height	Standard height SH	Stroke (mm)	Mounting block diameter 5bar	Maximum diameter (mm)	P.C.D (mm)	Vent hole (E)	Fixing bolt / Thread blind hole Specifications	Numbers
AS-147-2	71	216	152	145	108	162	44.45	1/4"PT	M10*P1.5	4
AS-147-2N	71	216	152	145	108	162	44.45	1/4"PT	M10*P1.5	4
AS-160-1	44	100	70	56	120	176	44.45	1/4"PT	M10*P1.5	4
AS-160-1N	44	100	70	56	120	176	44.45	1/4"PT	M10*P1.5	4
AS-160-2	62	168	104	106	120	176	44.45	1/4"PT	M10*P1.5	4
AS-160-2N	62	168	104	106	120	176	44.45	1/4"PT	M10*P1.5	4
AS-160-3	80	236	174	156	120	176	44.45	1/4"PT	M10*P1.5	4
AS-160-3N	80	236	174	156	120	176	44.45	1/4"PT	M10*P1.5	4
AS-210-1	48	125	80	77	150	230	69.9	3/8"PT	M10*P1.5	4
AS-210-1N	48	125	80	77	150	230	69.9	3/8"PT	M10*P1.5	4
AS-210-2	70	238	140	168	150	230	69.9	3/8"PT	M10*P1.5	4
AS-210-2N	70	238	140	168	150	230	69.9	3/8"PT	M10*P1.5	4
AS-210-3	95	340	200	245	150	230	69.9	3/8"PT	M10*P1.5	4
AS-210-3N	95	340	200	245	150	230	69.9	3/8"PT	M10*P1.5	4
AS-250-1	50	162	92	112	168	270	88.9	1/2"PT	M10*P1.5	4
AS-250-1N	50	162	92	112	168	270	88.9	1/2"PT	M10*P1.5	4
AS-250-2	78	238	160	160	168	270	88.9	1/2"PT	M10*P1.5	4
AS-250-2N	78	238	160	160	168	270	88.9	1/2"PT	M10*P1.5	4
AS-250-3	106	385	232	279	168	270	88.9	1/2"PT	M10*P1.5	4
AS-250-3N	106	385	232	279	168	270	88.9	1/2"PT	M10*P1.5	4



RD Series

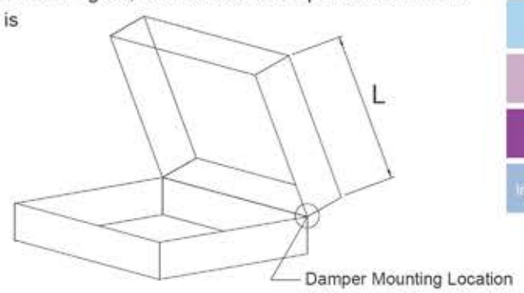
Rotary damper

Using high-viscosity silicone oil for the braking effect (resistance) of rotating parts, the sealed viscous grease inside the body generates resistance to the movement of components. The torque generated depends on the viscosity of the grease, the clearance between moving parts, and the contact area of the oil.

- Material ——— Outer pipe: zinc alloy and engineering plastics
  Axis: Carbon steel with nickel plating and engineering plastics
- Torque Size ——— 0.3~8N•m
- Temperature range —— -5~50°C
- Installation ——— CJAC provides you with installation methods such as fixed-through holes and square shafts. Your special demands can also be customized according to your specifications.
- Specific demands —— CJAC can customize solutions based on your requirements.

Selection of rotary damper

1. The rotation axis is directly connected to the damper shaft or inner hole T=L/xM (center position or center of gravity position). Usually, when the cover is used as shown in the figure, the maximum torque is determined when the cover is in the horizontal position, and the damper is selected by calculation to satisfy the following equation.
   Torque T=L/2x9.8xM(N·m)
   L : Cover size (m)
   M: Cover weight (kg)
   The above calculation formula provides the maximum torque value that occurs when the cover is about to be closed. Please use this torque value for practical operations to confirm the final required torque. The adjustment of the torque can be achieved by replacing the high-viscosity oil.



2. The rotation axis and the damper shaft are interconnected via gears, and the calculation of torque varies depending on the gear ratio or lever ratio

RDS | 18 | W | L1 | G1

- RDS: Swinging
- RDR: Rotary

Product O.D.

- W: White axis, from highest to lowest damping force
- B: Black axis, from lowest to highest damping force
- P: Axis
- Blank: No Axis

- L: Left, torque when rotating counterclockwise
- R: Right, torque when rotating clockwise
- RL: Both clockwise and counterclockwise rotations generate torque.
- 1: Maximum operating torque 1N·m(10kgf·cm)

- G1: Gear code
- Blank: No gear

G1 Gear specification

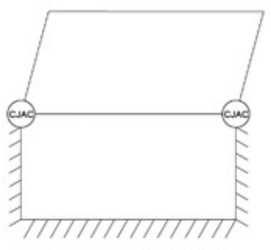
Serial No.	Item	Specification
1	Gear type	Standard spur circular gear
2	Tooth profile	Involute
3	Modulus	0.8
4	Pressure angle	20°
5	Gear number	11
6	Pitch circle diameter	8.8mm

G2 Gear specification

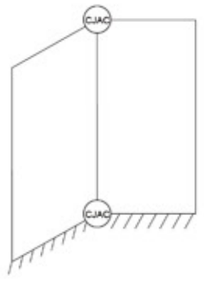
Serial No.	Item	Specification
1	Gear type	Standard spur circular gear
2	Tooth profile	Involute
3	Modulus	1.0
4	Pressure angle	20°
5	Gear number	12
6	Pitch circle diameter	12mm

Installation

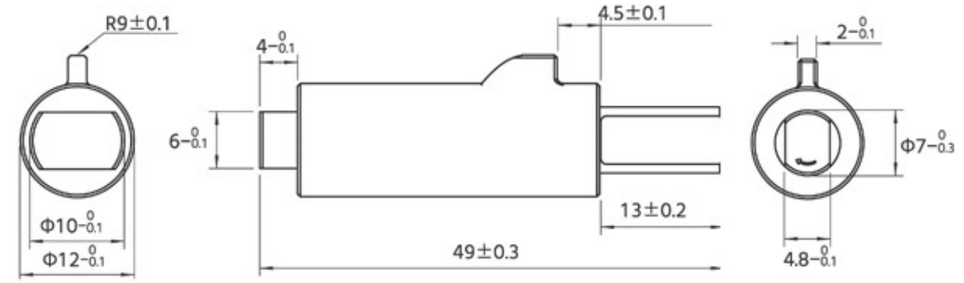
Rotary damper installation diagram:



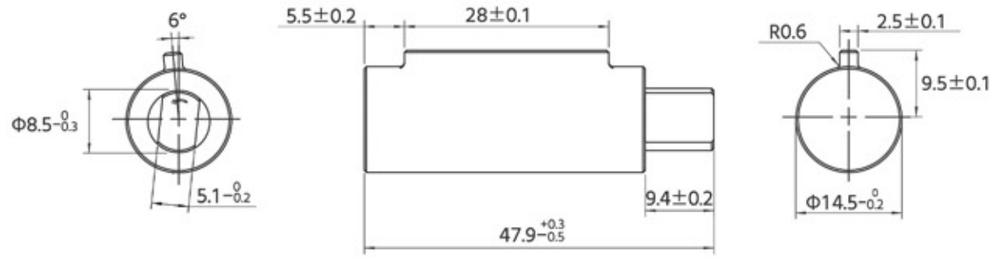
Horizontal Installation



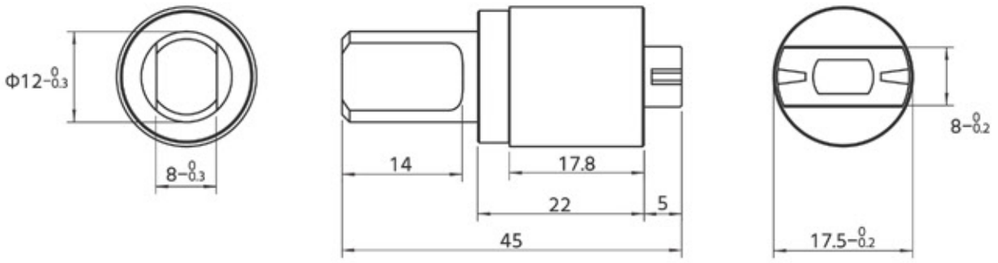
Vertical Installation



Model	Torque	Torque force without damping direction	Revering direction	Maximum angle	Temperature range
RDS12-B-R1	1N·m (10kgf·cm)	0.3N·m (3kgf·cm)	Clockwise	110°	-5-+50°C
RDS12-B-L1			Counterclockwise	110°	-5-+50°C

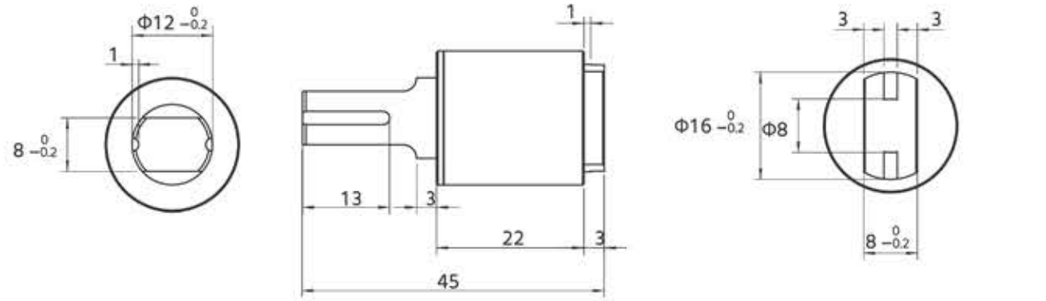


Model	Torque	Torque force without damping direction	Revering direction	Maximum angle	Temperature range
RDS15-B-L3	3N·m (30Kgf·cm)	0.8N·m (8kgf·cm)	Counterclockwise	110°	0-50°C

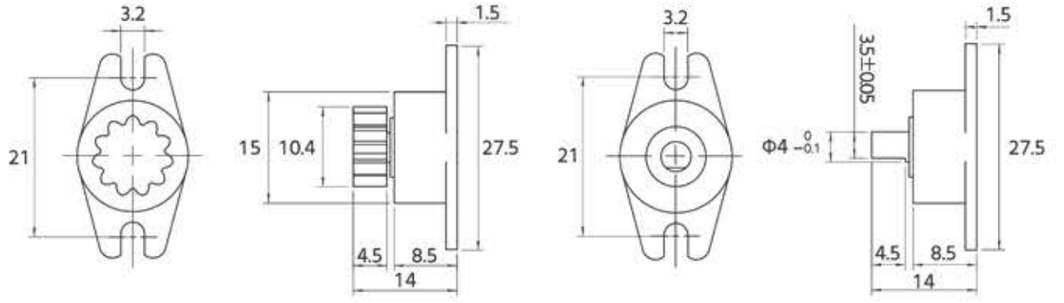


Model	Torque	Torque force without damping direction	Revering direction	Maximum angle	Temperature range
RDS18-B-R1	1N·m (10kgf·cm)	0.3N·m (3kgf·cm)	Clockwise	115°	-5-50°C
RDS18-B-L1			Counterclockwise	115°	-5-50°C
RDS18-B-R1.8	1.8N·m (18kgf·cm)	0.8N·m (8kgf·cm)	Clockwise	115°	-5-50°C
RDS18-B-L1.8			Counterclockwise	115°	-5-50°C

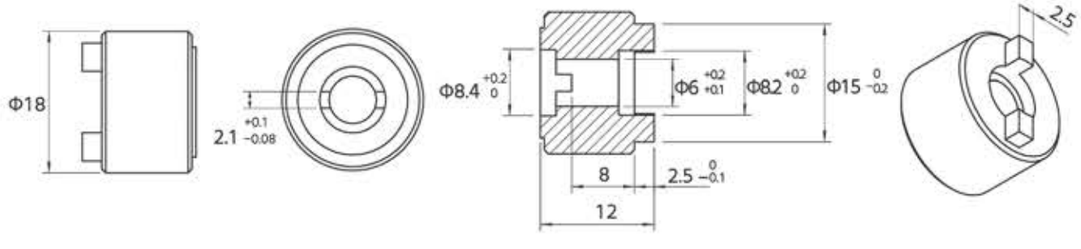
* Note: The specified torque is based on a speed of 20 rotations per minute and data recorded at a temperature of 23±3°C.



Model	Torque	Torque force without damping direction	Revering direction	Maximum angle	Temperature range
RDS20-B-R1	1N·m (10kgf·cm)	0.2N·m (2kgf·cm)	Clockwise	110°	-5-50°C
RDS20-B-L1			Counterclockwise	110°	-5-50°C
RDS20-B-R2	2N·m (20kgf·cm)	0.4N·m (4kgf·cm)	Clockwise	110°	-5-50°C
RDS20-B-L2			Counterclockwise	110°	-5-50°C
RDS20-B-R3	3N·m (30kgf·cm)	0.8N·m (8kgf·cm)	Clockwise	110°	-5-50°C
RDS20-B-L3			Counterclockwise	110°	-5-50°C

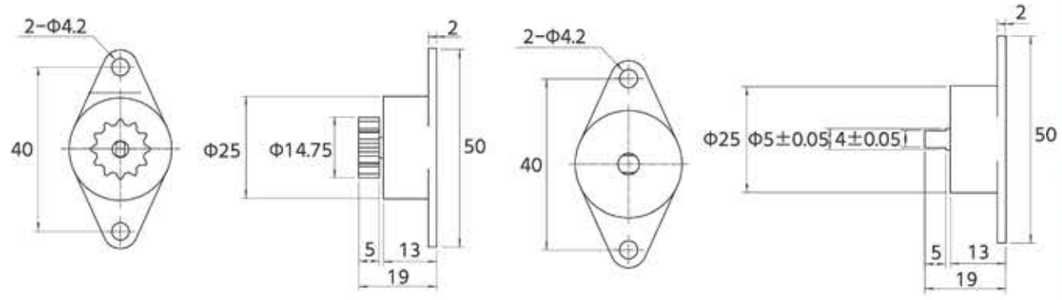


Model	Torque	Revering direction	Maximum revering speed	Maximum freque	Temperature range
RDR15-P-RL0.03	0.03N·m (0.3±0.08kgf·cm)	Two-way	50 rpm	10 times/minute	0-+50°C

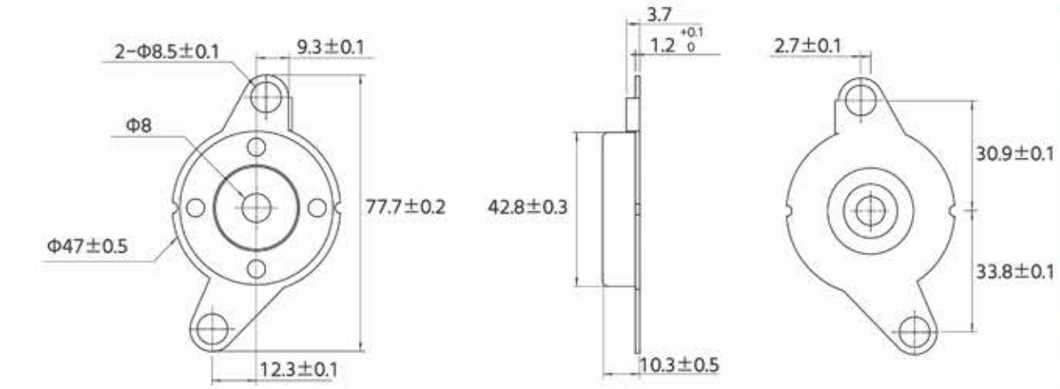


Model	Torque	Revering direction	Maximum revering speed	Maximum freque	Temperature range
RDR18-RL0.09	0.09N·m (0.9±0.1kgf·cm)	Two-way	150 rpm	10 times/minute	0-+50°C

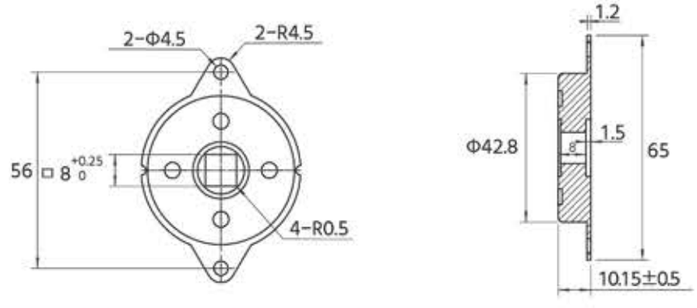
* Note: The specified torque is based on a speed of 20 rotations per minute and data recorded at a temperature of 23±3°C.



Model	Torque	Revering direction	Maximum revering speed	Maximum freque	Temperature range
RDR25-P-RL0.05-G2	0.05±0.01N·m (0.5±0.1kgf·cm)	Two-way	50 rpm	12 times/minute	0-+50°C

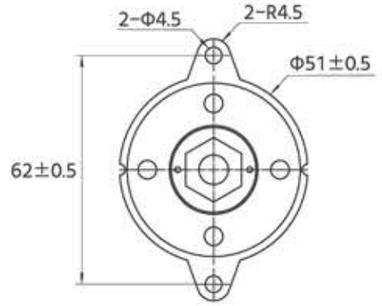


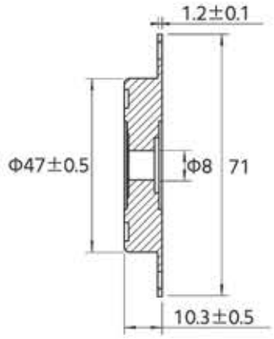
Model	Torque	Revering direction	Maximum revering speed	Maximum freque	Temperature range
RDR43-R3 RDR43-L3	3±0.4N·m (30±4kgf·cm)	Clockwise Counterclockwise	50 rpm	12 times/minute	-20-+50°C



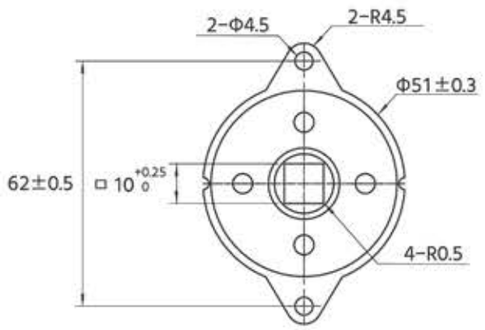
Model	Torque	Revering direction	Maximum revering speed	Maximum freque	Temperature range
RDR43-RL2	2±0.3N·m (20±3kgf·cm)	Two-way	50 rpm	12 times/minute	-10-+50°C

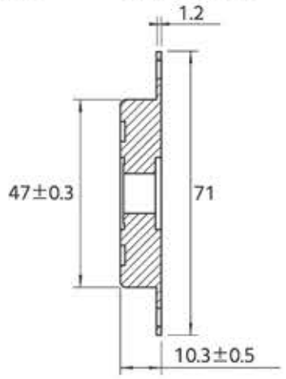
* Note: The specified torque is based on a speed of 20 rotations per minute and data recorded at a temperature of 23±3°C.





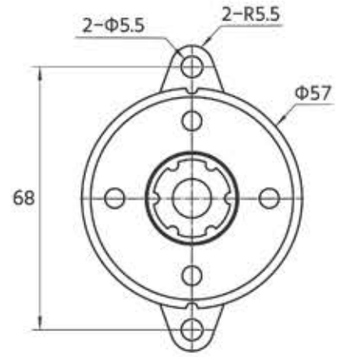
Model	Torque	Revering direction	Maximum revering speed	Maximum freque	Temperature range
RDR47-R1.5	1.5±0.3N·m (15±3kgf·cm)	Clockwise	50 rpm	12 times/minute	-10-+50°C
RDR47-L1.5	1.5±0.3N·m (15±3kgf·cm)	Counterclockwise	50 rpm	12 times/minute	-10-+50°C
RDR47-R2	2±0.4N·m (20±4kgf·cm)	Clockwise	50 rpm	12 times/minute	-10-+50°C
RDR47-L2	2±0.4N·m (20±4kgf·cm)	Counterclockwise	50 rpm	12 times/minute	-10-+50°C
RDR47-R2.5	2.5±0.5N·m (25±5kgf·cm)	Clockwise	50 rpm	12 times/minute	-10-+50°C
RDR47-L2.5	2.5±0.5N·m (25±5kgf·cm)	Counterclockwise	50 rpm	12 times/minute	-10-+50°C
RDR47-R3	3±0.6N·m (30±6kgf·cm)	Clockwise	50 rpm	12 times/minute	-10-+50°C
RDR47-L3	3±0.6N·m (30±6kgf·cm)	Counterclockwise	50 rpm	12 times/minute	-10-+50°C

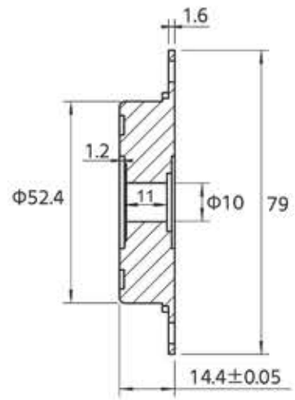




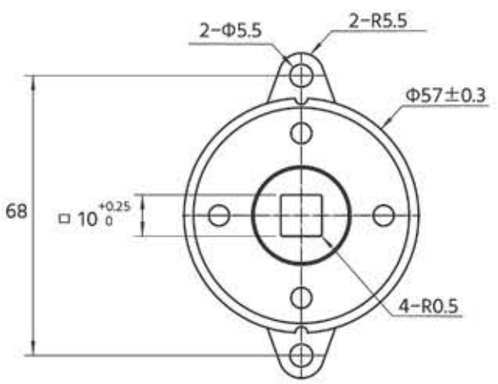
Model	Torque	Revering direction	Maximum revering speed	Maximum freque	Temperature range
RDR47-RL1.5	1.5±0.3N·m (15±3kgf·cm)	Two-way	50 rpm	50 times/minute	-10-+50°C
RDR47-RL2	2±0.4N·m (20±4kgf·cm)	Two-way	50 rpm	50 times/minute	-10-+50°C
RDR47-RL2.5	2.5±0.5N·m (25±5kgf·cm)	Two-way	50 rpm	50 times/minute	-10-+50°C
RDR47-RL3	3±0.6N·m (30±6kgf·cm)	Two-way	50 rpm	50 times/minute	-10-+50°C

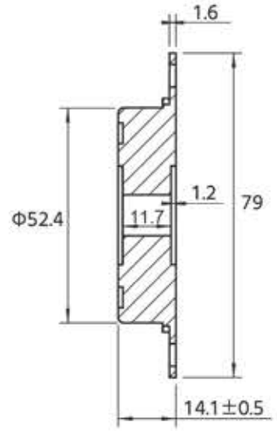
* Note: The specified torque is based on a speed of 20 rotations per minute and data recorded at a temperature of 23±3°C.





Model	Torque	Revering direction	Maximum revering speed	Maximum freque	Temperature range
RDR53-R3	3±0.4N·m (30±4kgf·cm)	Clockwise	50 rpm	12 times/minute	-10-50°C
RDR53-L3		Counterclockwise	50 rpm	12 times/minute	-10-50°C





Model	Torque	Revering direction	Maximum revering speed	Maximum freque	Temperature range
RDR53-R3	3±0.4N·m (30±4kgf·cm)	Two-way	50 rpm	12 times/minute	-10-50°C

* Note: The specified torque is based on a speed of 20 rotations per minute and data recorded at a temperature of 23±3°C.

Product Instruction Manual

Read before use

Please read this article with a full understanding of the meaning of the symbols as follows

Caution The product must be used under normal conditions, otherwise, the product will be damaged.

Warning Strictly follow the operating procedures, repair methods, and other regulations to avoid the possibility of personal injury and damage to the equipment.

Warning

Warnings

! Burning is strictly prohibited

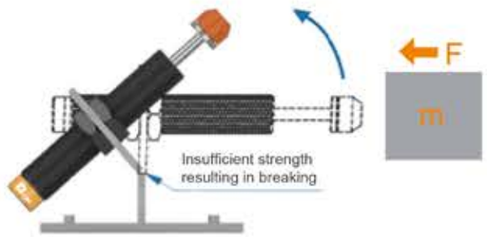
- As the oil is sealed, burning it in a fire can cause fire and accidents.
- Disposal of waste oil should be carried out according to the regulations.

Caution

Cautions

! Insufficient strength of the carrier causing the absorber to stop operating

- Insufficient overall strength can damage the machine and lead to the risk of injury.
- Pre-confirmation of overall strength: maximum resistance * factor of safety (For maximum resistance, please refer to the product catalog or consult CJAC)
- Strictly prohibit keeping the hydraulic buffer in a compressed state for an extended period of time, as it can result in poor product reset or even failure to reset.



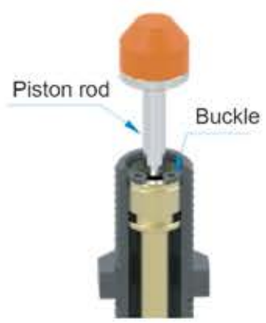
! Torque situation

- An unusual phenomenon caused by over-torque operation, which may damage the machine and buffer.
- Please note the amount of torque

Over-torquing of nuts is prohibited						
Thread O.D. (mm)	M8x1	M10x1	M12x1	M14x1.5	M16x1.5	M20x1.5
Nut Mounting Torque	3.9	7.8	7.8	9.8	14.7	29.4

! Watch out for detached buckles

- If the operating method is improper, the internal pressure may rise abnormally, causing the buckle to detach and internal components to fly out.
- Keep your face away from the buckle-type shock absorber being used.



! Littering of grease-stained products is prohibited

- Please protect the environment by not disposing of items containing oil and grease.
- Please dispose of waste oil according to regulations.

! Be aware of accidents caused by product damage or accidents

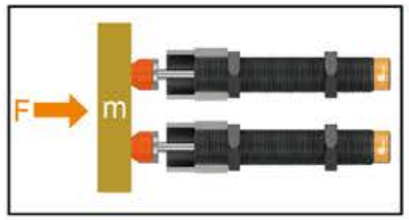
- Caused by product damage and ejection due to non-compliant operations.
- Please install protective covers or other devices.

! Be cautious of the eccentricity and the angle of eccentricity.

- Load ±2.5° or more will cause the piston line to bend, resulting in damage to the machine due to friction and poor performance.
- Please operate within the central axis range of the piston (angle within ±2.5).

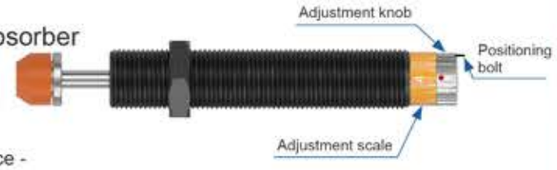
! Precautions for parallel use

- The use of shock absorbers should be operated under appropriate conditions and in a regulated manner.
- When using 2 or more products in parallel, they must be of the same model to ensure equal pressure distribution. Adjusting type products for parallel use may be challenging due to absorption characteristics, so careful consideration is necessary during their application.
- The shock absorber itself is not recommended for use as a safety positioning device. If precise positioning is required, it is advised to install a positioning stop nut.



! Adjustment method of adjustable shock absorber

- For the first-time use, set the adjustment knob to the position marked "4," observe the impact effect, and then adjust it to the most suitable position.
- Caution: When adjusting, be sure to use the safety device - tighten the positioning bolt to secure the shock absorber; otherwise, the adjustment knob may loosen, resulting in the inability to absorb normal impacts.



Note: Use the red dot on the adjustment knob as the reference mark.

! Caution regarding the operating environment

- Please use within the operating temperature range of -10°C to +80°C and humidity range of 0% to 80%.
- Please use at standard atmospheric pressure; strictly avoid using in vacuum or high-pressure environments, as it may damage the product.
- Do not allow the shaft to be contaminated with sewage or dirty oil. It must operate in a clean condition, as usage in corrosive environments will reduce its service life. If the working environment is harsh, please install a dustproof cover or protective shield (refer to the dimensions and usage precautions of this product).
- If there are special requirements, please consult CJAC.

! Maintenance and repair

- A damaged axis will lead to reduced durability and hinder the smooth reset of the product.
- Damage to the sealing components will result in oil leakage and reduced product durability. The bolt at the bottom oil filling port of the hydraulic damper must not be rotated, as it may cause oil leakage.
- Regarding durability, it varies depending on the operating conditions. For details, please consult CJAC.
- This shock absorber cannot be disassembled and must be stored intact. If you disassemble the shock absorber on your own, please exercise caution as it contains a spring that may cause the safety device to eject, posing a risk of injury.

! Selection of shock absorber

- Please refer to the selected calculation method for shock absorbers in the product catalog or consult CJAC.

! List of accessories

- Installation wrenches
- Dry protectors

Please contact your local CJAC agent for assistance,
or visit our website at www.c-jac.com
Thank you for choosing CJAC products!