ESSTEE

Shock Absorbers Hydraulic Buffers

Contents

Importer / Whole Sale Distributor :

SHREE SAI TECH,
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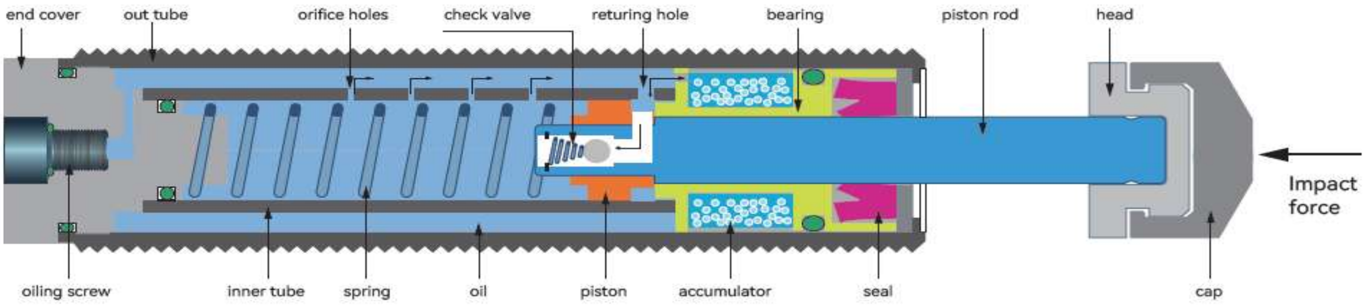
Principle of self-compensation series

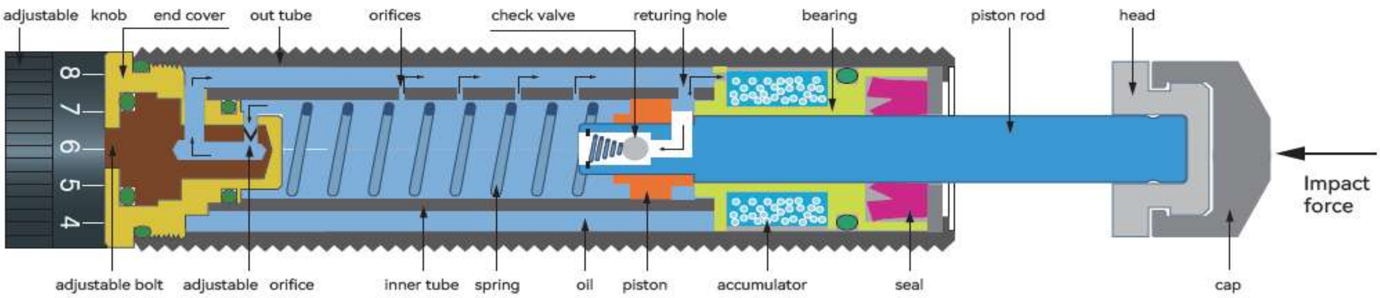
When an object impacts on the shock absorber unit, it will drive the in piston rod - pressing the oil to pass through the orifices of the inner tube resulting the soft stop for the moving object.

After the object is retracted, the inner spring pushes the piston rod return to its original position and ready for next cycle.



Principle of adjustable series

The basic principle of the adjustable one is the same as the non-adjustable one, except that there is adjusting device for the area of the orifices. There are two types of adjustable one: single orifice adjustable and multi-orifice adjustable. The figure above is the single orifice adjustable. By rotating the adjustable knob with 0-8 scale, the adjusting bolt is driven to rotate, When it is adjusted to 0, the orifice is fully open, and then the shock absorber is "the softest"; when it is adjusted to 8, the orifice is completely closed, and then the buffer is "the hardest", and the orifice area continuously smaller from 0 to 8. the structure of multi-orifices adjustable one is relatively complex.



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Description of model and how to order

How To Order for exsample AC2016-2CN

AC	20	16	—	2	C	N
Main function	Thread or diameter	Stroke (mm)		impact velocity	Other	Impact head

Main function

AC	Self-compensation series
AD	Adjustable series
ACY	-A Self-Compensation series
ADJ	-A Adjustable series
ACD	Double acting series
ZC FC	For stop air cylinder,non-adjustable
ZD	For stop air cylinder,adjustable
DC	For circuit breaker,non-adjustable
DD	For circuit breaker,adjustable
HR	Hydraulic speed controllers

Thread or diameter

04	M4*0.5
06	M6*0.75
08	M8*1.0 or M8*0.75
10	M10*1.0
12	M12*1.0
14	M14*1.5 or M14*1
16	M16*1.5 or M16*1
20	M20*1.5
24	Φ24
25	M25*1.5
27	M27*1.5 or M27*3.0
30	M30*1.5
33	M33*1.5
36	M36*1.5
42	M42*1.5
45	M45*1.5
64	M64*2 or 2 1/2-12UNF
85	M85*2

Stroke (mm)

impact velocity

Blank	standerd
1	High speed
2	Middle speed
3	Low speed
4	Lower speed
5	Low speed for AD series

Other

Blank	standerd
S	-S series
C	Compact series
E	One orifice or one adjustable orifice
K	-K High energy
D	High energy
W	Adjust at side
B	Inch thread
M	-M series

Impact head

Blank	With cap
N	Without cap
F	Steel cap

selection table : shock absorbers Vs air cylinder diameter

Cylinder I.D.	Ø6	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø160	Ø200	Ø250
force (Kgf) presure (5kg/cm²)	1.4	3.9	5.7	10	15.7	24.5	40	62.8	98	155	251	393	613	1005	1570	2454
AC0404	●	●														
AC0604	●	●	●													
AC0806		●	●	●												
AC1005		●	●	●												
AC1007		●	●	●												
AC1008		●	●	●	●											
AC1210			●	●	●											
AC1215			●	●	●											
AC1412/AC1612			●	●	●											
AC1416/AC1616			●	●	●	●										
AC1420/AC1620			●	●	●	●										
AC1425/AC1625			●	●	●	●										
AC2016/AC2015				●	●	●	●									
AC2020				●	●	●	●	●								
AC2025/AC2030				●	●	●	●	●								
AC2040				●	●	●	●	●	●							
AC2050				●	●	●	●	●	●							
AC2525/AC2725						●	●	●	●	●	●					
AC2530/AC2540						●	●	●	●	●	●					
AC2550/AC2750						●	●	●	●	●	●					
AC2580						●	●	●	●	●	●					
AC3035								●	●	●	●	●				
AC3325/AC3625								●	●	●	●	●				
AC3350/AC3650								●	●	●	●	●	●			
AC3660								●	●	●	●	●	●			
AC4225/AC4525									●	●	●	●	●			
AC4250/AC4550									●	●	●	●	●	●		
AC4275/AC4575									●	●	●	●	●	●	●	
AC64050												●	●	●	●	
AC64100												●	●	●	●	
AC64150												●	●	●	●	●

Cylinder I.D.	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø160	Ø200	Ø250
force (Kgf) presure (5kg/cm²)	3.9	5.7	10	15.7	24.5	40	62.8	98	155	251	393	613	1005	1570	2454
AD0806	●	●	●												
AD1007	●	●	●												
AD1210		●	●	●	●										
AD1410		●	●	●	●	●									
AD1412/AD1612			●	●	●	●									
AD1416/AD1616			●	●	●	●									
AD1420/AD1620			●	●	●	●									
AD1425/AD1625			●	●	●	●									
AD2016/AD2020				●	●	●	●								
AD2025				●	●	●	●								
AD2030				●	●	●	●								
AD2040				●	●	●	●	●							
AD2050				●	●	●	●	●							
AD2525/AD2725					●	●	●	●	●						
AD2530					●	●	●	●	●						
AD2540						●	●	●	●						
AD2550/AD2750						●	●	●	●						
AD2580						●	●	●	●	●					
AD3035						●	●	●	●	●					
AD3325/AD3625							●	●	●	●	●				
AD3350/AD3650							●	●	●	●	●				
AD4225/AD4525								●	●	●	●	●			
AD4250/AD4550								●	●	●	●	●			
AD4275/AD4575								●	●	●	●	●			
AD64050											●	●	●	●	
AD64100											●	●	●	●	
AD64150											●	●	●	●	●
AD85050												●	●	●	●
AD85090												●	●	●	●
AD85125												●	●	●	●
AD85165												●	●	●	●

1. Definitude Device Colliding Model

Plane Motion
- Simple plane colliding
- Colliding with the thrust of cylinder
- Colliding with driving force of motor

Slope Motion
- Colliding when sliding freely
- Colliding with cylinderd own thrust
- Colliding with cylinder'up thrust

2. The Necessary Items In Energy Calculating

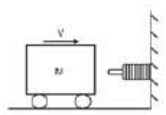
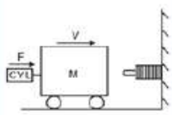
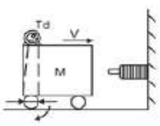
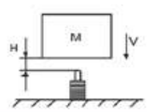
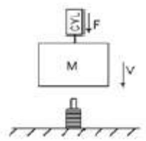
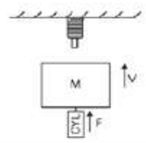
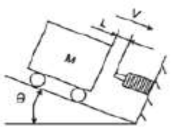
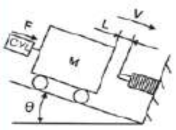
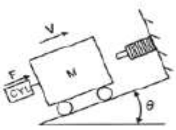
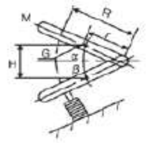
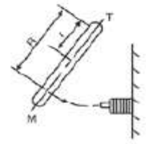
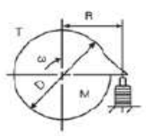
E=Total energy (Nm)
E1=Kinetic energy (Nm)
E2=Work energy (Nm)
M=Colliding mass (kg)
V=Colliding speed (m/s)
S=Stroke (m)
C=Times/hr

F=Force (N)
g=Acceleration of gravity (9.8m/s^2)
H=Falling height (m)
T=Rorsion (N・m)
Td=Rorsion when motor starts
K=Deceleration
Eh=energy Per Hour

θ、α、β=Slope angle (deg)
L=Colliding matter moving distance (m) Slope free fall
R=Distance from circumgyrating center to colliding point (m)
r=Distance from circumgyrating center to the center of gravity (m)
G=Center of gravity place colliding model
μ=friction Coefficient

ω=Speed of angle (rad/s)
J=Inertia moment (kg・m^2)
D=Diameter (m)
N=Circumgyrating number (rpm)
Me=Effective weight (kg)
P=pressure

Colliding Mode Cutline

	Plane colliding			Vertical colliding		
	Simple plane colliding	With cylinder's thrust	With motor's thrust	Free falling	Cylinder lower limiter	Cylinder upper limiter
Examples in using						
Kinetic energy E_1 (Nm)	$\frac{1}{2}\bullet M\bullet V^2$	$\frac{1}{2}\bullet M\bullet V^2$	$\frac{1}{2}\bullet M\bullet V^2$	$\frac{1}{2}\bullet M\bullet V^2$	$\frac{1}{2}\bullet M\bullet V^2$	$\frac{1}{2}\bullet M\bullet V^2$
Work energy E_2 (Nm)	–	$F\bullet S$	$2\bullet\frac{K}{D}\bullet Td\bullet S$	$M\bullet g\bullet S$	$(M\bullet g+F)\bullet S$	$(F-M\bullet g)\bullet S$
Total energy E (Nm)	$E=E_1$	$E=E_1+E_2$	$E=E_1+E_2$	$E=E_1+E_2$	$E=E_1+E_2$	$E=E_1+E_2$
Effective Weight Me (Kg)	Me=M	$Me=\frac{2\bullet E}{V^2}$	$Me=\frac{2\bullet E}{V^2}$	$Me=\frac{2\bullet E}{V^2}$ $V=\sqrt{2\bullet g\bullet h}$	$Me=\frac{2\bullet E}{V^2}$	$Me=\frac{2\bullet E}{V^2}$
	Slope colliding			Shake colliding		Circumgyrate colliding
	Free falling	When cylinder pressure existing	When cylinder pressure existing	Free falling	Torsion of motor etc.	Torsion of motor etc.
Examples in using						
Kinetic energy E_1 (Nm)	$\frac{1}{2}\bullet M\bullet V^2$	$\frac{1}{2}\bullet M\bullet V^2$	$\frac{1}{2}\bullet M\bullet V^2$	$M\bullet g\bullet H$	$\frac{J\bullet\omega^2}{2}=\frac{1}{2}\bullet M\bullet V^2$	$\frac{J\bullet\omega^2}{2}=\frac{M\bullet D^2\bullet\omega^2}{2}$
Work energy E_2 (Nm)	$M\bullet g\bullet S\bullet\sin\theta$	$(M\bullet g\bullet\sin\theta+F)\bullet S$	$(F-M\bullet g\bullet\sin\theta)\bullet S$	$\frac{r}{R}\bullet M\bullet g\bullet S$	$\frac{T}{R}\bullet S$	$\frac{T}{R}\bullet S$
Total energy E (Nm)	$E=E_1+E_2$	$E=E_1+E_2$	$E=E_1+E_2$	$E=E_1+E_2$	$E=E_1+E_2$	$E=E_1+E_2$
Effective Weight Me (Kg)	$Me=\frac{2\bullet E}{V^2}(V=\sqrt{2\bullet g\bullet L\bullet\sin\theta})$	$Me=\frac{2\bullet E}{V^2}$	$Me=\frac{2\bullet E}{V^2}$	$Me=\frac{2\bullet E}{V^2}(V=\frac{R}{r}\sqrt{\frac{3\bullet g\bullet H}{2}})$	$Me=\frac{2\bullet E}{V^2}(V=\omega\bullet R)$	$Me=\frac{2\bullet E}{V^2}(V=\omega\bullet R,\omega=\frac{2\pi\bullet N}{V^2}$

3. Confirming The Relative Items The Bound Of Thespecification Of Shock Absorber

a) Energy absorbing per hour [Nm]

b) Maximum colliding speed [m/s]

c) Temperature) [℃]

d) Reverting time) [t]

4. To Calculate The Fact Energy By Colliding Model Cutline

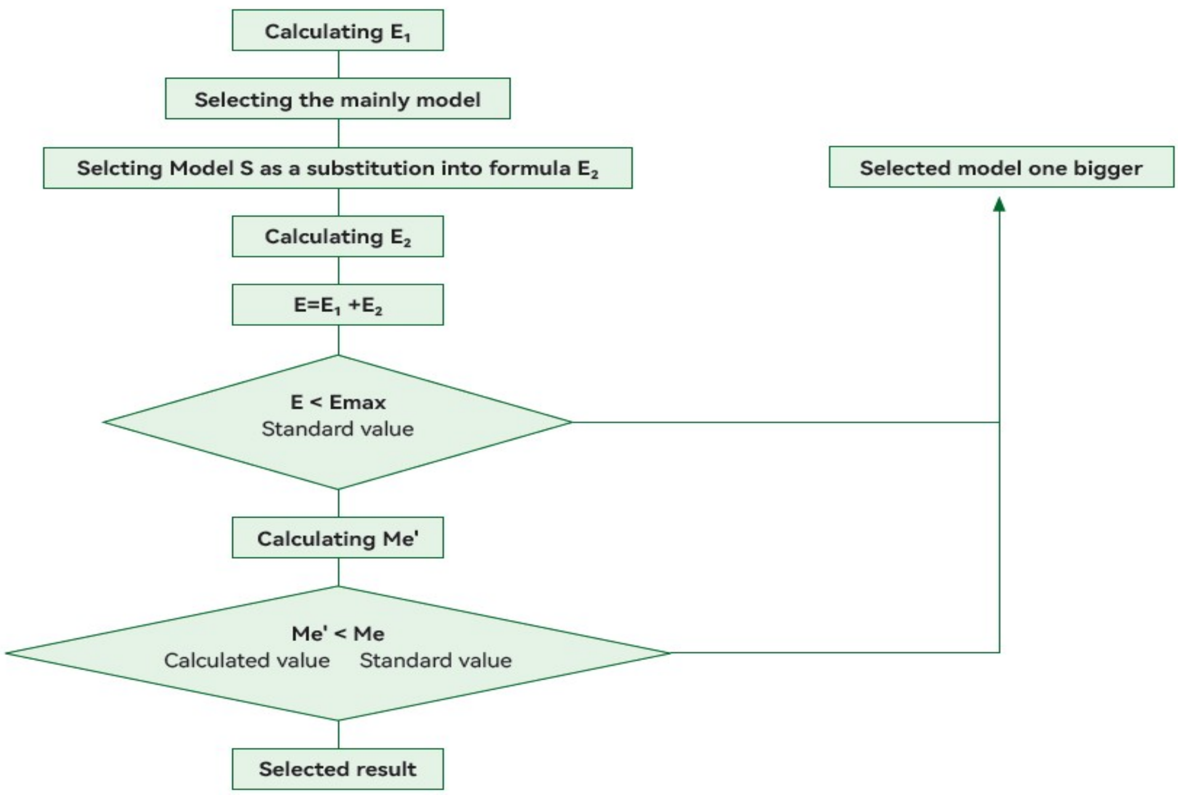
1)	E_1	Kinetic energy	To calculate the value of E_1, by colliding model cutline.
2)	E_2	Work energy	To calculate the value of E_2, by colliding model cutline.
3)	E	Total energy	Then, if the calculating result is more than emax,selecting the other model that bigger than before and re-calculating. Getting E's value by calculating, re-selected model, if it is under Emax will be ok.

5. Confirming About Colliding Matter Of Effective Weight

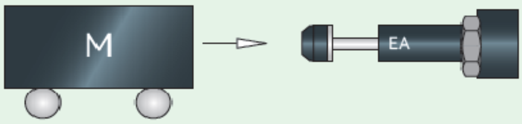
1) To calculate the Me's value by colliding model cutline.

2) We can select the conform Me with this term by selected Model4,corresponding Me (specimen value) and the result of a.

6. Flow Chart About Model Selection



COMPUTE EXAMPLE 1: horizontal impact



use condition

m=300kg
v=1.0m/s
s=0.04m
c=300/hr

expressions and result

$$E_1=\frac{mv^2}{2}=\frac{300*1.0^2}{2}=150Nm$$

$E=E_1=150Nm$

$E_h=E*C=150*300=45000Nm/hr$

$$Me=\frac{2E}{V^2}=\frac{2*150}{1.0^2}=300kg$$

According to specifications table you can use the shock absorber AD3650

COMPUTE EXAMPLE 2: horizontal impact having thrust

use condition

m=300kg
V=1.2m/s
s=0.05m
p=40N/cm²
d=100mm
c=300/hr

expressions and result

$$E_1=\frac{mv^2}{2}=\frac{300*1.2^2}{2}=216Nm$$

$E_2=F*S=0.00785Pd^2\cdot S$

$=0.00785*40*100^2*0.05=157Nm$

$E=E1+E2=216+157=373Nm$

$E_h=E*C=373*300=11900Nm/hr$

$$Me=\frac{2E}{V^2}=\frac{2*373}{1.2^2}=518kg$$

According to specifications table you can use the shock absorber AD4250

COMPUTE EXAMPLE 3: free whereabouts

use condition

m=40kg
H=0.4m
s=0.06m
c=200/hr

expressions and result

$$V=\sqrt{2g*h}=\sqrt{2*9.8*0.4}=2.8m/sec$$

$$E_1=\frac{mv^2}{2}=\frac{40*2.8^2}{2}=157Nm$$

$E_2=F*s=mg*s=40*9.8*0.06=23.5Nm$

$E=E_1+E_2=157+23.5=180.5Nm$

$E_h=E*C=180.5*200=36100Nm/hr$

$$Me=\frac{2E}{V^2}=\frac{2*180.5}{2.8^2}=46kg$$

According to specifications table you can use the shock absorber AD3650

COMPUTE EXAMPLE 3: free whereabouts having thrust

use condition

m=40kg
H=0.3m
s=0.025m
p=5bar
d=50mm
c=200/hr
v=1.0m/sec

expressions and result

$$E_1=\frac{mv^2}{2}=\frac{40*1.0^2}{2}=20Nm$$

$E_2=F*S=(mg+0.0785Pd^2)*S$

$=(40*9.8+0.0785*5*50^2)*0.025=33.5Nm$

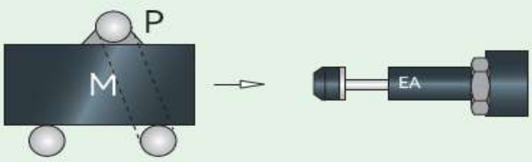
$E=E_1+E_2=20+33.5=55.5Nm$

$E_h=E*C=55.5*200=11100Nm/hr$

$$Me=\frac{2E}{V^2}=\frac{2*55.5}{1.0^2}=111kg$$

According to specifications table you can use the shock absorber AD2525

COMPUTE EXAMPLE 1: horizontal impact of motor drive



use condition

m=400kg
V=1.0m/s
KW=1.5KW
HM=2.5
S=0.075m
c=60/hr

expressions and result

$$E_1=\frac{mv^2}{2}=\frac{400*1.0^2}{2}=200Nm$$

$$E_2=F*S=\frac{KW*HM}{V}*S=\frac{1500*2.5}{1.0}*0.075=281Nm$$

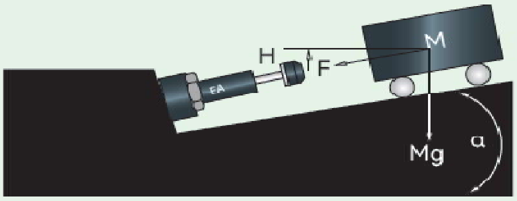
$E=E_1+E_2=200+281=481Nm$

$E_h=E*C=481*60=25860Nm/hr$

$$Me=\frac{2E}{V^2}=\frac{2*481}{1.0^2}=962kg$$

According to specifications table you can use the shock absorber AD4275

COMPUTEEXAMPLE 6: gradient impact



use condition

m=150kg
H=0.3m
s=0.075m
$\alpha=30°$
c=200/hr

expressions and result

$$V=\sqrt{2gH}=\sqrt{2*9.8*0.3}=2.43m/sec$$

E_2=F*S=m*g*s*sinα=150*9.8*0.075 *sin30° =55.2Nm

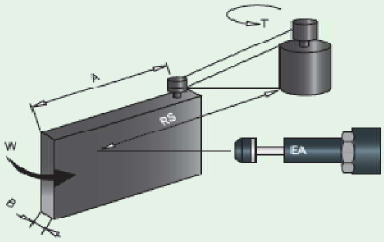
$E=E_1+E_2$=443+55.2=498.2Nm

E_h=E*C=498.2*200=99640Nm/hr

$$Me=\frac{2E}{V^2}=\frac{2*498.2}{2.43^2}=168.7kg$$

According to specifications table you can use the shock absorber AD4275

COMPUTE EXAMPLE 7: horizontal revolving door



use condition

m=20kg
ω=2.0rad/s
T=20Nm
Rs=0.8m
A=1.0m
B=0.05m
S=0.016m
C=100/hr

expressions and result

$$J=\frac{m(4A^2+B^2)}{12}=\frac{20(4*1.0^2+0.05^2)}{12}=6.67kg\bullet m^2$$

$$E_1=\frac{J\omega^2}{2}=\frac{6.67*2.0^2}{2}=13.34Nm$$

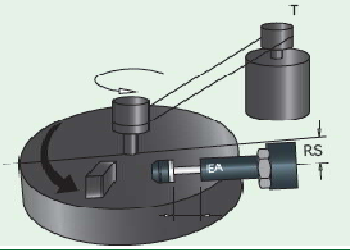
$$\theta=\frac{S}{Rs}=\frac{0.04}{0.8}=0.05rad$$

E_2=T*θ=20*0.05=1.0Nm
$E=E_1+E_2$=13.34+1.0=14.34Nm
E_h=E*C=14.34*100=1434Nm/hr
v=ω*Rs=2.0*0.8=1.6m/s

$$Me=\frac{2E}{V^2}=\frac{2*14.34}{1.6^2}=11.2kg$$

According to specifications table you can use the shock absorber AD2016

COMPUTE EXAMPLE 8: revolving dial having thrust



use condition

m=200kg
ω=1.0rad/s
T=100Nm
R=0.5m
Rs=0.4m
S=0.04m
C=100/hr

expressions and result

$$J=\frac{mR^2}{12}=\frac{200*0.5^2}{2}=25kg\bullet m^2$$

$$E_1=\frac{J\omega^2}{2}=\frac{25*1.0^2}{2}=12.5Nm$$

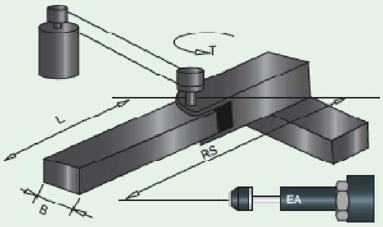
$$\theta=\frac{S}{Rs}=\frac{0.04}{0.8}=0.1rad$$

E_2=T*θ=100*0.1=10Nm
$E=E_1+E_2$=12.5+1.0=22.5Nm
E_h=E*C=22.5*50=1125Nm/hr
v=ω*Rs=1.0*0.4=0.4m/s

$$Me=\frac{2E}{V^2}=\frac{2*22.5}{0.4^2}=281kg$$

According to specifications table you can use the shock absorber AD4250

COMPUTE EXAMPLE 9: revolving arm having thrust



use condition

m=40kg
A=0.5m
B=0.05m
ω=2.0rad/s
T=10Nm
Rs=0.4m
S=0.05m
C=50/hr

expressions and result

$$J=\frac{m(4A^2+B^2)}{12}=\frac{40(4*0.5^2+0.05^2)}{12}=3.36kg\bullet m^2$$

$$E_1=\frac{J\omega^2}{2}=\frac{3.36*2.0^2}{2}=6.8Nm$$

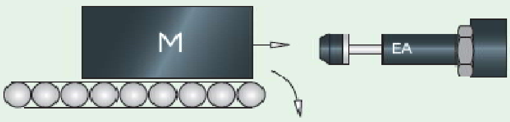
$$\theta=\frac{S}{Rs}=\frac{0.05}{0.4}=0.125rad$$

E_2=T*θ=10*0.125=1.25Nm
$E=E_1+E_2$=6.8+1.25=8.05Nm
E_h=E*C=8.05*50=402.5Nm/hr
v=ω*Rs=2.0*0.4=0.8m/s

$$Me=\frac{2E}{V^2}=\frac{2*8.05}{0.8^2}=25.15kg$$

According to specifications table you can use the shock absorber AD1416-2

COMPUTE EXAMPLE 10: horizontal dynamical conveyer belt



use condition

m=150kg
V=0.5m/s
μ=0.25
s=0.02m
C=120/hr

expressions and result

$$E_1-\frac{mv^2}{2}-\frac{150*1.0^2}{2}-18.75Nm$$

E_2= F*S=mgμ*s=150*9.8*0.25*0.02=7.35Nm

$E=E_1+E_2$=18.73+7.35=26.1Nm

Eh=E*C=26.1*120=3132Nm/hr

$$Me=\frac{2E}{V^2}=\frac{2*26.1}{0.5^2}=208.8kg$$

According to specifications table you can use the shock absorber AD2020-3

Models and specifications table - AC Self-Compensation Series

Model	Description	Stroke	Energy Per Cycle	Energy Per Hour	Effective Weight			Impact Speed(m/s)			Temperature
		mm	Nm	Nm	-1 High Speed	-2 Middle Speed	-3 Low Speed	-1 High Speed	-2 Middle Speed	-3 Low Speed	℃
AC0604(-M)	-M series or Standard	4	0.5	2400	0.4	1.8	3	4	2	1	- 45 ~ + 80
AC0604-S	-S series	4	0.5	2400		3			0.3-3.0		- 45 ~ + 80
AC0805	Standard	5	2	7800	0.5	2	5	4	2	1	- 45 ~ + 80
AC0805-M	-M series	5	0.7	2500	0.6	3	5	4	2	1	- 45 ~ + 80
AC0806	Standard	6	2.5	8800	0.6	2.5	6.5	4	2	1	- 45 ~ + 80
AC0806-S	-S series	6	3	8000		6			0.05-5		- 45 ~ + 80
AC1005	Standard	5	3	3500	1.5	3	8	4	2	1	- 45 ~ + 80
AC1005-M	-M series	5	1	2500	1.5	5	8	4	2	1	- 45 ~ + 80
AC1007	Standard	7	6	14500	2	6	15	4	2	1	- 45 ~ + 80
AC1007-S	-S series	7	6	14500		15			0.05-5		- 45 ~ + 80
AC1008	Standard	8	6	15200	2	6	15	4	2	1	- 45 ~ + 80
AC1008-M	-M series	8	3	3800	2.5	10	20	4	2	1	- 45 ~ + 80
AC1210	Standard	10	10	24500	5	10	30	4	2	1	- 45 ~ + 80
AC1210-M	-M series	10	6.9	6500	14	30	50	4	2	1	- 45 ~ + 80
AC1210-S	-S series	10	10	25000	5	10	30	4	2	1	- 45 ~ + 80
AC1406-M	-M Compact	6	5	6500		85			0.2-4		- 45 ~ + 80
AC1410	Standard	10	18	30000	8	40	90	4	2	1	- 45 ~ + 80
AC1412	Standard	12	20	36000	8	50	100	4	2	1	- 45 ~ + 80
AC1412-S	-S series	12	20	38000		40			0.05-5		- 45 ~ + 80
AC1412-SM	-S Compact	12	20	35000		40			0.05-5		- 45 ~ + 80
AC1415	Standard	15	20	30000	10	90	180	4	2	1	- 45 ~ + 80
AC1416	Standard	16	22	38000	10	90	180	4	2	1	- 45 ~ + 80
AC1420	Standard	20	25	38000	45	155	200	4	2	1	- 45 ~ + 80
AC1425	Standard	25	30	38000	45	160	250	4	2	1	- 45 ~ + 80
AC1604-S	-S Compact	4	5	7500		120			0.05-3		- 45 ~ + 80
AC1606-M	-M Compact	6	6	7800		120			0.2-2		- 45 ~ + 80
AC1612	Standard	12	20	38000	8	50	100	4	2	1	- 45 ~ + 80
AC1616	Standard	16	25	40000	10	90	180	4	2	1	- 45 ~ + 80
AC1620	Standard	20	30	40000	45	155	200	4	2	1	- 45 ~ + 80
AC1625	Standard	25	35	43000	45	160	250	4	2	1	- 45 ~ + 80
AC2007-S	-S Compact	7	16	26000		90			3		- 45 ~ + 80
AC2008-M	-M Compact	8	10	17000		80			3		- 45 ~ + 80
AC2015-S	-S series	15	59	38000		150			0.05-5		- 45 ~ + 80
AC2016	Standard	16	35	42000	60	250	600	4	2	1	- 45 ~ + 80
AC2020	Standard	20	45	45000	90	300	700	4	2	1	- 45 ~ + 80
AC2025	Standard	25	52	45000	90	300	700	4	2	1	- 45 ~ + 80
AC2030	Standard	30	59	45000	90	300	700	4	2	1	- 45 ~ + 80
ACD2035	Double acting series	35	55	63000	60	250	600	4	2	1	- 45 ~ + 80
AC2040	Standard	40	68	65000	100	300	1000	4	2	1	- 45 ~ + 80
AC2050	Standard	50	75	72000	100	400	1200	4	2	1	- 45 ~ + 80
ACD2050	Double acting series	50	65	68000	65	300	600	4	2	1	- 45 ~ + 80
ACD2050-W	Double acting series	50	70	72000		600			4		- 45 ~ + 80

Models and specifications table - AC Self-Compensation Series

ESSTEE

Model	Description	Stroke	Energy Per Cycle	Energy Per Hour	Effective Weight			Impact Speed(m/s)			Temperature
		mm	Nm	Nm	-1 High Speed	-2 Middle Speed	-3 Low Speed	-1 High Speed	-2 Middle Speed	-3 Low Speed	℃
AC2508-M	-M Compact	8	18	18000		250			3		- 45 ~ + 80
AC2525	Standard	25	89	57000	200	800	1300	4	2	1	- 45 ~ + 80
AC2525-S	Standard	25	89	52000		300			4		- 45 ~ + 80
AC2530	Standard	30	98	60000	200	800	1300	4	2	1	- 45 ~ + 80
AC2540	Standard	40	115	75000	300	900	1400	4	2	1	- 45 ~ + 80
AC2550	Standard	50	135	90000	200	1100	1600	4	2	1	- 45 ~ + 80
AC2580	Standard	80	160	100000	300	1200	1800	4	2	1	- 45 ~ + 80
AC2708-M	-M Compact	8	26	24000		300			3		- 45 ~ + 80
AC2725	Standard	25	130	75000	400	1000	2200	4	2	1	- 45 ~ + 80
AC2725-S	-S series	25	147	72000		500			4		- 45 ~ + 80
AC2750	Standard	50	250	95000	800	1900	3500	4	2	1	- 45 ~ + 80
AC3009-S	-S Compact	9	40	70000		550			3		- 45 ~ + 80
AC3035	Standard	35	205	90600	600	1500	2500	4	2	1	- 45 ~ + 80
AC3213-S	-S Compact	13	75	90000		650			3		- 45 ~ + 80
AC3325	Standard	25	180	100000	720	2000	2880	4	2	1	- 45 ~ + 80
AC3350	Standard	50	300	120000	1200	3300	4800	4	2	1	- 45 ~ + 80
AC3625	Standard	25	220	135000	880	2400	3500	4	2	1	- 45 ~ + 80
AC3650	Standard	50	350	150000	1400	2500	5600	4	2	1	- 45 ~ + 80
AC3660	Standard	60	360	150000	1400	2500	5600	4	2	1	- 45 ~ + 80
AC4225	Standard	25	300	125000	1100	2300	5500	4	2	1	- 45 ~ + 80
AC4250	Standard	50	600	160000	1400	2700	6500	4	2	1	- 45 ~ + 80
AC4275	Standard	75	900	180000	1800	3120	7500	4	2	1	- 45 ~ + 80
AC4525	Standard	25	300	160000	1100	2300	5500	4	2	1	- 45 ~ + 80
AC4550	Standard	50	600	180000	1400	2700	6500	4	2	1	- 45 ~ + 80
AC4575	Standard	75	900	200000	1800	3120	7500	4	2	1	- 45 ~ + 80
AC64025	Standard	25	1050	150000	1900	5000	11000	4	2	1	- 45 ~ + 80
AC64050	Standard	50	1500	165000	2000	5000	11000	4	2	1	- 45 ~ + 80
AC64100	Standard	100	2800	220000	3000	6000	12000	4	2	1	- 45 ~ + 80
AC64150	Standard	150	4200	260000	3500	7000	13000	4	2	1	- 45 ~ + 80

Model	Description	Stroke	Energy Per Cycle	Energy Per Hour	Effective Weight		Impact Speed(m/s)		Temperature
		mm	Nm	Nm	-1 High Speed / -2 Middle Speed / -3 Low Speed		-1 High Speed / -2 Middle Speed / -3 Low Speed		℃
AD1007	Standard	7	6	14500	50	/	4	/	- 45 ~ + 80
AD1008-M	-M series	8	1.8	3528	10	90	4	1	- 45 ~ + 80
AD1210	Standard	10	10	30000	80	/	4	/	- 45 ~ + 80
AD1210-M	-M series	12	5	5880	30	30	4	1	- 45 ~ + 80
AD1214-M	-M series	14	5.5	5880	30	/	4	1	- 45 ~ + 80
AD1410	Standard	10	20	30000	80	150	4	1	- 45 ~ + 80
AD1412	Standard	12	22	30000	80	170	4	1	- 45 ~ + 80
AD1415	Standard	15	24	30000	80	190	4	1	- 45 ~ + 80
AD1416	Standard	16	25	38000	90	200	4	1	- 45 ~ + 80
AD1420	Standard	20	29	38000	100	230	4	1	- 45 ~ + 80
AD1425	Standard	25	33	38000	130	250	4	1	- 45 ~ + 80
AD1612	Standard	12	22	40000	80	170	4	1	- 45 ~ + 80
AD1616	Standard	16	25	40000	90	200	4	1	- 45 ~ + 80
AD1620	Standard	20	30	45000	100	230	4	1	- 45 ~ + 80
AD1625	Standard	25	35	45000	130	250	4	1	- 45 ~ + 80
AD2016	Standard	16	35	42000	220	320	4	1	- 45 ~ + 80
AD2016-K	-K series High Energy	16	40	45000	320	/	4	/	- 45 ~ + 80
AD2020	Standard	20	45	45000	300	700	4	1	- 45 ~ + 80
AD2025	Standard	25	52	45000	300	800	4	1	- 45 ~ + 80
AD2030	Standard	30	60	45000	320	900	4	1	- 45 ~ + 80
AD2040	Standard	40	70	65000	320	1000	4	1	- 45 ~ + 80
AD2050	Standard	50	75	72000	350	1200	4	1	- 45 ~ + 80
AD2525	Standard	25	89	57000	400	1300	4	1	- 45 ~ + 80
AD2525-K	-K series High Energy	25	100	54000	1300	/	4	/	- 45 ~ + 80
AD2530	Standard	30	98	60000	400	1400	4	1	- 45 ~ + 80
AD2540	Standard	40	115	75000	600	1500	4	1	- 45 ~ + 80
AD2550	Standard	50	135	85000	720	1600	4	1	- 45 ~ + 80
AD2580	Standard	80	160	100000	800	1800	4	1	- 45 ~ + 80
AD2725	Standard	25	100	70000	400	1400	4	1	- 45 ~ + 80
AD2725-K	-K series High Energy	25	140	70000	1300	/	4	/	- 45 ~ + 80
AD2750	Standard	50	250	95000	720	3000	4	1	- 45 ~ + 80
AD3035-K	-K series High Energy	35	205	90600	2500	/	4	/	- 45 ~ + 80
AD3325	Standard	25	180	100000	1400	2000	4	1	- 45 ~ + 80
AD3325-K	-K series High Energy	25	260	100000	2500	/	4	/	- 45 ~ + 80
AD3350	Standard	50	300	120000	1400	2500	4	1	- 45 ~ + 80
AD3350-K	-K series High Energy	50	450	105000	3000	/	4	/	- 45 ~ + 80
AD3625	Standard	25	180	120000	1400	2000	4	1	- 45 ~ + 80

Models and specifications table - AD Adjustable Series

ESSTEE

Model	Description	Stroke	Energy Per Cycle	Energy Per Hour	Effective Weight			Impact Speed(m/s)			Temperature
		mm	Nm	Nm	-1 High Speed	-2 Middle Speed	-3 Low Speed	-1 High Speed	-2 Middle Speed	-3 Low Speed	℃
AD3625-K	-K series High Energy	25	260	100000	2500	/	4	/	- 45 ~ + 80
AD3650	Standard	50	300	145000	1400	3500	4	1	- 45 ~ + 80
AD3650-K	-K series High Energy	50	450	130000	3000	/	4	/	- 45 ~ + 80
AD4225	Standard (Front adjustment)	25	260	125000	3000	/	4	/	- 45 ~ + 80
AD4225-E	Standard (End adjustment)	25	350	125000	3600	6500	4	1	- 45 ~ + 80
AD4225-K	-K series High Energy	25	350	125000	3600	/	4	/	- 45 ~ + 80
AD4250	Standard (Front adjustment)	50	500	150000	4000	/	4	/	- 45 ~ + 80
AD4250-E	Standard (End adjustment)	50	700	165000	6000	12000	4	1	- 45 ~ + 80
AD4250-K	-K series High Energy	50	700	165000	6000	/	4	/	- 45 ~ + 80
AD4275	Standard (Front adjustment)	75	750	180000	6000	/	4	/	- 45 ~ + 80
AD4275-E	Standard (End adjustment)	75	1050	210000	8000	17000	4	1	- 45 ~ + 80
AD4525	Standard (End adjustment)	25	350	150000	3600	6500	4	1	- 45 ~ + 80
AD4525-K	-K series High Energy	25	350	150000	4000	/	4	/	- 45 ~ + 80
AD4550	Standard (End adjustment)	50	700	165000	6000	12000	4	1	- 45 ~ + 80
AD4550-K	-K series High Energy	50	700	220000	10000	/	4	/	- 45 ~ + 80
AD4575	Standard (End adjustment)	75	1050	182000	8000	17000	4	1	- 45 ~ + 80
AD64025E	Standard (End adjustment)	25	1050	150000	12000	19000	4	1	- 45 ~ + 81
AD64050B	Standard (Front adjustment)	50	1500	165000	12800	/	2	/	- 45 ~ + 80
AD64050W	Standard (Central adjustment)	50	1500	185000	12800	/	2	/	- 45 ~ + 80
AD64050E	Standard (End adjustment)	50	2080	185000	12800	19500	2	1	- 45 ~ + 80
[illegible]	Standard [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
AD85050W	Standard (Central adjustment)	50	2300	372000	37000	/	2	/	- 45 ~ + 80
AD85050	Standard (End adjustment)	50	2700	390000	39000	50000	2	1	- 45 ~ + 80
AD85090W	Standard (Central adjustment)	90	4000	652000	40000	/	2	/	- 45 ~ + 80
AD85090	Standard (End adjustment)	90	4500	660000	42000	51000	2	1	- 45 ~ + 80
AD85125	Standard (End adjustment)	125	5700	980000	43000	53000	2	1	- 45 ~ + 80
AD85165	Standard (End adjustment)	165	7500	1300000	45000	56000	2	1	- 45 ~ + 80

Dimensions table - AC self-compensation series

Fig.1

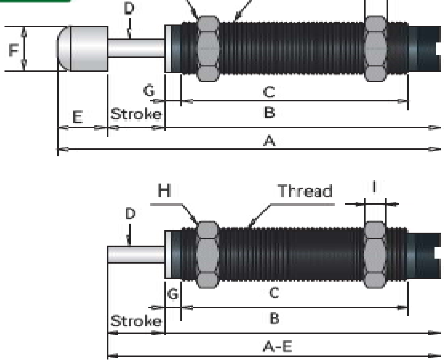
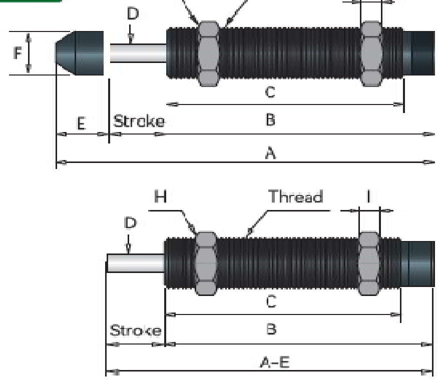
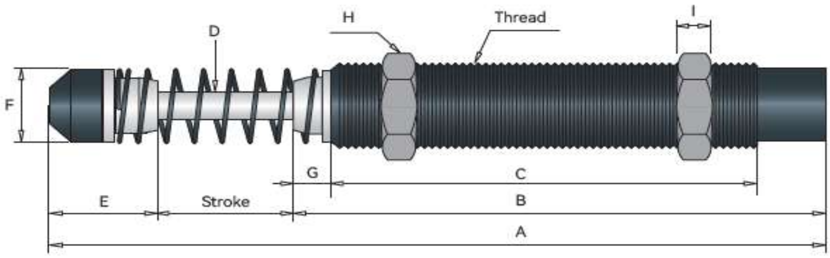


Fig.2



Model	Description	Thread	Stroke mm	A	B	C	D	E	F	G	H	I
AC0604(-M)	-M series or Standard	M6*0.75	4	33.5	25.5	21.5	1.8	4	4.7	0.5	8	3
AC0805	Standard	M8*0.75	5	43.3	32.3	27.5	2.9	6	6.6	/	11	3
AC0805-M	-M series	M8*0.75	5	37	27	20.5	2	5	6	1.5	11	3
AC0806	Standard	M8*1.0	6	50	38	33.2	2.9	6	6.6	/	11	3
AC1005	Standard	M10*1.0	5	39.7	28.7	23.7	2.8	6	8.6	/	12.7	4
AC1005-M	-M series	M10*1.0	5	39	27	20.5	3	7	6	1.5	12.7	4
AC1007	Standard	M10*1.0	7	64.6	49	44	3	8.6	8.6	/	12.7	4
AC1008	Standard	M10*1.0	8	57	43	38.2	3	6	8.6	/	12.7	4
AC1008-M	-M series	M10*1.0	8	55	40	33	3	7	6	1.5	12.7	4
AC1210	Standard	M12*1.0	10	69.5	50	45.2	3	9.5	10.5	/	14	4
AC1210-M	-M series	M12*1.0	10	71	53	47.5	3.5	8	8	/	14	4
AC1410	Standard	M14*1.5	10	84.8	66.8	57.8	4	8	11	/	19	6
AC1412	Standard	M14*1.5	12	99	76	70	4	11	12	/	19	6
AC1415	Standard	M14*1.5	15	102	76	70	4	11	12	/	19	6
AC1416	Standard	M14*1.5	16	122	95	89	4	11	12	/	19	6
AC1420	Standard	M14*1.5	20	126	95	89	4	11	12	/	19	6
AC1425	Standard	M14*1.5	25	131	95	89	4	11	12	/	19	6
AC1612	Standard	M16*1.5	12	99	76	70	4	11	13.8	/	19	6
AC1616	Standard	M16*1.5	16	103	76	70	4	11	13.8	/	19	6
AC1620	Standard	M16*1.5	20	126	95	89	4	11	13.8	/	19	6
AC1625	Standard	M16*1.5	25	131	95	89	4	11	13.8	/	19	6
AC2016	Standard	M20*1.5	16	120.1	88.6	81.6	6	15.5	18	/	26	8
AC2020	Standard	M20*1.5	20	145	109.5	102.5	6	15.5	18	/	26	8
AC2025	Standard	M20*1.5	25	150	109.5	102.5	6	15.5	18	/	26	8
AC2030	Standard	M20*1.5	30	155	109.5	102.5	6	15.5	18	/	26	8
AC2040	Standard	M20*1.5	40	188	132.5	125.5	6	15.5	18	/	26	8
AC2050	Standard	M20*1.5	50	229	163.5	156.5	6	15.5	18	/	26	8
AC2525	Standard	M25*1.5	25	154.5	111	104	8	18.5	22	/	32	10
AC2530	Standard	M25*1.5	30	159.5	111	104	8	18.5	22	/	32	10
AC2550	Standard	M25*1.5	50	230.5	162	155	8	18.5	22	/	32	10
AC2580	Standard	M25*1.5	80	298.5	200	193	8	18.5	22	/	32	10
AC2725	Standard	M27*1.5	25	154.5	111	104	8	18.5	22	/	32	10
AC2750	Standard	M27*1.5	50	230.5	162	155	8	18.5	22	/	32	10
AC3035	Standard	M30*1.5	35	195.5	136	128.5	10	24.5	28	3	36	8

AC series



Model	Description	Thread	Stroke	A	B	C	D	E	F	G	H	I
			mm									
AC2540	Standard	M25*1.5	40	213.8	137	120	8	36.8	22	10	32	10
AC3325	Standard	M33*1.5	25	153.5	106.5	89	10	22	29	10	41	10
AC3350	Standard	M33*1.5	50	222	150	125.5	10	22	29	17	41	10
AC3625	Standard	M36*1.5	25	159.5	106.5	89	10	28	35.5	10	46	12
AC3650	Standard	M36*1.5	50	228	150	125.5	10	28	35.5	17	46	12
AC3660	Standard	M36*1.5	60	238	150	125.5	10	28	35.5	17	46	12
AC4225	Standard	M42*1.5	25	177.8	118.8	95.5	12	34	44.5	15.8	50	12
AC4250	Standard	M42*1.5	50	232.6	148.6	125.3	12	34	44.5	15.8	50	12
AC4275	Standard	M42*1.5	75	287.8	178.8	155.5	12	34	44.5	15.8	50	12
AC4525	Standard	M45*1.5	25	177.8	118.8	95.5	12	34	44.5	15.8	55	8
AC4550	Standard	M45*1.5	50	232.6	148.6	125.3	12	34	44.5	15.8	55	8
AC4575	Standard	M45*1.5	75	287.8	178.8	155.5	12	34	44.5	15.8	55	8
AC64025	Standard	M64*2.0	25	189.3	112.5	106.5	20	51.8	59	/	77	9
AC64050	Standard	M64*2.0	50	256.3	154.5	148.5	20	51.8	59	/	77	9
AC64100	Standard	M64*2.0	100	356.3	204.5	198.5	20	51.8	59	/	77	9
AC64150	Standard	M64*2.0	150	476.8	262.5	256.5	20	64.3	59	/	77	9

Dimensions table - AC self-compensation series

ESSTEE

AC-S self-compensation series

Fig.1

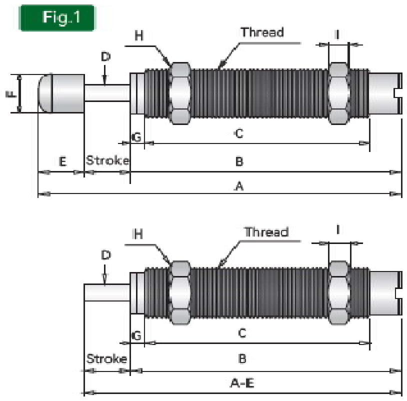
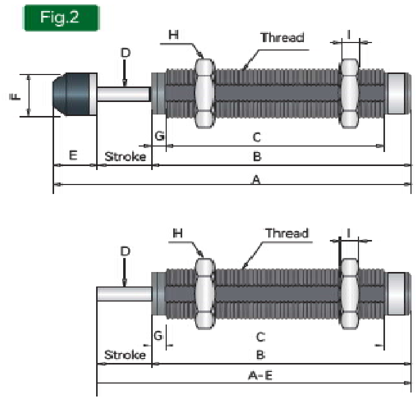


Fig.2



Model	Description	Thread	Stroke	A	B	C	D	E	F	G	H	I
			mm									
AC0604-S	-S series	M6*0.75	4	33.5	25.5	20.5	1.8	4	4.7	0.5	8	3
AC0806-S	-S series	M8*1.0	6	55.2	40.6	33.6	2.9	8.6	6.6	2	11	3
AC1007-S	-S series	M10*1.0	7	62.3	46.7	38.5	3	8.6	8.6	3.2	12.7	4
AC1210-S	-S series	M12*1.0	10	71.2	52.5	44	3	8.7	10.5	3	14	4
AC1412-S	-S series	M14*1.5	12	90	67	58.5	4	11	12	3.5	19	6
AC1412-SM	-S series Compact	M14*1.5	12	78	55	46.7	4	11	12	3.5	19	6
AC2015-S	-S series	M20*1.5	15	103.5	73	62	6	15.5	18	4	26	8
AC2525-S	-S series	M25*1.5	25	135.5	92	82	8	18.5	22	/	32	10
AC2725-S	-S series	M27*1.5	25	142.5	99	86	8	18.5	22	5	32	10

Dimensions table – AD adjustable series

ESSTEE

Fig.1

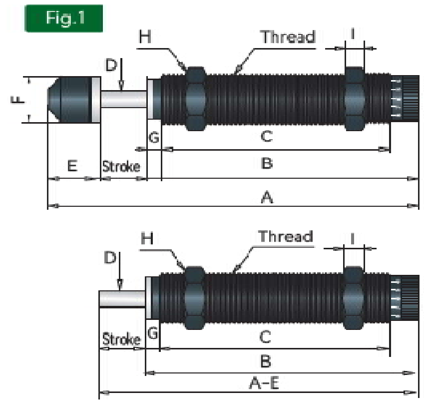
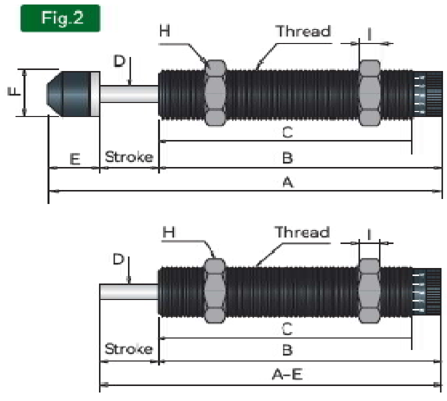


Fig.2



Model	Description	Thread	Stroke mm	A	B	C	D	E	F	G	H	I
AD1007	Standard	M10*1.0	7	75.6	60	45.8	3	8.6	8.6	3.2	12.7	4
AD1008-M	-M series	M10*1.0	8	65.2	50.9	40.7	2.4	6.3	6	1.5	12.7	4
AD1210	Standard	M12*1.0	10	83.5	64	49	3	9.5	10.5	3	14	4
AD1210-M	-M series	M12*1.0	10	84	66	59.5	3.5	8	8	1.5	14	4
AD1214-M	-M series	M12*1.0	14	92	70	58	3.5	8	8	1.5	14	4
AD1410	Standard	M14*1.5	10	103	82	70	4	11	12	/	19	6
AD1412	Standard	M14*1.5	12	105	82	70	4	11	12	/	19	6
AD1415	Standard	M14*1.5	15	108	82	70	4	11	12	/	19	6
AD1416	Standard	M14*1.5	16	109	82	70	4	11	12	/	19	6
AD1420	Standard	M14*1.5	20	132	101	89	4	11	12	/	19	6
AD1425	Standard	M14*1.5	25	137	101	89	4	11	12	/	19	6
AD1612	Standard	M16*1.5	12	105	82	70	4	11	13.8	/	19	6
AD1616	Standard	M16*1.5	16	109	82	70	4	11	13.8	/	19	6
AD1620	Standard	M16*1.5	20	132	101	89	4	11	13.8	/	19	6
AD1625	Standard	M16*1.5	25	137	101	89	4	11	13.8	/	19	6
AD2016	Standard	M20*1.5	16	148.5	117	102.5	6	15.5	18	/	26	8
AD2020	Standard	M20*1.5	20	134.1	98.6	84.1	6	15.5	18	/	26	8
AD2025	Standard	M20*1.5	25	157.5	117	102.5	6	15.5	18	/	26	8
AD2030	Standard	M20*1.5	30	162.5	117	102.5	6	15.5	18	/	26	8
AD2040	Standard	M20*1.5	40	195.5	140	125.5	6	15.5	18	/	26	8
AD2050	Standard	M20*1.5	50	236.5	171	156.5	6	15.5	18	/	26	8
AD2525	Standard	M25*1.5	25	162	118.5	104	8	18.5	22	/	32	10
AD2530	Standard	M25*1.5	30	167	118.5	104	8	18.5	22	/	32	10
AD2550	Standard	M25*1.5	50	238	169.5	155	8	18.5	22	/	32	10
AD2580	Standard	M25*1.5	80	306	207.5	193	8	18.5	22	/	32	10
AD2725	Standard	M27*1.5	25	162	118.5	104	8	18.5	22	/	32	10
AD2750	Standard	M27*1.5	50	238	169.5	155	8	18.5	22	/	32	10

Dimensions table - AD adjustable series

ESSTEE

Fig.1

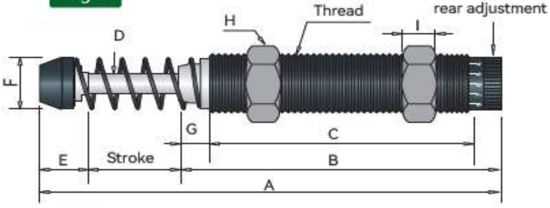


Fig.2

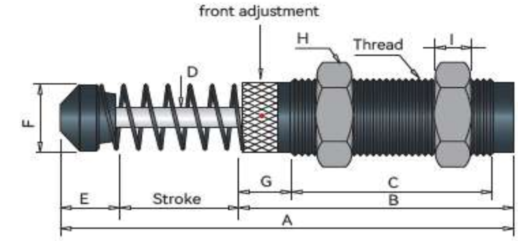


Fig.3

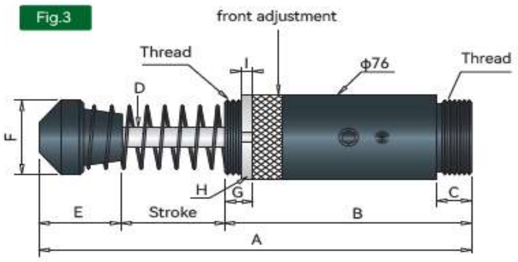
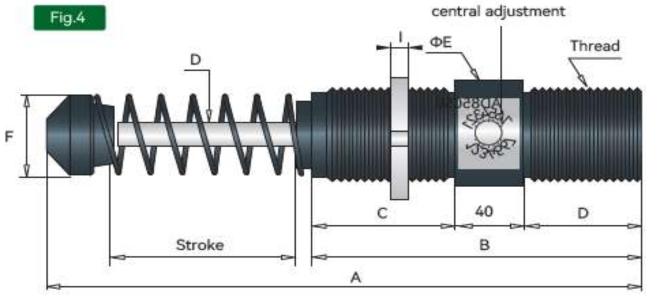


Fig.4



Model	Description	Thread	Stroke mm	A	B	C	D	E	F	G	H	I
AD2540	Standard	M25*1.5	40	221.3	144.5	120	8	36.8	22	10	32	10
AD3325	Standard	M33*1.5	25	162	115	89	10	22	29	10	41	10
AD3350	Standard	M33*1.5	50	230.5	158.5	125.5	10	22	29	17	41	10
AD3625	Standard	M36*1.5	25	168	115	89	10	28	35.5	10	46	12
AD3650	Standard	M36*1.5	50	236.5	158.5	125.5	10	28	35.5	17	46	12
AD4225	Standard (Front adjustment)	M42*1.5	25	186.5	127.5	88	12	34	44.5	28.5	50	12
AD4225-E	Standard (End adjustment)	M42*1.5	25	186.3	127.3	95.5	12	34	44.5	15.8	50	12
AD4250	Standard (Front adjustment)	M42*1.5	50	241	157	117.5	12	34	44.5	28.5	50	12
AD4250-E	Standard (End adjustment)	M42*1.5	50	241.1	157.1	125.3	12	34	44.5	15.8	50	12
AD4275	Standard (Front adjustment)	M42*1.5	75	296.5	187.5	148	12	34	44.5	28.5	50	12
AD4275-E	Standard (End adjustment)	M42*1.5	75	296.3	187.3	155.5	12	34	44.5	15.8	50	12
AD4525	Standard (End adjustment)	M45*1.5	25	186.3	127.3	95.5	12	34	44.5	15.8	55	8
AD4550	Standard (End adjustment)	M45*1.5	50	241.1	157.1	125.3	12	34	44.5	15.8	55	8
AD4575	Standard (End adjustment)	M45*1.5	75	296.3	187.3	155.5	12	34	44.5	15.8	55	8
AD64025E	Standard (End adjustment)	M64*2.0	25	193.3	116.5	106.5	20	51.8	59	/	77	9
AD64050B	Standard (Front adjustment)	UNF2 1/2-12	50	252.8	151	26	20	51.8	59	24	76	9.4
AD64050W	Standard (Central adjustment)	M64*2.0	50	223.5	140	50	20	76	50	7	77	9
AD64050E	Standard (End adjustment)	M64*2.0	50	260.3	158.5	148.5	20	51.8	59	/	77	9
AD64100B	Standard (Front adjustment)	UNF2 1/2-12	100	352.8	201	26	20	51.8	59	24	76	9.4
AD64100W	Standard (Central adjustment)	M64*2.0	100	324.5	191	76	20	76	50	7	77	9
AD64100E	Standard (End adjustment)	M64*2.0	100	360.3	208.5	198.5	20	51.8	59	/	77	9
AD64150B	Standard (Front adjustment)	UNF2 1/2-12	150	475.3	261	26	20	64.3	59	24	76	9.4
AD64150E	Standard (End adjustment)	M64*2.0	150	480.8	266.5	256.5	20	64.3	59	/	77	9
AD85050W	Standard (Central adjustment)	M85*2.0	50	228.9	140.5	31.8	22	98	69	13	102	11
AD85050	Standard (End adjustment)	M85*2.0	50	259.5	162.5	152.5	22	47	69	/	102	11
AD85090W	Standard (Central adjustment)	M85*2.0	90	307.8	179.4	70.6	22	98	69	13	102	11
AD85090	Standard (End adjustment)	M85*2.0	90	339.5	202.5	192.5	22	47	69	/	102	11
AD85125	Standard (End adjustment)	M85*2.0	125	418.5	237.5	227.5	22	56	69	/	102	11
AD85165	Standard (End adjustment)	M85*2.0	165	508.5	287.5	277.5	22	56	69	/	102	11

AD-K adjustable series

Fig.1

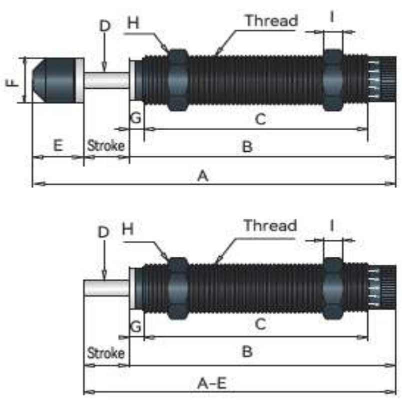


Fig.2

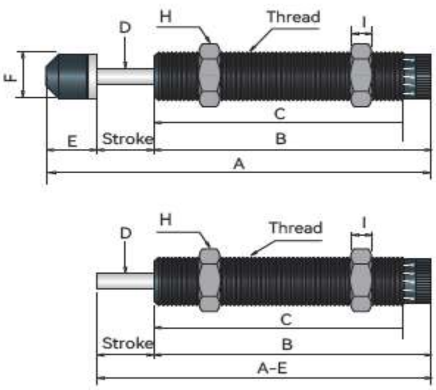
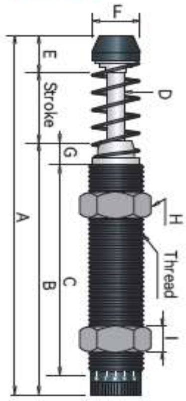


Fig.3



Model	Description	Thread	Stroke mm	A	B	C	D	E	F	G	H	I
AD2016-K	-K series High Energy	M20*1.5	16	115	85.5	70.5	6	13.5	13.5	1.5	26	8
AD2525-K	-K series High Energy	M25*1.5	25	144.5	103	89	8	16.5	16	2	32	10
AD2725-K	-K series High Energy	M27*1.5	25	144.5	103	89	8	16.5	16	2	32	10
AD3035-K	-K series High Energy	M30*1.5	35	204	144.5	125.5	10	24.5	28	3	36	8
AD3325-K	-K series High Energy	M33*1.5	25	171.5	122	103	10	24.5	28	3	41	12
AD3350-K	-K series High Energy	M33*1.5	50	230.5	156	137	10	24.5	28	3	41	12
AD3625-K	-K series High Energy	M36*1.5	25	171.5	122	103	10	24.5	28	3	46	12
AD3650-K	-K series High Energy	M36*1.5	50	230.5	156	137	10	24.5	28	3	46	12
AD4225-K	-K series High Energy	M42*1.5	25	163	113	82	12	25	39	10	50	12
AD4250-K	-K series High Energy	M42*1.5	50	218	143	112	12	25	39	10	50	12
AD4525-K	-K series High Energy	M45*1.5	25	163	113	82	12	25	39	10	55	8
AD4550-K	-K series High Energy	M45*1.5	50	218	143	112	12	25	39	10	55	8

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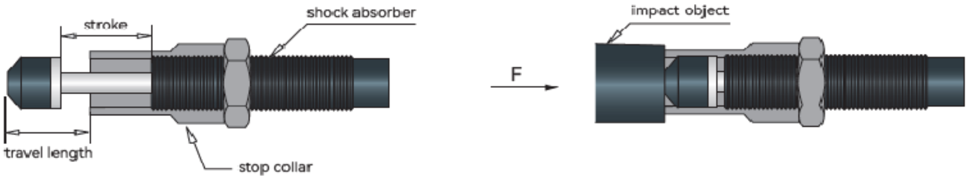
Stop Collar



Model	Model of nut	Description	A	B	C	D	E
06 series	SC06	hexagon	M6*0.75	10	8	-	-
	SCA06	flat edges	M6*0.75	10	9.5	5	8
08 series	SC08	hexagon	M8*1.0	14	11	-	-
	SCA08	flat edges	M8*1.0	12	12	6	10
10 series	SC10	hexagon	M10*1.0	16	12.7	-	-
	SCA10	flat edges	M10*1.0	19	14	9	12.7
12 series	SC12	hexagon	M12*1.0	20	14	-	-
	SCA12	flat edges	M12*1.0	19	16	9	14
14 series	SC14	hexagon	M14*1.5	27	19	18	-
	SCA14	flat edges	M14*1.5	20	17	9	15
16 series	SC16	hexagon	M16*1.5	27	19	18	-
	SCA16	flat edges	M16*1.5	25.4	21	10	19
20 series	SC20	hexagon	M20*1.5	35	26	25	-
	SCA20	flat edges	M20*1.5	25	24.8	10	22
	SC20-45L	hexagon	M20*1.5	45	26	25	-
	SCA20-45L	flat edges	M20*1.5	45	24.8	10	22
25 series	SC25	hexagon	M25*1.5	25	32	31.3	-
	SCA25	flat edges	M25*1.5	32	30	10	27
	SC25-65L	hexagon	M25*1.5	65	32	31.3	-
	SCA25-65L	flat edges	M25*1.5	65	30	10	27
27 series	SC27	hexagon	M27*1.5	45	32	31.3	-
	SCA27	flat edges	M27*1.5	32	32	15	30
	SC27-65L	hexagon	M27*1.5	65	32	31.3	-
	SCA27-65L	flat edges	M27*1.5	65	32	15	30
30 series	SCA30	圆形铣方	M30*1.5	45	36	15	33
33 series	SC33	hexagon	M33*1.5	80	41	40	-
	SCA33	flat edges	M33*1.5	63.5	38.5	20	36
36 series	SC36	hexagon	M36*1.5	80	46	45	-
	SCA36	flat edges	M36*1.5	63.5	41.5	20	39
42 series	SC42	hexagon	M42*1.5	80	50	49	-
	SCA42	flat edges	M42*1.5	63.5	50	20	47.5
45 series	SC45	hexagon	M45*1.5	80	50	49	-
	SCA45	flat edges	M45*1.5	63.5	50	20	47.5

Fig.1

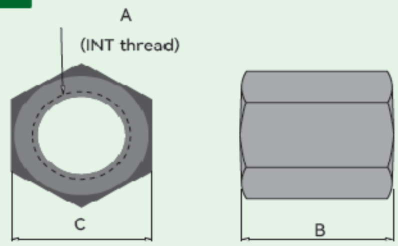


Fig.2

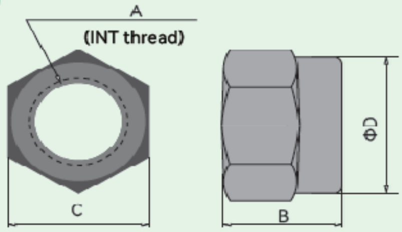
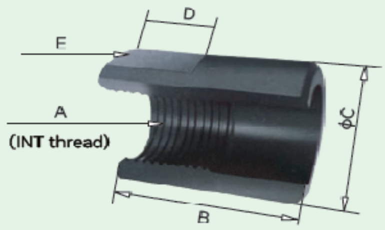
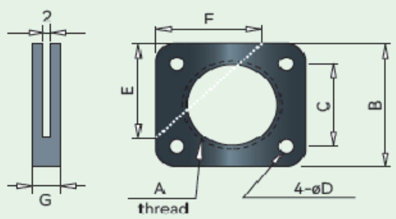


Fig.3



Flange

Specification	Dimension							Applicable For Shock Absorber Model
	A	B	C	D	E	F	G	
F36	M36*1.5	60	41	8.5	45	45	16	36 series
F42	M42*1.5	60	41	8.5	45	45	16	42 series
F64M	M64*2.0	89	70	10.5	55	55	16	64 series
F64B	2 1/2-12UNF	89	70	10.5	55	55	16	64 series
F85	M85*2	101.6	76.2	13.5	75	75	19	85 series



Accessories - Side load adapter

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Fig 1

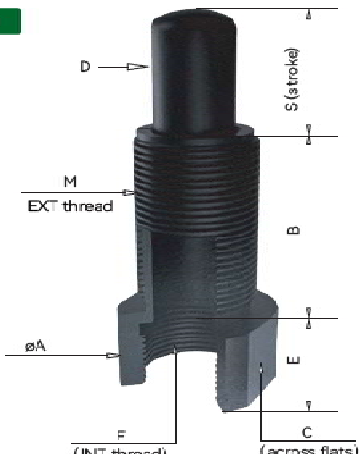
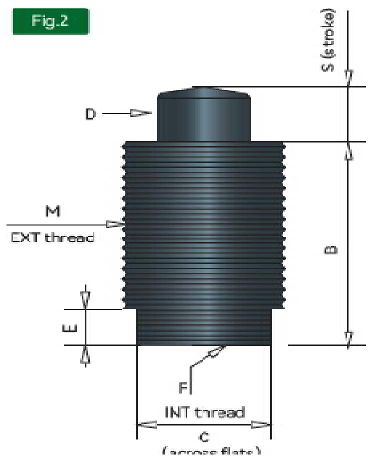
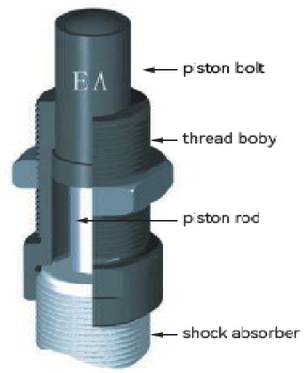


Fig.2

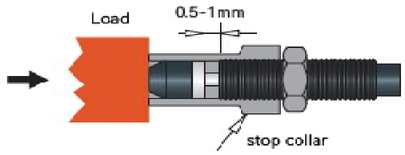


Use example

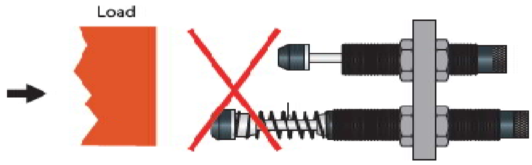


Model	A	B	C	D	E	M	F	S
SLA0604	10	10	8	3	10	M6*0.75	M6*0.75	4
SLA0805	12	11	10	4	10	M8*0.75	M8*0.75	5
SLA0806	12	11	10	4	10	M8*1.0	M8*1.0	6
SLA1005	13	10.5	11	5	11	M10*1.0	M10*1.0	5
SLA1007	13	12.5	11	5	11	M10*1.0	M10*1.0	7
SLA1008	13	13.5	11	5	11	M10*1.0	M10*1.0	8
SLA1210	16	18	13	6	14	M12*1.0	M12*1.0	10
SLA1215	16	23	13	6	14	M12*1.0	M12*1.0	15
SLA1410	18	18	15	8	16	M14*1.5	M14*1.5	10
SLA1412	18	20	15	8	16	M14*1.5	M14*1.5	12
SLA1415	18	23	15	8	16	M14*1.5	M14*1.5	15
SLA1416	18	24	15	8	16	M14*1.5	M14*1.5	16
SLA1420	18	28	15	8	16	M14*1.5	M14*1.5	20
SLA1425	18	33	15	8	16	M14*1.5	M14*1.5	25
SLA1610	20	18	17	8	16	M16*1.5	M16*1.5	10
SLA1612	20	20	17	8	16	M16*1.5	M16*1.5	12
SLA1616	20	24	17	8	16	M16*1.5	M16*1.5	16
SLA1620	20	28	17	8	16	M16*1.5	M16*1.5	20
SLA1625	20	33	17	8	16	M16*1.5	M16*1.5	25
SLA2015	25	26.5	22	11	20	M20*1.5	M20*1.5	15
SLA2016	25	27.5	22	11	20	M20*1.5	M20*1.5	16
SLA2020	25	31.5	22	11	20	M20*1.5	M20*1.5	20
SLA2025	25	36.5	22	11	20	M20*1.5	M20*1.5	25
SLA2030	25	41.5	22	11	20	M20*1.5	M20*1.5	30
SLA2525	36	38	32	15	30	M25*1.5	M25*1.5	25
SLA2530	36	43	32	15	30	M25*1.5	M25*1.5	30
SLA2725	36	38	32	15	30	M27*1.5	M27*1.5	25
SLA3325	-	92	40	20	20	M42*1.5	M33*1.5	25
SLA3350	-	128	40	20	20	M42*1.5	M33*1.5	50
SLA3625	-	92	41	20	20	M45*1.5	M36*1.5	25
SLA3650	-	128	41	20	20	M45*1.5	M36*1.5	50
SLA4225	-	100	61	35	20	M64*2	M42*1.5	25
SLA4250	-	130	61	35	20	M64*2	M42*1.5	50
SLA4525	-	100	61	35	20	M64*2	M45*1.5	25
SLA4550	-	130	61	35	20	M64*2	M45*1.5	50

Can't be used as a safety limit device. The external safety limit device (such as limit nut) should be adjusted at 0.5-1mm before the stoke.



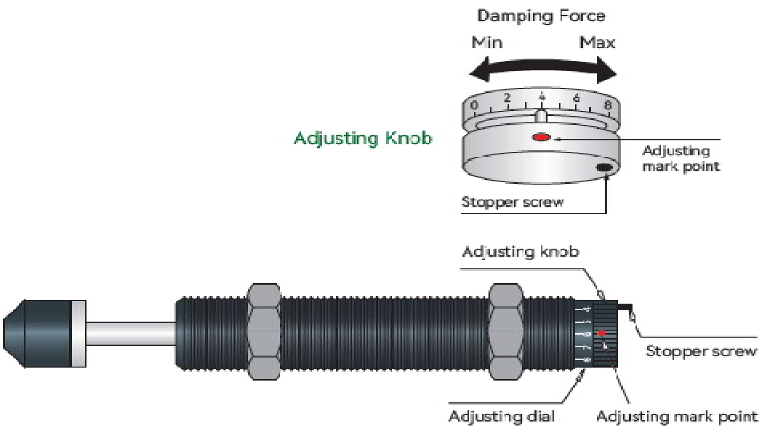
When two or more products are used in parallel, they must be of the same model so that they are subjected to equal pressure.



Operating Notes for the adjustable series:

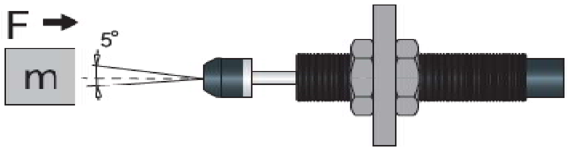
The adjustment method is as follows: first set the adjustment knob scale 4, observe the impact effect, if the object just contact the buffer has a large sound, indicating that the damping force is too large, it should be adjusted to the direction of the small number; If the object runs to the end of the stroke and there is a large impact sound, it indicates that the damping force is too small, and it should be adjusted in the direction of the larger number.

When adjusting, first loosen the stopper screw, and then step by step increase or decrease, do not jump adjustment, adjust to the right position, tighten the stopper screw.

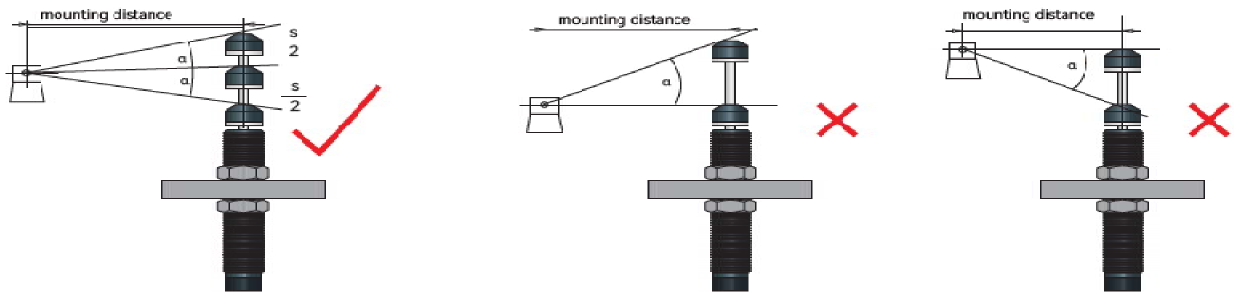


Side load adapter

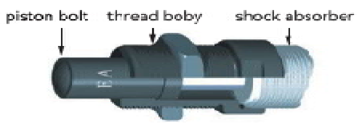
If the angle between direction of impact and piston rod center line more than ±2.5° , please use the side load adapter



In order to reduce the eccentric Angle when rotating motion should be correctly installed according to the right figure



With side load impact angles of more than 5° the operating lifteime of the shock absorber reduces rapidly due to increased wear of the rods and bearings. The optional side load adapter porvides a long lasting solution.



Hydraulic speed controllers

ESSTEE

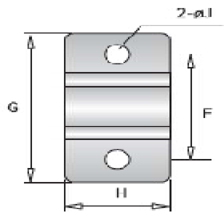
Hydraulic speed controllers is a kind of hydraulic type control device of feed speed that can adjust freely feed speed of air cylinder from low speed to high speed within the range of e xpectation.

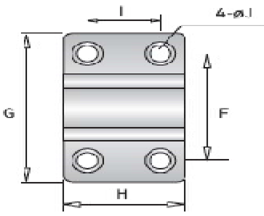
- Compact structure, can be installed in any direction.
- No need to supplement the working oil of the fully closed structure, can ensure long-term stability of the function.
- Even if the load changes sharply, the control speed change is extremely small, can obtain a stable feed speed.
- Feed speed can be adjusted simply by adjusting knob.

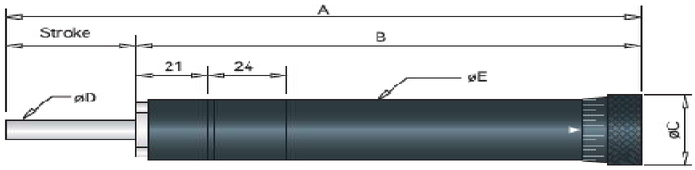
Model	Stroke	MAX.Load	Temperature
	mm	kgf	℃
DC2415	15	350	-45 ~ +80
DC2425	25	350	-45 ~ +80
DC2430	30	350	-45 ~ +80
DC2460	60	350	-45 ~ +80
DC2480	80	350	-45 ~ +80
DC24100	100	350	-45 ~ +80
DC3140	40	550	-45 ~ +80
DC3160	60	550	-45 ~ +80
DC31100	100	550	-45 ~ +80


2 Holes Fixed Block


4 Holes Fixed Block







Model	Stroke (mm)	A	B	C	D	E	F	G	H 2/4 holes	I	J 2/4 holes
DC2415	15	158.8	143.8	28	9	24	37	52	28/33	20	5.7/6.5
DC2125	25	179.8	154.8	28	9	24	37	52	28/33	20	5.7/6.5
DC2430	30	207.2	177.2	28	9	24	37	52	28/33	20	5.7/6.5
DC2460	60	278.2	218.2	28	9	24	37	52	28/33	20	5.7/6.5
DC2180	80	343.1	263.1	28	9	24	37	52	28/33	20	5.7/6.5
DC24100	100	399.2	299.2	28	9	24	37	52	28/33	20	5.7/6.5
DC3140	40	270	230	36	12	31	44	60	42	26	6.5
DC3160	60	325	265	36	12	31	44	60	42	26	6.5
DC31100	100	405	305	36	12	31	44	60	42	26	6.5

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