



AC
M6, M8, M10, M12
多孔固定式小型
自动补偿
Multi-hole Non-adjustable
Small Size
Self-compensation



AC
M14, M20, M25, M36
多孔固定式
自动补偿
Multi-hole Non-adjustable
Self-compensation



AC-S
M8, M10, M14, M20, M27
多孔固定式适用高频操作
自动补偿
Multi-hole Non-adjustable
for High Frequency Operation
Self-compensation



AD
M14, M20, M25, M36
可调整式
Adjustable



AD
M42, M64
可调整式重型
Adjustable
Heavy

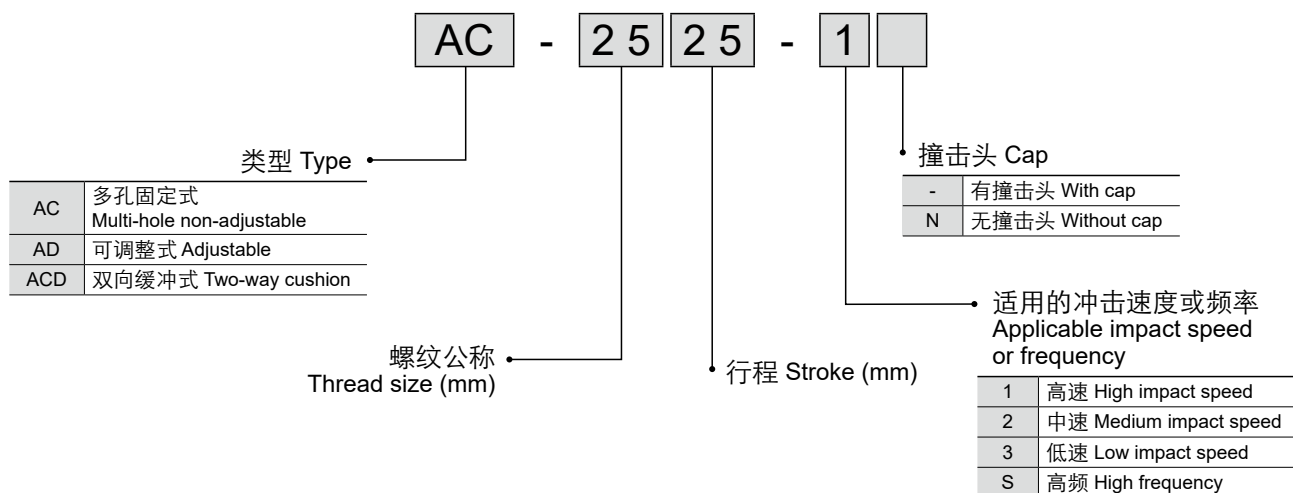


ACD
M20
双向缓冲式
自动补偿
Two-way Cushion
Self-compensation



定位停止螺帽 &
安装法兰
Stopper collar &
Mounting flange

型号表示方法 How to Order

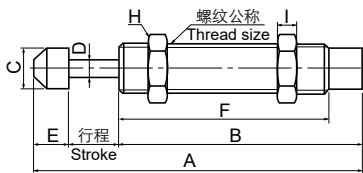


油压缓冲器
Shock Absorber
Series AC/AD/ACD

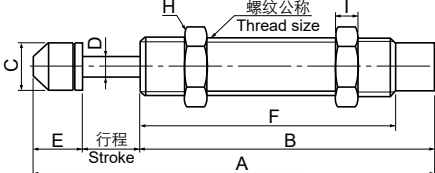
规格和尺寸 Specifications and Dimensions

AC多孔固定式 Multi-hole non-adjustable

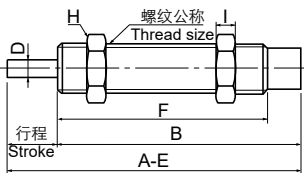
M6, M8, M10, M12
有撞击头With cap



M14, M20, M25 (AC-2525)
有撞击头With cap



无撞击头Without cap



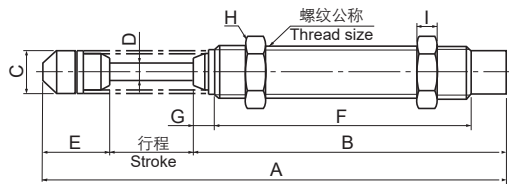
型号 Model	螺纹公称 Thread size	行程 Stroke (mm)	每次最大 吸收能量 Max. energy absorption per cycle (Nm)	每小时最大 吸收能量 Max. energy absorption per hour (Nm)	最大有效 重量 Max. effective weight (kg)	最大撞击 速度 Max. impact speed (m/s)	工作温度 Operating temperature	尺寸 Dimensions (mm)							
								A	B	C	D	E	F	H	I
AC-0604-1	M6x0.75	4	1.8	6480	0.4	2	-10~85℃	33	25	4.6	1.8	4	20.5	8	2
AC-0604-2					1.8	1									
AC-0604-3					4	0.5									
AC-0806-1	M8x1.0	6	2	7200	0.5	2		50	38	6.6	2.8	6	33	11	3
AC-0806-2					2	1									
AC-0806-3					6	0.5									
AC-1005-1	M10x1.0	5	3	10800	1	3		38.7	27.7	8.6	2.8	6	22.9	12.7	3
AC-1005-2					3	1.5									
AC-1005-3					7	0.8									
AC-1008-1		8	4	14400	2	3		57	43	8.6	3	6	38	12.7	3
AC-1008-2					4	1.5									
AC-1008-3					9	0.8									
AC-1210-1	M12x1.0	10	5	18000	5	3		69.2	50	10.3	3	9.2	45.5	14	4
AC-1210-2					10	1.5									
AC-1210-3					30	0.8									
AC-1412-1	M14x1.5	12	15	36000	8	3		100.2	76.2	12	4	12	67	19	6
AC-1412-2					50	1.5									
AC-1412-3					100	0.8									
AC-1416-1		16	20	40000	10	3		123	95	12	4	12	86	19	6
AC-1416-2					70	1.5									
AC-1416-3					150	0.8									
AC-1416-1C				35000	10	3		104	76	12	4	12	67	19	6
AC-1416-2C					70	1.5									
AC-1416-3C					150	0.8									
AC-1425-1		25	25	48000	12	3		147	110	12	4	12	100	19	6
AC-1425-2					80	1.5									
AC-1425-3					160	0.8									
AC-2020-1	M20x1.5	20	40	48000	30	3.5		145.8	110	18	6	15.8	101	26	8
AC-2020-2					200	2									
AC-2020-3					700	1									
AC-2030-1		30	50	54000	30	3.5		155.8	110	18	6	15.8	101	26	8
AC-2030-2					200	2									
AC-2030-3					700	1									
AC-2050-1	M25x1.5	50	60	66000	60	3.5		232.8	167	18	6	15.8	158	26	8
AC-2050-2					400	2									
AC-2050-3					1200	1									
AC-2525-1	M25x1.5	25	80	60000	200	4		154.5	111	22	8	18.5	101	32	10
AC-2525-2					600	2.5									
AC-2525-3					1000	1									

油压缓冲器
Shock Absorber
Series AC/AD/ACD

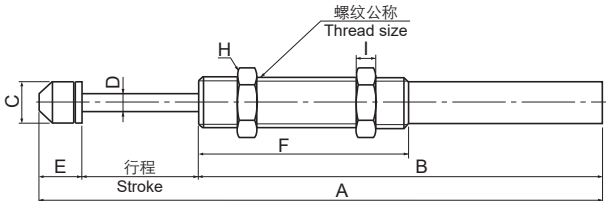
规格和尺寸 Specifications and Dimensions

AC多孔固定式 Multi-hole non-adjustable

M25 (AC-2540), M36 (AC-3660)



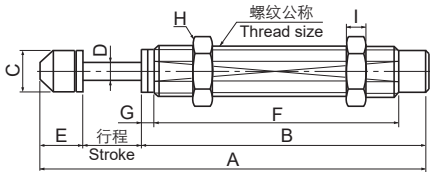
M25 (AC-2550, AC-2580)



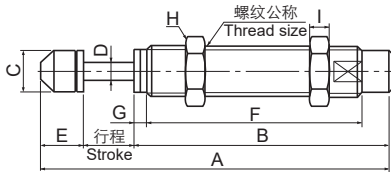
型号 Model	螺纹 公称 Thread size	行程 Stroke (mm)	每次最大 吸收能量 Max.energy absorption per cycle (Nm)	每小时最大 吸收能量 Max.energy absorption per hour (Nm)	最大有效 重量 Max. effective weight (kg)	最大撞击 速度 Max. impact speed (m/s)	工作温度 Operating temperature	尺寸 Dimensions (mm)								
								A	B	C	D	E	F	G	H	I
AC-2540-1	M25x1.5	40	120	84000	300	4	-10~85℃	214	137	22	8	37	117	10	32	10
AC-2540-2					800	2.5										
AC-2540-3					1200	1										
AC-2550-1		50	98	98000	15	4		239	170.5	22	8	18.5	100	-	32	10
AC-2550-2					40	2.5										
AC-2550-3					160	1										
AC-2580-1		80	150	127500	20	4		335.5	237	22	8	18.5	100	-	32	10
AC-2580-2					50	2.5										
AC-2580-3					200	1										
AC-3660-1	M36x1.5	60	250	125000	400	4		247	162	35	10	25	134	17	46	15
AC-3660-2					1500	2.5										
AC-3660-3					2400	1										

AC-S多孔固定式高频适用 Multi-hole non-adjustable for high frequency operation

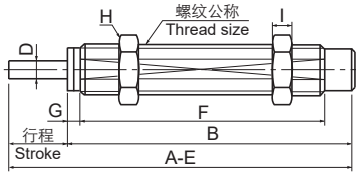
M8, M10, M14 (AC1412-S), M20, M27有撞击头With cap



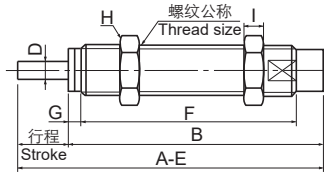
M14 (AC1412-SC)有撞击头With cap



M8, M10, M14 (AC1412-SN), M20, M27无撞击头Without cap



M14 (AC1412-SCN)无撞击头Without cap



型号 Model	螺纹 公称 Thread size	行程 Stroke (mm)	每次最大 吸收能量 Max.energy absorption per cycle (Nm)	每小时最大 吸收能量 Max.energy absorption per hour (Nm)	最大有效 重量 Max. effective weight (kg)	最大撞击 速度 Max. impact speed (m/s)	工作温度 Operating temperature	尺寸 Dimensions (mm)								
								A	B	C	D	E	F	G	H	I
AC-0806-S	M8x1.0	6	3	7000	6	2.5	-10~85℃	51.6	39.6	6.7	2.8	6	33.6	2	11	3
AC-1007-S	M10x1.0	7	6	12400	12	3.5		63	47.5	8.5	3	8.5	39	3	12.7	3
AC-1210-S	M12x1.0	10	12	22500	22	4.0		71	53	10.3	4	12	44	3	14	4
AC-1412-S	M14x1.5	12	20	33000	40	5.0		91.5	67.5	11.9	4	12	59	4	19	6
AC-1412-SC					35	5.0		79	55	12	4	12	46.5	4	19	6
AC-2015-S	M20x1.5	15	59	38000	120	5.0		105.2	74	17.9	6	16.2	62.5	6	26	6
AC-2725-S	M27x1.5	25	147	72000	270	3.5		142.5	99	22	8	18.5	85.5	8	36	6

油压缓冲器

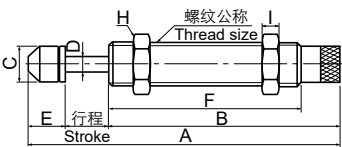
Shock Absorber

Series AC/AD/ACD

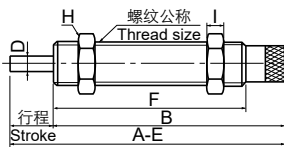
规格和尺寸 Specifications and Dimensions

AD可调整式 Adjustable

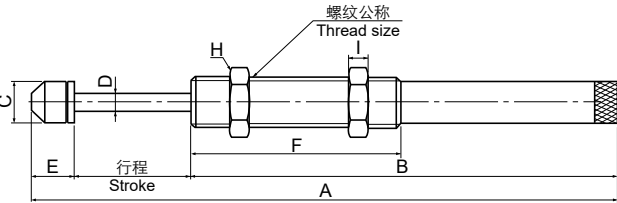
M14, M20,
M25 (AD-2525 , AD-2530)
有撞击头With cap



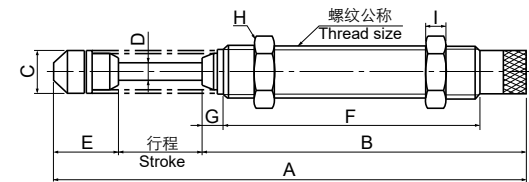
M14, M20,
M25 (AD-2525N , AD-2530N)
无撞击头Without cap



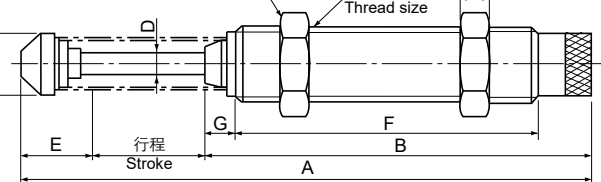
M25 (AD-2550 , AD-2580)



M25 (AD-2540)

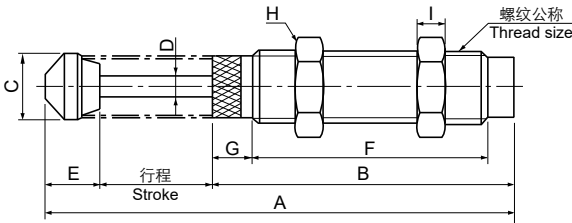


M36

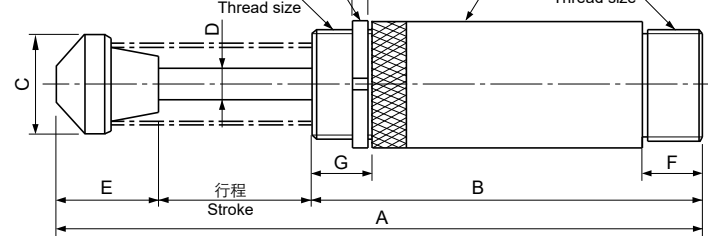


AD可调整式重型 Adjustable heavy

M42



M64



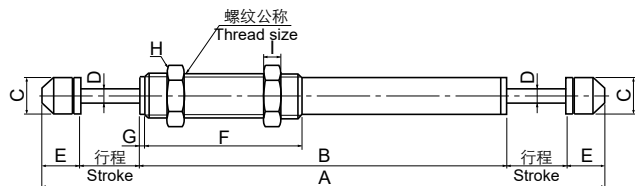
型号 Model	螺纹公称 Thread size	行程 Stroke (mm)	每次最大 吸收能量 Max.energy absorption per cycle (Nm)	每小时最大 吸收能量 Max.energy absorption per hour (Nm)	最大有效 重量 Max. effective weight (kg)	最大撞击 速度 Max. impact speed (m/s)	工作温度 Operating temperature	尺寸 Dimensions (mm)								
								A	B	C	D	E	F	G	H	I
AD-1410	M14x1.5	10	20	24000	80	3.2	-10~85°C	105.2	83.2	12	4	12	65.7	-	19	6
AD-1415		15	22	26400	120	3.2		129	102	12	4	12	85	-	19	6
AD-2016	M20x1.5	16	25	32000	200	3.6		148.8	117	18	6	15.8	101	-	26	8
AD-2025		25	39	39000	312	3.6		157.8	117	18	6	15.8	101	-	26	8
AD-2525	M25x1.5	25	85	51000	400	3.6		162	118.5	22	8	18.5	101	-	32	10
AD-2530		30	95	57000	480	3.6		167	118.5	22	8	18.5	101	-	32	10
AD-2540		40	100	84000	700	3.6		221.5	144.5	22	8	37	117	10	32	10
AD-2550		50	98	98000	720	4.2		246.5	178	22	8	18.5	100	-	32	10
AD-2580		80	150	127000	800	4.2		343	244.5	22	8	18.5	100	-	32	10
AD-3625	M36x1.5	25	150	90000	1400	3.2	-10~85°C	183	133	35.5	10	25	103	10	46	10
AD-3650		50	300	108000	1400	3.2		246	171	35.5	10	25	134	17	46	15
AD-4225	M42x1.5	25	260	130000	3000	3.6		186	127.5	44.5	12	33.5	88	28.5	50	15
AD-4250		50	500	155000	4000	4.8		245.5	157	44.5	12	38.5	117.5	28.5	50	15
AD-4275		75	750	187000	6000	4.8		301	187.5	44.5	12	38.5	148	28.5	50	15
AD-64050	UNF21/2-12	50	12000	1560000	12727	1.6		247	146	59	20	51	26	23	76.2	9.4
AD-64100		100	24000	1920000	18181	1.6		347	196	59	20	51	26	23	76.2	9.4
AD-64150		150	36000	2520000	23636	1.6		467	256	59	20	61	26	23	76.2	9.4

油压缓冲器
Shock Absorber
Series AC/AD/ACD

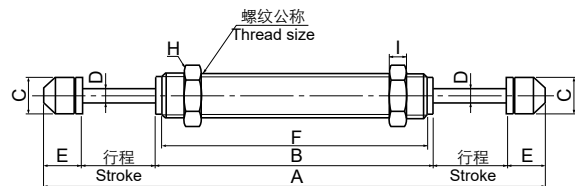
规格和尺寸 Specifications and Dimensions

ACD双向缓冲 Two-way cushion

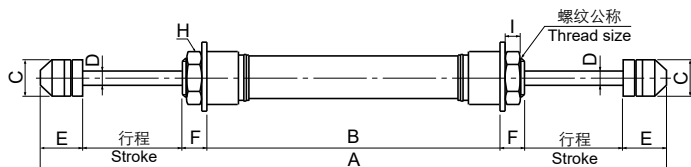
M20 (ACD-2030, ACD-2035)



M20 (ACD-2045-QY, ACD-2050-L)



M20 (ACD-2050-2)

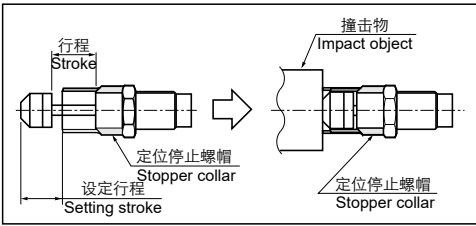


型号 Model	螺纹 公称 Thread size	行程 Stroke (mm)	每次最大 吸收能量 Max. energy absorption per cycle (Nm)	每小时最大 吸收能量 Max. energy absorption per hour (Nm)	最大有效 重量 Max. effective weight (kg)	最大撞击 速度 Max. impact speed (m/s)	工作温度 Operating temperature	尺寸 Dimensions (mm)								
								A	B	C	D	E	F	G	H	I
ACD-2030-1	M20x1.5	30	45	54000	40	3.5	-10~85°C	189	123	18	5	15.8	46	3	26	8
ACD-2030-2					300	2.0										
ACD-2030-3					900	1.0										
ACD-2035-1		35	52	62000	40	3.5		223	123	18	5	15.8	46	3	26	8
ACD-2035-2					200	2.0										
ACD-2035-3					650	1.0										
ACD-2045-QY		45	55	137500	350	4.0		276.6	155	18	6	15.8	149	-	26	8
ACD-2050-2		50	60	150000	400	4.0		323	148	18	6	21	12.5	-	26	8
ACD-2050-L					400	4.0		320.6	189	18	6	15.8	183	-	26	8

定位停止螺帽(选用配件) Stopper collar (optional accessory)

型号 Model	尺寸 Dimensions (mm)	适用 缓冲器 Applicable shock absorber	型号 Model	尺寸 Dimensions (mm)	适用 缓冲器 Applicable shock absorber
SC-08		AC-0806	SC-14		AC-1412 AC-1416 AC-1420 AC-1425 AD-1410 AD-1415 AD-1425
SC-10		AC-1005 AC-1007 AC-1008	SC-20		AC-2015 AC-2020 AC-2030 AC-2050 AD-2016 AD-2020 AD-2025
SC-12		AC-1210	SC-25		AC-2525 AC-2550 AC-2580 AD-2525 AD-2530 AD-2550 AD-2580

应用示例 Application example



型号 Model	尺寸 Dimensions (mm)	适用缓冲器 Applicable shock absorber
SC-40		AC-2540 AD-2540
SC-50		AC-3660 AD-3625 AD-3650

油压缓冲器
Shock Absorber
Series AC/AD/ACD

规格和尺寸 Specifications and Dimensions

安装法兰(选用配件)
Mounting flange (optional accessory)

型号 Model	尺寸 Dimensions (mm)	适用缓冲器 Applicable shock absorber
F 36		AC-3660 AD-3650
F 42		AD-4225 AD-4250 AD-4275
F 64		AD-64050 AD-64100 AD-64150

选型方法 How to Select

2 确定油压缓冲器尺寸要求的参数
Parameters required to precisely determine the size of shock absorber

符号 Symbol	参数说明 Parameter description	单位 Unit
C	每小时撞击次数 Impact cycles per hour	/hr
F	推进力 Propelling force	N
m	减速负载的综合重量 Total weight of load to be decelerated	kg
v	撞击速度 Impact velocity	m/s

3 计算公式
Calculation Formulas

项目 Item	公式 Formula
动能 Kinetic energy	$E_k = mv^2/2$
每次驱动能量 Drive energy per cycle	$E_D = F \cdot S$
自由落体速度 Freefall velocity	$v = \sqrt{2g \cdot h}$
气液压缸的推进力 Cylinder propelling force	$F = 0.00785Pd^2$

选型方法 How to Select

1 使用条件的参数说明
Parameters of application conditions

符号 Symbol	参数说明 Parameter description	单位 Unit
μ	摩擦系数 Friction coefficient	-
α	斜面倾角 Angle of inclined plane	rad
θ	负载撞击接触角度 Impact angle of load side	rad
ω	角速度 Angular velocity	rad/s
A	宽度 Width	m
B	厚度 Thickness	m
C	每小时撞击次数 Impact cycles per hour	/hr
d	气液压缸缸径 Cylinder bore size	mm
E_D	每次驱动能量 Drive energy per cycle	Nm
E_K	每次动能 Kinetic energy per cycle	Nm
E_T	每次综合能量 Total energy per cycle	Nm
E_{TC}	每小时综合能量 Total energy per hour	Nm
F	推进力 Propelling force	N
F_m	最大冲击力 Maximum shock force	N
g	重力加速度 Acceleration of gravity	m/s ²
h	高度 Height	m
HM	马达制动系数 (一般为 2.5) Arresting torque factor for motor (normally 2.5)	-
kW	电动马达功率 Electric motor power	kW
m	减速负载的综合重量 Total weight of load to be decelerated	kg
M_e	有效重量 Effective weight	kg
P	气液压缸操作压力 Cylinder operating pressure	bar
R	半径 Radius	m
R_s	油压缓冲器至旋转中心的距离 Distance between shock absorber and rotation center	m
S	行程 Stroke	m
T	驱动扭矩 Driving torque	Nm
t	减速时间 Deceleration time	s
v	撞击速度 Impact velocity	m/s

项目 Item	公式 Formula
最大冲击力 (概估) Maximum shock force (approximate)	$F_m = 1.2E_T/S$
电动马达产生的推进力 Propelling force generated by electric motor	$F = 3000kW/v$
每小时吸收的总能量 Total energy absorption per hour	$E_{TC} = E_T \cdot C$

油压缓冲器

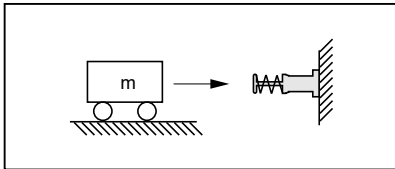
Shock Absorber

Series AC/AD/ACD

选型方法 How to Select

4 计算举例 Calculation examples

例一：水平撞击 Example 1: horizontal impact



使用条件 Application conditions

$m=300\text{ kg}$
 $v=1.0\text{ m/s}$
 $S=0.05\text{ m}$
 $C=300\text{ /hr}$

用公式计算 Calculating by formulas

$$E_K = \frac{mv^2}{2} = \frac{300 \cdot 1.0^2}{2} = 150\text{ Nm}$$

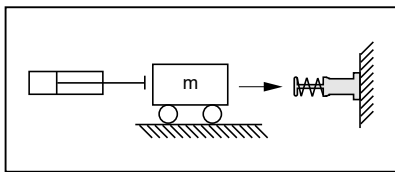
$$E_T = E_K = 150\text{ Nm}$$

$$E_{TC} = E_T \cdot C = 150 \cdot 300 = 45000\text{ Nm/hr}$$

$$M_e = \frac{2E_T}{v^2} = \frac{2 \cdot 150}{1.0^2} = 300\text{ kg}$$

由“有效重量 - 撞击速度”曲线图建议使用 AD-3650 油压缓冲器。
 According to "effective weight - impact velocity" graph, suggest AD-3650 shock absorber.

例二：有推进力的水平撞击 Example 2: horizontal impact with propelling force



使用条件 Application conditions

$m=300\text{ kg}$
 $v=1.2\text{ m/s}$
 $S=0.05\text{ m}$
 $P=40\text{ N/cm}^2$
 $d=100\text{ mm}$
 $C=300\text{ /hr}$

用公式计算 Calculating by formulas

$$E_K = \frac{mv^2}{2} = \frac{300 \cdot 1.2^2}{2} = 216\text{ Nm}$$

$$E_D = F \cdot S = 0.00785Pd^2 \cdot S$$

$$= 0.00785 \cdot 40 \cdot 100^2 \cdot 0.05 = 157\text{ Nm}$$

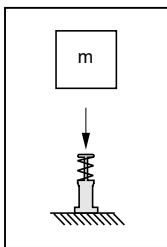
$$E_T = E_K + E_D = 216 + 157 = 373\text{ Nm}$$

$$E_{TC} = E_T \cdot C = 373 \cdot 300 = 111900\text{ Nm/hr}$$

$$M_e = \frac{2E_T}{v^2} = \frac{2 \cdot 373}{1.2^2} = 518\text{ kg}$$

由“有效重量 - 撞击速度”曲线图建议使用 AD-4250 油压缓冲器。
 According to "effective weight - impact velocity" graph, suggest AD-4250 shock absorber.

例三：自由落体撞击 Example 3: freefall impact



使用条件 Application conditions

$m=40\text{ kg}$
 $h=0.4\text{ m}$
 $S=0.06\text{ m}$
 $C=200\text{ /hr}$

用公式计算 Calculating by formulas

$$v = \sqrt{2g \cdot h} = \sqrt{2 \cdot 9.81 \cdot 0.4} = 2.8\text{ m/sec}$$

$$E_K = \frac{mv^2}{2} = \frac{40 \cdot 2.8^2}{2} = 157\text{ Nm}$$

$$E_D = F \cdot S = m \cdot g \cdot S = 40 \cdot 9.81 \cdot 0.06 = 23.5\text{ Nm}$$

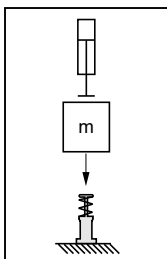
$$E_T = E_K + E_D = 157 + 23.5 = 180.5\text{ Nm}$$

$$E_{TC} = E_T \cdot C = 180.5 \cdot 200 = 36100\text{ Nm/hr}$$

$$M_e = \frac{2E_T}{v^2} = \frac{2 \cdot 180.5}{2.8^2} = 46\text{ kg}$$

由“有效重量 - 撞击速度”曲线图建议使用 AC-3660-1 油压缓冲器。
 According to "effective weight - impact velocity" graph, suggest AC-3660-1 shock absorber.

例四：有推进力的自由落体撞击 Example 4: freefall impact with propelling force



使用条件 Application conditions

$m=40\text{ kg}$
 $h=0.3\text{ m}$
 $S=0.025\text{ m}$
 $P=5\text{ bar}$
 $d=50\text{ mm}$
 $C=200\text{ /hr}$
 $v=1.0\text{ m/sec}$

用公式计算 Calculating by formulas

$$E_K = \frac{mv^2}{2} = \frac{40 \cdot 1.0^2}{2} = 20\text{ Nm}$$

$$E_D = F \cdot S = (mg + 0.0785Pd^2) \cdot S$$

$$= (40 \cdot 9.81 + 0.0785 \cdot 5 \cdot 50^2) \cdot 0.025 = 34.4\text{ Nm}$$

$$E_T = E_K + E_D = 20 + 34.4 = 54.4\text{ Nm}$$

$$E_{TC} = E_T \cdot C = 54.4 \cdot 200 = 10880\text{ Nm/hr}$$

$$M_e = \frac{2E_T}{v^2} = \frac{2 \cdot 54.4}{1.0^2} = 108.8\text{ kg}$$

由“有效重量 - 撞击速度”曲线图建议使用 AD-2525 油压缓冲器。
 According to "effective weight - impact velocity" graph, suggest AD-2525 shock absorber.

油压缓冲器

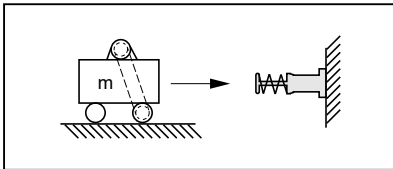
Shock Absorber

Series AC/AD/ACD

选型方法 How to Select

4 计算举例 Calculation examples

例五：马达驱动的水平撞击 Example 5: horizontal impact with motor drive



使用条件 Application conditions

$m=400 \text{ kg}$
 $v=1.0 \text{ m/s}$
 $kW=1.5 \text{ kW}$
 $HM=2.5$
 $S=0.075 \text{ m}$
 $C=60 \text{ /hr}$

用公式计算 Calculating by formulas

$$E_K = \frac{mv^2}{2} = \frac{400 \cdot 1.0^2}{2} = 200 \text{ Nm}$$

$$E_D = F \cdot S = \frac{kW \cdot HM}{v} \cdot S = \frac{1500 \cdot 2.5}{1.0} \cdot 0.075 = 281 \text{ Nm}$$

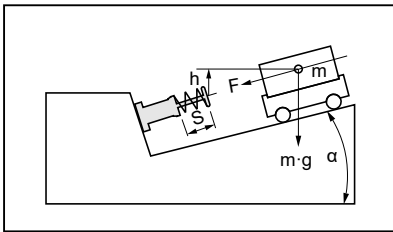
$$E_T = E_K + E_D = 200 + 281 = 481 \text{ Nm}$$

$$E_{TC} = E_T \cdot C = 481 \cdot 60 = 28860 \text{ Nm/hr}$$

$$M_e = \frac{2E_T}{v^2} = \frac{2 \cdot 481}{1.0^2} = 962 \text{ kg}$$

由“有效重量 - 撞击速度”曲线图建议使用 AD-4275 油压缓冲器。
 According to "effective weight - impact velocity" graph, suggest AD-4275 shock absorber.

例六：倾斜撞击 Example 6: inclined impact



使用条件 Application conditions

$m=150 \text{ kg}$
 $h=0.3 \text{ m}$
 $S=0.075 \text{ m}$
 $\alpha=30^\circ$
 $C=200 \text{ /hr}$

用公式计算 Calculating by formulas

$$v = \sqrt{2g \cdot h} = \sqrt{2 \cdot 9.81 \cdot 0.3} = 2.43 \text{ m/sec}$$

$$E_K = \frac{mv^2}{2} = \frac{150 \cdot 2.43^2}{2} = 443 \text{ Nm}$$

$$E_D = F \cdot S = m \cdot g \cdot S \cdot \sin \alpha = 150 \cdot 9.81 \cdot 0.075 \cdot \sin 30^\circ = 55.2 \text{ Nm}$$

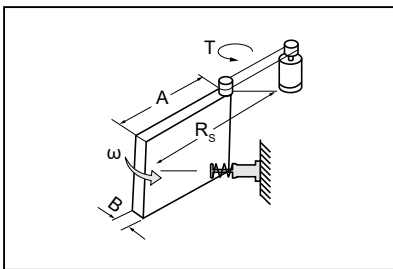
$$E_T = E_K + E_D = 443 + 55.2 = 488.2 \text{ Nm}$$

$$E_{TC} = E_T \cdot C = 488.2 \cdot 200 = 97640 \text{ Nm/hr}$$

$$M_e = \frac{2E_T}{v^2} = \frac{2 \cdot 488.2}{2.43^2} = 165.4 \text{ kg}$$

由“有效重量 - 撞击速度”曲线图建议使用 AD-4275 油压缓冲器。
 According to "effective weight - impact velocity" graph, suggest AD-4275 shock absorber.

例七：水平旋转门 Example 7: horizontal revolving door



使用条件 Application conditions

$m=20 \text{ kg}$
 $\omega=2.0 \text{ rad/s}$
 $T=20 \text{ Nm}$
 $R_s=0.8 \text{ m}$
 $A=1.0 \text{ m}$
 $B=0.05 \text{ m}$
 $S=0.016 \text{ m}$
 $C=100 \text{ /hr}$

用公式计算 Calculating by formulas

$$I = \frac{m(4A^2+B^2)}{12} = \frac{20 \cdot (4 \cdot 1.0^2 + 0.05^2)}{12} = 6.67 \text{ kgm}^2$$

$$E_K = \frac{I\omega^2}{2} = \frac{6.67 \cdot 2.0^2}{2} = 13.34 \text{ Nm}$$

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

$$E_D = T \cdot \theta = 20 \cdot 0.05 = 1.0 \text{ Nm}$$

$$E_T = E_K + E_D = 13.34 + 1.0 = 14.34 \text{ Nm}$$

$$E_{TC} = E_T \cdot C = 14.34 \cdot 100 = 1434 \text{ Nm/hr}$$

$$v = \omega \cdot R_s = 2.0 \cdot 0.8 = 1.6 \text{ m/s}$$

$$M_e = \frac{2E_T}{v^2} = \frac{2 \cdot 14.34}{1.6^2} = 11.2 \text{ kg}$$

由“有效重量 - 撞击速度”曲线图建议使用 AD-2016 油压缓冲器。
 According to "effective weight - impact velocity" graph, suggest AD-2016 shock absorber.

油压缓冲器

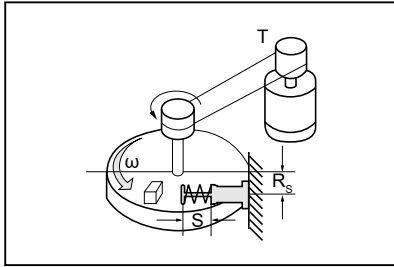
Shock Absorber

Series AC/AD/ACD

选型方法 How to Select

4 计算举例 Calculation examples

例八：有驱动的旋转分度盘
Example 8: rotary index plate
with driving force



使用条件
Application conditions

$m=200 \text{ kg}$
 $\omega=1.0 \text{ rad/s}$
 $T=100 \text{ Nm}$
 $R=0.5 \text{ m}$
 $R_s=0.4 \text{ m}$
 $S=0.04 \text{ m}$
 $C=100 \text{ /hr}$

用公式计算
Calculating by formulas

$$I = \frac{mR^2}{2} = \frac{200 \cdot 0.5^2}{2} = 25 \text{ kgm}^2$$

$$E_k = \frac{I\omega^2}{2} = \frac{25 \cdot 1.0^2}{2} = 12.5 \text{ Nm}$$

$$\theta = \frac{S}{R_s} = \frac{0.04}{0.4} = 0.1 \text{ rad}$$

$$E_D = T \cdot \theta = 100 \cdot 0.1 = 10 \text{ Nm}$$

$$E_T = E_k + E_D = 12.5 + 10 = 22.5 \text{ Nm}$$

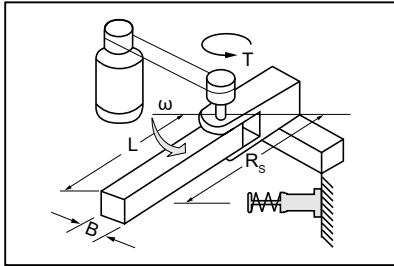
$$E_{TC} = E_T \cdot C = 22.5 \cdot 50 = 1125 \text{ Nm/hr}$$

$$v = \omega \cdot R_s = 1.0 \cdot 0.4 = 0.4 \text{ m/s}$$

$$M_e = \frac{2E_T}{v^2} = \frac{2 \cdot 22.5}{0.4^2} = 281 \text{ kg}$$

由“有效重量 - 撞击速度”曲线图建议使用 AD-4250 油压缓冲器。
According to "effective weight - impact velocity" graph, suggest AD-4250 shock absorber.

例九：有驱动的旋转臂
Example 9: pivot arm with
driving force



使用条件
Application conditions

$m=40 \text{ kg}$
 $\omega=2.0 \text{ rad/s}$
 $T=10 \text{ Nm}$
 $R_s=0.4 \text{ m}$
 $A=0.5 \text{ m}$
 $B=0.05 \text{ m}$
 $S=0.05 \text{ m}$
 $C=50 \text{ /hr}$

用公式计算
Calculating by formulas

$$I = \frac{m(4A^2+B^2)}{12} = \frac{40 \cdot (4 \cdot 0.5^2 + 0.05^2)}{12} = 3.34 \text{ kgm}^2$$

$$E_k = \frac{I\omega^2}{2} = \frac{3.34 \cdot 2.0^2}{2} = 6.68 \text{ Nm}$$

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

$$E_D = T \cdot \theta = 10 \cdot 0.125 = 1.25 \text{ Nm}$$

$$E_T = E_k + E_D = 6.68 + 1.25 = 7.93 \text{ Nm}$$

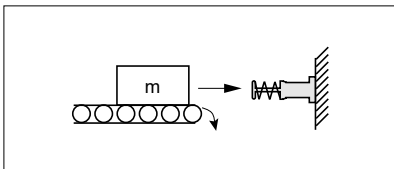
$$E_{TC} = E_T \cdot C = 7.93 \cdot 50 = 396.5 \text{ Nm/hr}$$

$$v = \omega \cdot R_s = 2.0 \cdot 0.4 = 0.8 \text{ m/s}$$

$$M_e = \frac{2E_T}{v^2} = \frac{2 \cdot 7.93}{0.8^2} = 24.78 \text{ kg}$$

由“有效重量 - 撞击速度”曲线图建议使用 AC-1416-2 油压缓冲器。
According to "effective weight - impact velocity" graph, suggest AC-1416-2 shock absorber.

例十：水平输送带负载撞击
Example 10: impact by load on
horizontal conveyor



使用条件
Application conditions

$m=150 \text{ kg}$
 $v=0.5 \text{ m/s}$
 $\mu=0.25$
 $S=0.02 \text{ m}$
 $C=120 \text{ /hr}$

用公式计算
Calculating by formulas

$$E_k = \frac{mv^2}{2} = \frac{150 \cdot 0.5^2}{2} = 18.75 \text{ Nm}$$

$$E_D = F \cdot S = m \cdot g \cdot \mu \cdot S = 150 \cdot 9.81 \cdot 0.25 \cdot 0.02 = 7.35 \text{ Nm}$$

$$E_T = E_k + E_D = 18.75 + 7.35 = 26.1 \text{ Nm}$$

$$E_{TC} = E_T \cdot C = 26.1 \cdot 120 = 3132 \text{ Nm/hr}$$

$$M_e = \frac{2E_T}{v^2} = \frac{2 \cdot 26.1}{0.5^2} = 208.8 \text{ kg}$$

由“有效重量 - 撞击速度”曲线图建议使用 AC-2020-3 油压缓冲器。
According to "effective weight - impact velocity" graph, suggest AC-2020-3 shock absorber.