



SB, SBD SERIES SAFETY BRAKES

SB、SBD系列安全制动器

致力传动安全 Committed to transmission security



SB、SBD系列安全制动器

SB,SBD SERIES SAFETY BRAKES

应用：SB、SBD系列液压安全（紧急）制动器，是一种使用在低速轴（卷筒轴）上的大功率制动装置，可广泛用于大中型起重机、港口装卸机械起升以及臂架俯仰机构低速轴的紧急安全制动。矿用卷扬机、提升机和大功率倾角式皮带运输机的工作制动和紧急安全制动，缆车和索缆起重机驱动机构的安全制动，铸造起重机等特种起重机起升机构低速轴的安全（紧急）制动。

Application:

SB,SBD series hydraulic safety (emergency) brakes are high-power braking devices, which can be widely used as emergency safety brake on low speed shafts for the lifting control and pitching mechanism of various large and middle crane and port handling machinery. They are also applied for the same purpose for mine winder, lifter, elevators, belt conveyers, cable cars, foundry and cable cranes and so on.

主要特点 Main feature:

1

- + 常闭式设计，安全可靠；特制碟簧施力制动，液压驱动释放（液压站选型详见液压站样本）。

Normally closed design, safe and reliable; specially-designed disc springs applied. hydraulic driving release (type selection of hydraulic power unit see "Manual for hydraulic power unit").

2

- + 动作灵敏，闭合（上闸）时间短。

Swift action and short braking time.

3

- + 可选配开闸限位、衬垫磨损极限限位等开关，进行信号显示或联锁保护。

Be able to optionally equip with release limit and pad wear limit switch, which can realize signal indication and interlocking protection.

4

- + 高性能无石棉硬质摩擦衬垫，摩擦系数稳定，不损伤制动盘且对水介质和盐雾（海水）不敏感。

Brake lining is made from non-asbestos hard material, which has high and stable friction performance, and it is insensitive to water, salt and other environmental agents.

5

- + 合理的密封结构设计和进口名牌密封件。效果好、寿命长。

Excellent sealing ensure the brake long service life.

6

- + 安装位置灵活，使用、调整、维护简单。

Installing position is flexible, operation, adjustment and maintenance are easy.



SB系列 Series



SBD□-A系列 Series



SBD□-B系列 Series



SBD□-C系列 Series



SBD□-D系列 Series

使用条件 Operating condition:

●环境温度: $-20^{\circ}\text{C}\sim+50^{\circ}\text{C}$ 。

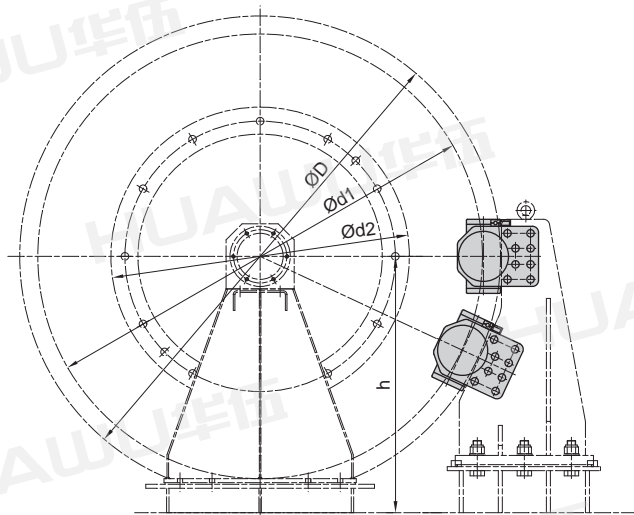
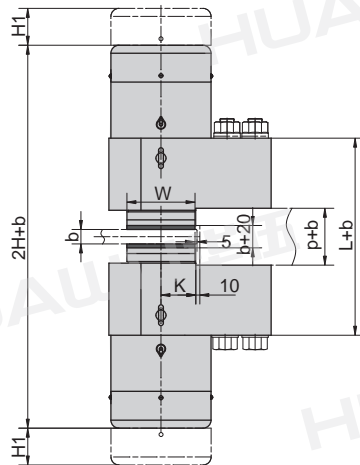
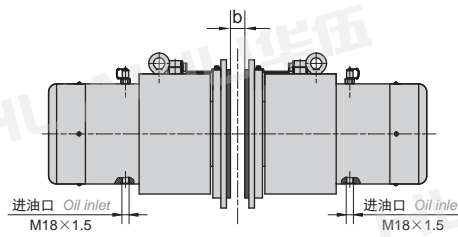
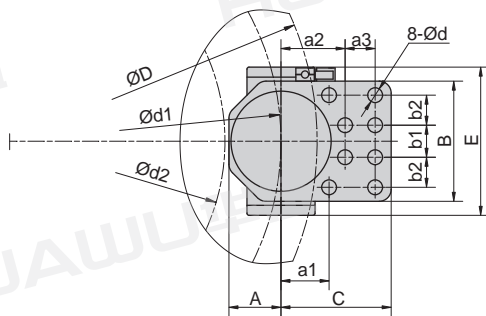
●相对湿度: $<90\%$ 。

有特殊要求时, 在订货时协商确定。

●Ambient temperature: $-20^{\circ}\text{C}\sim+50^{\circ}\text{C}$ 。

●Relative humidity: $<90\%$ 。

Special requirements can be discussed in order.



安装方式 Installation
h由用户确定 h Determined by the user

订货标记 Order Mark

SB□-□×□□□

特殊要求(可用文字说明)
Special requirement(can be specified in words)

附加装置 Additional option

制动盘径和厚度 Disc diameter and width

产品型号 Type

- RL-开闸限位开关 Release limit-switch
- WL-衬垫磨损极限限位开关 Lining wear limit-switch
- CL-闭闸限位开关 Closed limit-switch

订货示例 Order Example

SB250-2200×40 RL, 表示额定夹紧力为250KN, 制动盘直径为2200mm, 盘厚为40mm, 带开闸限位开关。

SB250-2200×40 RL, rated clamping force is 250KN, braking disc diameter is 2200mm, disc thickness is 40mm, with release limit switch.

SB系列安全制动器技术参数 *Technical data of SB series safety brakes*

产品型号 Type	夹紧力F Clamp force (KN)	释放压力 Release pressure (MPa)	开闸油量 Release oil volume (ml)	退距 Clearance (mm)	摩擦系数 Friction coefficient		安装螺栓/性能等级/安装扭矩 Mounting bolts bolts;performance class;Installation torque	不含支架重量 Weight bracket excluded (kg)
					静态 Static	动态 Dynamic		
SB50	50	11	30	1-2	0.4	0.36	8-M20、10.9、550±10	90
SB100	100	12	50	1-2	0.4	0.36	8-M24、10.9、950±10	150
SB160	160	12	70	1-2	0.4	0.36	8-M30、10.9、1900±20	310
SB250	250	16.5	95	1-2	0.4	0.36	8-M36、10.9、3300±40	452
SB315	315	17	115	1-2	0.4	0.36	8-M36、10.9、3300±40	672
SB400	400	16.5	170	1-2	0.4	0.36	8-M48、10.9、7500±100	1100

制动力矩 *Brake torque* $Nm=F \times \mu \times d1$ *Torque in Nm=* $F \times \mu \times d1$ **尺寸表** *Dimensions(mm)*

产品型号 Type	A	a1	a2	a3	b1	b2	B	C	d	k	P	L	E	W	H	H1
SB50	77	77	90	38	38	38	154	150	20.5	56	102	300	240	110	310	80
SB100	95	95	105	45	55	45	190	180	25	71	102	348	286	140	360	85
SB160	110	120	135	65	70	65	260	235	31	87	106	412	370	170	410	95
SB250	130	120	160	75	80	75	300	275	37	87	106	456	370	170	470	110
SB315	140	175	205	85	90	82.5	335	330	37	137	106	476	410	270	500	110
SB400	170	180	220	120	110	110	440	420	50	137	142	602	546	270	560	115

与制动盘有关尺寸 *Relative Dimensions of brake disc(mm)*

产品型号 Type	b	D	d1	d2 _{max}
SB50	30	36	40	≥500
SB100	30	36	40	≥500
SB160	30	36	40	≥600
SB250	30	36	40	≥600
SB315	30	36	40	≥1200
SB400	30	36	40	≥1800

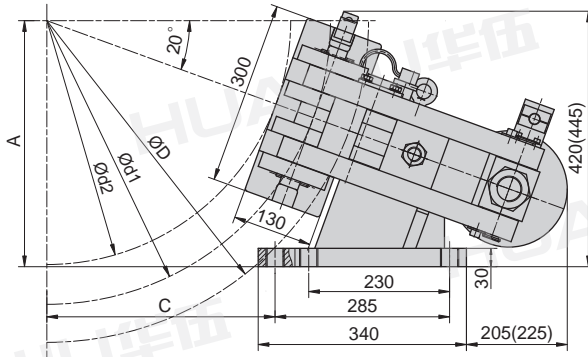
d1=理论摩擦直径 *d1=the theoretical friction diameter*

d2=允许最大的卷筒或联接毂外径 *d2=max .allowable drum or hub diameter*

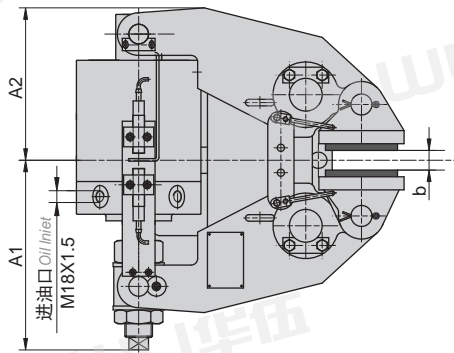
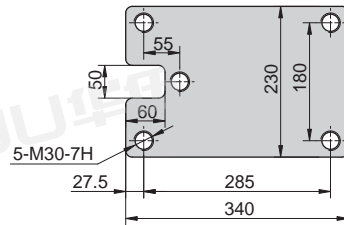
D:如为其它盘径, 请与我们联系 *For other disc diameters please contact us*

安装及外形尺寸

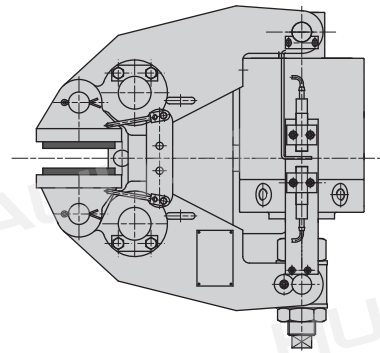
Outline and installation dimension



底板连接尺寸
Base plate connection dimensions



安装形式 Version: II型

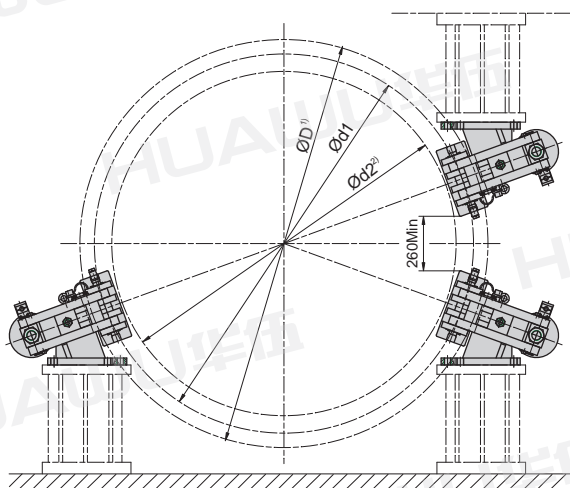


安装形式 Version: I型

注: 括号内的尺寸用于SBD315-A。
Note: Dimensions in bracket are used in SBD315-A.

安装示意图

Installation diagram



制动力矩: $M = \mu \times d1 \times F$ (Nm)

式中: μ —摩擦系数计算取值: 静态0.4, 动态0.36

$d1$ —制动盘计算摩擦直径, $d1 = D - 135$ (mm),

或 $D - 155$ (mm) (后者针对SBD315-A)

F —制动时总夹紧力(KN)。

注: 1) 制动盘直径用于 $\varnothing 800 \leq \varnothing D \leq \varnothing 1800$, 如需其它盘径
请与我们联系。

2) $d2$ —允许的最大卷筒或联接毂外径, $d2 = D - 270$ (mm)。

Braking torque: $M = \mu \times d1 \times F$ (Nm)

In it: μ —the value of friction coefficient: Static 0.4, dynamic 0.36

$d1$ —disc friction diameter $d1 = D - 135$ (mm)

or $D - 155$ (mm) (the latter is specially used in SBD315-A)

F —total clamp force (KN).

Notes: 1) D —brake disc dia. for $\varnothing 800 \leq \varnothing D \leq \varnothing 1800$,

If you have other requirements, please contact with us.

2) $d2$ — $d2 = \max.$ allowable drum or hub diameter $d2 = D - 270$ (mm).

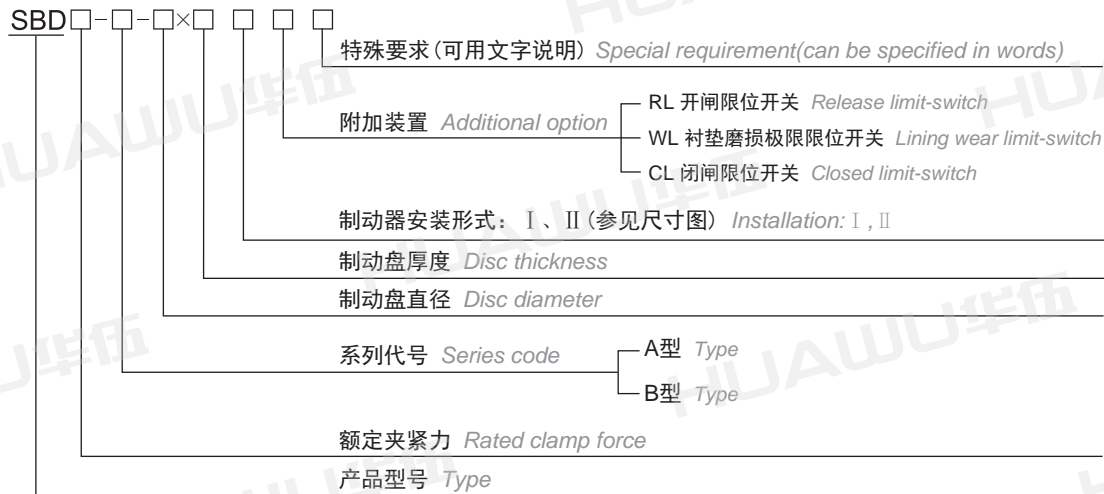
SBD□-A系列安全制动器尺寸和技术参数

Dimensions and technical data of SBD□-A series safety brakes

产品型号 Type	总夹紧力 Total clamp force(KN)	制动力 Braking force (KN)	油缸工作压力 Cylinder pressure (bar)	开闸油量 Oil volume (ml)	开闸间隙 Released clearance (mm)	A(mm)	C(mm)	d1(mm)	d2max (mm)	D(mm)	A1 (mm)	A2 (mm)	b (mm)	重量 Weight (kg)
SBD100-A	100	72	80	90	0.75~1.5	0.171×ØD+220	0.470×ØD-127	ØD-135	ØD-270	Ø800≤ØD ≤Ø1800	295	220	30 (25) (36)	195
SBD125-A	125	90	90	90	0.75~1.5						315	235	30 (25) (36)	195
SBD160-A	160	115	110	75	0.75~1.25									235
SBD200-A	200	144	100	120	0.75~1.5									258
SBD250-A	250	180	120	100	0.75~1.25									260
SBD315-A	315	220	110	160	0.75~1.25									30(25)

注：SBD□-A系列安全制动器为原型号SBD系列安全制动器。
Note: The original types of SBD□-A series safety brakes are SBD.

订货标记 Order Mark



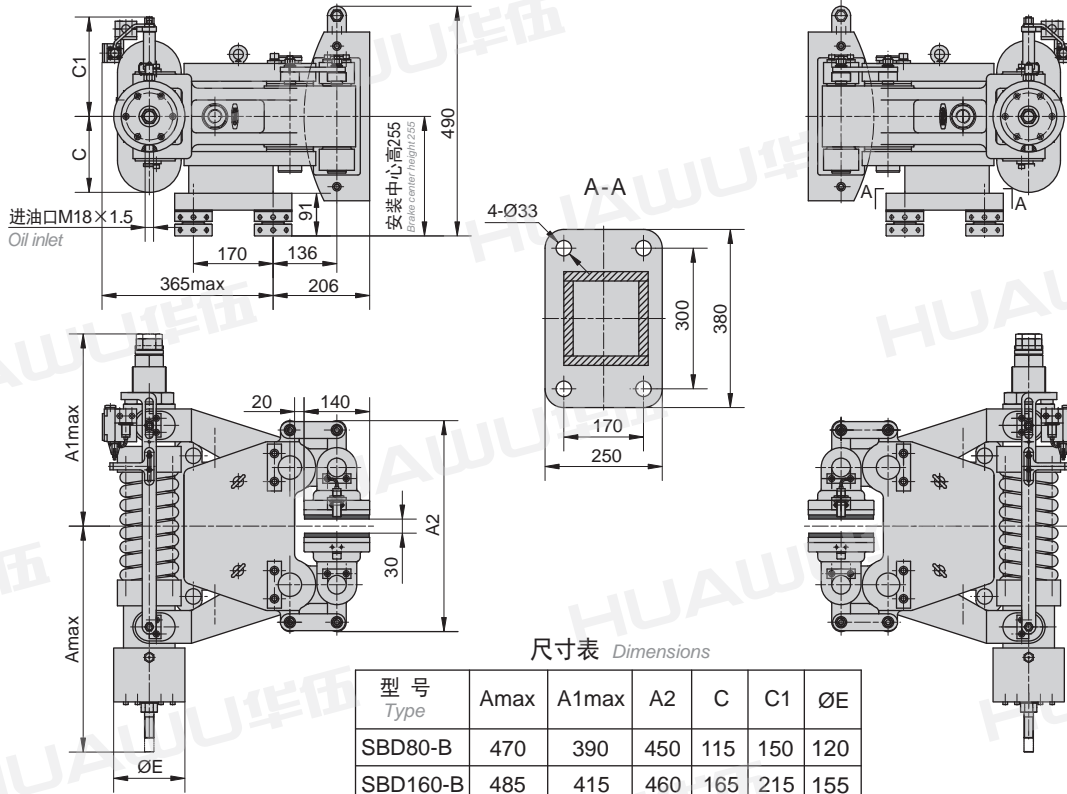
订货示例 Order Example

示例: SBD250-A-1600×30 I RL 表示额定夹紧力为250KN, 带开闸限位开关, I型安装的A型安全制动器, 制动盘直径为1600mm, 盘厚为30mm。

Sample: SBD250-A-1600×30 I RL means its rated clamping force is 250KN with release limit switch and A-type safety brake of I version installation. The brake disc diameter is 1600mm and the disc thickness is 30mm.

安装及外形尺寸

Outline and installation dimension

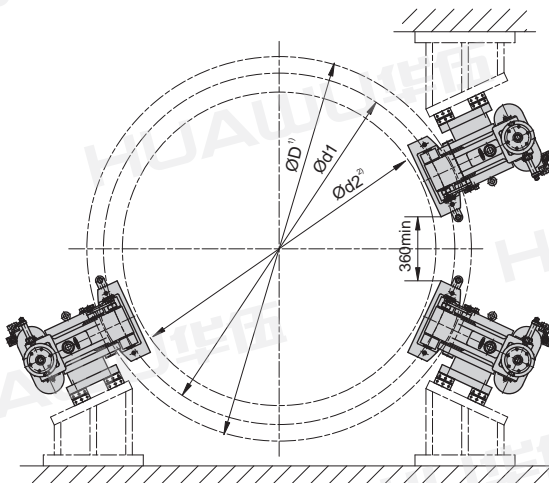


安装型式 Version: II 型

安装型式 Version: I 型

安装示意图

Installation diagram



制动力矩: $M = \mu \times d1 \times F$ (Nm)。

式中: μ —摩擦系数计算取值: 静态0.4, 动态0.36;

$d1$ —制动盘计算摩擦直径, $d1 = D - 150$ (mm);

F —制动时总夹紧力 (KN)。

注: 1) D —制动盘直径 $D \geq 800$ (mm);

2) $d2$ —允许的最大卷筒或联接毂外径, $d2 = D - 360$ (mm)。

Braking torque: $M = \mu \times d1 \times F$ (Nm).

In it: μ —the value of friction coefficient: Static 0.4, dynamic 0.36;

$d1$ —disc friction diameter $d1 = D - 150$ (mm);

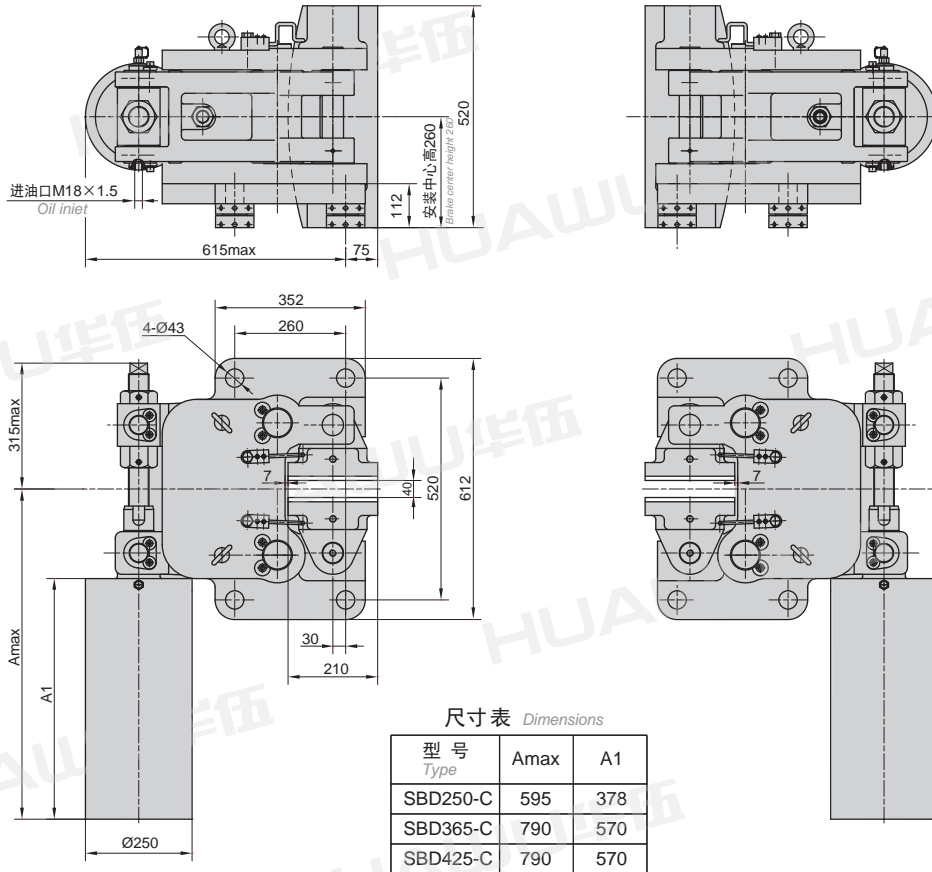
F —total clamp force (KN).

Notes: 1) D —disc diameter $D \geq 800$ (mm);

2) $d2$ —max. allowable drum or hub diameter $d2 = D - 360$ (mm).

安装及外形尺寸

Outline and installation dimension

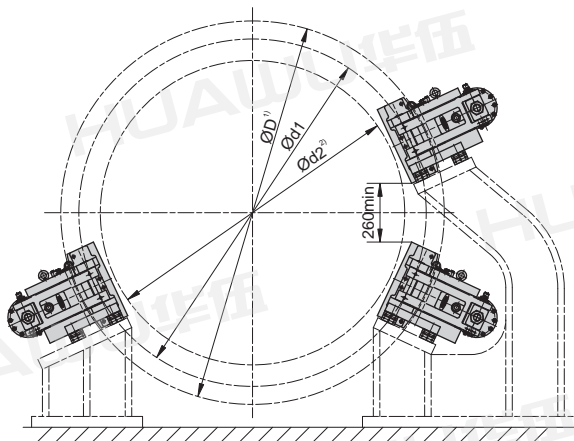


安装型式 Version: II 型

安装型式 Version: I 型

安装示意图

Installation diagram



制动力矩: $M = \mu \times d1 \times F(\text{Nm})$ 。

式中: μ —摩擦系数计算取值: 静态0.4, 动态0.36;

$d1$ —制动盘计算摩擦直径, $d1 = D - 220(\text{mm})$;

F —制动时总夹紧力(KN)。

注: 1) D —制动盘直径 $D \geq 1800(\text{mm})$;

2) $d2$ —允许的最大卷筒或联接毂外径, $d2 = D - 500(\text{mm})$ 。

Braking torque: $M = \mu \times d1 \times F(\text{Nm})$ 。

In it: μ —the value of friction coefficient: Static 0.4, dynamic 0.36;

$d1$ —disc friction diameter $d1 = D - 220(\text{mm})$;

F —total clamp force(KN)。

Notes: 1) D —disc diameter $D \geq 1800(\text{mm})$;

2) $d2$ —max. allowable drum or hub diameter $d2 = D - 500(\text{mm})$ 。

SBD系列安全制动器技术参数 *Technical data of series safety brake*

产品型号 Type	额定夹紧力 Rated clamp force (KN)	制动力 Braking force (KN)	单侧瓦块退距 Single-side shoe clearance (mm)	油缸工作压力 Working pressure of oil cylinder(MPa)	油缸开闸油量 Release oil volume(ml)	重量 Weight (kg)
SBD80-B	80	57	1~2	9.5	55	270
SBD160-B	160	115	1~2	9.5	115	310
SBD250-C	250	180	1~2	8	275	660
SBD365-C	365	262	1~2	8	275	720
SBD425-C	425	306	1~2	9.5	275	730

注：1)SBD80-B、SBD160-B、SBD250-C、SBD365-C、SBD425-C系列安全制动器为原型号SBB80、SBB160、SBB250、SBB365、SBB425系列安全制动器；

2)摩擦系数：静态0.4，动态0.36。

Note:1)The original types of SBD80-B, SBD160-B,SBD250-C, SBD365-C, SBD425-C series safty brakes are SBB80, SBB160,SBB250,SBB365,SBB425.

2)Friction coefficient: Static 0.4,dynamic 0.36.

订货标记 Order Mark



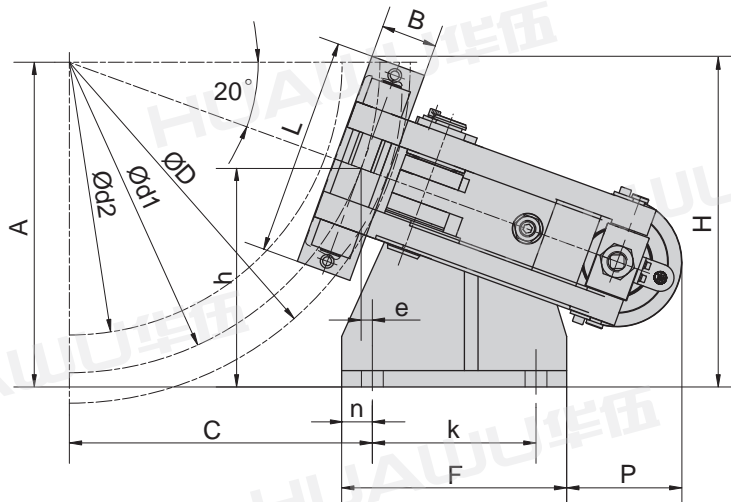
订货示例 Order Example

示例：SBD365-C-2200×40 I RL-表示额定夹紧力为365KN、带开闸限位开关、I型安装的C型安全制动器。制动盘直径为2200mm，盘厚为40mm。

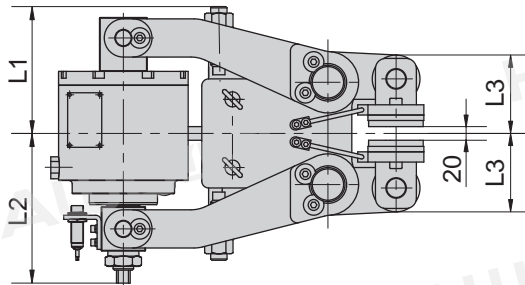
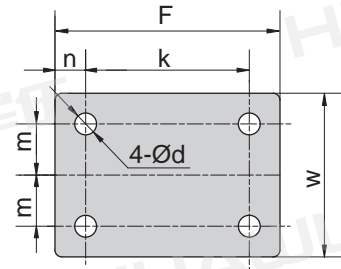
Sample: SBD365-C-2200×40 I RL clamping force its rated clamp is 365KN with release limit switch and C-type safety brake of I version installation.The brake disc diameter is 2200mm and the disc thickness is 40mm.

安装及外形尺寸

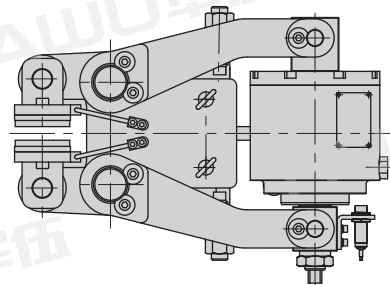
Outline and installation dimension



底板连接尺寸
Base plate connection dimensions



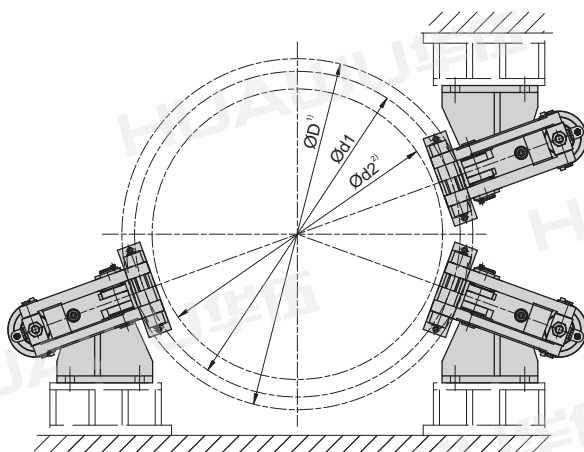
安装形式：II型 Installation type: version II



安装形式：I型 Installation type: version I

安装示意图

Installation diagram



制动力矩: $M = \mu \times d1 \times F(Nm)$ 。

式中: μ —摩擦系数计算取值: 静态0.4, 动态0.36;

$d1$ —制动盘计算摩擦直径(mm);

F —制动时总夹紧力(KN)。

注: 1) D —制动盘盘径 $D \geq 600(mm)$;

2) $d2$ —允许的最大卷筒或联接毂外径(mm)。

Braking torque: $M = \mu \times d1 \times F(Nm)$ 。

In it: μ —the value of friction coefficient: Static 0.4, dynamic 0.36;

$d1$ —disc friction diameter (mm);

F —total clamp force(KN)。

Notes: 1) D —disc diameter $D \geq 600(mm)$;

2) $d2$ —max .allowable drum or hub diameter (mm)。

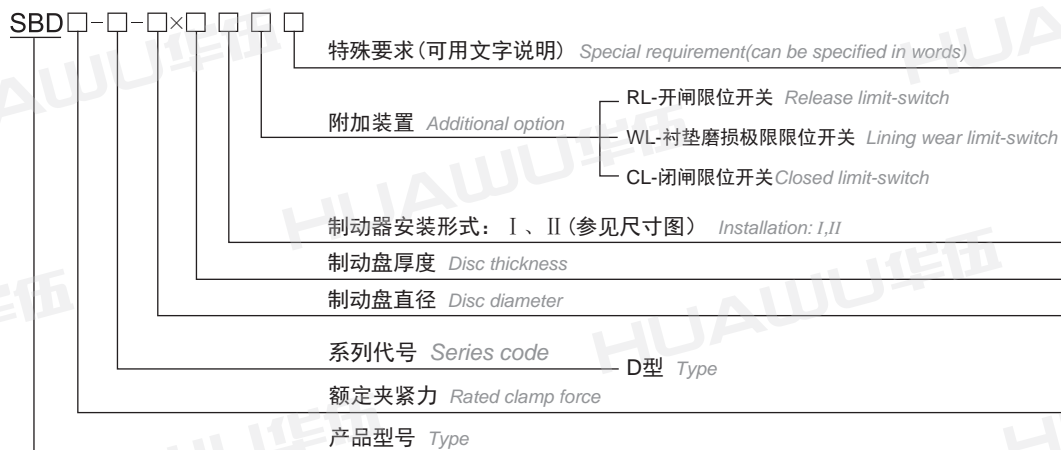
SBD□-D系列安全制动器技术参数 Technical data of series safety brakes

产品型号 Type	额定夹紧力 Rated clamp force (KN)	制动力 Braking force (KN)	油缸工作压力 Working pressure of oil cylinder(MPa)	开闸油量 Release oil volume(ml)	开闸间隙 Released clearance(mm)	重量 Weight (kg)	A(mm)	C(mm)	d1(mm)	d2max (mm)	D(mm)
SBD80-D	80	57	8	150	0.75~1.5	185	sin20 (D/2-45)+320.5	cos20 (D/2-45)+16.5	ØD-90	ØD-180	≥600
SBD120-D	120	86	8	150	0.75~1.5	193	sin20 (D/2-45)+320.5	cos20 (D/2-45)+16.5	ØD-90	ØD-180	≥600
SBD240-D	240	172	10	170	0.75~1.5	310	sin20 (D/2-75)+345	cos20 (D/2-75)+20	ØD-150	ØD-300	≥600

SBD□-D系列安全制动器尺寸 Dimensions of SBD series safety brakes

产品型号 Type	B(mm)	L(mm)	h(mm)	e(mm)	n(mm)	k(mm)	F(mm)	P(mm)	H(mm)	m(mm)	w(mm)	L1(mm)	L2(mm)	L3(mm)	d(mm)
SBD80-D	80	320	320.5	16.5	45	240	330	170	485	75	240	190	220	115	Ø32
SBD120-D	80	320	320.5	16.5	45	240	330	170	485	75	240	190	220	115	Ø32
SBD240-D	140	400	345	20	60	300	420	190	560	120	360	225	255	160	Ø38

订货标记 Order Mark



订货示例 Order Example

示例: SBD240-D-900×20 I RL-表示额定夹紧力为240KN、带开闸限位开关、I型安装的D型安全制动器。制动盘直径为900mm, 盘厚为20mm。

Sample: SBD240-D-900×20 I RL means its rated clamping force is 240KN with release limit switch and D-type safety brake of I version installation. The brake disc diameter is 900mm and the disc thickness is 20mm.