

支撑杆 Strut

一、功能简介

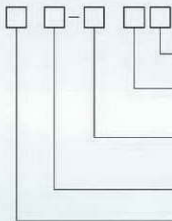
Function Brief

拉索(杆)支撑杆主要用于幕墙的主支撑结构中,位于拉索(杆)之间。用于平衡对称布置的拉索(杆)拉力的一个重要组件。同时也起到安装固定驳接爪(或其它装置)并能有效传递外力的作用。

The struts for tension cable or rod, lying between the tension cables or rods, are used in the main supporting structures of the curtain wall to balance the tension of symmetrical tension cables or rods.

二、拉索支撑杆型号规则

The principle for making the model number of the strut bar of the tension cable



相同布置位置的两种支撑杆区分代码。

The divisive code for two kinds of strut bars which are used to the same position of the tension cable.

支撑杆在布索形式中的位置代码。

The position code for the strut bar in the tension cable layout.

支撑杆压块样式区分代码:圆柱形压块代码采用“A”, 圆弧形压块代码采用“B”。

The divisive code for the pressing plate styles of the strut bar: A stands for the cylinder pressing plate code B stands for the circular arc pressing plate code

布索形式的主受力体系区分代码,竖向采用“S”, 横向采用“H”。

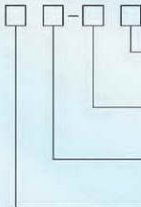
The divisive code for the main load bearing system of the tension cable layout. H stands for the vertical tension cable layout, S stands for the horizontal tension cable layout.

拉索支撑杆代码采用“G”。

S stands for the code of the strut of the tension cable

三、拉杆支撑杆型号规则

The principle for making the model number of the strut bar of the tension rod



相同布置位置的两种支撑杆区分代码,只有单一支撑杆样式时,此代码可取消。

The divisive code for two kinds of strut bars which are used to the same position of the tension rod this code will be cancelled when the strut bar is of single style.

支撑杆在布杆形式中的位置代码。

The position code for the strut bar in the tension rod layout.

支撑杆耳板样式区分代码:直边耳板代码采用“A”,斜边耳板代码采用“B”。

The divisive code of the lug styles of the strut bar: A stands for the straight flange lug code B stands for the bevelled edge lug code

拉杆支撑杆代码采用“G”。

G stands for the strut bar of the tension rod

四、拉索支撑杆压索摩擦力计算公式(机械设计手册引用)

The formula to calculate the friction force of strut pressing the tension cable (referring to Machine Design handbook)

单个压索螺栓预紧力 $F_0 = (0.5 \sim 0.6) \sigma_s A_s$ (σ_s 为螺栓材料强度设计值, A_s 为螺栓有效截面积)

Single pressure cable bolt preload

(σ_s is the bolt material strength design values, A_s is the effective cross-sectional area of bolt)

压索螺栓组正压力 $F = nF_0$

Cable bolt group positive pressure

(n 为压索螺栓数目)

(n is the number of cable bolt)

压索摩擦力 $f = \mu F$

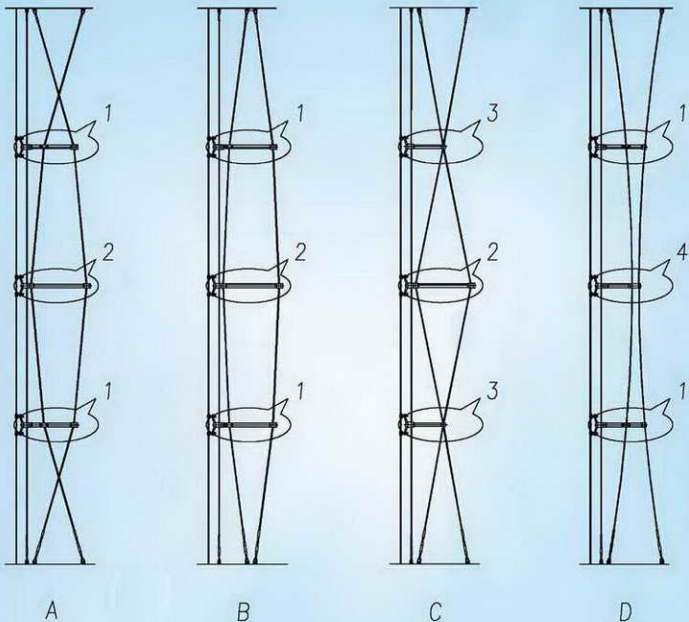
The friction force for pressing the cable

(μ 为材料间摩擦系数)

(μ is the friction coefficient between different materials)

拉索支承结构常见形式(一)

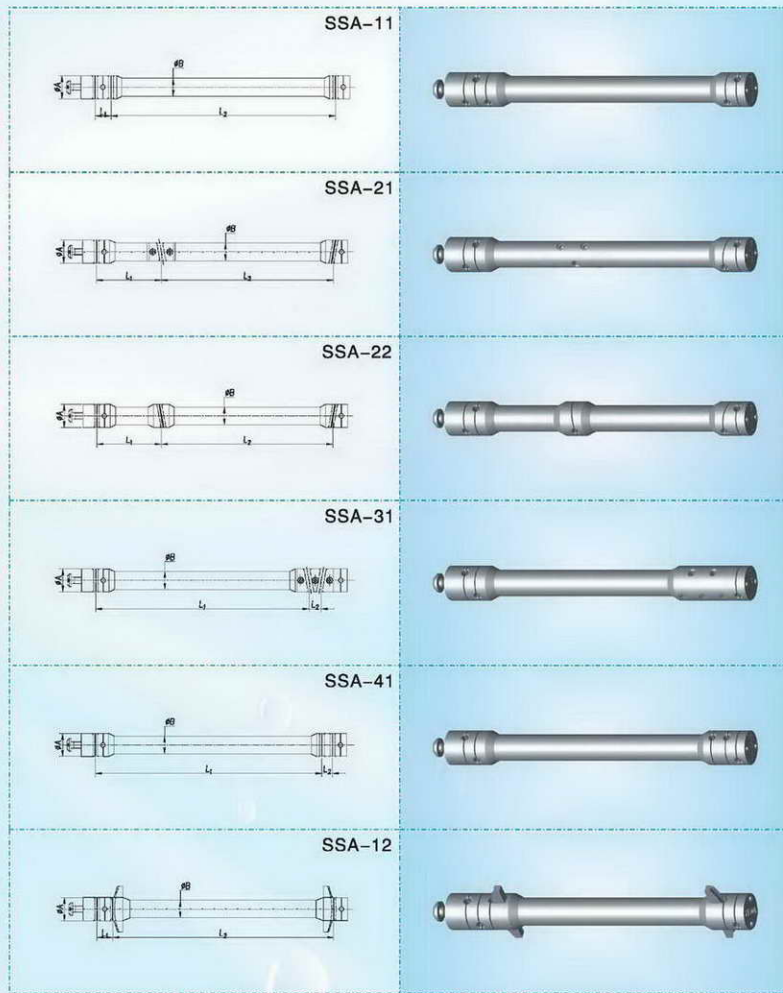
The common styles of the tension cable supporting structure



竖向主受力布索形式

The distribution style for the vertical loading of the tension cable.

节点1处可用支撑杆样式 Node 1 can be used for the listed strut bar style	SSA-21、SSA-22、SSB-2
节点2处可用支撑杆样式 Node 2 can be used for the listed strut bar style	SSA-11、SSA-12、SSA-13、SSB-1
节点3处可用支撑杆样式 Node 3 can be used for the listed strut bar style	SSA-31、SSA-32
节点4处可用支撑杆样式 Node 4 can be used for the listed strut bar style	SSA-41、SSA-42、SSB-3

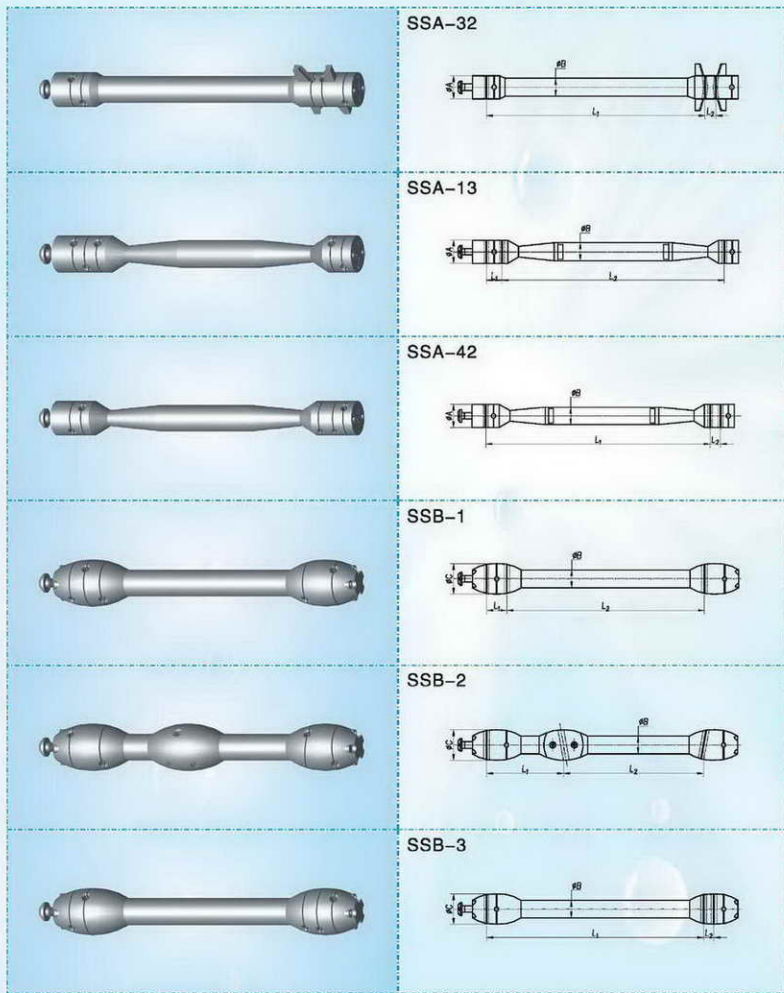


注：支撑杆压块外径 ϕA 有 $\phi 65$ 和 $\phi 75$ 两种规格，具体大小应根据所配用拉索索径确定。
支撑杆连接套管 ϕB 有 $\phi 50 \times 5$ 和 $\phi 60 \times 8$ 两种规格，具体大小应根据计算确定。

Note: There are two specifications of the outside diameter ϕA of the strut's lock block: $\phi 65$ and $\phi 75$, the exact dimension is based on the cable's diameter.
There are two specifications of the joint sleeve ϕB of the strut: $\phi 50 \times 5$ and $\phi 60 \times 8$ the exact dimension is based on the calculation.

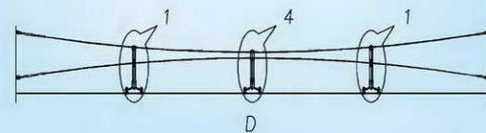
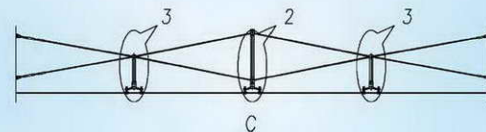
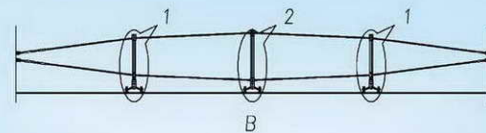
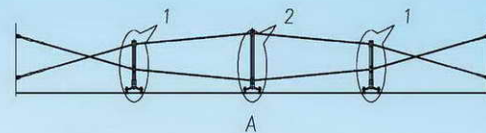
拉索支承结构常见形式(二):

The common system of tension cable support structure



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 支撑杆连接套管 ϕB 有 $\phi 50 \times 5$ 和 $\phi 60 \times 8$ 两种规格, 具体大小应根据计算确定。
 支撑杆压块外径 ϕC 暂无标准件, 应根据具体情况来确定。

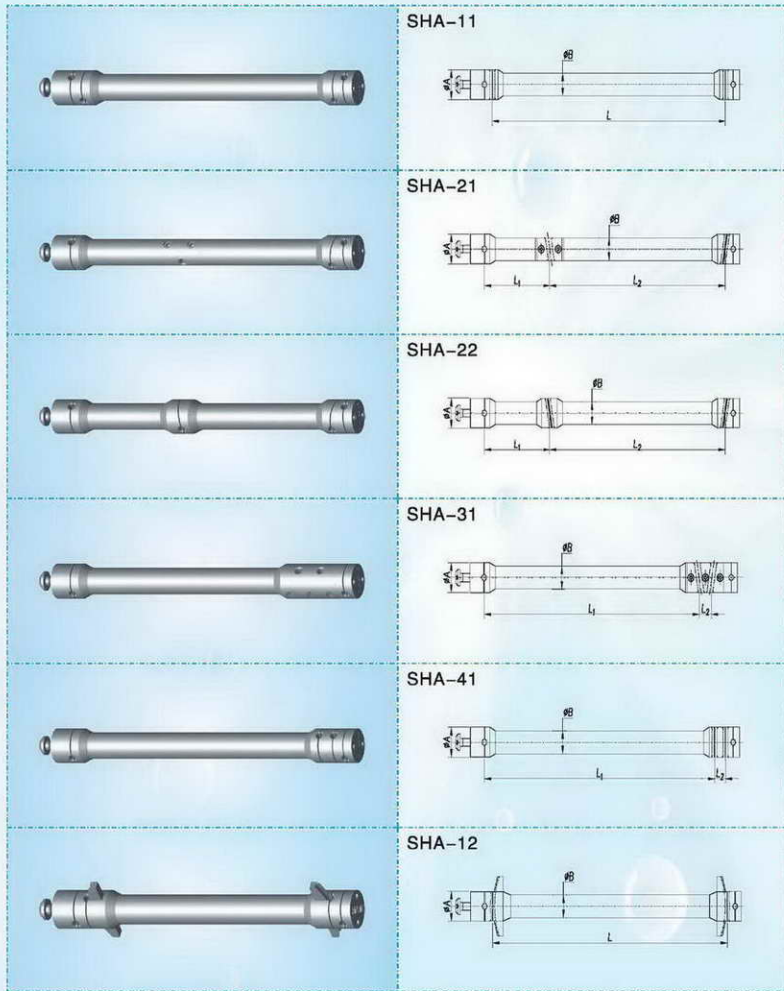
Note: There are two specifications of the outside diameter ϕA of the strut's lock block: $\phi 65$ and $\phi 75$, the exact dimension is based on the cable's diameter.
 There are two specifications of the joint sleeve ϕB of the strut: $\phi 50 \times 5$ and $\phi 60 \times 8$ the exact dimension is based on the calculation.
 There's no standard outside diameter of the strut's lock block C, its dimension depends.



横向主受力布索形式

The distribution style for the horizontal loading of the tension cable.

节点1处可用支撑杆样式 Node 1 can be used for the listed strut bar style	SHA-21、SHA-22、SHB-2
节点2处可用支撑杆样式 Node 2 can be used for the listed strut bar style	SHA-11、SHA-12、SHA-13、SHB-1
节点3处可用支撑杆样式 Node 3 can be used for the listed strut bar style	SHA-31、SHA-32
节点4处可用支撑杆样式 Node 4 can be used for the listed strut bar style	SHA-41、SHA-42、SHB-3

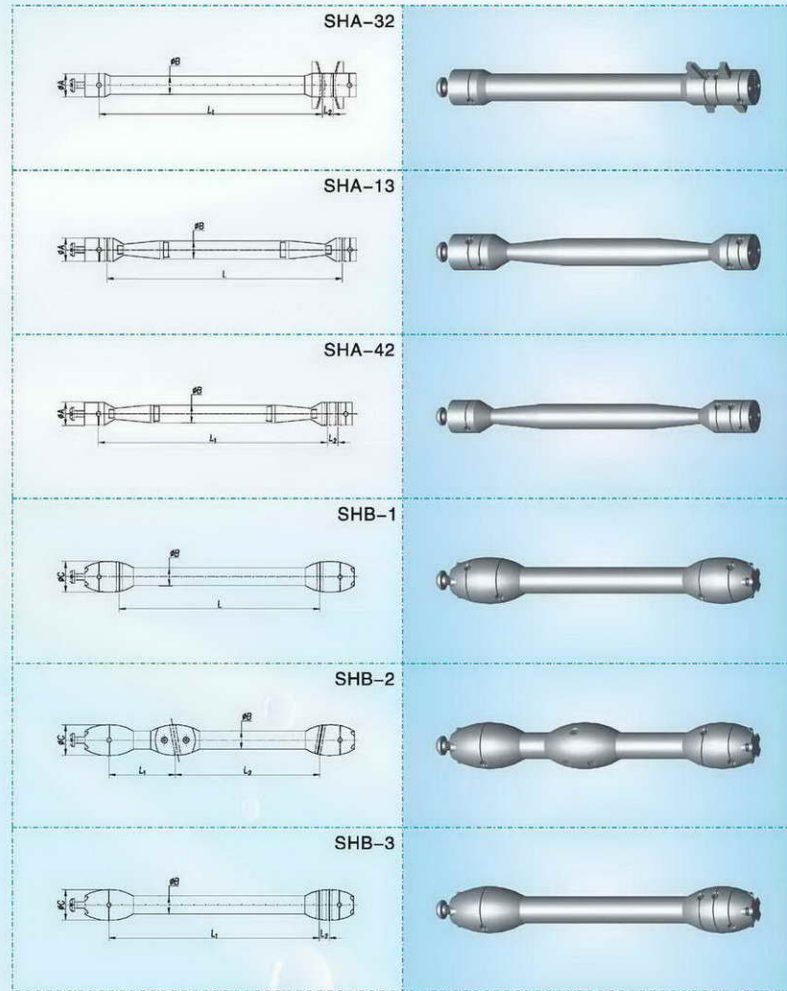


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支撑杆连接套管 ϕB 有 $\phi 50 \times 5$ 和 $\phi 60 \times 8$ 两种规格，具体大小应根据计算确定。

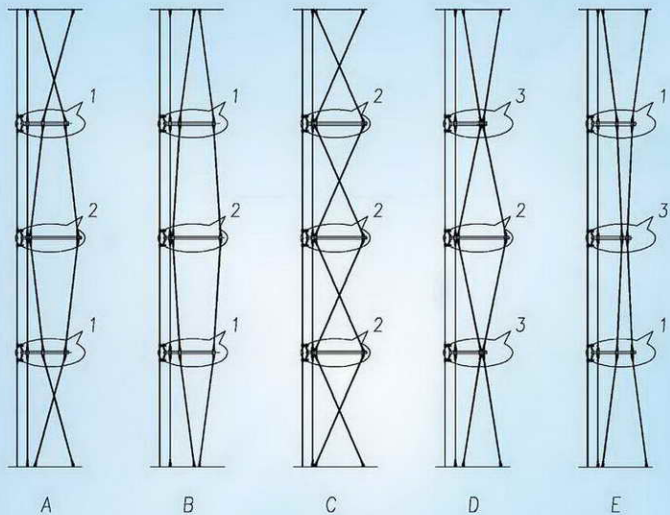
支撑杆压块外径 ϕC 暂无标准件，应根据具体情况来确定。

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There's no standard outside diameter of the strut's lock block C , its dimension depends.

拉杆支承结构常见形式(一)

The common styles of the tension rod supporting structure



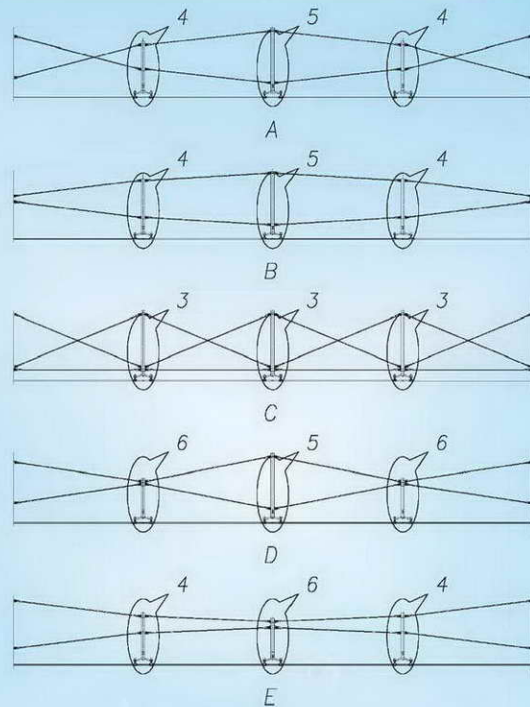
竖向主受力布杆形式

The distribution style for the horizontal loading of the tension cable.

节点1处可用支撑杆样式 Node 1 can be used for the listed strut bar style	GA-2、GB-2
节点2处可用支撑杆样式 Node 2 can be used for the listed strut bar style	GA-1、GB-1
节点3处可用支撑杆样式 Node 3 can be used for the listed strut bar style	GA-31、GA-32、GB-3

拉杆支承结构常见形式(二)

Typical styles of tension rod support system



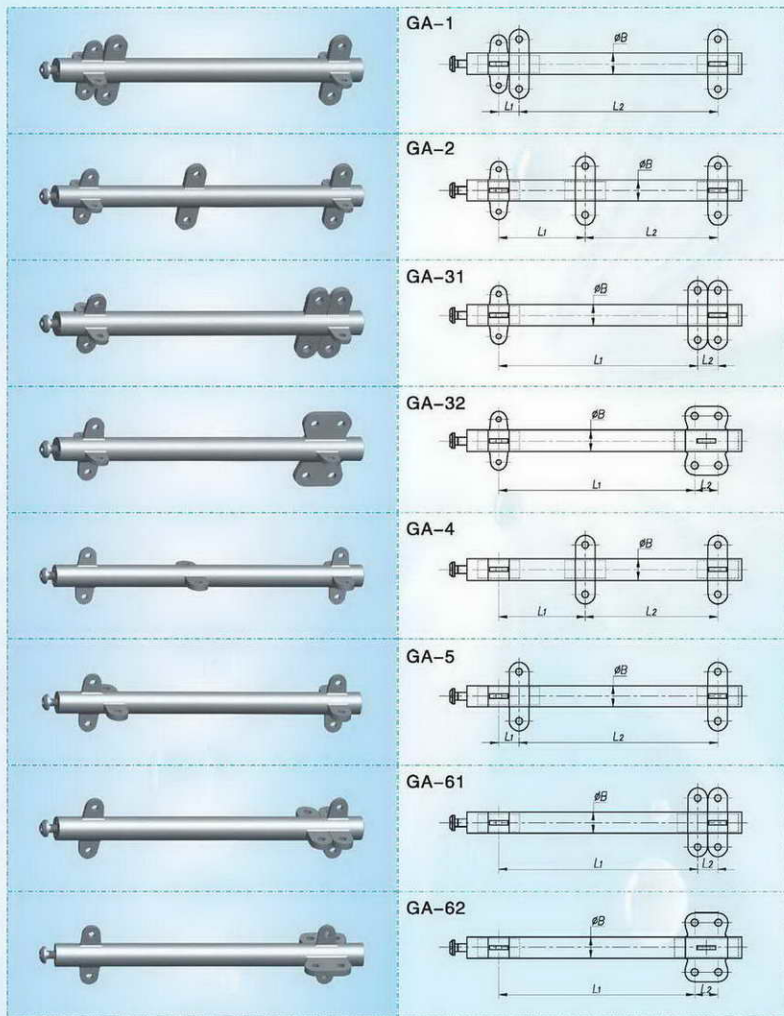
横向主受力布杆形式

The distribution style for the vertical loading of the tension cable.

节点3处可用支撑杆样式 Node 3 can be used for the listed strut bar style	GA-1、GB-1
节点4处可用支撑杆样式 Node 4 can be used for the listed strut bar style	GA-4
节点5处可用支撑杆样式 Node 5 can be used for the listed strut bar style	GA-5
节点6处可用支撑杆样式 Node 6 can be used for the listed strut bar style	GA-61、GA-62

拉杆支承结构特殊功能配件应用节点图

Node drawing of the application for special fittings of the tension rod support structure



注：支撑杆耳板应根据拉杆大小确定。支撑杆连接套管 ϕB 规格为 $\phi 50 \times 5$ 。

Note: The lug of the strut bar is determined by the dimension of the tension rod. The connecting sleeve of the strut bar ϕB is $\phi 50 \times 5$

