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KINLONG

KIN LONG
For Better Living

Point-Fixed Glass Curtain Wall Typical Product Catalogue



Guangdong Kinlong Hardware Products Co.,Ltd.

No.3, Jian Lang Rd, Daping,Tangxia Town, Dongguan City, China.

T: 0086-769-82166666 82136666

F: 0086-769-82955240 82955241

E: mail@kinlong.com

H: www.kinlong.com

www.kinlong.com

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Surface Finish



Mirror



Satin



Sandblast



Electroplating

Material & Standard

I . Material

1. The casting stainless steel products,

- Common Material: CF8,CF8M(ASTM A743/A743M)
- Optional Material: CD3MN(ASTM A890/A890M)
- Non-standard Material: Other requested casting stainless steel material which are similar to CF8,CF8M

2. The stainless steel products(sheet/tube/bar etc.):

- Common Material: 304,316(ASTM A276/A276M, ASTM A666, ASTM A269/A269M)
- Optional Material: 2205(ASTM A276/A276M, ASTM A666, ASTM A269/A269M)
- Non-standard Material: Other requested material which are similar to 304,316

3. Material Description :

Point-fixed glass curtain wall fittings, as the products exposed, are mainly made of the stainless steel with bright appearance and good corrosion resistance. KIN LONG is a supplier of high-end glass curtain wall fittings. Most of the products are made of high-end stainless steel. The typical material are austenitic stainless steel 316, CF8M and duplex stainless steel 2205, CD3MN.

316 and 2205 are the stainless steel following American standard which be applicable for profiles (sheet, tube, bar). Especially the material 316 is high-end and commonly used all over the world. It has excellent mechanical properties and corrosion resistance meet the demands of most projects. It is mostly commonly used material for point-fixed products currently, but it is not recommended to use in the worse environment such as swimming pools, seaside. In these cases, high duplex stainless steel 2205 can be selected. Material stainless steel 2205 has the advantages compared with stainless steel 316 as following:

- 1) Yield strength is 2 times higher than common austenitic stainless steel. Having enough ductility and toughness for application. With the same bearing capacity, the accessories sizes will be smaller and more exquisite when use the duplex stainless steel .
- 2) Compared with the austenitic stainless steel, it has bigger yield strength, higher material utilization ratio, by less material used
- 3) Compared with the austenitic stainless steel, it has the similar alloy content, and surface homogeneous corrosion, pitting corrosion and intergranular corrosion are super excellence and can apply to severe surroundings.
- 4) Having the superior anti-stress corrosion cracking (SCC) ability, generally, it won't lead to stress corrosion cracking (the suitable temperature is lower than its critical temperature) when being in the chloride ion environment (seaside, natatorium).
- 5) The coefficient of linear expansion is close to carbon steel and reinforced concrete. When taking as prestressing force rod, the thermal stress will not effect too much beyond action of thermal difference.
- 6) No need preheating before welding. No need heating treatment after welding. It can weld with carbon steel.

Most of the point-fixed glass are made by selecting the precision casting process because of the diversity appearance. Due to the different manufacturing process between casting milling and rolling, KIN LONG selects CF8M and CD3MN to produce spider with casting process, while the material 316 and 2205 can not be so prefect to present corrosion performance.

Corrosion resistance of stainless steel is mainly formed by surface passivation film and promoting the electrode potentially from the iron-chromium alloy, therefore the production process of the stainless steel should include the heat treatment to make the alloy composition uniform. Any kind of scratch and damage on the surface should be avoided. To keep the corrosion resistance of stainless steel. please note the following :

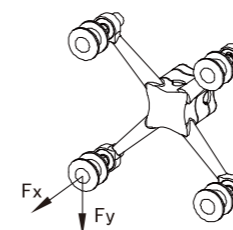
- Heat treatment should be carried out after casting according to requirements
- Stainless steel grades should be selected reasonably according to the environment
- Selecting the smooth surface treatment
- Taking product protection during the installation
- The design and application of the product should be avoided fouling and water accumulation.
- Regularly cleaning to avoid the dirty

II . Product Executive Standard

| Products Series | Executive Standard |
|-------------------------------|---|
| Spider, Routel | Point-fixed Device for Construction Curtain Wall JG/T138-2010 |
| Clamp | Point-fixed Device for Construction Curtain Wall GB/T 37266-2018 |
| Strut Bar | Stainless Steel Strut Bar DB44/T 1053-2012 |
| Stainless Steel Tension Cable | Stainless Steel Tension Cable YB/T 4294-2012 |
| Stainless Steel Strand | Stainless Steel Wire Strand GB/T 25821-2010 |
| Stainless Steel Swaged Anchor | Swaged Fitting of Steel Strand for Curtain JG/T 201-2007 |
| Stainless Steel Tension Rod | Steel Tension Rod Member for Building JG/T 389-2012 |
| Suspension Clamp | The Suspending Clamp for Suspended Glass Curtain Wall JG 139-2017 |

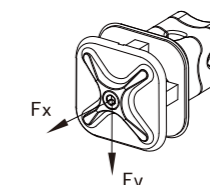
Common Calculation Formula

I . Calculation of radial and axial load for model selection



$$n_x = 4$$

$$n_y = 2$$



$$n_x = 1$$

$$n_y = 1$$

1. The Weight of The Glass Panel

$$G_k = T \times B \times H \times \rho$$

G_k —The weight of the glass panel(N);

T —The valid thickness of the glass(mm);

B —The width of the glass(m);

H —The height of the glass(m);

ρ —The gravity density of the glass(Default: 25.6);

2. Radial Force

$$F_y = 1.2 G_k / n_y$$

F_y —The radial force for a single point(N);

G_k —The weight of the glass panel(N);

n_y — Number of force bearing point in y direction,

Please follow specifical drawing of project

3. Axial Force

$$F_x = q \times B \times H / n_x$$

F_x —The axial force for a single point(N);

q —Even distributed design value of the load on the glass panel, mainly supposed to be the wind load (N/m²) ;

B —The width of the glass(m);

H —The height of the glass(m);

n_x — Number of force bearing point in x direction, see attached drawing for details;

II . Calculation for tightening torque of fastening cable bolt (Deduced from *Mechanical Design Handbook*)

$$T = 1.3 f d / n$$

In formula T —Tightening torque of single bolt(N • mm)

f —The friction force that accessory load in the project

d —Nominal diameter of bolt for fastening cable

n —Number of bolt for fastening cable

Integrated Flat Cap Routel



Note: The ball head bolt is not removable since the base seat and the ball head bolt is integrated.

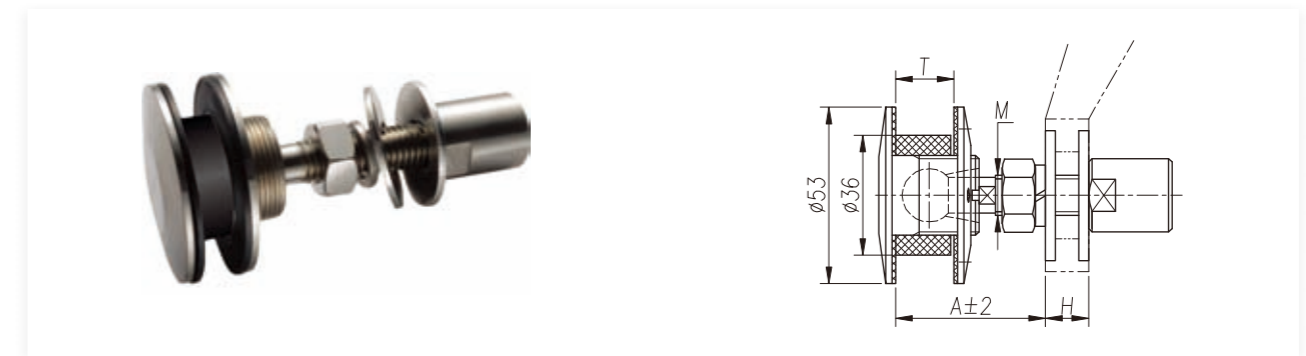
| Size Model | A | M | T | H | The Available Rotation Angle | The Recommended Value of Load Capacity (N) | Main material: 316, 304 | |
|------------|----|-----|-------|---|------------------------------|--|-------------------------|------------|
| | | | | | | | $F_x \leq$ | $F_y \leq$ |
| ATF11X | 45 | M12 | 8-18 | — | $\pm 5^\circ$ | 3000 | 1500 | |
| ATF12X | 53 | M12 | 18-26 | — | $\pm 5^\circ$ | 3000 | 1500 | |



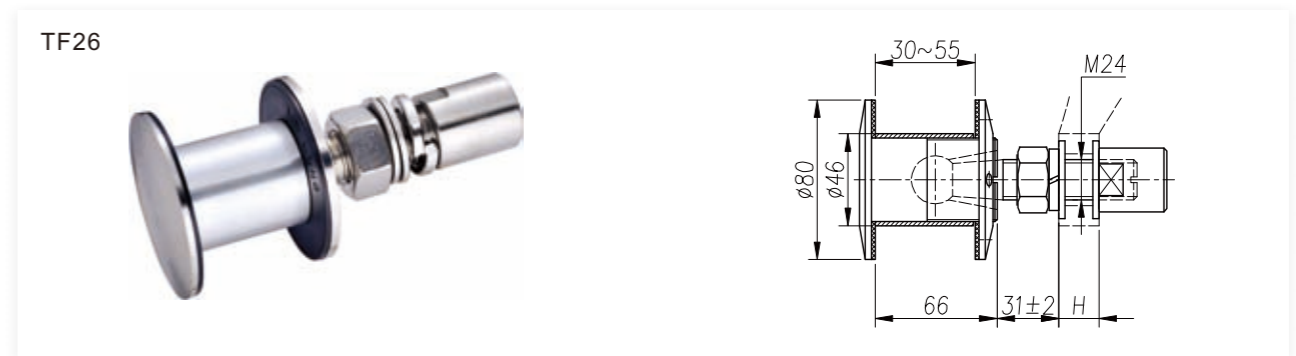
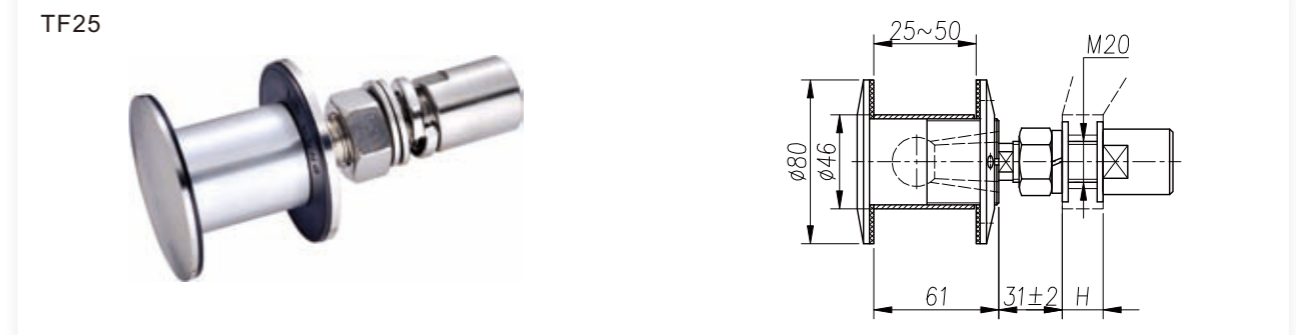
Note: The ball head bolt is not removable since the base seat and the ball head bolt is integrated.

| Size Model | A | M | T | H | The Available Rotation Angle | The Recommended Value of Load Capacity (N) | Main material: 316, 304 | |
|------------|----|-----|-------|---|------------------------------|--|-------------------------|------------|
| | | | | | | | $F_x \leq$ | $F_y \leq$ |
| TF11X | 60 | M14 | 8-18 | — | $\pm 5^\circ$ | 4500 | 2000 | |
| TF12X | 65 | M14 | 18-26 | — | $\pm 5^\circ$ | 4500 | 2000 | |

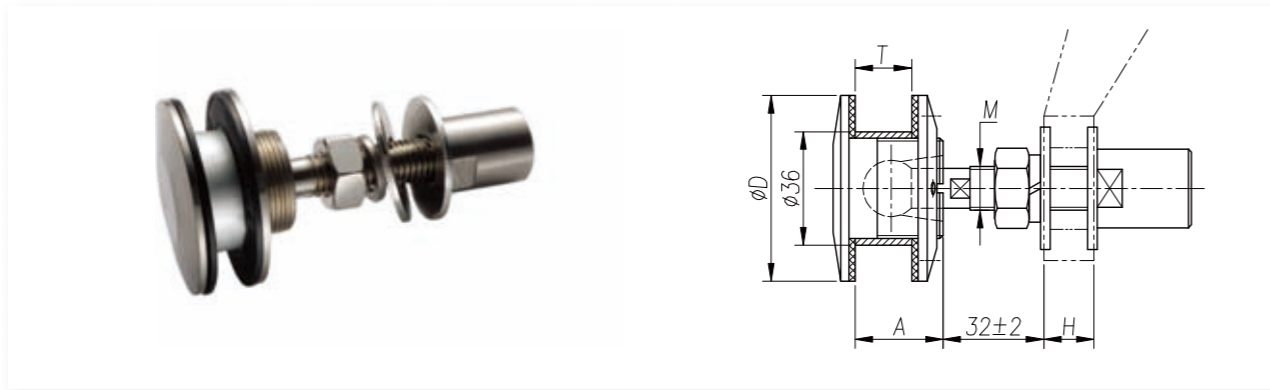
Flat Cap Routel



| Size Model | A | M | T | H | The Available Rotation Angle | The Recommended Value of Load Capacity (N) | Main material: 316, 304 | |
|------------|----|-----|-------|---|------------------------------|--|-------------------------|------------|
| | | | | | | | $F_x \leq$ | $F_y \leq$ |
| ATF13 | 69 | M14 | 26-40 | — | $\pm 5^\circ$ | 3500 | 2000 | |
| ATF14 | 78 | M16 | 40-46 | — | $\pm 5^\circ$ | 4000 | 2500 | |

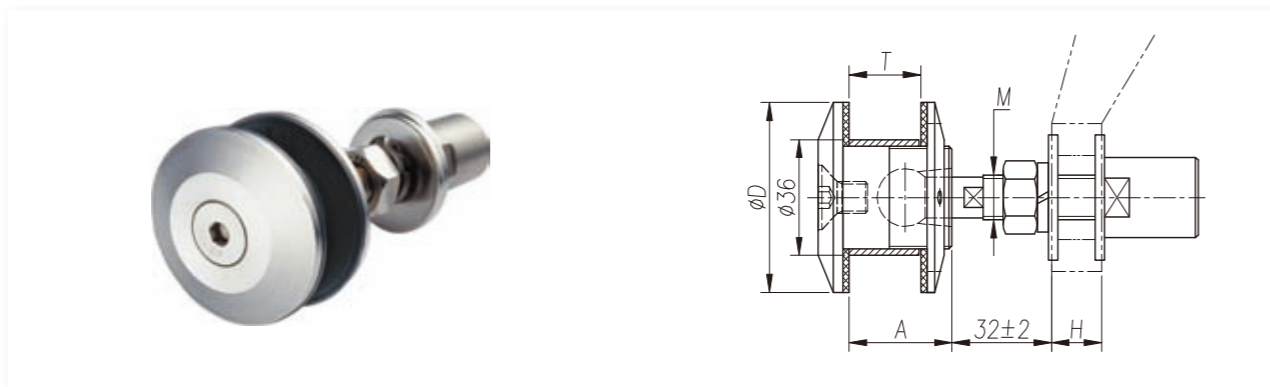


| The Recommended Value of Load Capacity (N) | Model | Main material: 316, 304 | | The Available Rotation Angle |
|--|-------|-------------------------|------------|------------------------------|
| | | $F_x \leq$ | $F_y \leq$ | |
| | TF25 | 7000 | 3500 | $\pm 5^\circ$ |
| | TF26 | 7500 | 5000 | $\pm 5^\circ$ |



| Model | Size | A | D | M | T | H | The Available Rotation Angle | Main material: 316, 304 | |
|-------------|------|----|-----|-------|---|---|------------------------------|-------------------------|------|
| | | | | | | | | Fx ≤ | Fy ≤ |
| TF11A | 28 | 59 | M14 | 8-18 | — | — | ±10° | 4500 | 2000 |
| TF12A | 36 | 59 | M14 | 18-26 | — | — | ±10° | 4500 | 2000 |
| TF13(TF13A) | 50 | 59 | M16 | 26-40 | — | — | ±5°(±10°) | 6000 | 2500 |
| TF14(TF14A) | 56 | 59 | M18 | 30-46 | — | — | ±5°(±10°) | 6500 | 2800 |
| TF21(TF21A) | 32 | 70 | M16 | 8-22 | — | — | ±5°(±10°) | 6000 | 2500 |
| TF22(TF22A) | 40 | 70 | M16 | 22-30 | — | — | ±5°(±10°) | 6000 | 2500 |
| TF23(TF23A) | 50 | 70 | M16 | 30-40 | — | — | ±5°(±10°) | 6000 | 2500 |
| TF24(TF24A) | 61 | 70 | M18 | 30-50 | — | — | ±5°(±10°) | 6500 | 2800 |
| TF2E55 | 66 | 70 | M18 | 25-55 | — | — | ±5° | 6500 | 2800 |

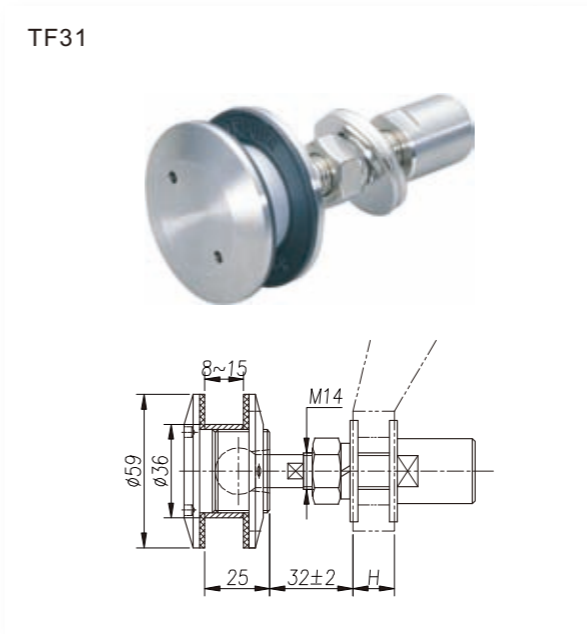
The Recommended Value of Load Capacity (N)



Note: Fastening glue is suggested to be used when installing the countersunk socket screw of exterior installation route.

| Model | Size | A | D | M | T | H | The Available Rotation Angle | Main material: 316, 304 | |
|-------|------|----|-----|-------|---|---|------------------------------|-------------------------|------|
| | | | | | | | | Fx ≤ | Fy ≤ |
| TF32 | 33 | 59 | M14 | 15-23 | — | — | ±5° | 4500 | 2000 |
| TF33 | 50 | 59 | M16 | 23-40 | — | — | ±5° | 6000 | 2500 |
| TF34 | 56 | 59 | M18 | 30-46 | — | — | ±5° | 6500 | 2800 |
| TF35 | 50 | 70 | M16 | 30-40 | — | — | ±5° | 6000 | 2500 |
| TF36 | 61 | 70 | M18 | 30-50 | — | — | ±5° | 6500 | 2800 |

The Recommended Value of Load Capacity (N)



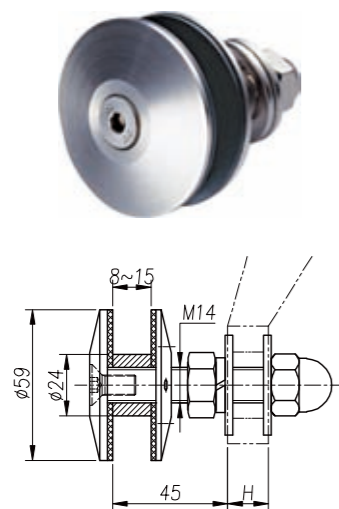
Note: Fastening glue is suggested to be used when installing the countersunk socket screw of exterior installation route.

| Model | Main material: 316, 304 | | The Available Rotation Angle |
|-------|-------------------------|------|------------------------------|
| | Fx ≤ | Fy ≤ | |
| TF31 | 4500 | 2000 | ±5° |
| TF41 | 2500 | 1200 | ±5° |
| TF42 | 2500 | 1200 | — |
| TF43 | 4500 | 2000 | — |

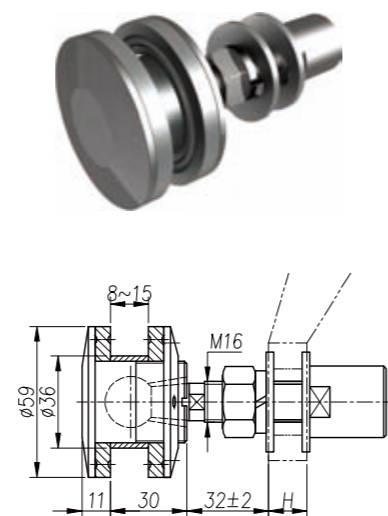
The Recommended Value of Load Capacity (N)

Flat Cap Waterproof Routel

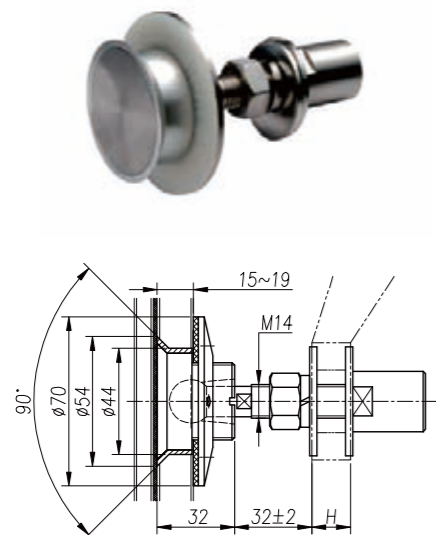
TF44



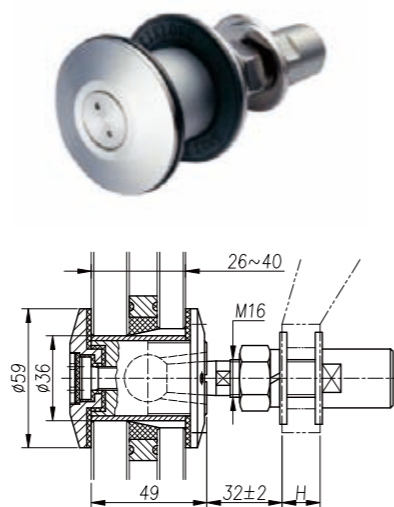
TF53



TF54



TF55



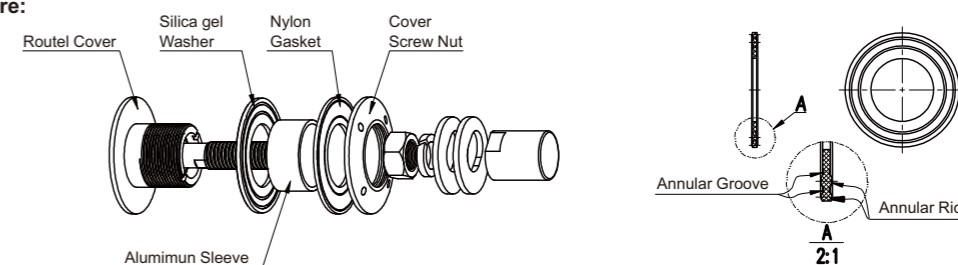
Note: Fastening glue is suggested to be used when installing the countersunk socket head cap screw of exterior installation routel.

| The Recommended Value of Load Capacity(N) | Model | Main material:316, 304 | | Rotation Angle |
|---|-------|------------------------|------|----------------|
| | | Fx≤ | Fy≤ | |
| | TF44 | 4500 | 2000 | — |
| | TF53 | 6000 | 2500 | ±5° |
| | TF54 | 4500 | 2000 | ±5° |
| | TF55 | 6000 | 2500 | ±5° |

Product function:

1. The appearance and function are same as other standard routel.
2. The routel adopts soft and strong weather resistance silicone washer with special structure, no needs glue for waterproofing
3. Silicone washer has strong weather resistance and universal, which can be exchanged with the washer of other common routel.
4. This product is our patent product.

Product structure:



Waterproof routel

Silicone washer

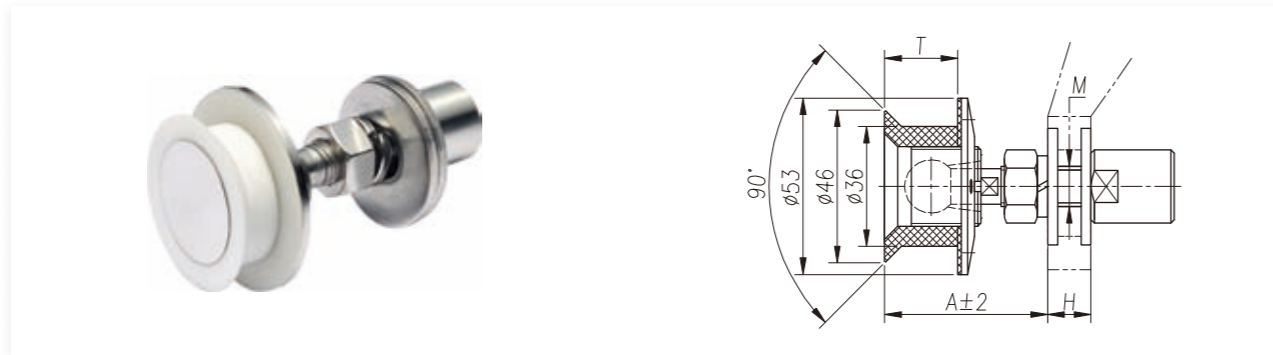
The fore part of waterproof routel has a special structural silicone washer. During the installation, the Silica gel washer will be out of shape by pushing and squeezing, then get the waterproofing performance and watertightness.

Product parameter

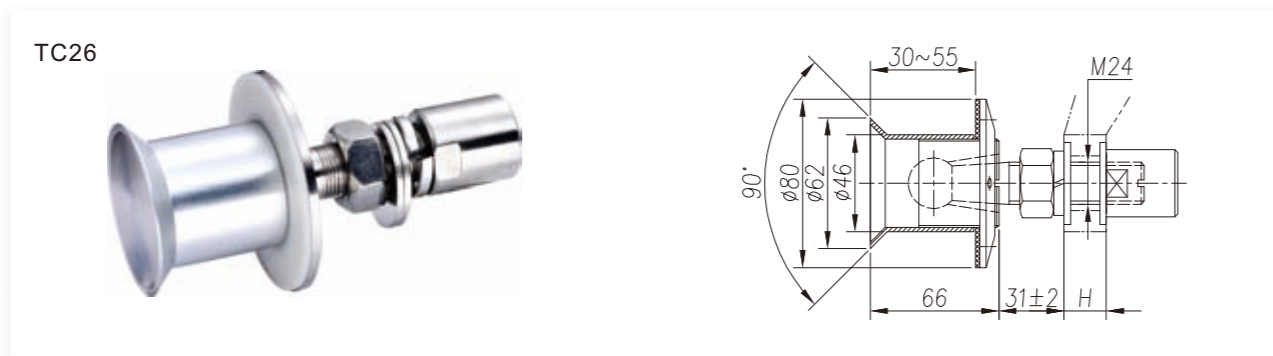
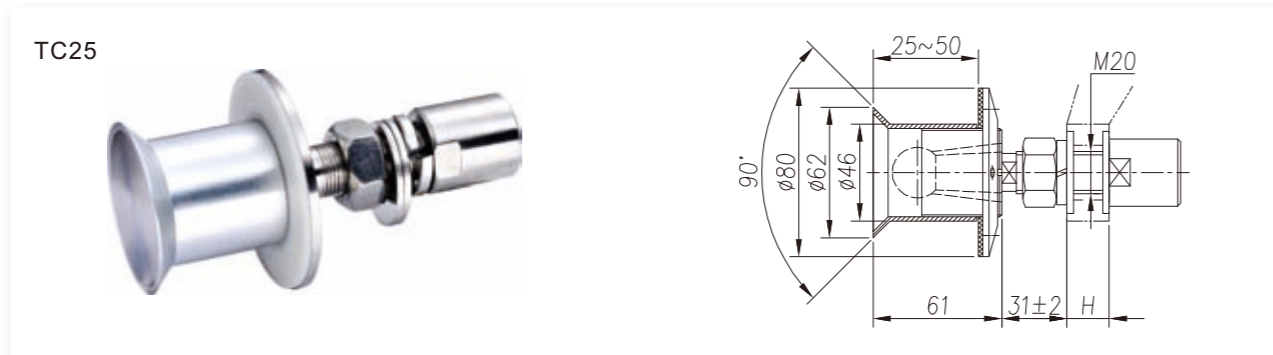


| Model | Size | | | | | | | The Available Rotation Angle | Main material:316, 304 | |
|------------------|------|----|----|-----|-------|---|-----------|---|------------------------|------|
| | A | B | D | M | T | H | Fx≤ | | Fy≤ | |
| F-TF11X(F-TF11A) | 27 | 32 | 59 | M14 | 8-18 | — | ±5°(±10°) | The Recommended Value of Load Capacity(N) | 4500 | 2000 |
| F-TF12A | 35 | 32 | 59 | M14 | 18-26 | — | ±10° | | 4500 | 2000 |
| F-TF12X | 35 | 29 | 59 | M14 | 18-26 | — | ±5° | | 4500 | 2000 |
| F-TF13(F-TF13A) | 49 | 32 | 59 | M16 | 26-40 | — | ±5°(±10°) | | 6000 | 2500 |
| F-TF14(F-TF14A) | 55 | 32 | 59 | M18 | 30-46 | — | ±5°(±10°) | | 6500 | 2800 |
| F-TF21(F-TF21A) | 31 | 32 | 70 | M16 | 8-22 | — | ±5°(±10°) | | 6000 | 2500 |
| F-TF22(F-TF22A) | 39 | 32 | 70 | M16 | 22-30 | — | ±5°(±10°) | | 6000 | 2500 |
| F-TF23(F-TF23A) | 49 | 32 | 70 | M16 | 30-40 | — | ±5°(±10°) | | 6000 | 2500 |
| F-TF24(F-TF24A) | 60 | 32 | 70 | M18 | 30-50 | — | ±5°(±10°) | | 6500 | 2800 |
| F-TF32 | 32 | 32 | 59 | M14 | 15-23 | — | ±5° | | 4500 | 2000 |
| F-TF33 | 49 | 32 | 59 | M16 | 23-40 | — | ±5° | | 6000 | 2500 |
| F-TF34 | 55 | 32 | 59 | M18 | 30-46 | — | ±5° | | 6500 | 2800 |
| F-TF35 | 49 | 32 | 70 | M16 | 30-40 | — | ±5° | | 6000 | 2500 |
| F-TF36 | 60 | 32 | 70 | M18 | 30-50 | — | ±5° | | 6500 | 2800 |

Countersunk Routel

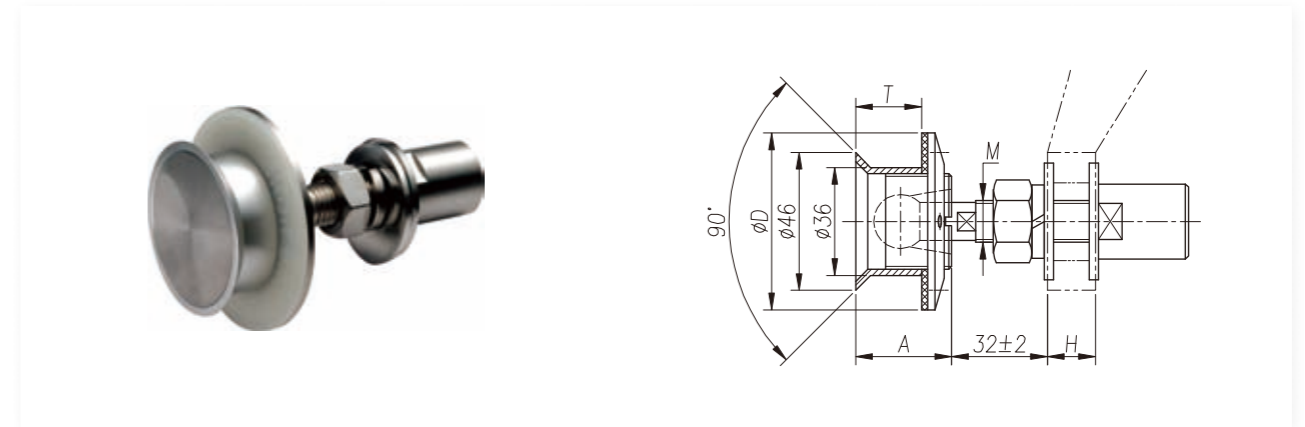


| Model | Size | A | M | T | H | The Available Rotation Angle | Main material:316, 304 | | The Recommended Value of Load Capacity(N) |
|-------|------|-----|-------|---|---|------------------------------|------------------------|------|---|
| | | | | | | | Fx≤ | Fy≤ | |
| ATC11 | 49 | M12 | 8-22 | — | — | ±5° | 3000 | 1500 | |
| ATC12 | 56 | M12 | 22-30 | — | — | ±5° | 3000 | 1500 | |
| ATC13 | 69 | M14 | 30-40 | — | — | ±5° | 3500 | 2000 | |
| ATC14 | 78 | M16 | 40-46 | — | — | ±5° | 4000 | 2500 | |

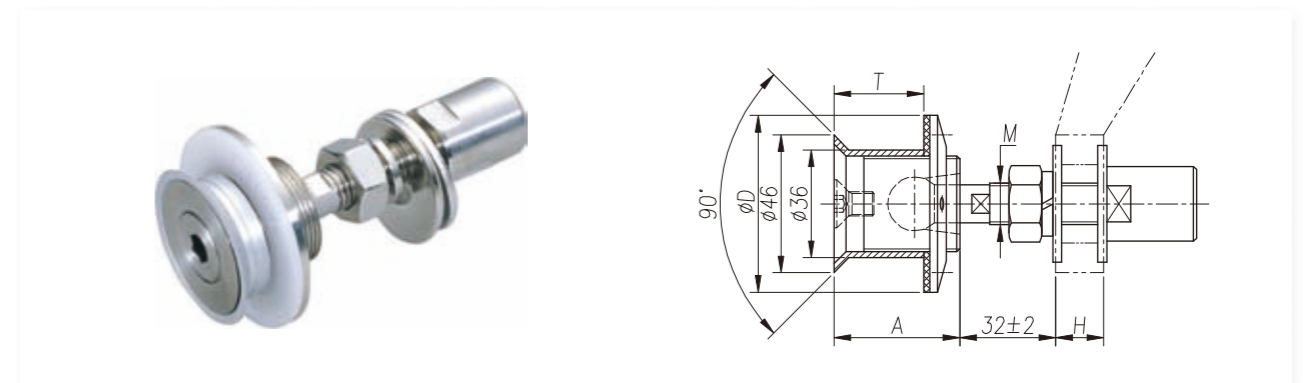


Note: The thickness of monolithic glass layer for countersunk hole ≥12mm for TC25 & TC26

| The Recommended Value of Load Capacity(N) | Model | Main material:316, 304 | | The Available Rotation Angle |
|---|-------|------------------------|------|------------------------------|
| | | Fx≤ | Fy≤ | |
| | | TC25 | 7000 | |
| TC26 | 7500 | 5000 | ±5° | |

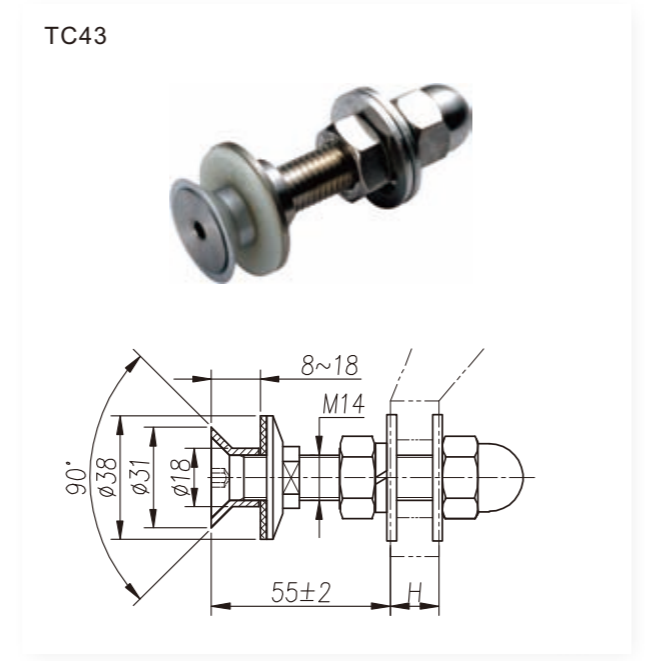
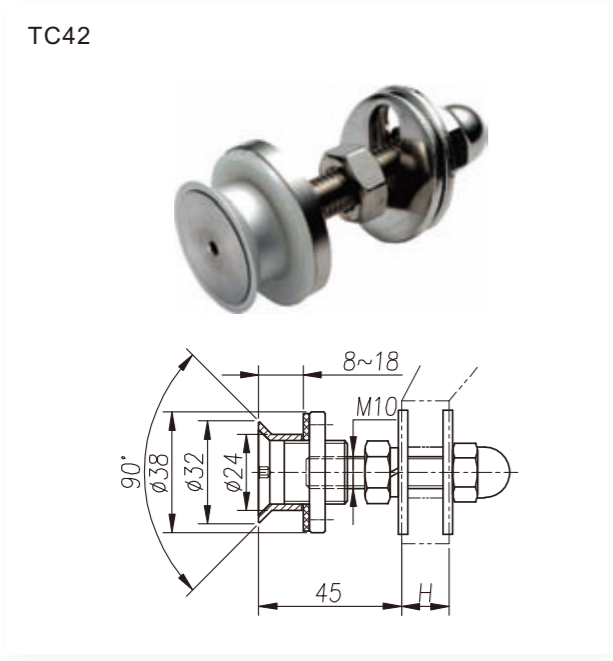
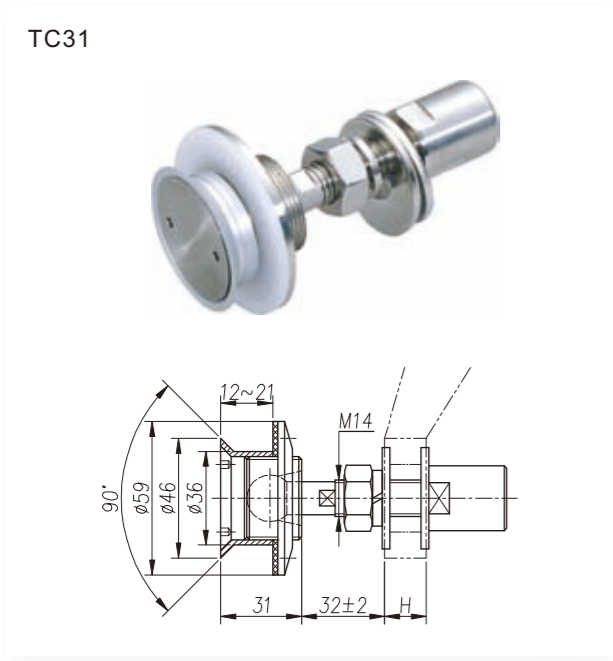


| Model | Size | A | D | M | T | H | The Available Rotation Angle | Main material:316, 304 | | The Recommended Value of Load Capacity(N) |
|-------------|------|----|-----|-------|---|---|------------------------------|------------------------|------|---|
| | | | | | | | | Fx≤ | Fy≤ | |
| TC11(TC11A) | 32 | 59 | M14 | 8-22 | — | — | ±5°(±10°) | 4500 | 2000 | |
| TC12(TC12A) | 40 | 59 | M14 | 22-30 | — | — | ±5°(±10°) | 4500 | 2000 | |
| TC13(TC13A) | 50 | 59 | M16 | 30-40 | — | — | ±5°(±10°) | 6000 | 2500 | |
| TC14(TC14A) | 56 | 59 | M18 | 30-46 | — | — | ±5°(±10°) | 6500 | 2800 | |
| TC21(TC21A) | 32 | 70 | M16 | 8-22 | — | — | ±5°(±10°) | 6000 | 2500 | |
| TC22(TC22A) | 40 | 70 | M16 | 22-30 | — | — | ±5°(±10°) | 6000 | 2500 | |
| TC23(TC23A) | 50 | 70 | M16 | 30-40 | — | — | ±5°(±10°) | 6000 | 2500 | |
| TC24(TC24A) | 56 | 70 | M18 | 30-46 | — | — | ±5°(±10°) | 6500 | 2800 | |

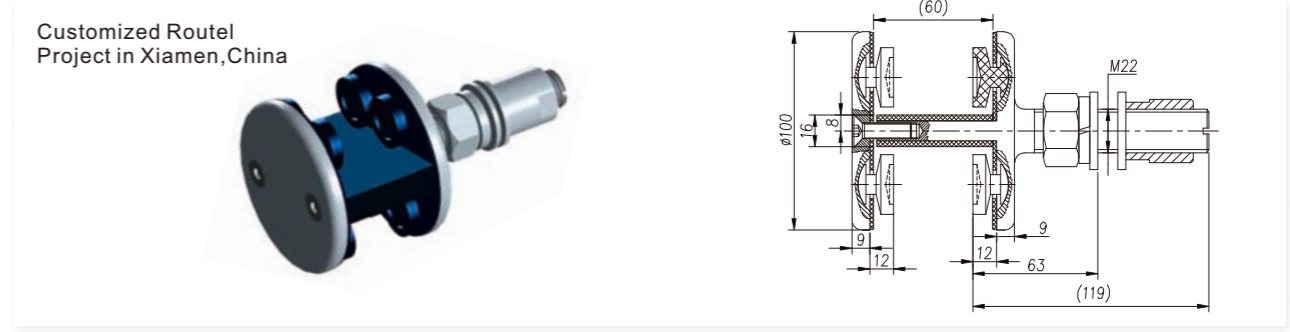
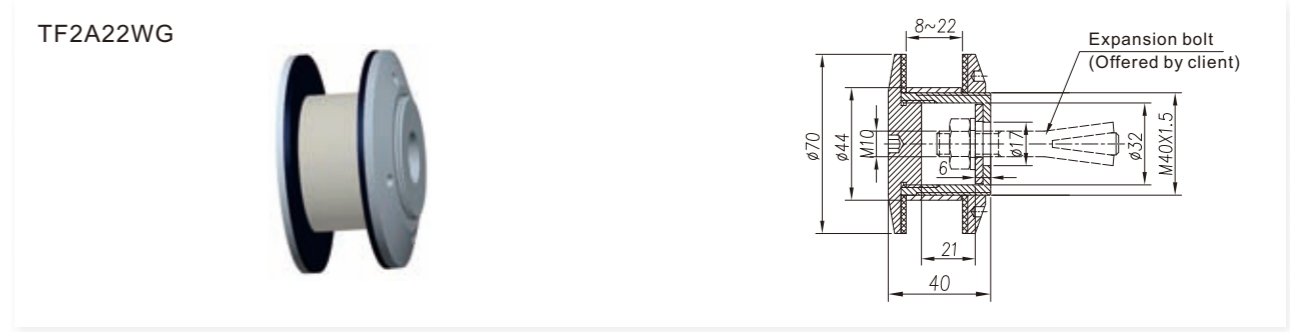
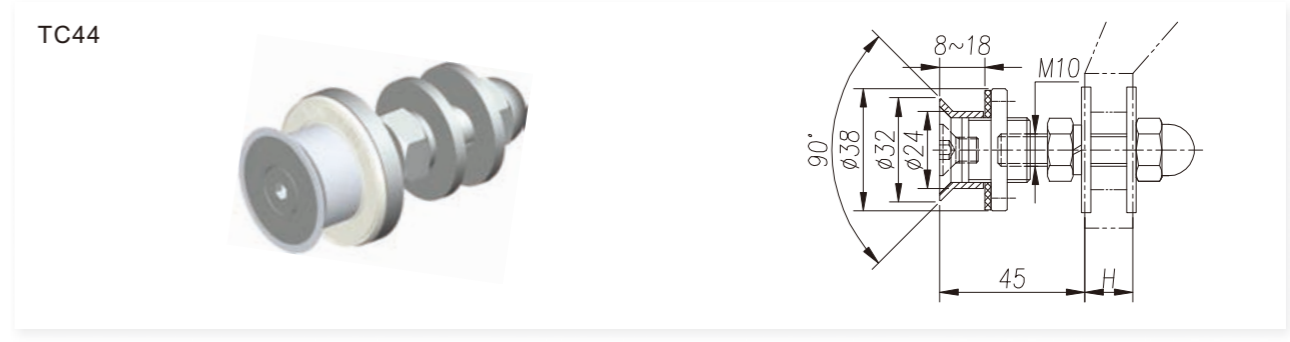


Note: Fastening glue is suggested to used when installing the countersunk socket head cap screw of exterior installation routel.

| Model | Size | A | D | M | T | H | The Available Rotation Angle | Main material:316, 304 | | The Recommended Value of Load Capacity(N) |
|-------|------|----|-----|-------|---|---|------------------------------|------------------------|------|---|
| | | | | | | | | Fx≤ | Fy≤ | |
| TC32 | 42 | 59 | M14 | 15-32 | — | — | ±5° | 4500 | 2000 | |
| TC33 | 50 | 59 | M16 | 30-40 | — | — | ±5° | 6000 | 2500 | |
| TC34 | 56 | 59 | M18 | 30-46 | — | — | ±5° | 6500 | 2800 | |
| TC35 | 50 | 70 | M16 | 30-40 | — | — | ±5° | 6000 | 2500 | |
| TC36 | 56 | 70 | M18 | 30-46 | — | — | ±5° | 6500 | 2800 | |



| The Recommended Value of Load Capacity(N) | Model | Main material:316, 304 | | The Available Rotation Angle |
|---|-------|------------------------|------|------------------------------|
| | | Fx≤ | Fy≤ | |
| | TC31 | 4500 | 2000 | ±5° |
| | TC41 | 2500 | 1200 | ±5° |
| | TC42 | 2500 | 1200 | — |
| | TC43 | 4500 | 2000 | — |



Note: Fastening glue is suggested to used when installing the countersunk socket head cap screw of exterior installation routel.

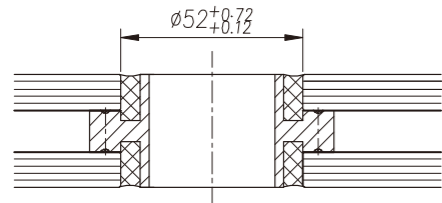
| The Recommended Value of Load Capacity(N) | Model | Main material:316, 304 | | The Available Rotation Angle |
|---|----------|------------------------|------|------------------------------|
| | | Fx≤ | Fy≤ | |
| | TC44 | 2500 | 1200 | — |
| | TF2A22WG | 2500 | 1500 | — |

Selection description for aluminium spacer (sleeve) and eccentric washer

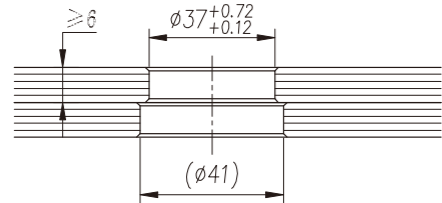
| | |
|---|--------------------------------------|
| | |
| Specification of eccentric washer | Length L of aluminium spacer(sleeve) |
| $(d-1) \times (D+0.5)$ D= diameter of screw | $L=T-2$ (Keep one decimal) |
| Eg: If T=17.52,d=40,D=14,then the specification of eccentric washer is $(40-1) \times (14+0.5)$,that is 39X14.5; Aluminum spacer length L=15.5 | |

Glass Drilling and Alu. Sleeve

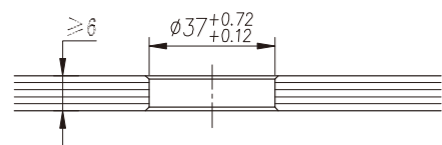
Suitable for: TF23, TF24, TF35, TF36



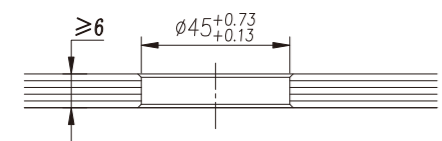
Suitable for :
ATF11X, ATF12X, TF11X, TF12X, TF13,
TF21~TF23, TF31~TF35, TF55



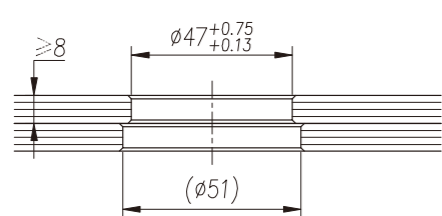
Suitable for:
ATF11X, ATF12X, TF11X, TF12X,
TF21, TF22, TF31, TF32



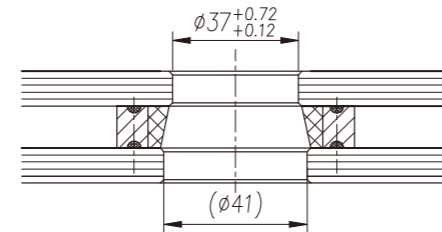
Suitable for: TF2A22WG



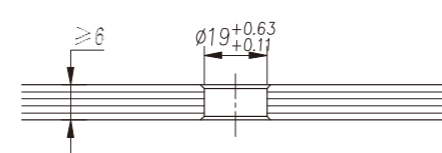
Suitable for: TF25, TF26



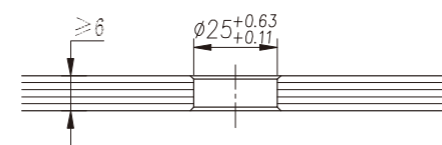
Suitable for: TF13, TF14, TF23, TF24,
TF33~TF36, TF55



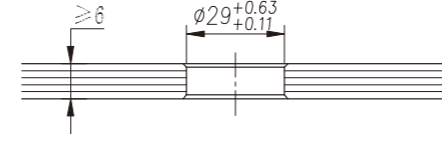
Suitable for : TF43



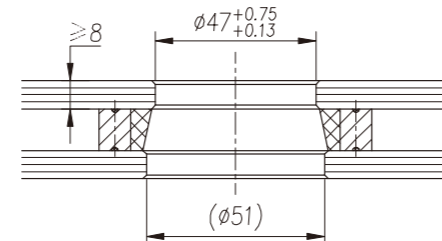
Suitable for : TF42, TF44



Suitable for: TF41

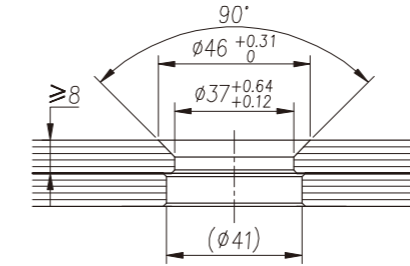


Suitable for: TF25, TF26

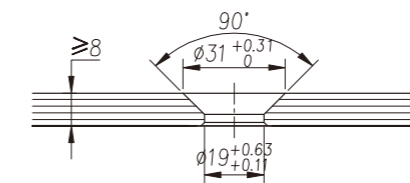


Note:
1. The above hole dimensions are only for reference;
2. Considering the potentially manufacturing error for laminated glass, different drilling diameter of the two panels is recommended.

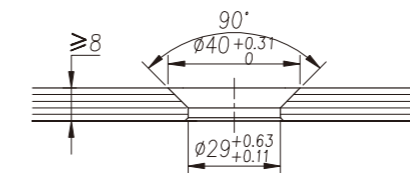
Suitable for: TC11~TC13, TC21~TC23
TC31~TC33, TC35



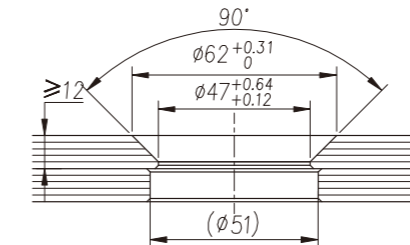
Suitable for: TC43



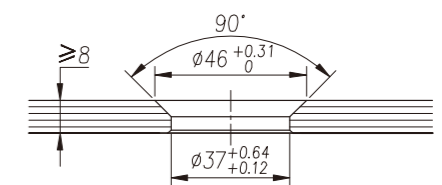
Suitable for:TC41



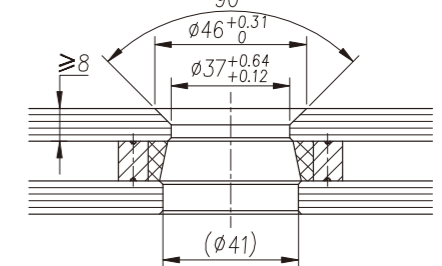
Suitable for:TC25, TC26



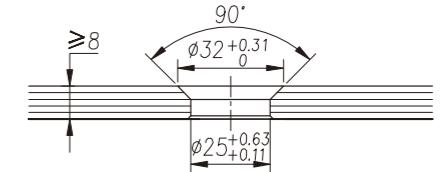
Suitable for: TC11, TC21, TC31, TC32



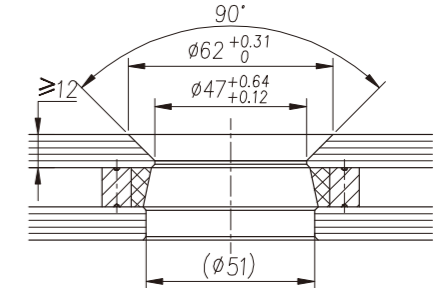
Suitable for:TC13, TC14, TC22~TC24,
TC32~TC36



Suitable for:TC42, TC44



Suitable for: TC25, TC26



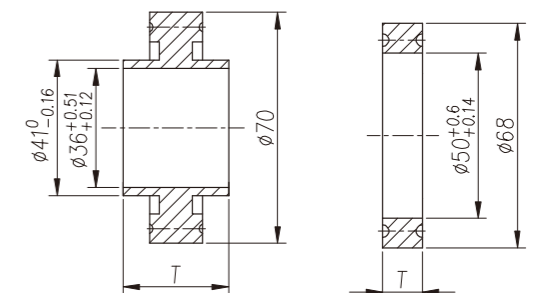
Note:
1. The above drilling dimension is only for reference;
2. Considering the potentially manufacturing tolerance for laminated glass, different drilling diameter of the two panels is recommended.

Alu. Sleeve for insulated glass (excluded in standard routel)



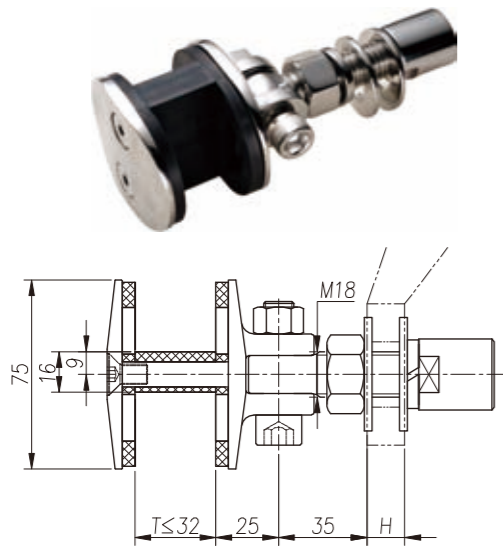
Sleeve 1

Sleeve 2

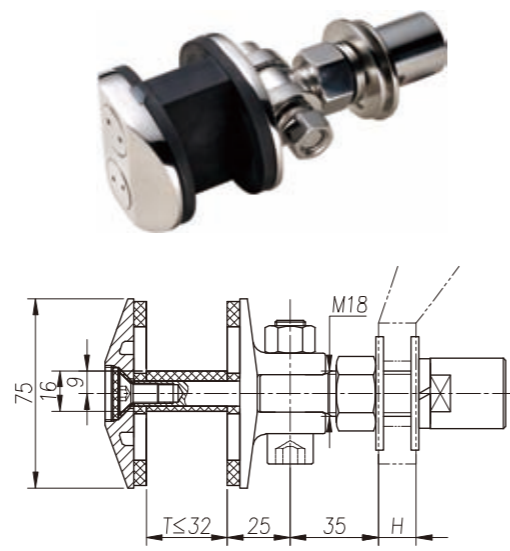


Spliced Routel

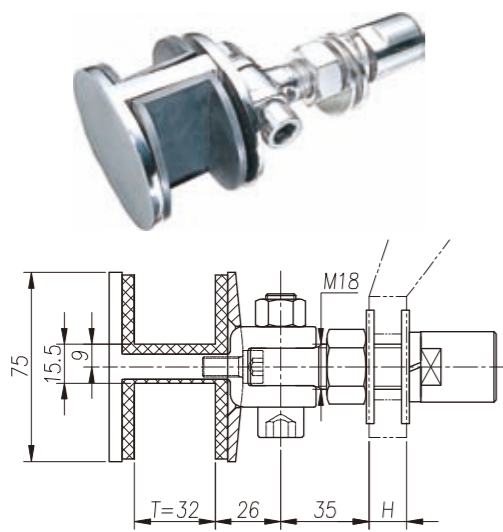
TJ11



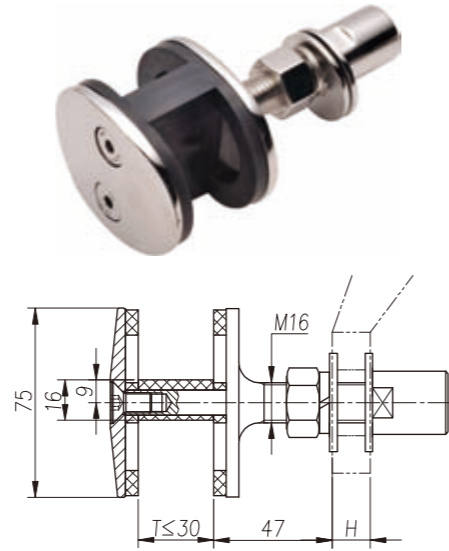
TJ12



TJ13

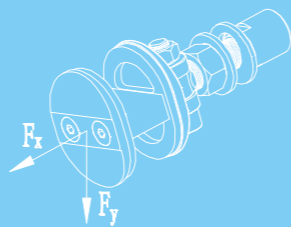


TJ15



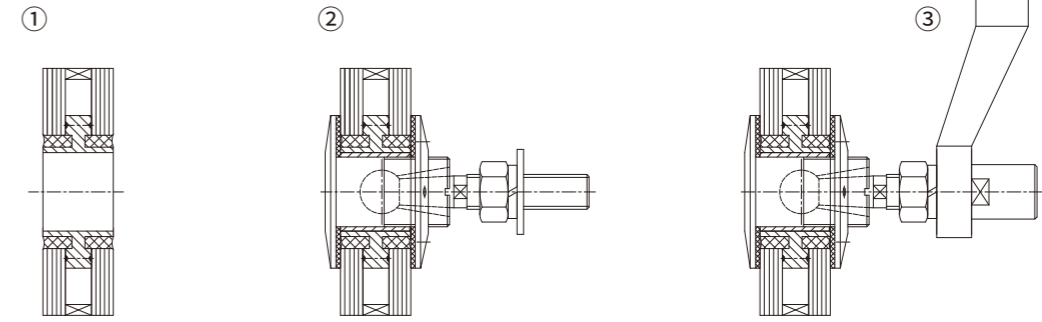
Note: Fastening glue is suggested to be used when installing the countersunk socket head cap screw of exterior installation routel.

| The Recommended Value of Load Capacity(N) | Model | Main material:CF8M、CF8 | |
|---|-------|------------------------|------------|
| | | $F_x \leq$ | $F_y \leq$ |
| | TJ11 | 6000 | 2500 |
| | TJ12 | 6000 | 2500 |
| | TJ13 | 6000 | 2500 |
| | TJ15 | 6000 | 2000 |

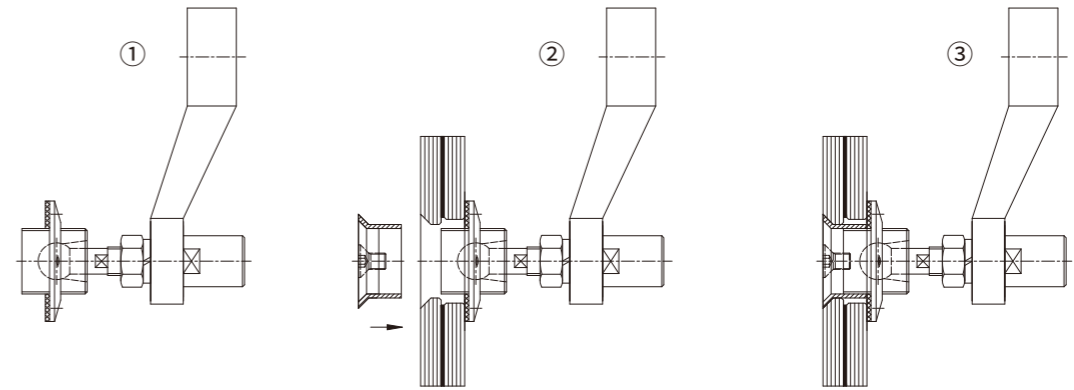


Installation diagram of routel

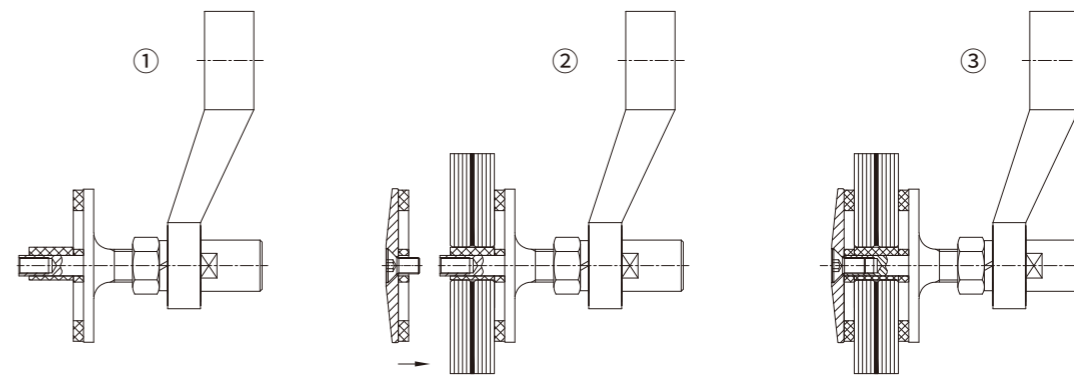
Interior installation



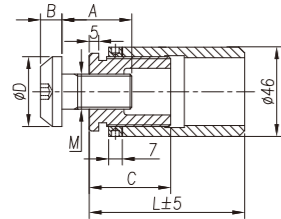
Exterior installation



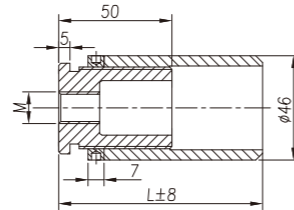
Spliced installation



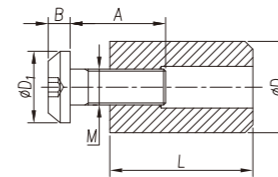
Connector



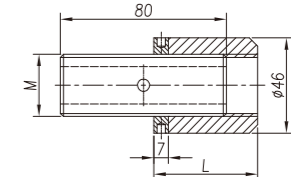
| Model | Size | A | B | C | M | D | L | Note |
|-------|------|----|----|-----|----|----|---|-------------|
| Z11 | 30 | 12 | 45 | M12 | 18 | 90 | | DIN912 Bolt |
| AZ15 | 36 | 11 | 42 | M18 | 36 | 90 | | |



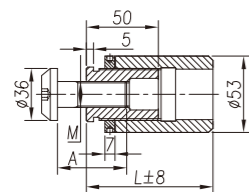
| Model | Size | M | L |
|-------|------|-----|----|
| Z12 | | M14 | 90 |
| Z13 | | M16 | 90 |
| Z15W | | M18 | 90 |



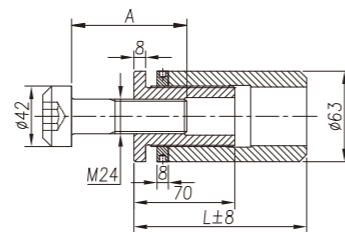
| Model | Size | A | B | M | D | D_1 | L |
|-------|------|----|-----|----|----|-------|---|
| Z35 | 48 | 11 | M18 | 46 | 36 | 72 | |
| Z36 | 54 | 11 | M20 | 46 | 36 | 72 | |
| Z37 | 80 | 20 | M24 | 63 | 42 | 72 | |



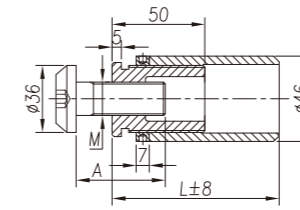
| Model | Size | M | L |
|-------|------|---------|----|
| Z38 | | M30X1.5 | 50 |



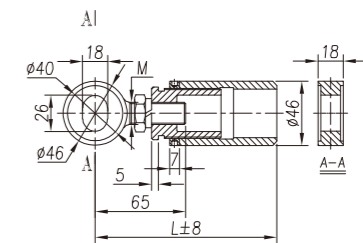
| Model | Size | A | M | L |
|---------|------|---|-----|----|
| Z15(53) | 48 | | M18 | 90 |
| Z16(53) | 54 | | M20 | 90 |



| Model | Size | A | L |
|-------|------|-----|-----|
| Z17 | | 80 | 120 |
| Z17L | | 100 | 120 |



| Model | Size | A | M | L |
|-------|------|---|-----|----|
| Z15 | 48 | | M18 | 90 |
| Z15L1 | 69 | | M18 | 90 |
| Z16 | 54 | | M20 | 90 |
| Z16L | 74 | | M20 | 90 |

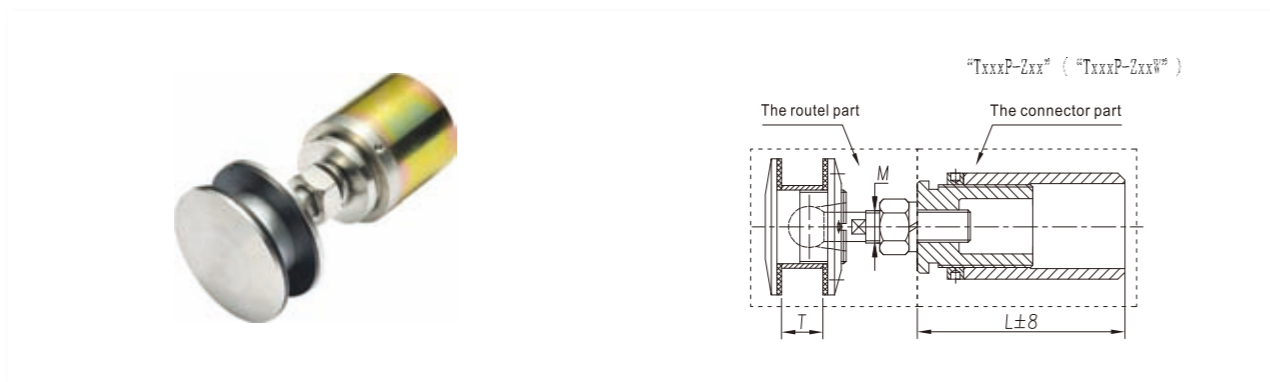


| Model | Size | M | L |
|-------|------|-----|-----|
| Z65 | | M16 | 130 |

Note: The surface treatment of the base is for anti-corrosion during storage and transportation, extra anti-corrosion surface treatment is needed after installation.

Note: The surface the base of basement is for anti-corrosion during storage and transportation, extra anti-corrosion surface treatment is needed after installation.

P-Z Series



| FP-Z | The routil part | T | M | The connector part | M | L | F _x ≤(N) | F _y ≤(N) | Model |
|------|-----------------|-------|-----|--------------------|-----|----|---------------------|---------------------|------------|
| | TF11XP | 8-18 | M14 | Z12 | M14 | 90 | 4500 | 2000 | TF11XP-Z12 |
| | TF12XP | 18-26 | M14 | Z12 | M14 | 90 | 4500 | 2000 | TF12XP-Z12 |
| | TF14P | 30-46 | M18 | Z15W | M18 | 90 | 6500 | 2800 | TF14P-Z15W |
| | TF21P | 8-22 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TF21P-Z13 |
| | TF22P | 22-30 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TF22P-Z13 |
| | TF23P | 30-40 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TF23P-Z13 |
| | TF24P | 30-50 | M18 | Z15W | M18 | 90 | 6500 | 2800 | TF24P-Z15W |
| | TF31P | 8-15 | M14 | Z12 | M14 | 90 | 4500 | 2000 | TF31P-Z12 |
| | TF32P | 15-23 | M14 | Z12 | M14 | 90 | 4500 | 2000 | TF32P-Z12 |
| | TF33P | 23-40 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TF33P-Z13 |
| | TF34P | 30-46 | M18 | Z15W | M18 | 90 | 6500 | 2800 | TF34P-Z15W |
| | TF35P | 30-40 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TF35P-Z13 |
| | TF36P | 30-50 | M18 | Z15W | M18 | 90 | 6500 | 2800 | TF36P-Z15W |

| CP-Z | The routil part | T | M | The connector part | M | L | F _x ≤(N) | F _y ≤(N) | Model |
|------|-----------------|-------|-----|--------------------|-----|----|---------------------|---------------------|------------|
| | TC01P | 8-22 | M14 | Z12 | M14 | 90 | 4500 | 2000 | TC01P-Z12 |
| | TC12P | 22-30 | M14 | Z12 | M14 | 90 | 4500 | 2000 | TC12P-Z12 |
| | TC13P | 30-40 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TC13P-Z13 |
| | TC14P | 30-46 | M18 | Z15W | M18 | 90 | 6500 | 2800 | TC14P-Z15W |
| | TC21P | 8-22 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TC21P-Z13 |
| | TC22P | 22-30 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TC22P-Z13 |
| | TC23P | 30-40 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TC23P-Z13 |
| | TC24P | 30-46 | M18 | Z15W | M18 | 90 | 6500 | 2800 | TC24P-Z15W |
| | TC31P | 12-21 | M14 | Z12 | M14 | 90 | 4500 | 2000 | TC31P-Z12 |
| | TC32P | 15-32 | M14 | Z12 | M14 | 90 | 4500 | 2000 | TC32P-Z12 |
| | TC33P | 30-40 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TC33P-Z13 |
| | TC34P | 30-46 | M18 | Z15W | M18 | 90 | 6500 | 2800 | TC34P-Z15W |
| | TC35P | 30-40 | M16 | Z13 | M16 | 90 | 6000 | 2500 | TC35P-Z13 |
| | TC36P | 30-46 | M18 | Z15W | M18 | 90 | 6500 | 2800 | TC36P-Z15W |

| JP-Z | The routil part | T | M | The connector part | M | L | F _x ≤(N) | F _y ≤(N) | Model |
|------|-----------------|------|-----|--------------------|-----|----|---------------------|---------------------|-----------|
| | TJ15P | 0-30 | M16 | Z13 | M16 | 90 | 6000 | 2000 | TJ15P-Z13 |
| | TJ16P | 0-30 | M16 | Z13 | M16 | 90 | 6000 | 2000 | TJ16P-Z13 |
| | TJ25P | 0-30 | M16 | Z13 | M16 | 90 | 6000 | 2000 | TJ25P-Z13 |

Note:
 1. The standard length of connector is L=90mm.
 2. The surface treatment of basement is for anti-corrosion during storage and transportation, another anti-corrosion surface treatment is needed after installation.



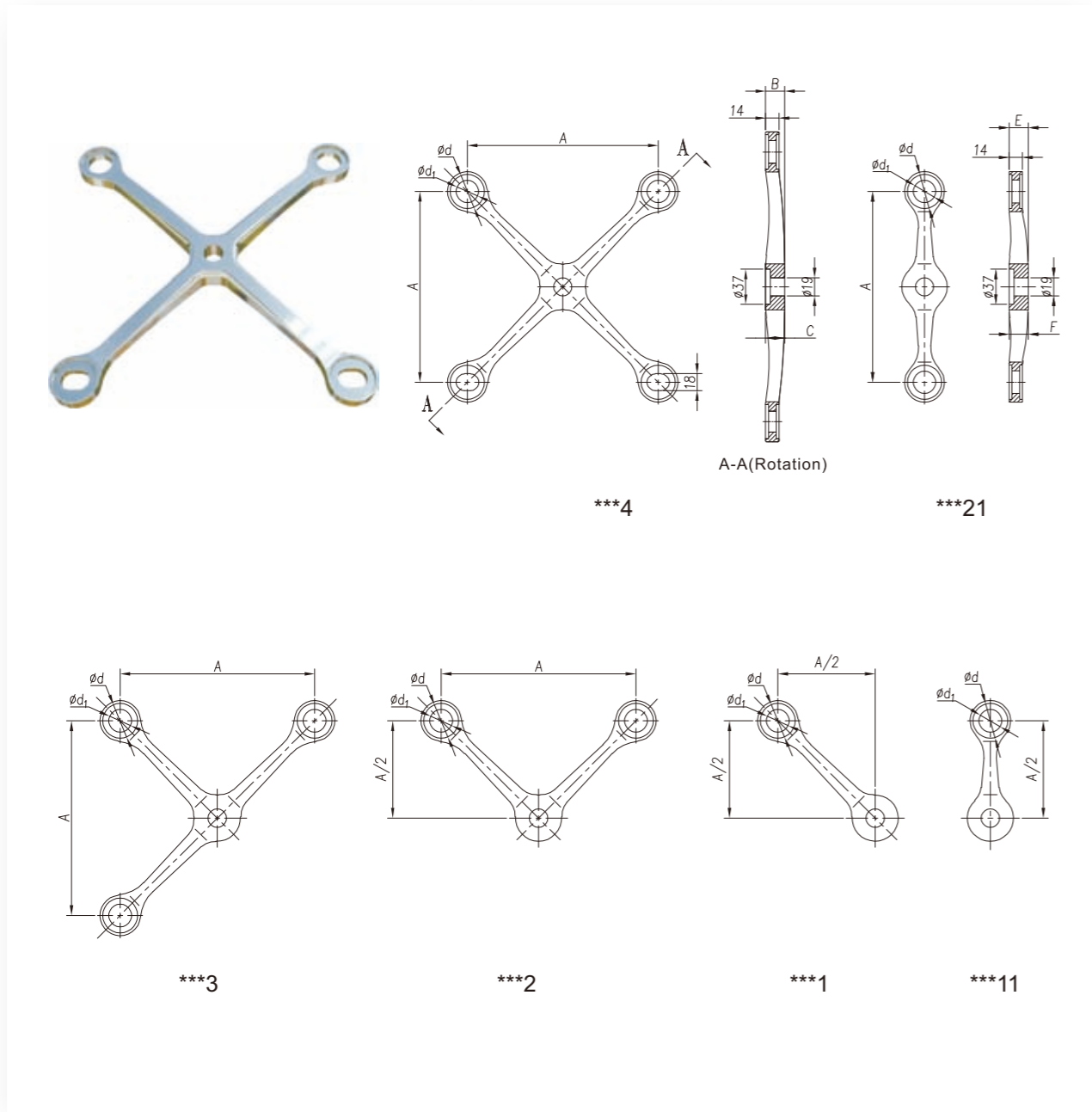
| FP-Z | The routil part | T | M | The connector part | M | L | F _x ≤(N) | F _y ≤(N) | Model |
|------|-----------------|-------|-----|--------------------|-----|----|---------------------|---------------------|-------------|
| | ATF11XP | 8-18 | M12 | Z31 | M12 | 72 | 3000 | 1500 | ATF11XP-Z31 |
| | ATF12XP | 18-26 | M12 | Z31 | M12 | 72 | 3000 | 1500 | ATF12XP-Z31 |
| | ATF13P | 26-40 | M14 | Z32 | M14 | 72 | 3500 | 2000 | ATF13P-Z32 |
| | ATF14P | 40-46 | M16 | Z33 | M16 | 72 | 4000 | 2500 | ATF14P-Z33 |
| | TF11XP | 8-18 | M14 | Z32 | M14 | 72 | 4500 | 2000 | TF11XP-Z32 |
| | TF12XP | 18-26 | M14 | Z32 | M14 | 72 | 4500 | 2000 | TF12XP-Z32 |
| | TF13P | 26-40 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TF13P-Z33 |
| | TF14P | 30-46 | M18 | Z35W | M18 | 72 | 6500 | 2800 | TF14P-Z35W |
| | TF21P | 8-22 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TF21P-Z33 |
| | TF22P | 22-30 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TF22P-Z33 |
| | TF23P | 30-40 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TF23P-Z33 |
| | TF24P | 30-50 | M18 | Z35W | M18 | 72 | 6500 | 2800 | TF24P-Z35W |
| | TF31P | 8-15 | M14 | Z32 | M14 | 72 | 4500 | 2000 | TF31P-Z32 |
| | TF32P | 15-23 | M14 | Z32 | M14 | 72 | 4500 | 2000 | TF32P-Z32 |
| | TF33P | 23-40 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TF33P-Z33 |
| | TF34P | 30-46 | M18 | Z35W | M18 | 72 | 6500 | 2800 | TF34P-Z35W |
| | TF35P | 30-40 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TF35P-Z33 |
| | TF36P | 30-50 | M18 | Z35W | M18 | 72 | 6500 | 2800 | TF36P-Z35W |

| CP-Z | The routil part | T | M | The connector part | M | L | F _x ≤(N) | F _y ≤(N) | Model |
|------|-----------------|-------|-----|--------------------|-----|----|---------------------|---------------------|------------|
| | ATC11P | 8-22 | M12 | Z31 | M12 | 72 | 3000 | 1500 | ATC11P-Z31 |
| | ATC12P | 22-30 | M12 | Z31 | M12 | 72 | 3000 | 1500 | ATC12P-Z31 |
| | ATC13P | 30-40 | M14 | Z32 | M14 | 72 | 3500 | 2000 | ATC13P-Z32 |
| | ATC14P | 40-46 | M16 | Z33 | M16 | 72 | 4000 | 2500 | ATC14P-Z33 |
| | TC01P | 8-22 | M14 | Z32 | M14 | 72 | 4500 | 2000 | TC01P-Z32 |
| | TC12P | 22-30 | M14 | Z32 | M14 | 72 | 4500 | 2000 | TC12P-Z32 |
| | TC13P | 30-40 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TC13P-Z33 |
| | TC14P | 30-46 | M18 | Z35W | M18 | 72 | 6500 | 2800 | TC14P-Z35W |
| | TC21P | 8-22 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TC21P-Z33 |
| | TC22P | 22-30 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TC22P-Z33 |
| | TC23P | 30-40 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TC23P-Z33 |
| | TC24P | 30-46 | M18 | Z35W | M18 | 72 | 6500 | 2800 | TC24P-Z35W |
| | TC31P | 12-21 | M14 | Z32 | M14 | 72 | 4500 | 2000 | TC31P-Z32 |
| | TC32P | 15-32 | M14 | Z32 | M14 | 72 | 4500 | 2000 | TC32P-Z32 |
| | TC33P | 30-40 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TC33P-Z33 |
| | TC34P | 30-46 | M18 | Z35W | M18 | 72 | 6500 | 2800 | TC34P-Z35W |
| | TC35P | 30-40 | M16 | Z33 | M16 | 72 | 6000 | 2500 | TC35P-Z33 |
| | TC36P | 30-46 | M18 | Z35W | M18 | 72 | 6500 | 2800 | TC36P-Z35W |

| JP-Z | The routil part | T | M | The connector part | M | L | F _x ≤(N) | F _y ≤(N) | Model |
|------|-----------------|------|-----|--------------------|-----|----|---------------------|---------------------|-----------|
| | TJ15P | 0-30 | M16 | Z33 | M16 | 72 | 6000 | 2000 | TJ15P-Z33 |
| | TJ16P | 0-30 | M16 | Z33 | M16 | 72 | 6000 | 2000 | TJ16P-Z33 |
| | TJ25P | 0-30 | M16 | Z33 | M16 | 72 | 6000 | 2000 | TJ25P-Z33 |

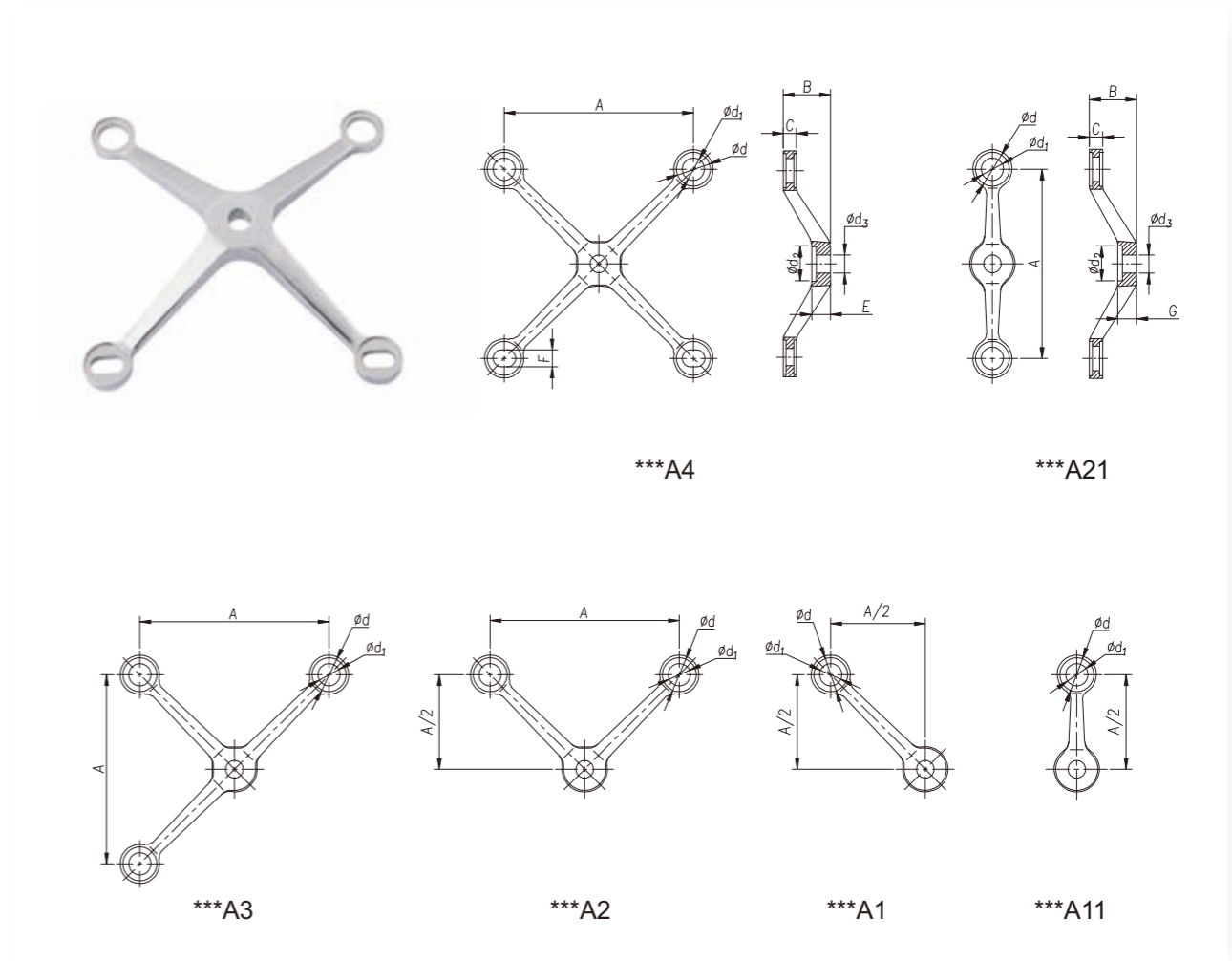
Note:
 1. The standard length of connector is L=72mm.
 2. The surface treatment of basement is for anti-corrosion during storage and transportation, another anti-corrosion surface treatment is needed after installation.

Spider



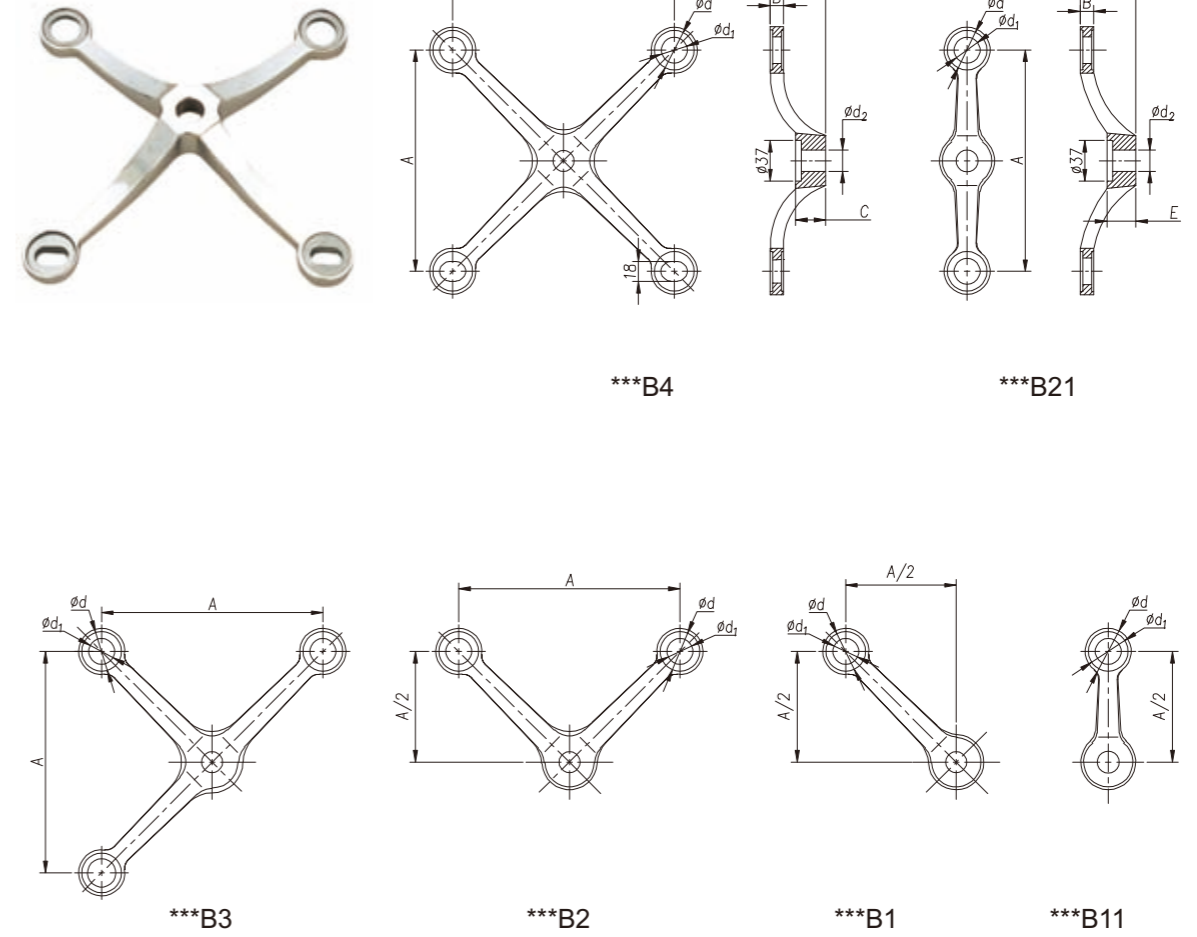
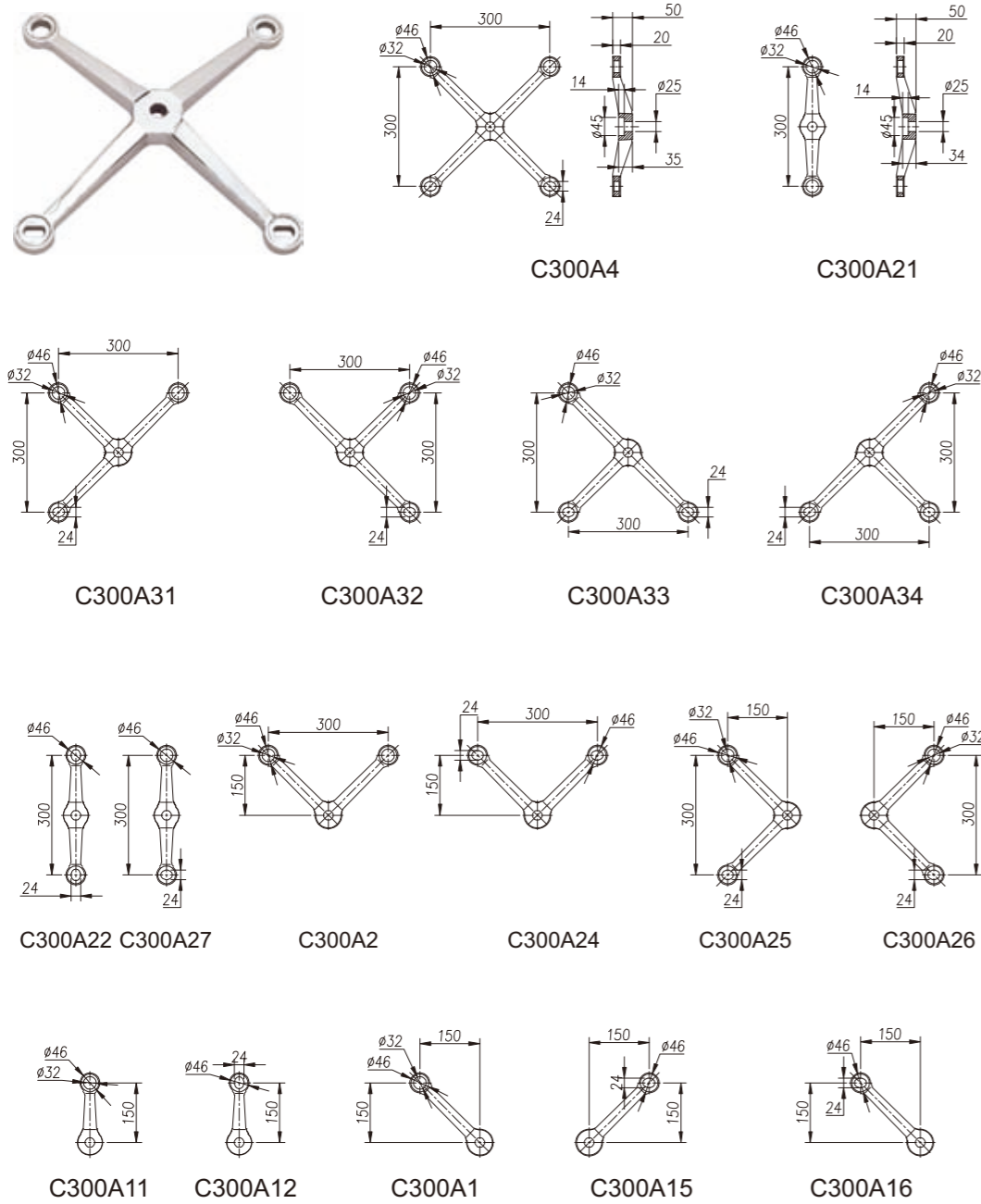
Note: Spider model is consisted of Series number + Arm Code, e.g. GZ250XFD4, GZ250XFD21 and so on.

| Model | Size | | | | | | | | The Recommended Value of Load Capacity(N) | Material: CF8M、CF8 | | Material: CD3MN | |
|-----------------|------|----|----|----|----------------|----|----|------------------|---|--------------------|------------------|------------------|--|
| | A | B | C | d | d ₁ | E | F | F _x ≤ | | F _y ≤ | F _x ≤ | F _y ≤ | |
| GZ200XFB Series | 200 | 20 | 20 | 36 | 24 | 20 | 20 | 2000 | 1000 | 2600 | 1300 | | |
| GZ220XFC Series | 220 | 20 | 20 | 36 | 26 | 20 | 20 | 2000 | 1200 | 2600 | 1600 | | |
| GZ250XFD Series | 250 | 24 | 24 | 40 | 26 | 24 | 24 | 2500 | 1500 | 3300 | 2000 | | |



Note: The model of spider consists of series number+ arm code like A160A4, A160A21 and so on.

| Model | Size | A | B | C | d | d ₁ | d ₂ | d ₃ | E | F | G | Material: CF8M、CF8 | | Material: CD3MN | | The Recommended Value of Load Capacity(N) |
|--------------|------|----|----|----|----|----------------|----------------|----------------|------|----|------|--------------------|------------------|------------------|------------------|---|
| | | | | | | | | | | | | F _x ≤ | F _y ≤ | F _x ≤ | F _y ≤ | |
| A160A Series | 160 | 40 | 10 | 26 | 16 | 19 | 13 | 16 | 12.5 | 16 | 1500 | 800 | — | — | | |
| A200A Series | 200 | 40 | 12 | 36 | 24 | 37 | 19 | 20 | 18 | 18 | 2000 | 800 | — | — | | |
| 200A Series | 200 | 50 | 14 | 36 | 24 | 37 | 19 | 20 | 18 | 20 | 2000 | 1000 | 2600 | 1300 | | |
| A220A Series | 220 | 50 | 12 | 36 | 26 | 37 | 19 | 21 | 18 | 19 | 2000 | 1000 | — | — | | |
| 220A Series | 220 | 50 | 12 | 36 | 26 | 37 | 19 | 23 | 18 | 20 | 2000 | 1200 | 2600 | 1600 | | |
| C220A Series | 220 | 50 | 18 | 36 | 26 | 37 | 19 | 28 | 18 | 26 | 4000 | 2500 | — | — | | |
| D220A Series | 220 | 50 | 20 | 36 | 26 | 37 | 21 | 28 | 20 | 28 | 5000 | 3500 | — | — | | |
| A250A Series | 250 | 50 | 12 | 40 | 26 | 37 | 19 | 22 | 18 | 20 | 2000 | 1200 | — | — | | |
| 250A Series | 250 | 50 | 14 | 40 | 26 | 37 | 19 | 25 | 18 | 22 | 2500 | 1500 | 3300 | 2000 | | |
| C250A Series | 250 | 50 | 17 | 40 | 26 | 37 | 19 | 27 | 18 | 27 | 4000 | 2500 | — | — | | |
| D250A Series | 250 | 50 | 20 | 40 | 26 | 37 | 21 | 30 | 20 | 30 | 5000 | 3500 | — | — | | |
| A300A Series | 300 | 50 | 16 | 40 | 26 | 37 | 21 | 28 | 18 | 28 | 2500 | 1500 | — | — | | |
| 300A Series | 300 | 50 | 18 | 40 | 26 | 37 | 21 | 32 | 18 | 26 | 3000 | 2000 | 3900 | 2600 | | |

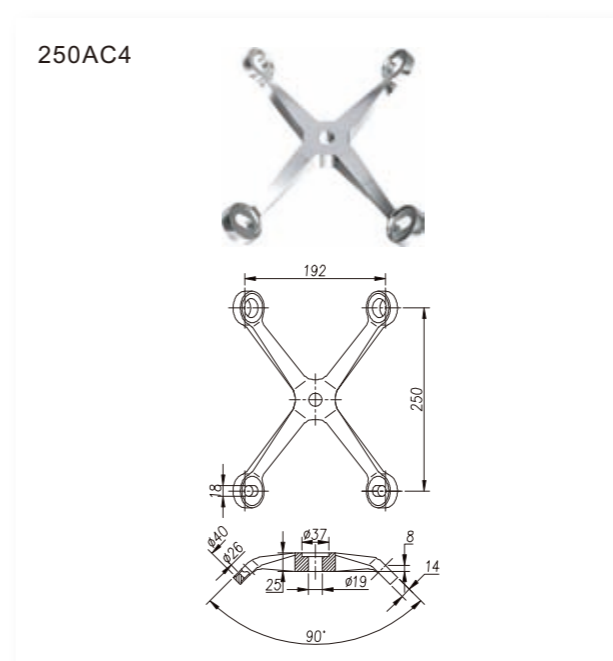
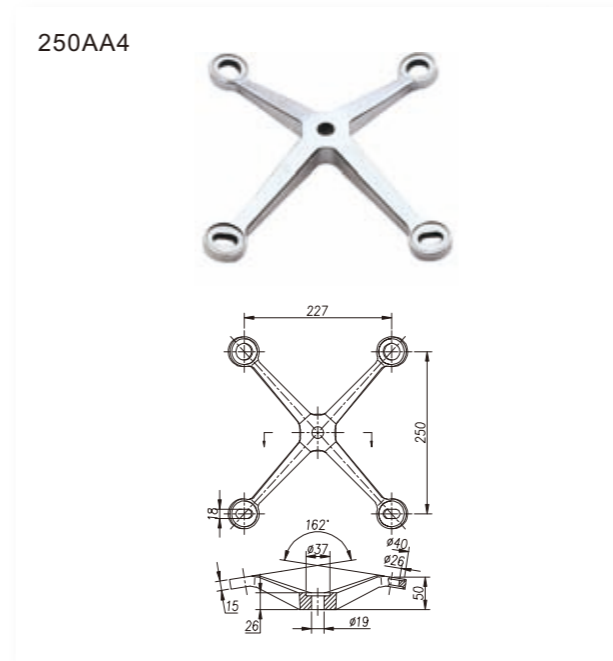
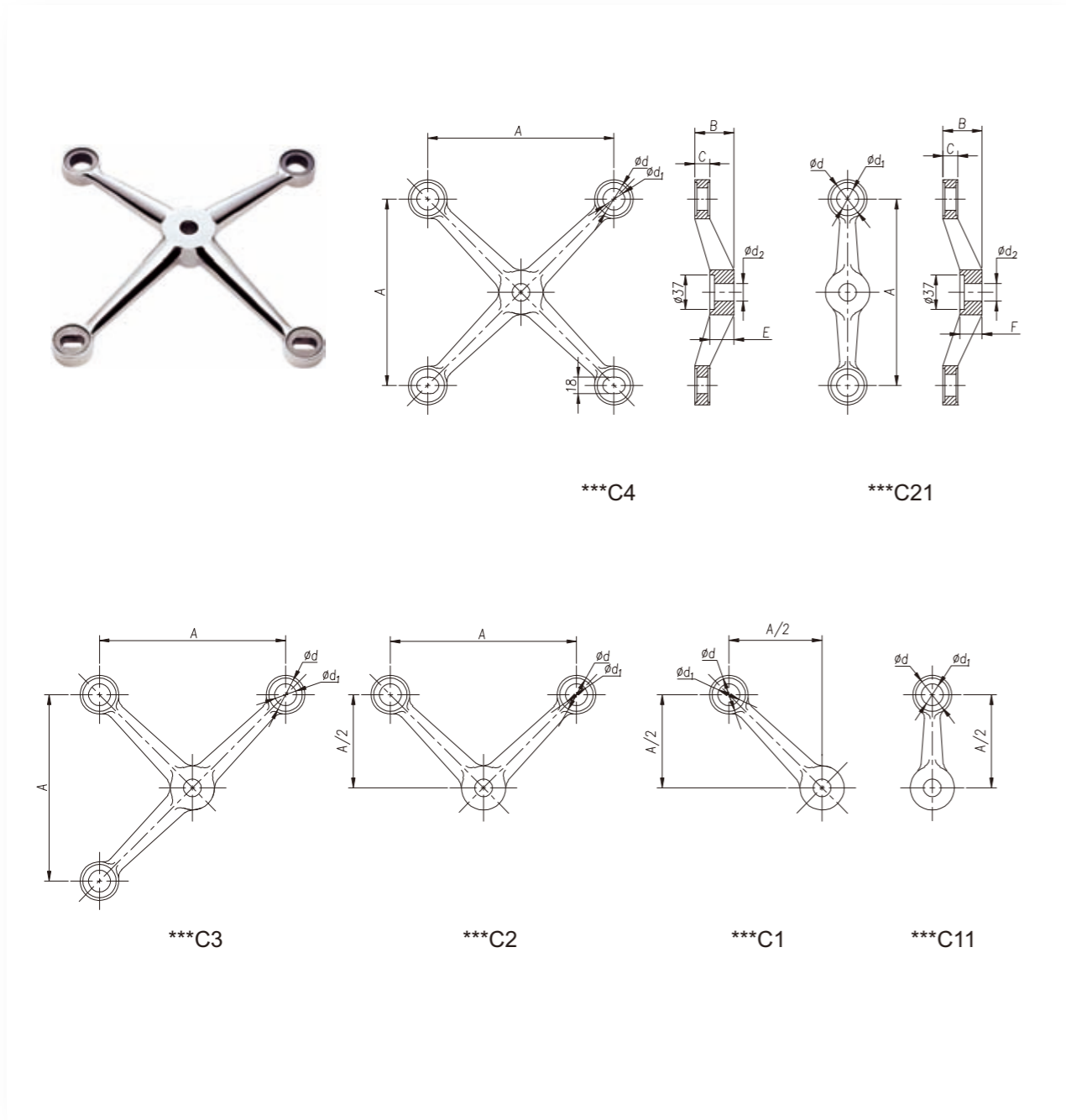


Note: The model of spider consists of series number+Arm Code like 220B4, 220B21 and so on.

| Size Model | A | B | C | d | d ₁ | d ₂ | E | The Recommended Value of Load Capacity(N) | Material: CF8M, CF8 | | Material: CD3MN | |
|---------------|-----|----|----|----|----------------|----------------|----|---|---------------------|------------------|------------------|------------------|
| | | | | | | | | | F _x ≤ | F _y ≤ | F _x ≤ | F _y ≤ |
| 200B Series | 200 | 12 | 27 | 36 | 24 | 19 | 26 | 2000 | 1000 | 2600 | 1300 | |
| 220B Series | 220 | 13 | 27 | 36 | 24 | 19 | 27 | 2000 | 1200 | 2600 | 1600 | |
| 250B Series | 250 | 16 | 26 | 40 | 26 | 19 | 24 | 2500 | 1500 | 3300 | 2000 | |
| 300B Series | 300 | 18 | 32 | 40 | 26 | 21 | 26 | 3000 | 2000 | 3900 | 2600 | |

| The Recommended Value of Load Capacity(N) | Model | Material: CF8M, CF8 | | Material: CD3MN | |
|---|--------------|---------------------|------------------|------------------|------------------|
| | | F _x ≤ | F _y ≤ | F _x ≤ | F _y ≤ |
| | C300A Series | 6000 | 4000 | — | — |

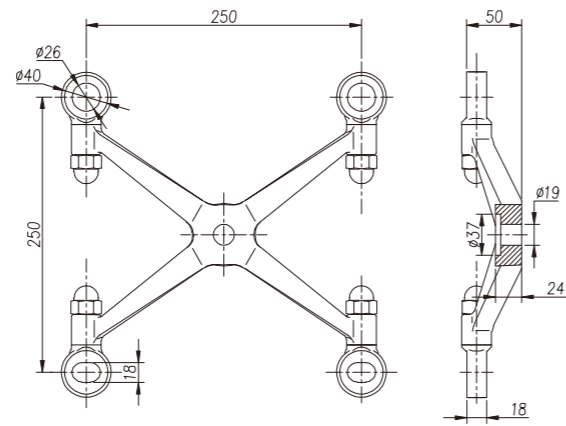
Note: When the radial load < 3500N, the eccentric washer can meet the requirement of load capacity. When the radial load > 3500N, The slot holes bear the loading.



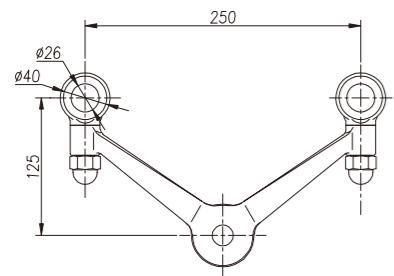
Note: The model of spider consists of series number+ arm code like 250C4, 250C21 and so on.

| Model | Size | | | | | | | | The Recommended Value of Load Capacity(N) | Material: CF8M, CF8 | | Material: CD3MN | |
|-------------|------|----|----|----|----------------|----------------|----|----|---|---------------------|------------------|------------------|------------------|
| | A | B | C | d | d ₁ | d ₂ | E | F | | F _x ≤ | F _y ≤ | F _x ≤ | F _y ≤ |
| 200C Series | 200 | 42 | 16 | 36 | 24 | 19 | 26 | 24 | 2000 | 1000 | 2600 | 1300 | |
| 250C Series | 250 | 50 | 18 | 40 | 26 | 19 | 32 | 26 | 2500 | 1500 | 3300 | 2000 | |
| 300C Series | 300 | 50 | 20 | 40 | 26 | 21 | 38 | 32 | 3000 | 2000 | 3900 | 2600 | |

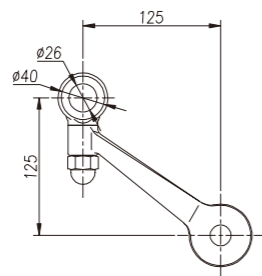
| The Recommended Value of Load Capacity(N) | Model | Material: CF8M, CF8 | | Material: CD3MN | |
|---|---------|---------------------|------------------|------------------|------------------|
| | | F _x ≤ | F _y ≤ | F _x ≤ | F _y ≤ |
| | 250AA4 | 2500 | 1500 | 3300 | 2000 |
| | 250AA21 | 2500 | 1500 | 3300 | 2000 |
| | 250AC4 | 2500 | 1500 | 3300 | 2000 |
| | 250AC21 | 2500 | 1500 | 3300 | 2000 |



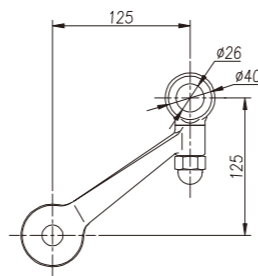
250K4



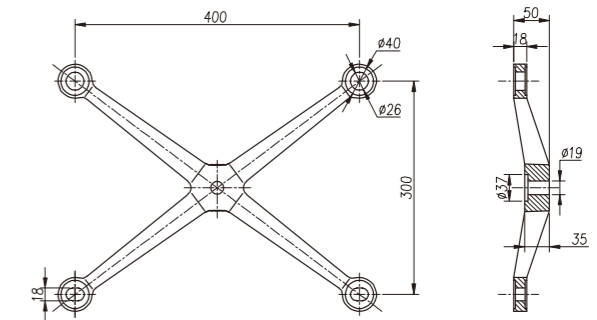
250K2



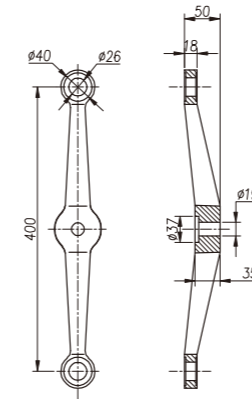
250K1



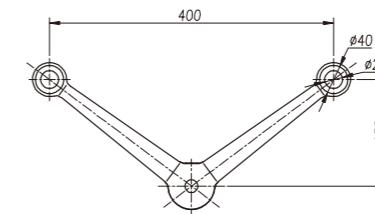
250K12



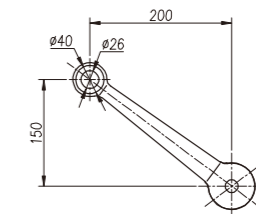
3040B4



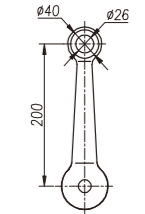
3040B21



3040B2



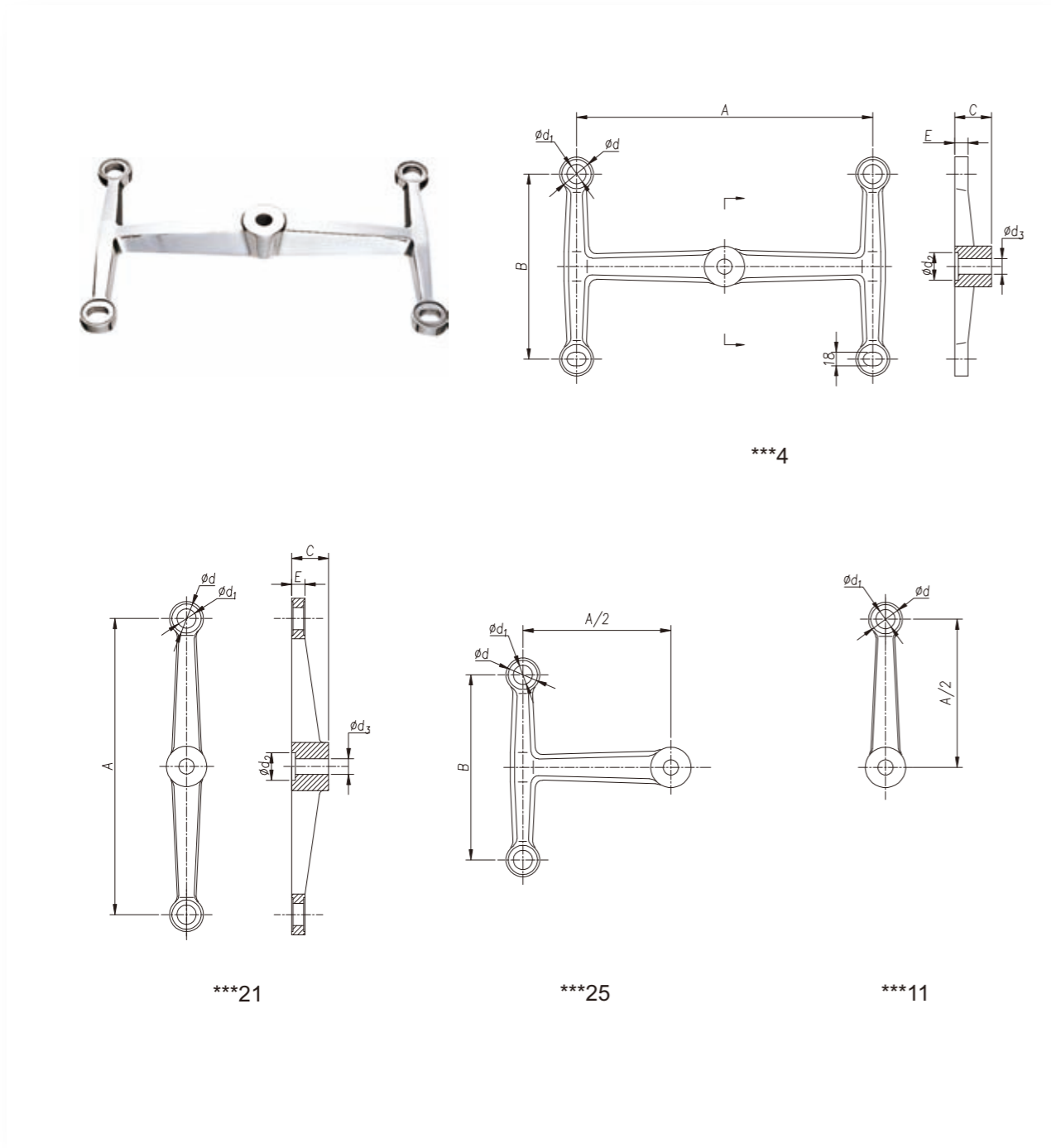
3040B1



3040B11

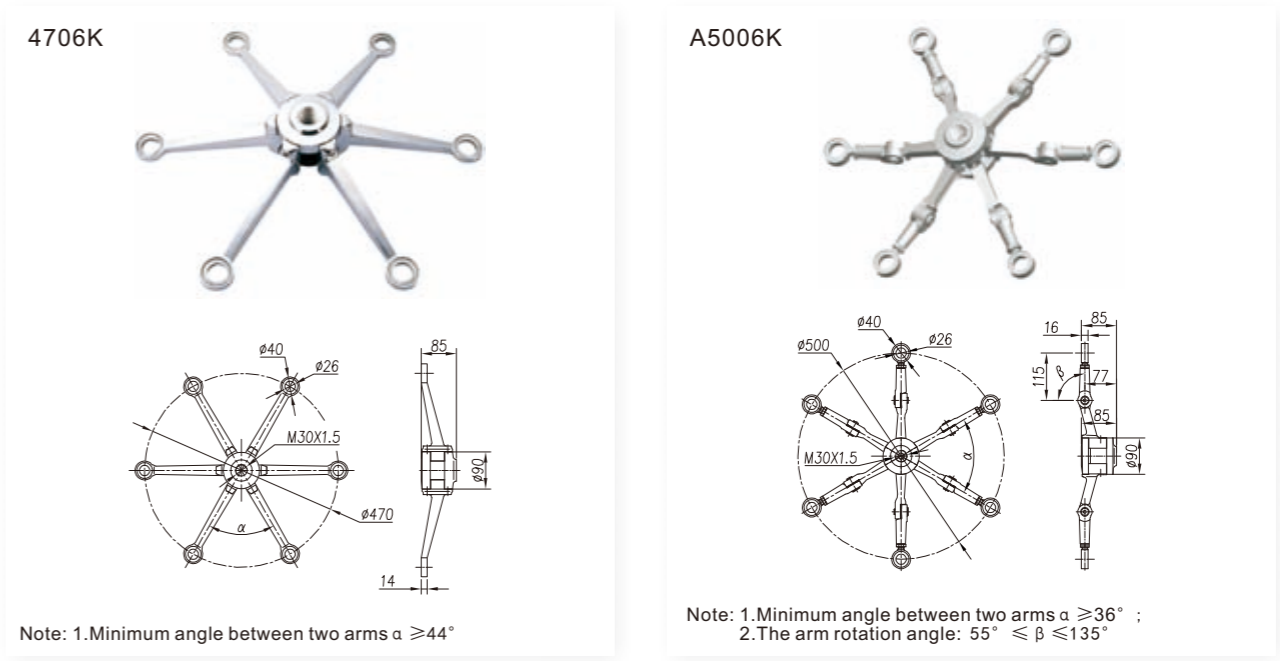
| The Recommended Value of Load Capacity(N) | Model | Main material: CF8M, CF8 | | Main material: CD3MN | | |
|---|-------------|--------------------------|------|----------------------|------|--|
| | | Fx ≤ | Fy ≤ | Fx ≤ | Fy ≤ | |
| | 250K Series | 2500 | 1500 | 3300 | 2000 | |

| The Recommended Value of Load Capacity(N) | Model | Material: CF8M, CF8 | | Material: CD3MN | | |
|---|--------------|---------------------|------|-----------------|------|--|
| | | Fx ≤ | Fy ≤ | Fx ≤ | Fy ≤ | |
| | 3040B Series | 4000 | 2000 | 5000 | 2600 | |



Note: the model of spider consists of series number+arm code like 3060HA4, 3060HA21 and so on.

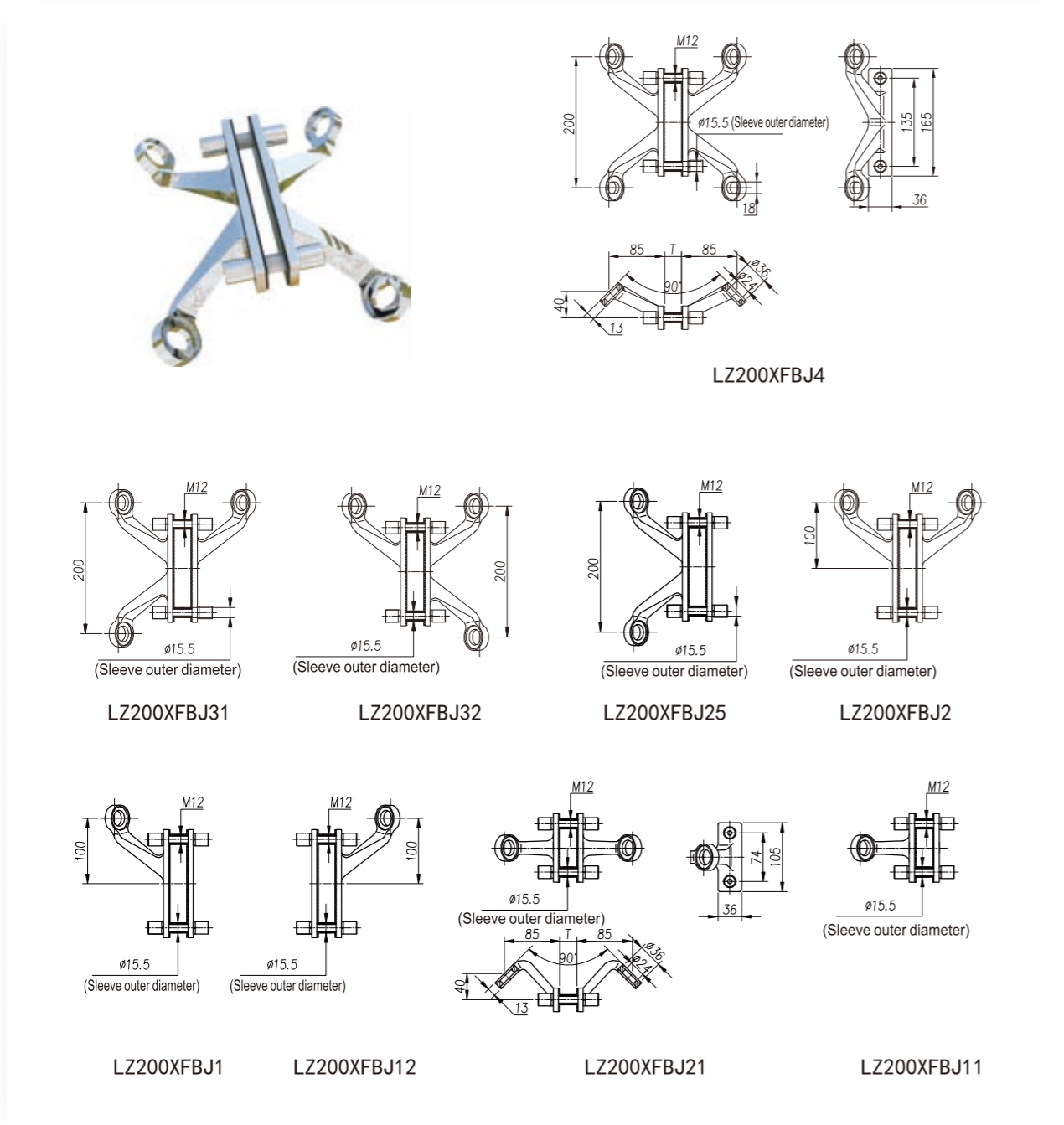
| Model | Size | | | | | | | | The Recommended Value of Load Capacity(N) | Material:CF8M,CF8 | | Material:CD3MN | |
|------------------|------|-----|----|----|----------------|----------------|----------------|----|---|-------------------|------------------|------------------|------------------|
| | A | B | C | d | d ₁ | d ₂ | d ₃ | E | | F _x ≤ | F _y ≤ | F _x ≤ | F _y ≤ |
| GZ3060HTC Series | 600 | 300 | 40 | 40 | 26 | 37 | 19 | 15 | Customized according to the project | | | | |
| 3060HA Series | 600 | 300 | 60 | 46 | 30 | 45 | 25 | 18 | 6500 | 2500 | 8000 | 3200 | |
| 4080HA Series | 800 | 400 | 80 | 50 | 32 | 45 | 25 | 20 | 6500 | 3500 | 8000 | 4500 | |



| The Recommended Value of Load Capacity(N) | Model | Material: CF8M, CF8 | | Material: CD3MN | |
|---|--------|---------------------|------------------|------------------|------------------|
| | | F _x ≤ | F _y ≤ | F _x ≤ | F _y ≤ |
| | 4706K | 4000 | 2000 | — | — |
| | A5006K | 1500 | 1000 | — | — |

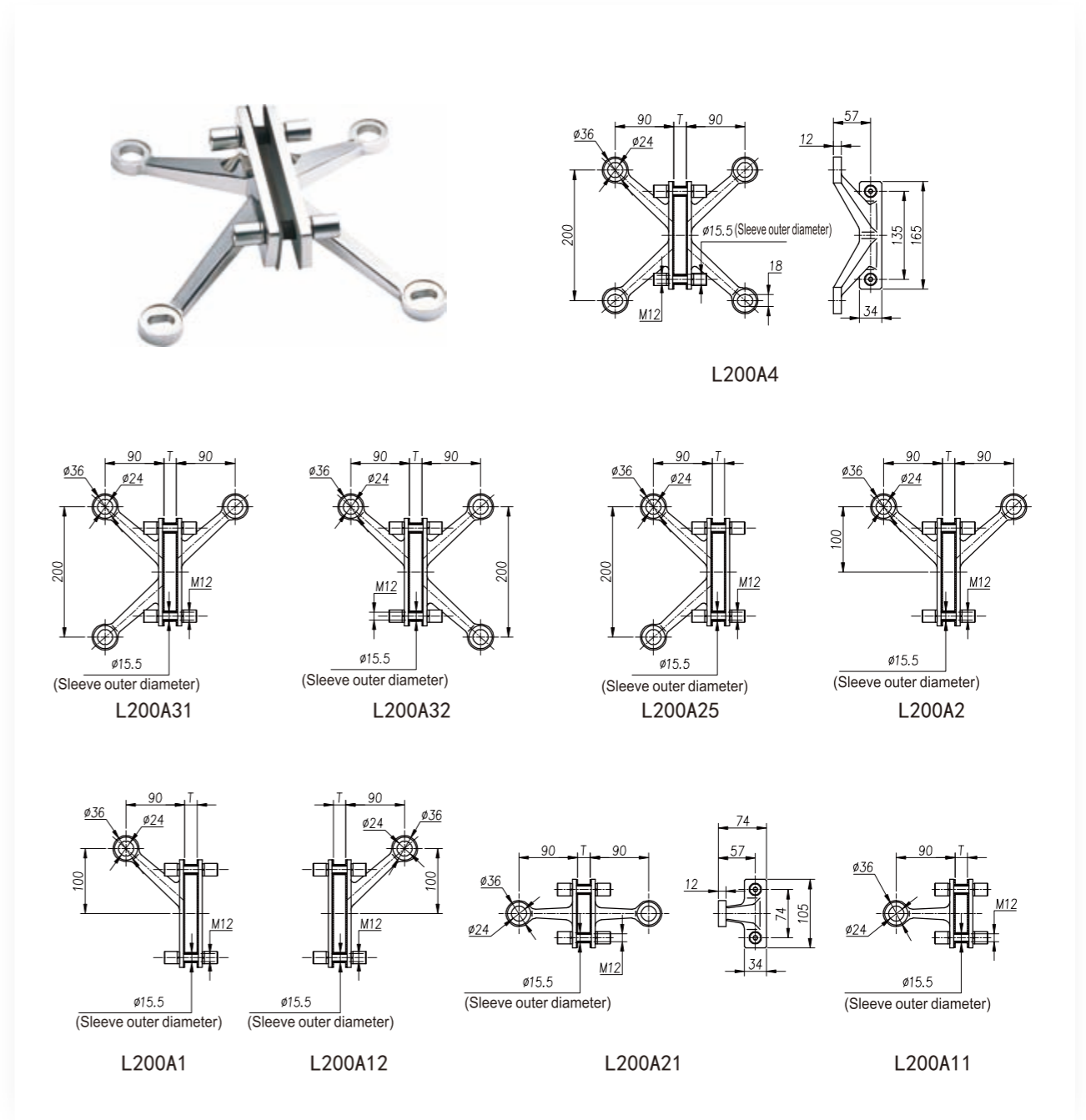


Fin Spider



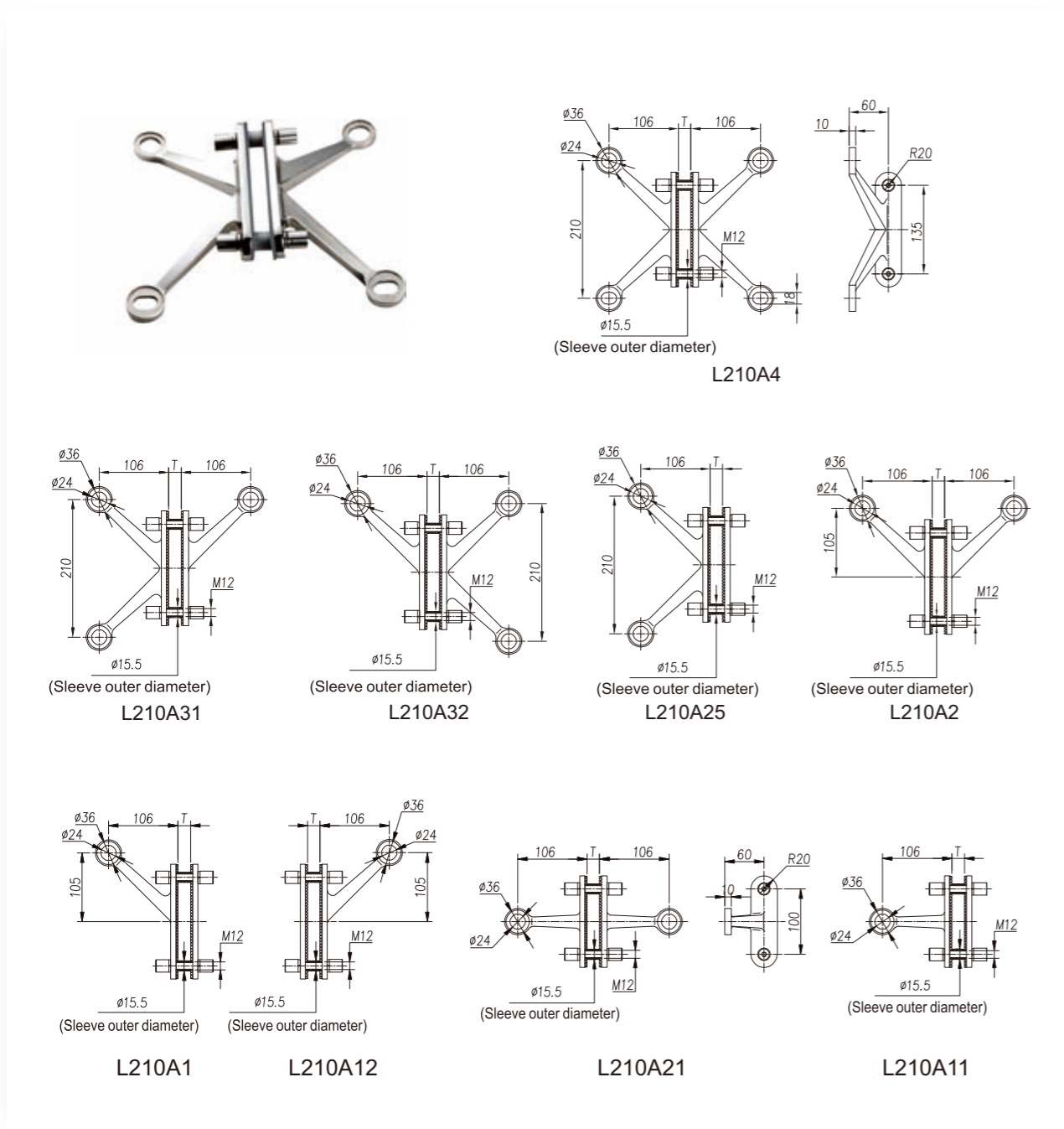
Note:
1. Please place the order with note of removing rubber washer or nylon sleeve while they are not needed. Please drill according to the bolt dimension.

| The Recommended Value of Load Capacity(N) | Model | Main material:CF8M、CF8 | | Main material:CD3MN | | |
|---|------------------|------------------------|------|---------------------|-----|--|
| | | Fx≤ | Fy≤ | Fx≤ | Fy≤ | |
| | LZ200XFBJ Series | 2000 | 1000 | — | — | |



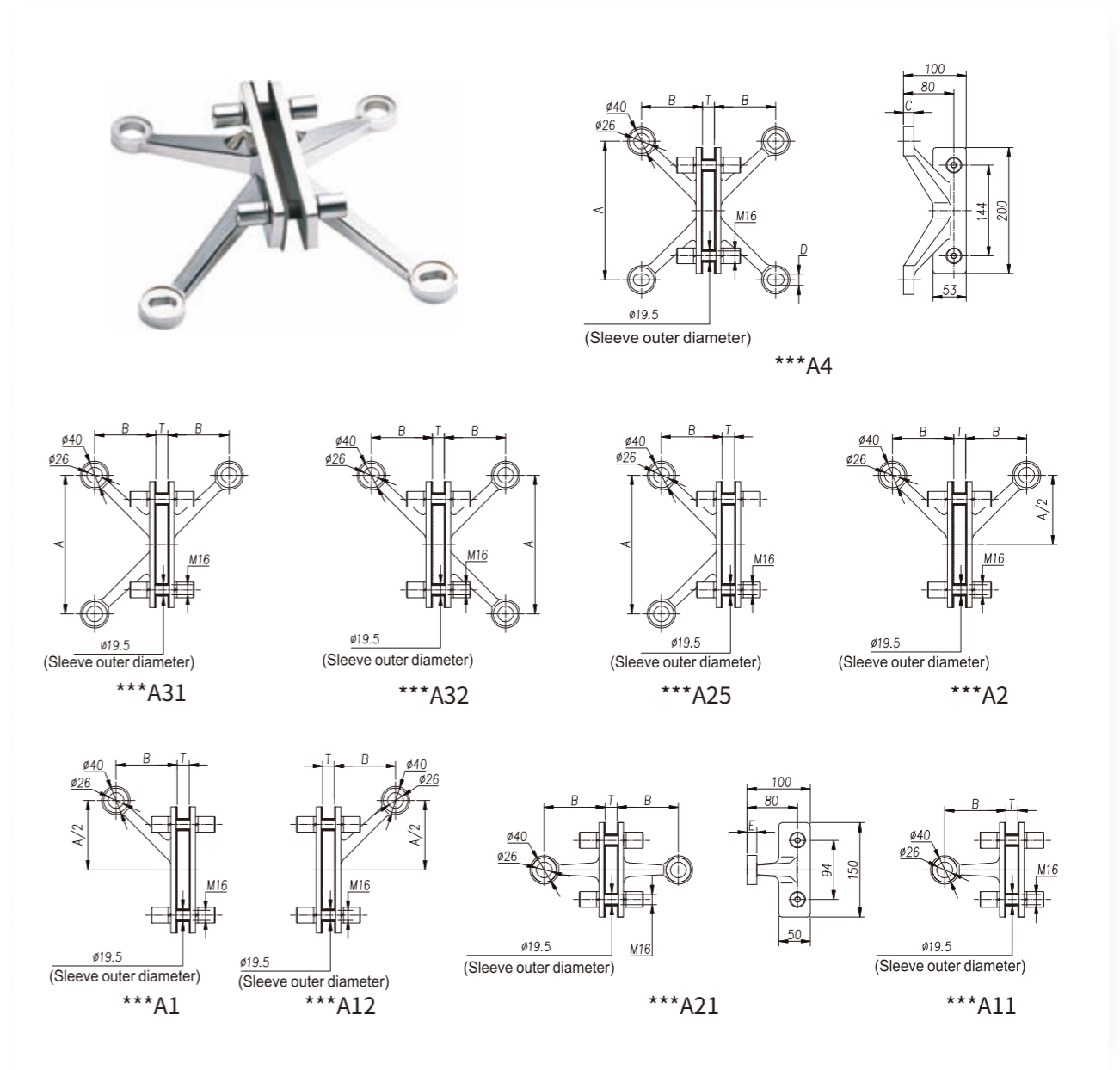
Note:
1. Please place the order with note of removing rubber washer or nylon sleeve while they are not needed. Please drill according to the bolt dimension.

| The Recommended Value of Load Capacity(N) | Model | Main material:CF8M、CF8 | | Main material:CD3MN | | |
|---|--------------|------------------------|------|---------------------|-----|--|
| | | Fx≤ | Fy≤ | Fx≤ | Fy≤ | |
| | L200A Series | 2000 | 1000 | — | — | |



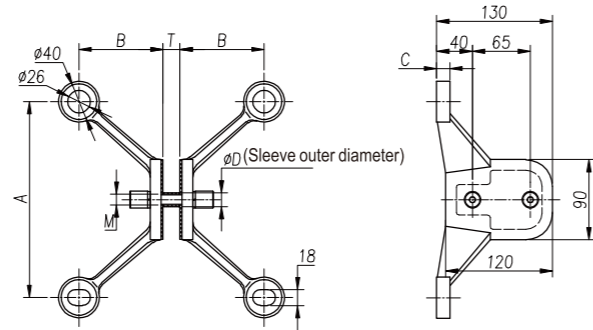
Note: 1. Please place the order with note of removing rubber washer or nylon sleeve while they are not needed. Please drill according to the bolt dimension.

| The Recommended Value of Load Capacity(N) | Model | Main material: CF8M, CF8 | | Main material: CD3MN | | |
|---|--------------|--------------------------|------|----------------------|------|--|
| | | Fx ≤ | Fy ≤ | Fx ≤ | Fy ≤ | |
| | L210A Series | 2000 | 1000 | 2600 | 1300 | |

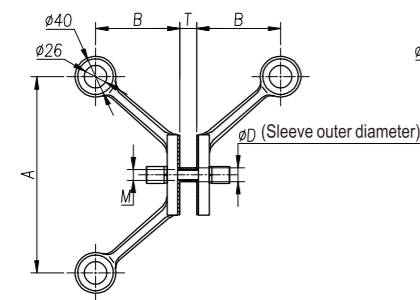


Note: 1. The model of spider consists of series number+ arm code like L220A4, L220A21 and so on.
 2. Please place the order with note of removing rubber washer or nylon sleeve while they are not needed. Please drill according to the bolt dimension.

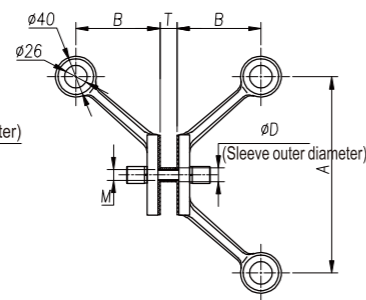
| Model | Size | A | B | C | D | E | T | Main material: CF8M, CF8 | | Main material: CD3MN | | |
|---------------|------|-----|----|----|----|---|---|--------------------------|------|----------------------|------|--|
| | | | | | | | | Fx ≤ | Fy ≤ | Fx ≤ | Fy ≤ | |
| L220A Series | 220 | 97 | 17 | 18 | 15 | — | — | 2500 | 1500 | 3300 | 2000 | |
| L250A Series | 250 | 119 | 17 | 18 | 15 | — | — | 2500 | 1500 | 3300 | 2000 | |
| CL220A Series | 220 | 97 | 18 | 18 | 18 | — | — | 4000 | 2500 | — | — | |
| CL250A Series | 250 | 119 | 18 | 18 | 18 | — | — | 4000 | 2500 | — | — | |
| DL220A Series | 220 | 97 | 19 | 20 | 19 | — | — | 5000 | 3500 | — | — | |
| DL250A Series | 250 | 119 | 19 | 20 | 19 | — | — | 5000 | 3500 | — | — | |



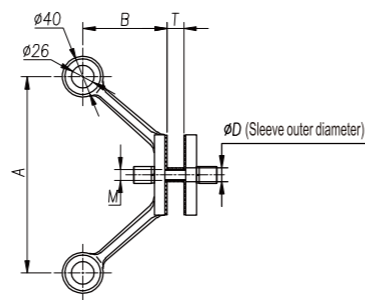
***B4



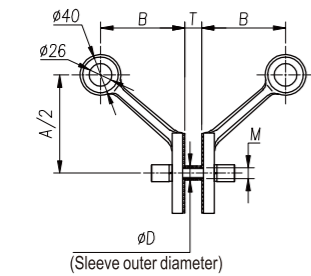
***B31



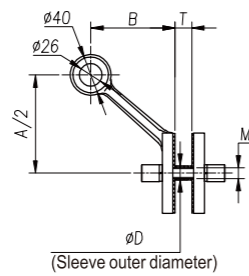
***B32



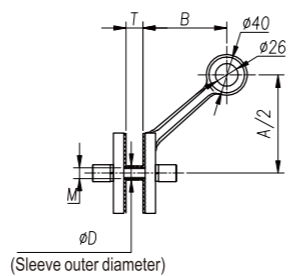
***B25



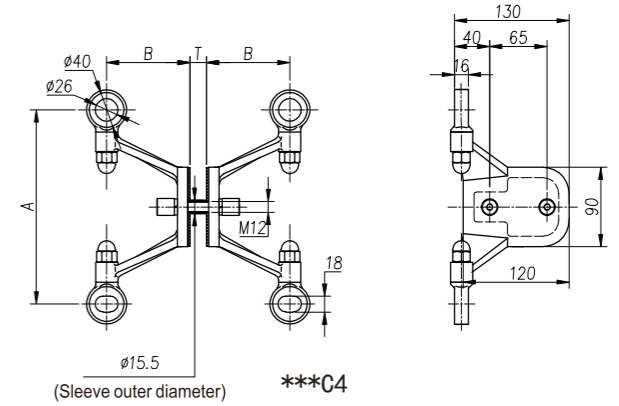
***B2



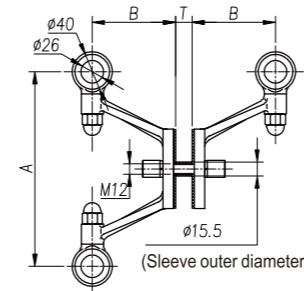
***B1



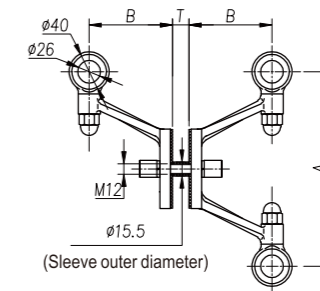
***B12



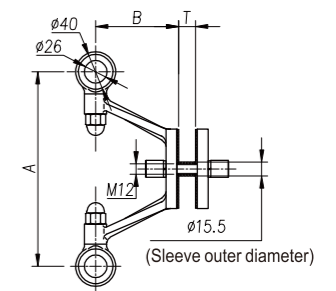
***C4



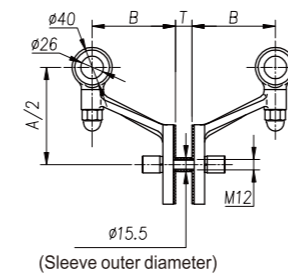
***C31



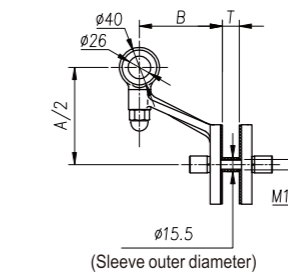
***C32



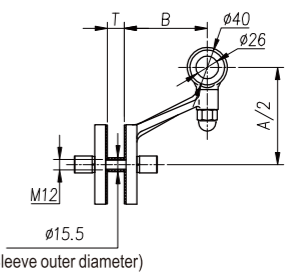
***C25



***C2



***C1



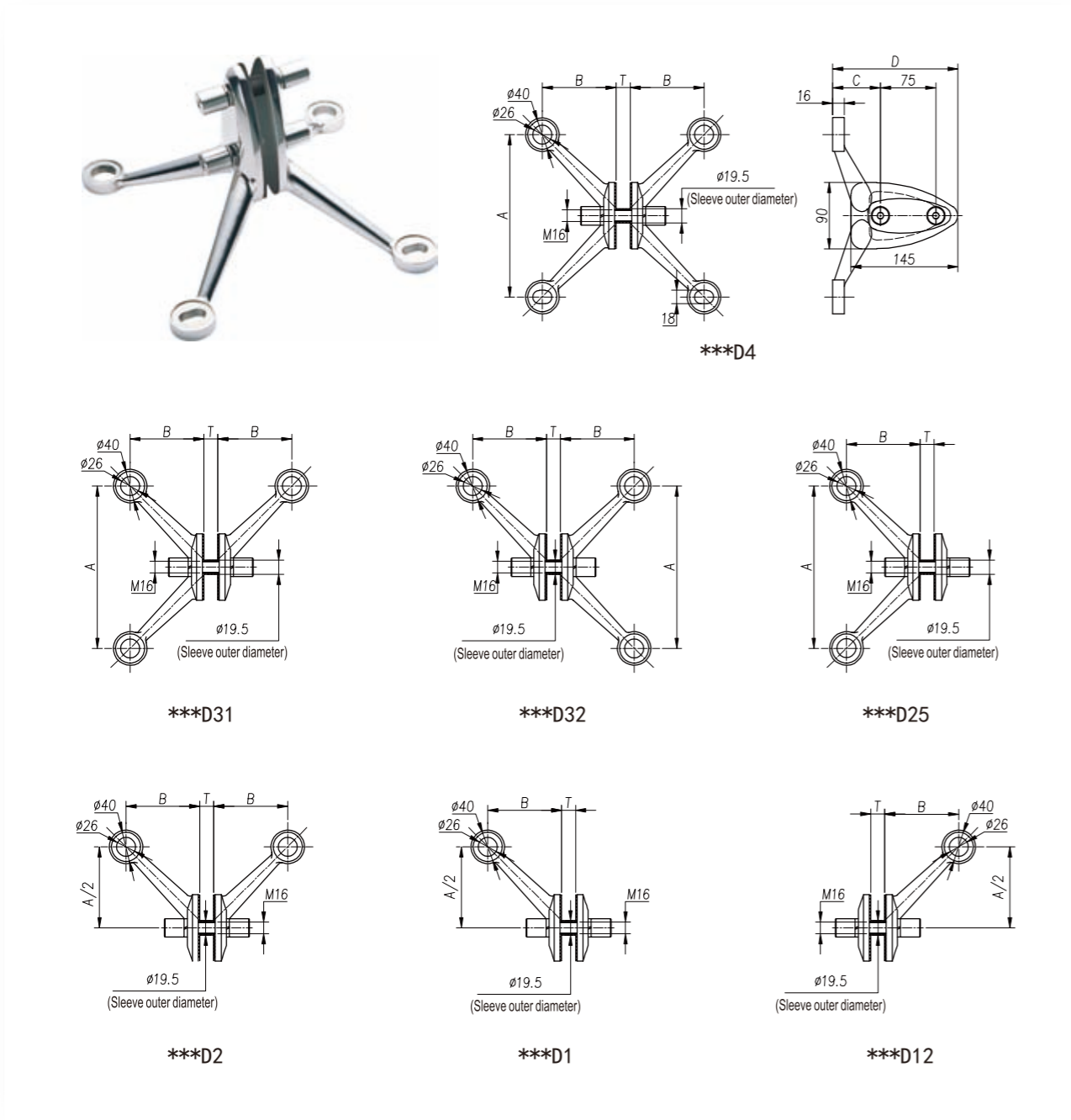
***C12

Note: 1. The model of spider consists of series number+ arm code like L250B4, L250B25 and so on.
 2. Please place the order with note of removing rubber washer or nylon sleeve while they are not needed in the order.
 Please drill according to the bolt dimension.

| Model | Size | A | B | C | D | M | T | The Recommended Value of Load Capacity(N) | Main material: CF8M, CF8 | | Main material: CD3MN | |
|---------------|------|-----|----|------|-----|---|---|---|--------------------------|------|----------------------|-----|
| | | | | | | | | | Fx≤ | Fy≤ | Fx≤ | Fy≤ |
| L220B Series | 220 | 94 | 15 | 15.5 | M12 | — | — | 2500 | 1500 | 3300 | 2000 | |
| L250B Series | 250 | 115 | 15 | 15.5 | M12 | — | — | 2500 | 1500 | 3300 | 2000 | |
| CL250B Series | 250 | 115 | 18 | 19.5 | M16 | — | — | 4000 | 2500 | — | — | |

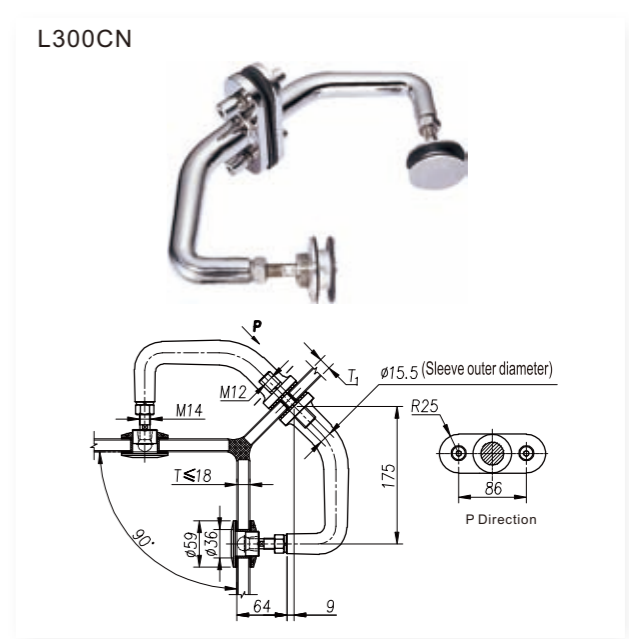
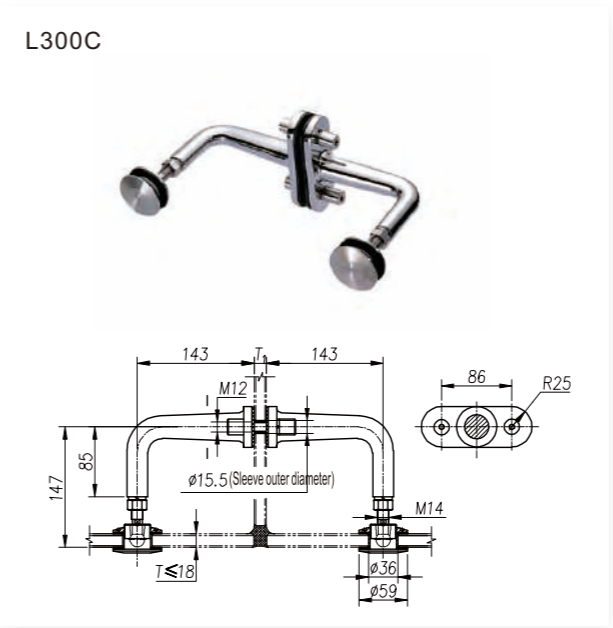
Note: 1. The model of spider consists of series number+ arm code like L250C4, L250C25 and so on.
 2. Please place the order with note of removing rubber washer or nylon sleeve while they are not needed. Please drill according to the bolt dimension.

| Model | Size | A | B | T | The Recommended Value of Load Capacity(N) | Main material:CF8M, CF8 | | Main material:CD3MN | |
|--------------|------|-----|---|---|---|-------------------------|------|---------------------|------|
| | | | | | | Fx≤ | Fy≤ | Fx≤ | Fy≤ |
| L220C Series | 220 | 94 | — | — | — | 2500 | 1500 | 3300 | 2000 |
| L250C Series | 250 | 115 | — | — | — | 2500 | 1500 | 3300 | 2000 |



Note: 1. The model of spider consists of series number+ arm code, like L250D4, L250D25 and so on.
 2. Please place the order with note of removing rubber washer or nylon sleeve while they are not needed in the order.
 Please drill according to the bolt dimension.

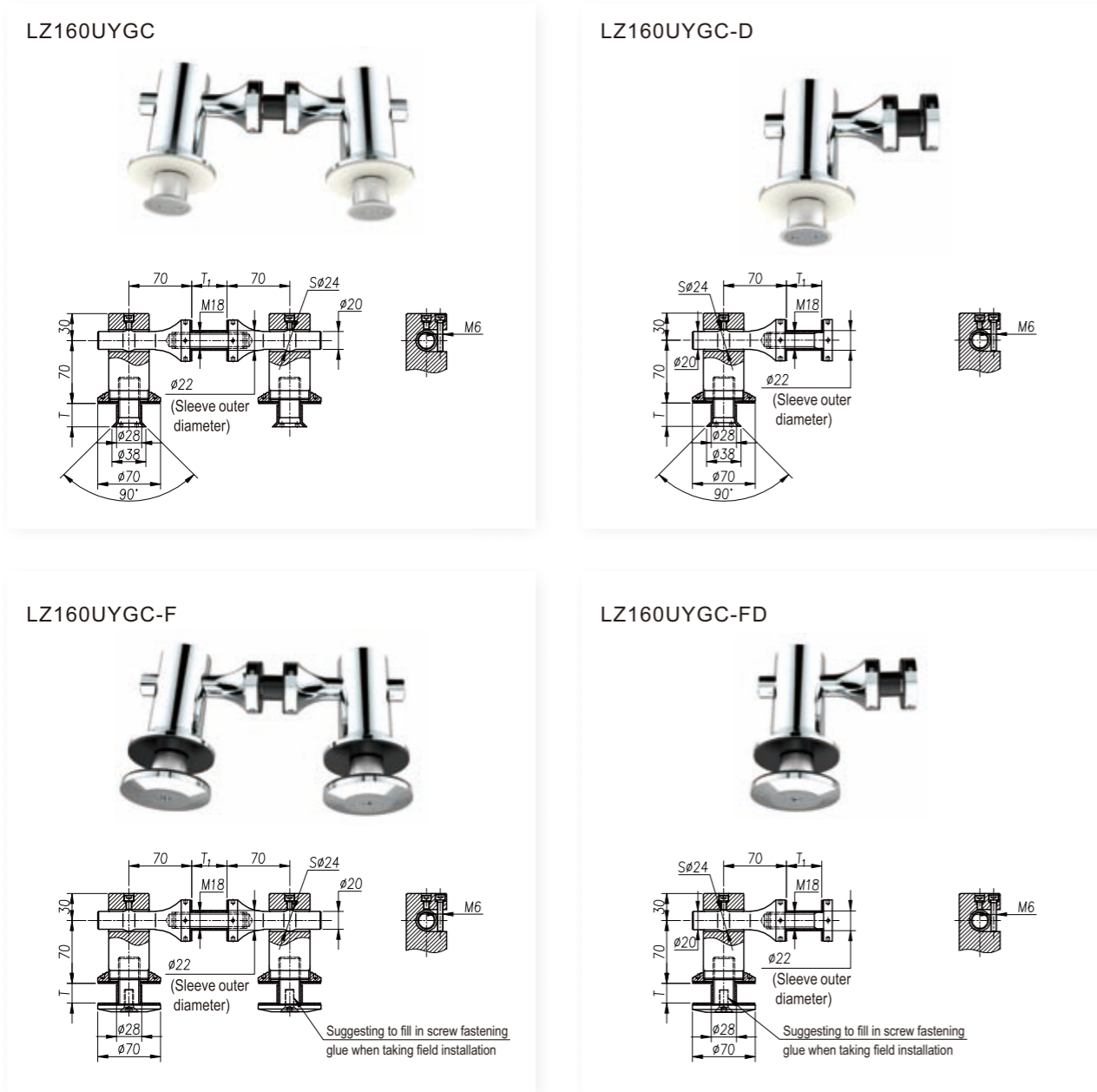
| Model | Size | | | | | The Recommended Value of Load Capacity(N) | Main material:CF8M、CF8 | | Main material:CD3MN | |
|--------------|------|-----|----|-----|---|---|------------------------|------|---------------------|-----|
| | A | B | C | D | T | | Fx≤ | Fy≤ | Fx≤ | Fy≤ |
| L220D Series | 220 | 100 | 65 | 170 | — | 2500 | 1500 | 3300 | 2000 | |
| L250D Series | 250 | 115 | 90 | 195 | — | 2500 | 1500 | 3300 | 2000 | |



Note: 1. Please place the order with note of removing rubber washer or nylon sleeve while they are not needed in the order.
 Please drill according to the bolt dimension.

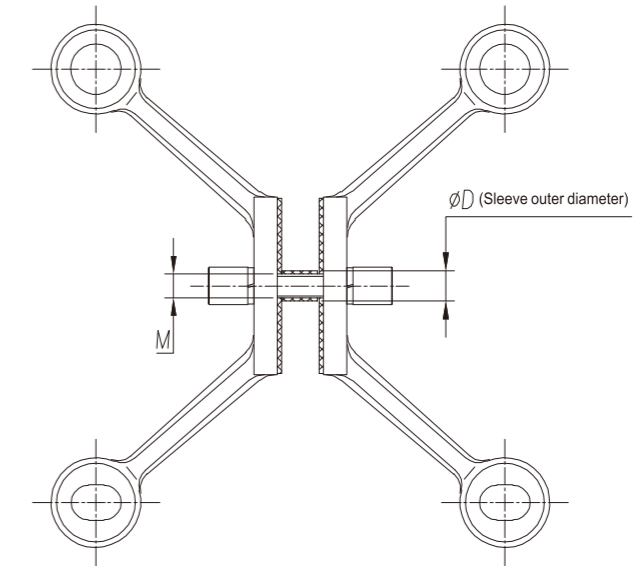
| The Recommended Value of Load Capacity(N) | Model | Main material:CF8M、CF8 | | Main material:CD3MN | |
|---|--------|------------------------|------|---------------------|------|
| | | Fx≤ | Fy≤ | Fx≤ | Fy≤ |
| | L300C | 3000 | 1500 | 3900 | 2000 |
| | L240D | 3500 | 1000 | 4500 | 1300 |
| | L300CY | 3000 | 1500 | 3900 | 2000 |
| | L300CN | | | | |

Fin Glass Drilling Diagram

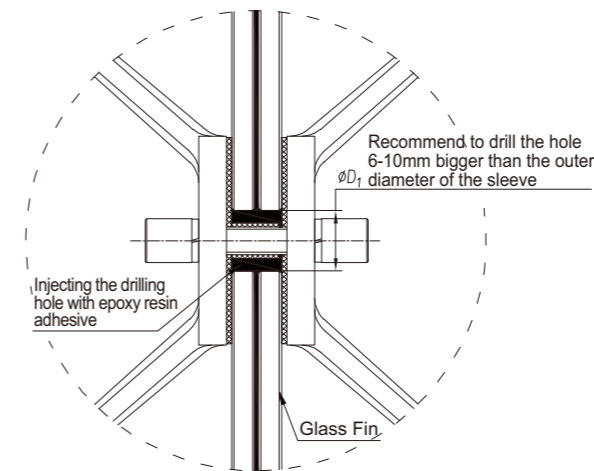


Note: 1. Facade glass thickness for standard items is: $8 \leq T \leq 26$ mm;
 2. Please place the order with note of removing rubber washer or nylon sleeve while they are not needed in the order.
 Please drill according to the bolt dimension.

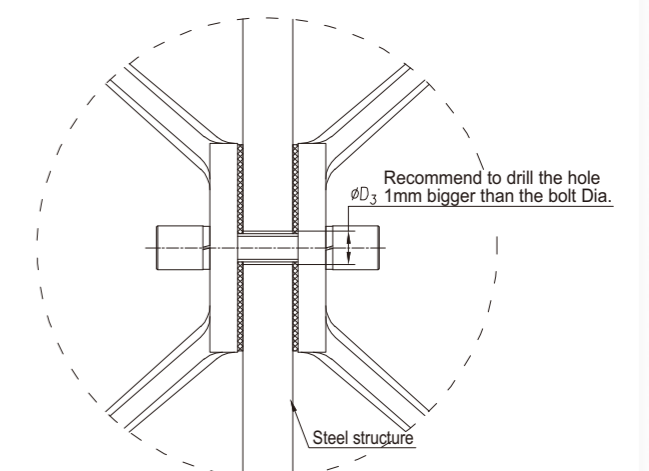
| The Recommended Value of Load Capacity(N) | Model | Main material:316, 304 | |
|---|--------------|------------------------|------------|
| | | $F_x \leq$ | $F_y \leq$ |
| | LZ160UYGC | 2000 | 1000 |
| | LZ160UYGC-D | | |
| | LZ160UYGC-F | | |
| | LZ160UYGC-FD | | |



The diagram of fin spider



The clamping type of glass fin



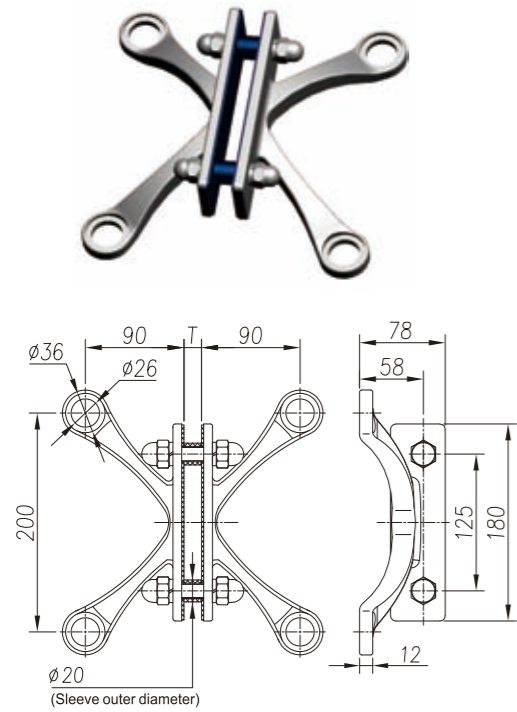
The clamping type of steel fin

Note:

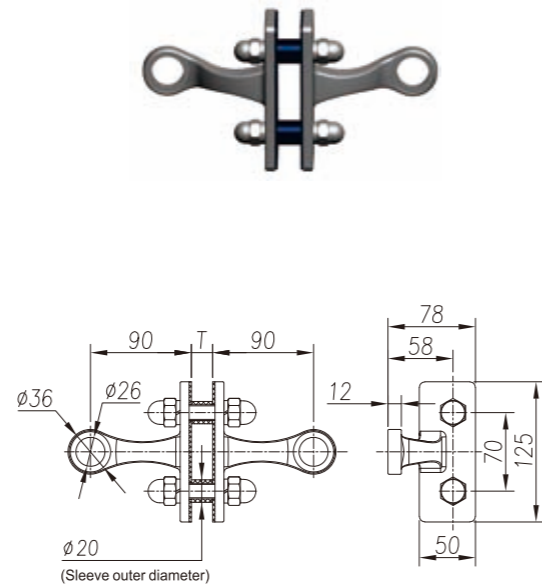
- When installing the fin suspending clamp to fin glass, big drilling is recommended and epoxy resin adhesive must be injected into the glass hole;
- When installing the fin suspending clamp to steel fin, no need nylon sleeve generally, the drilling diameter is 1mm bigger than the bolt diameter;
- The above glass drillings are for reference only.

Customized Product

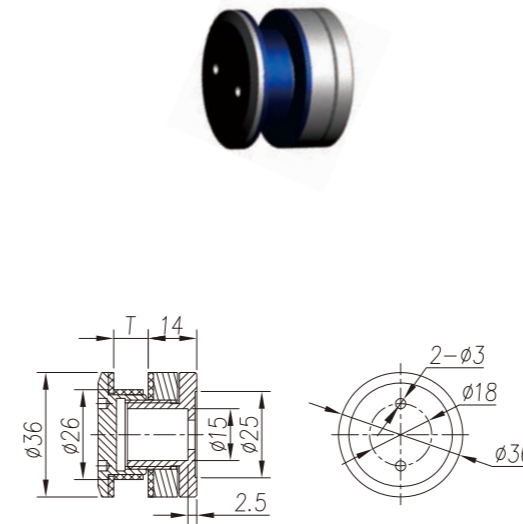
L200RA-190008



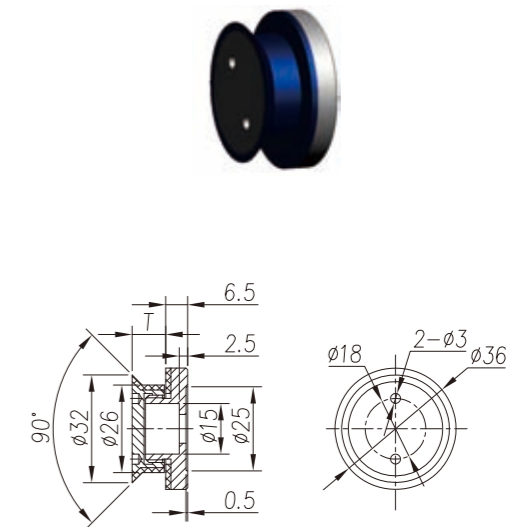
L200RA-190016



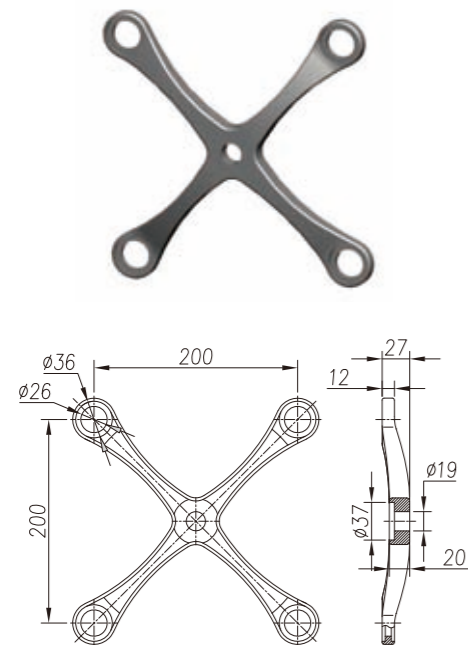
FBPJ-190457



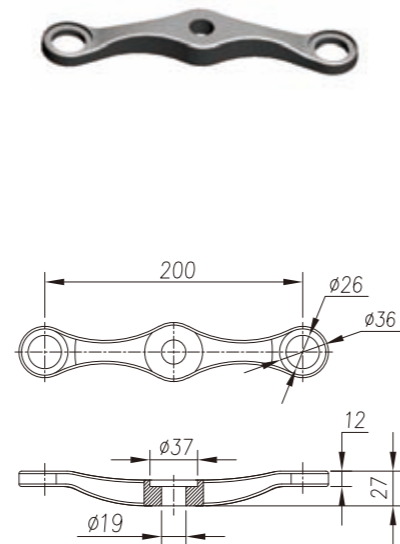
FBPJ-190450



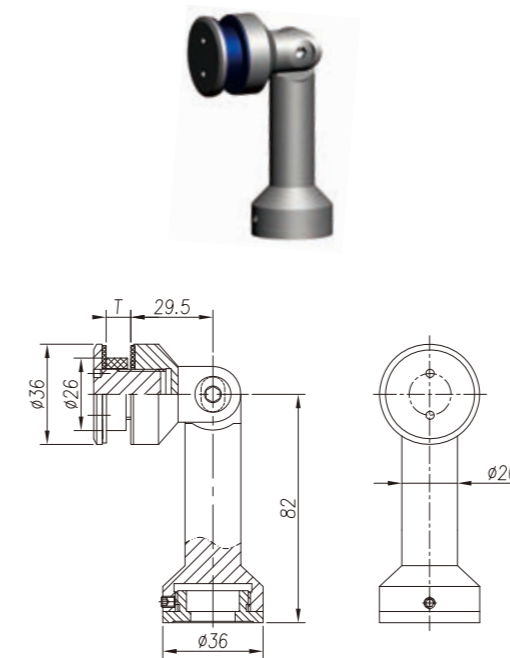
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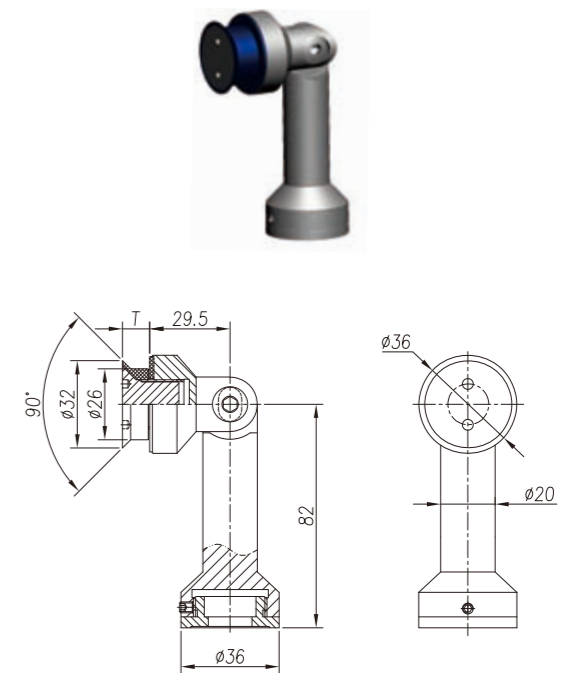
200RA-190004



FBPJ-190460

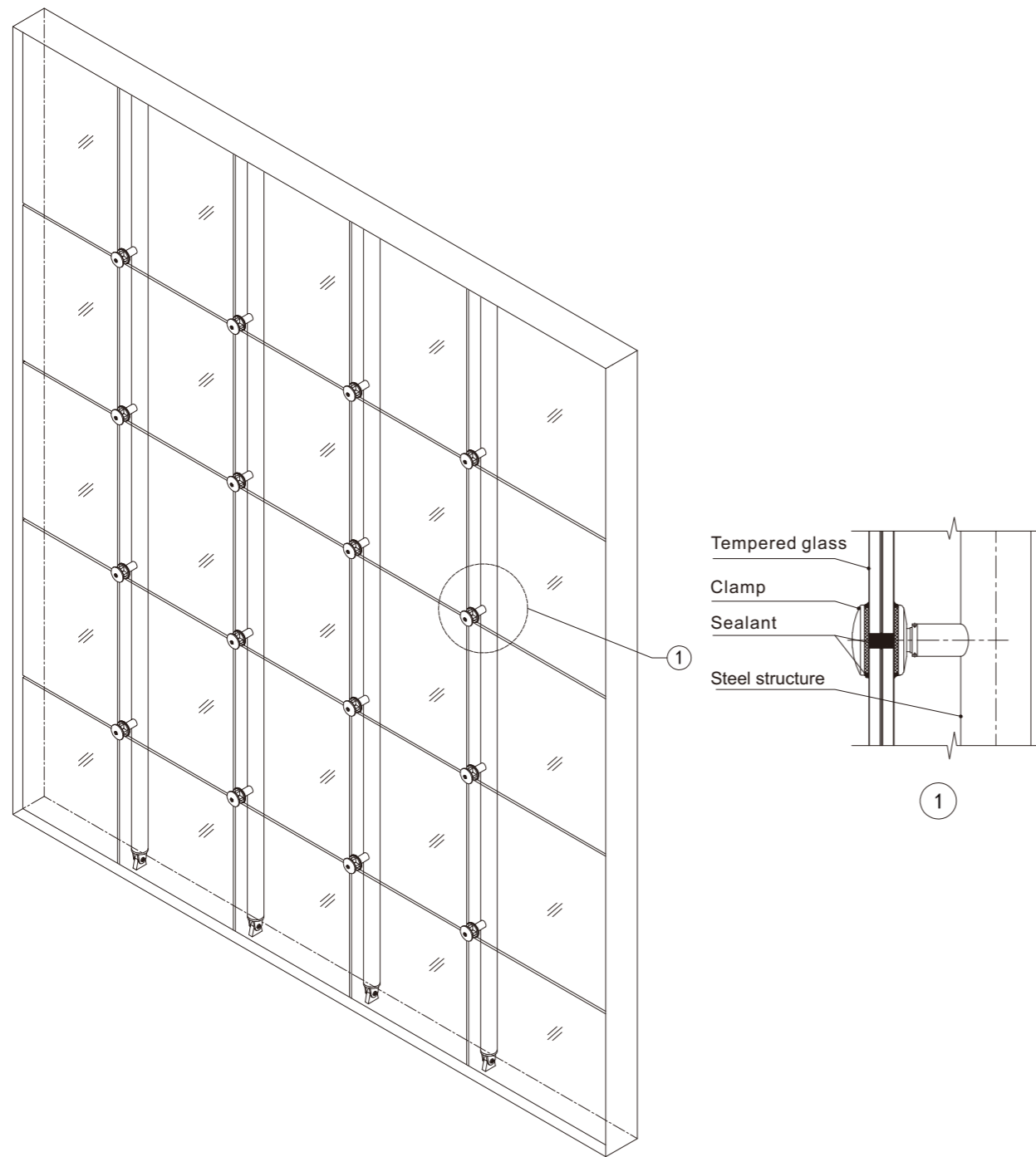


FBPJ-190454

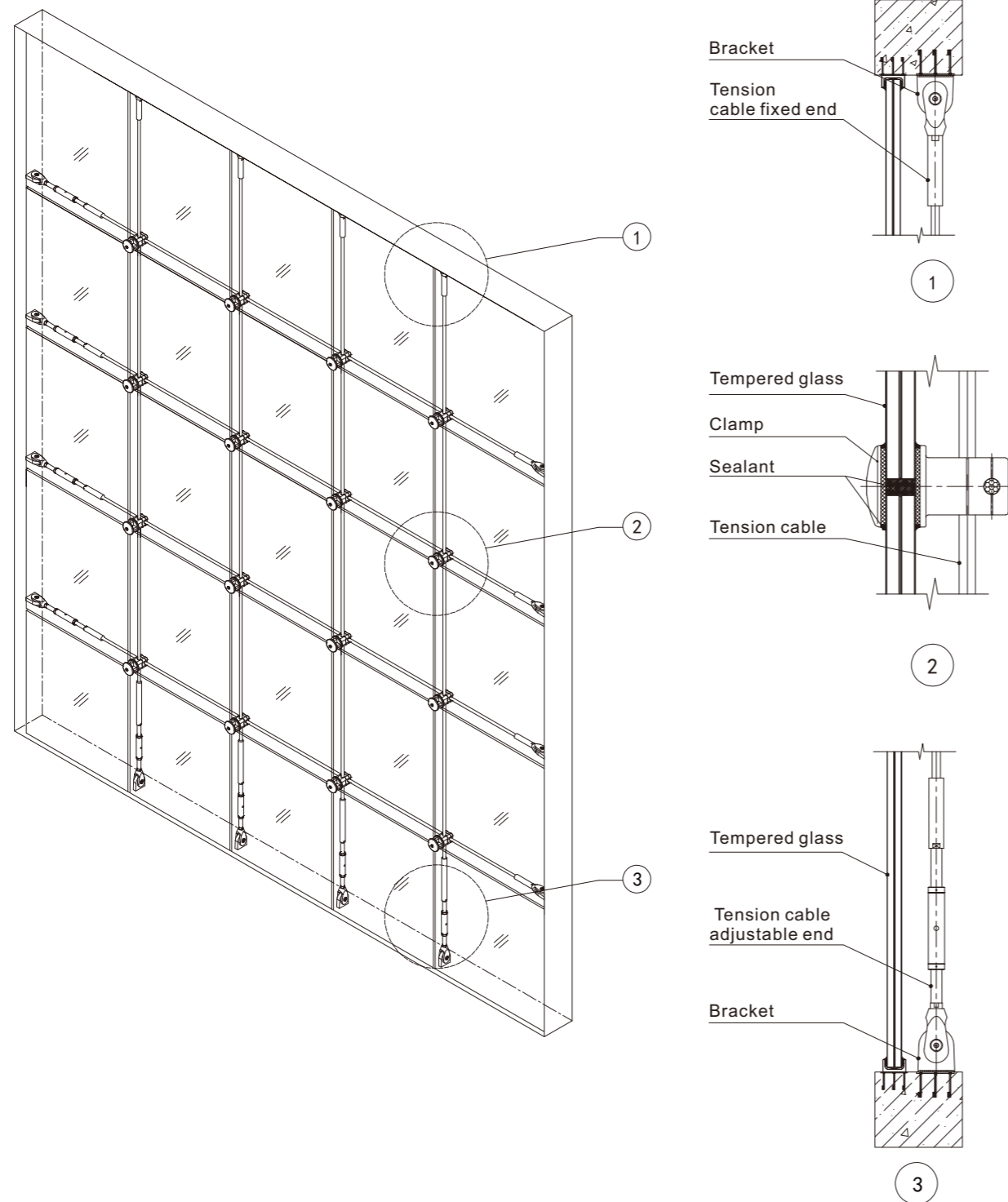


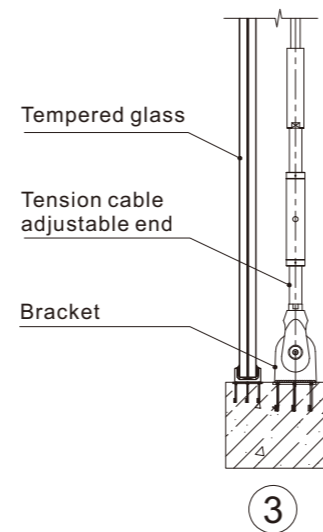
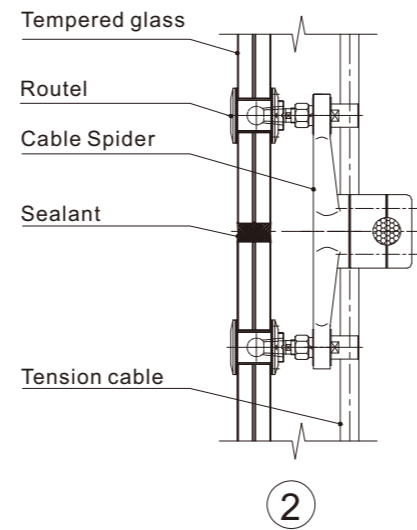
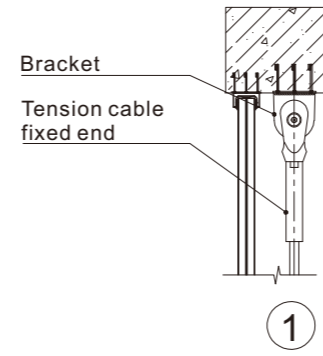
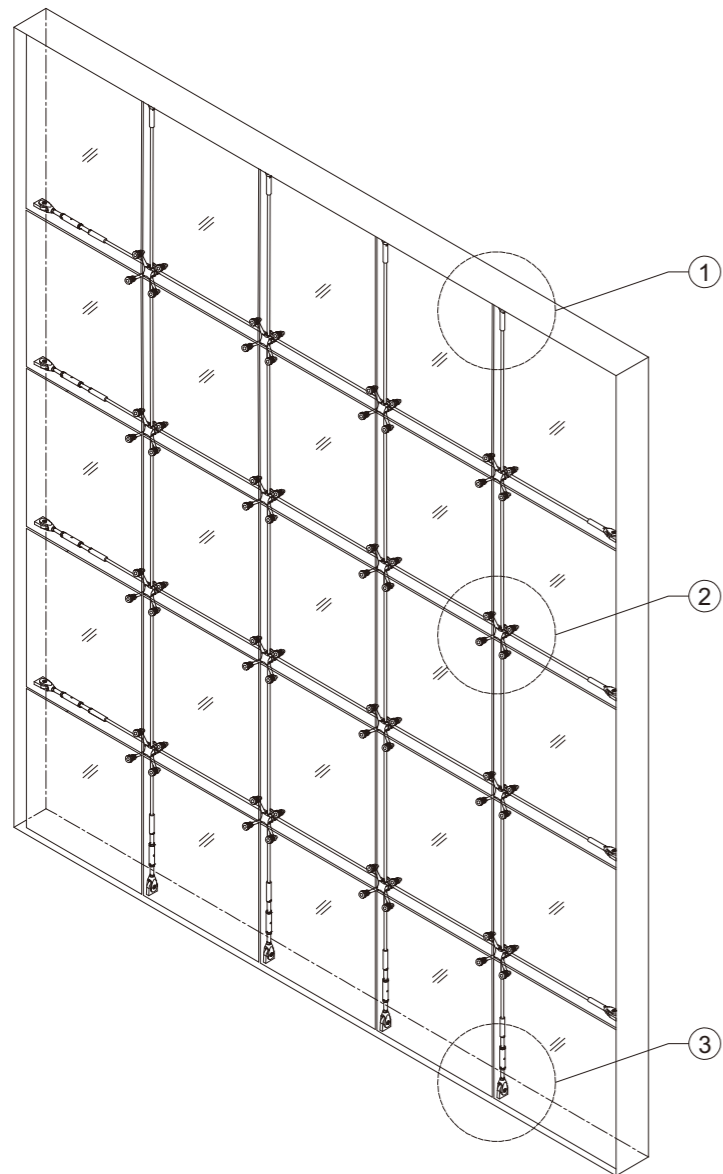
Note: Glass thickness T=10-12mm

Regular Curtain Wall System

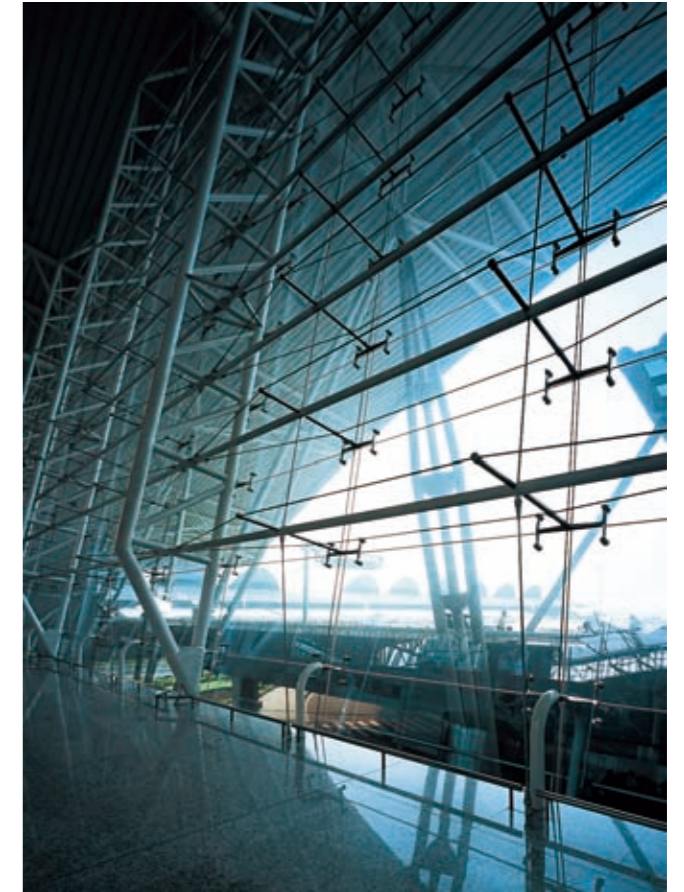
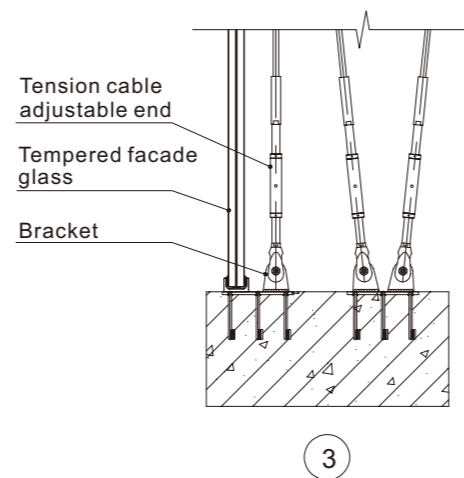
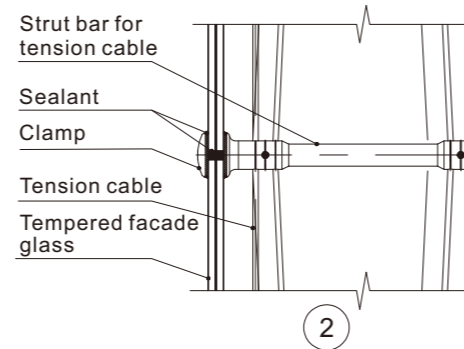
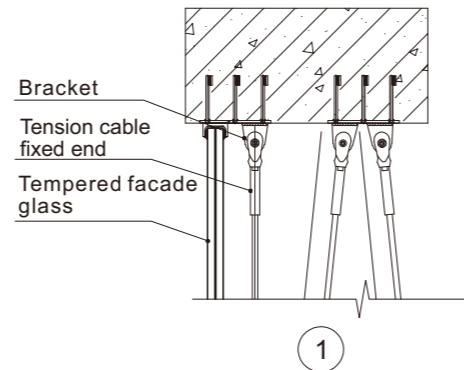
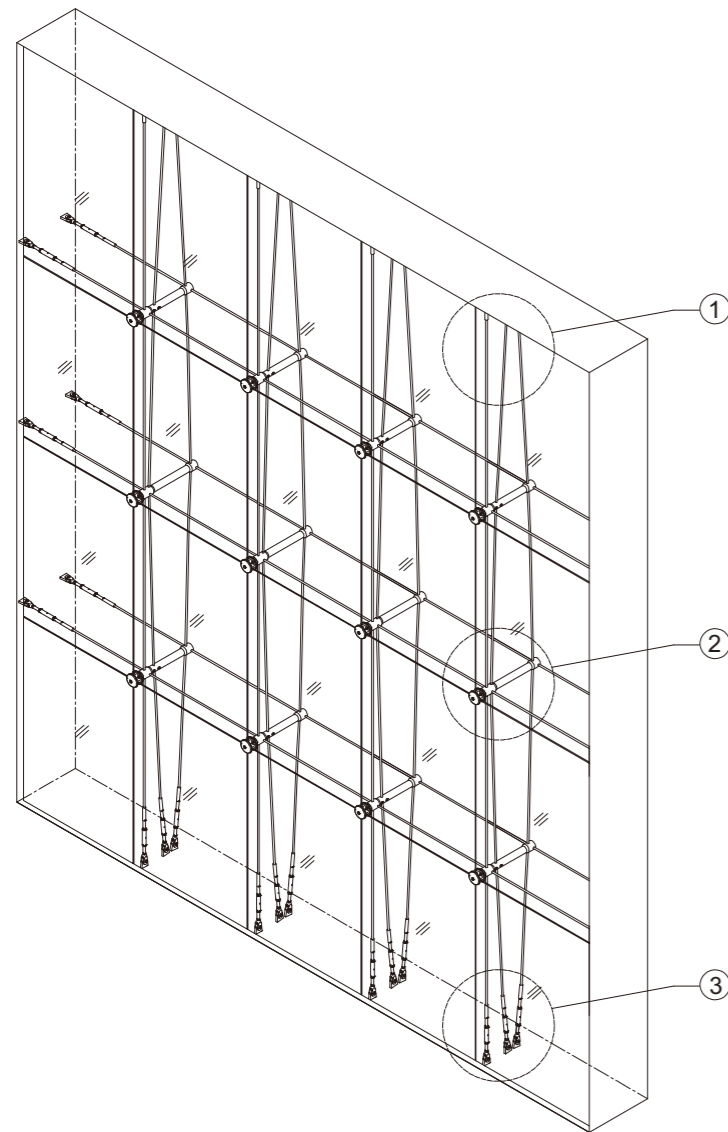


Single-layer Cable Net Glass Curtain Wall System

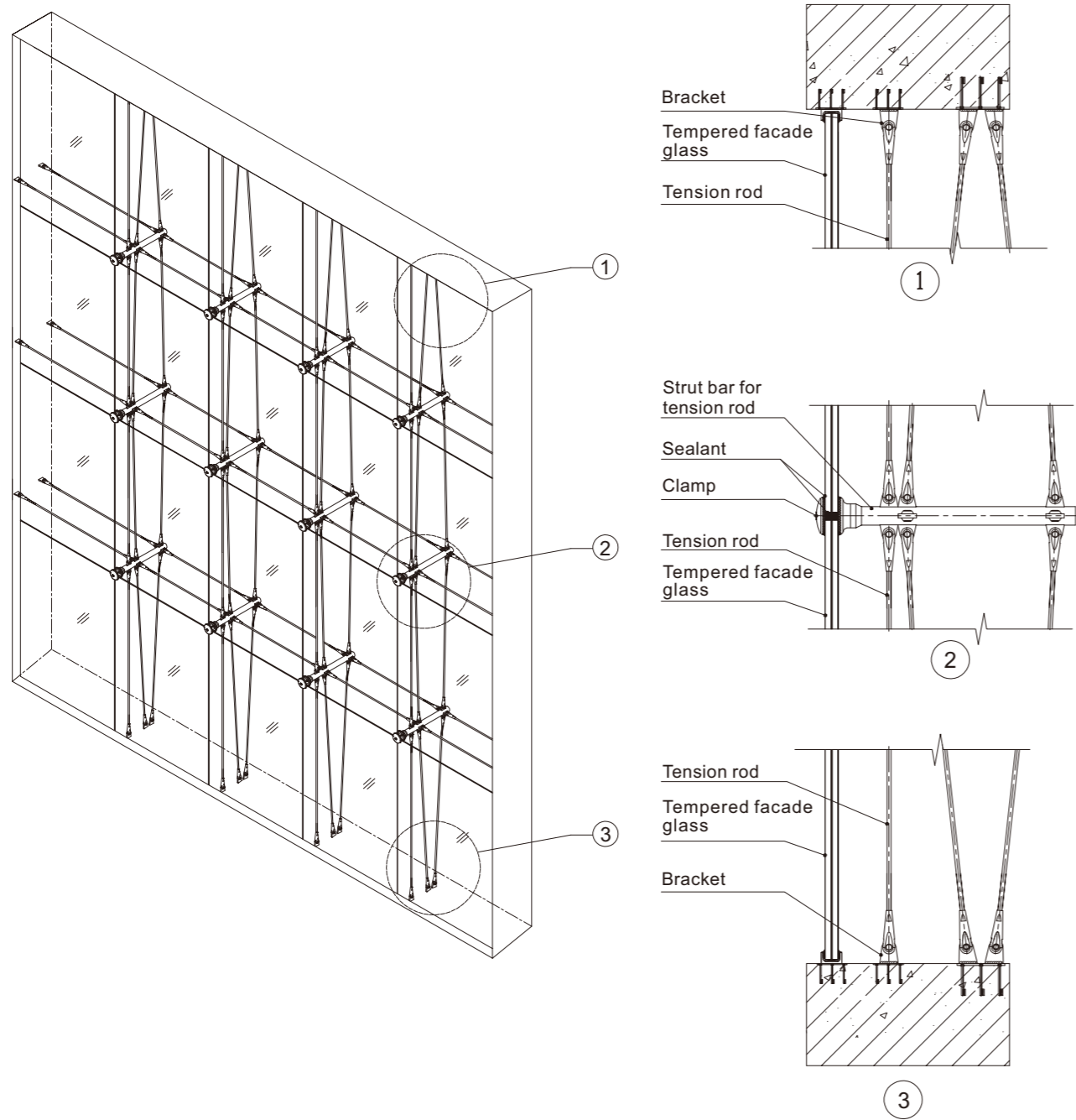




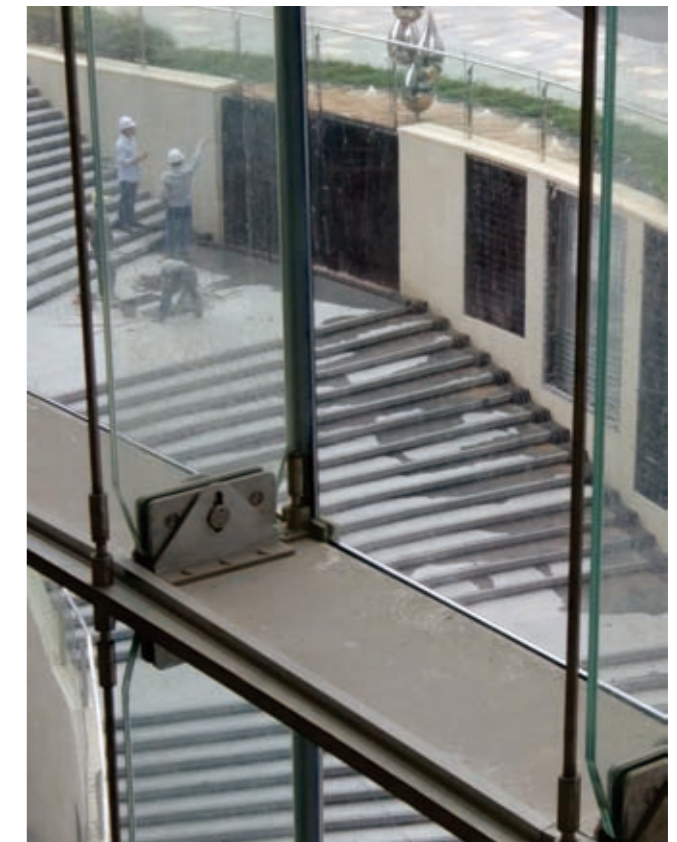
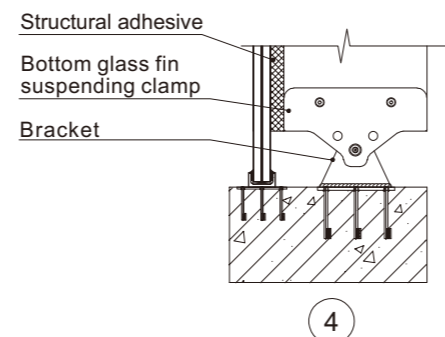
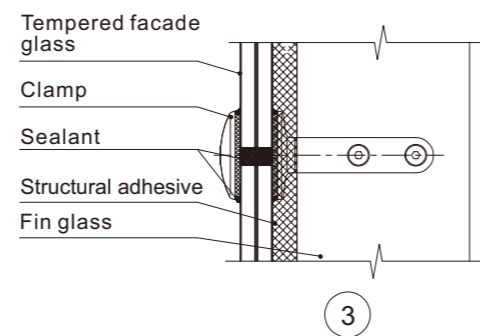
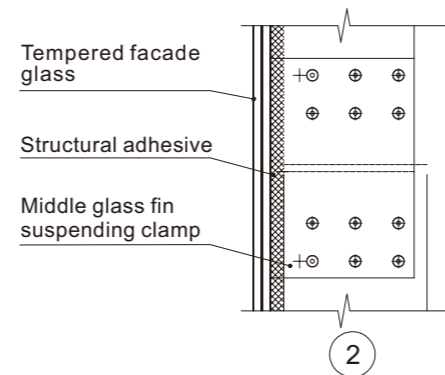
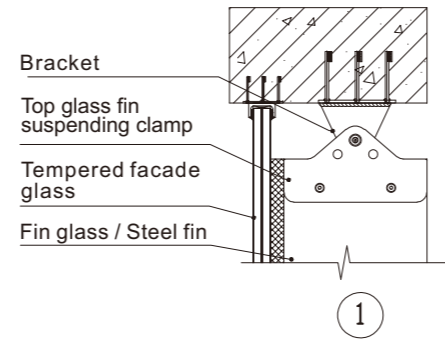
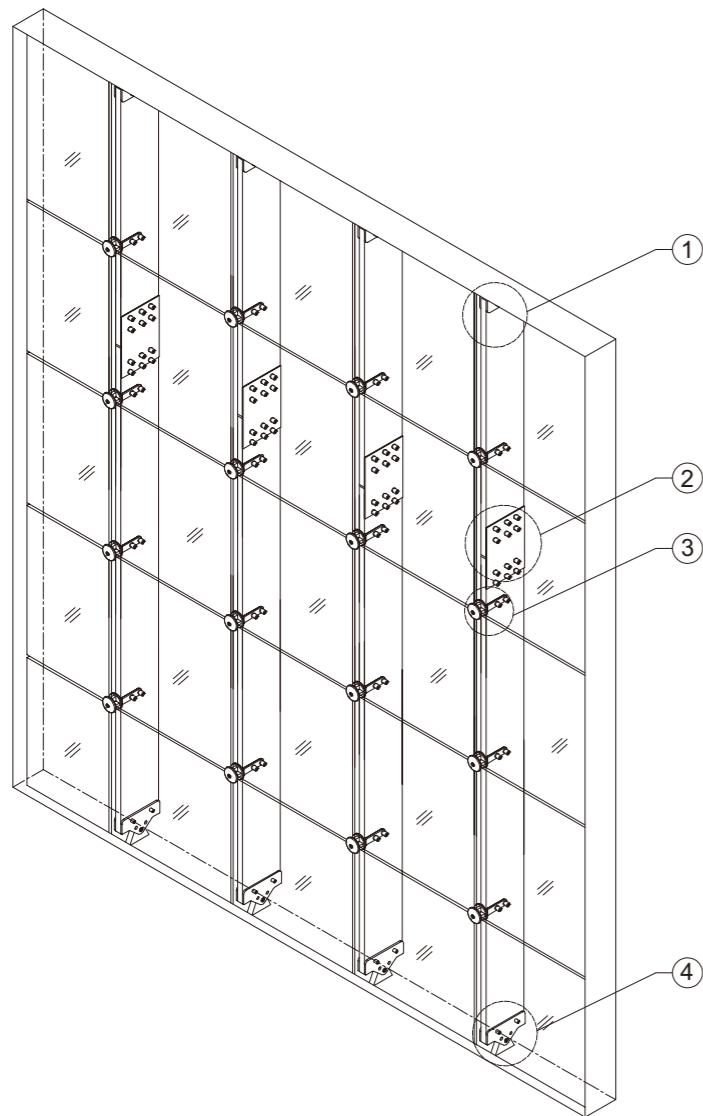
Cable Truss Glass Curtain Wall System



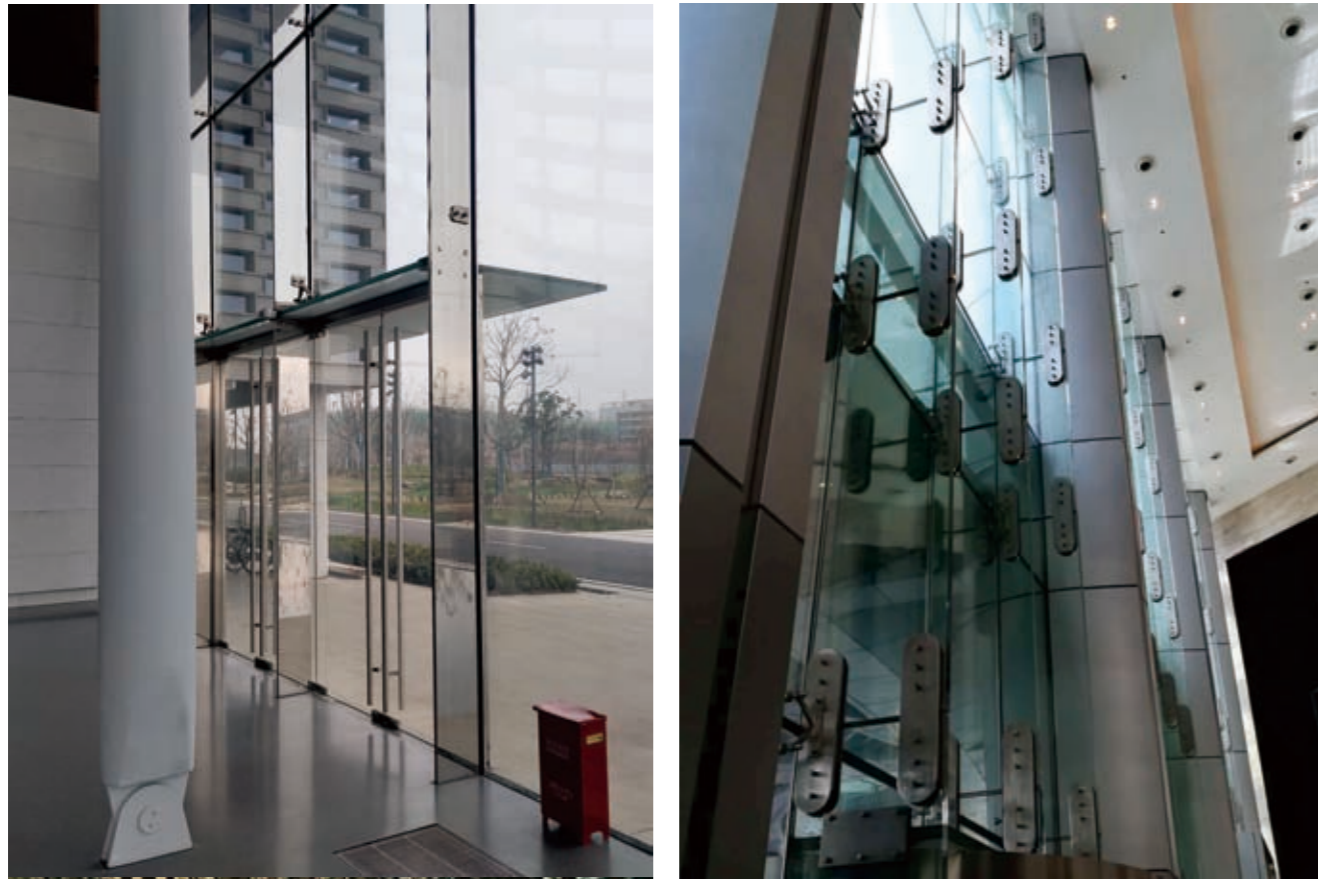
Rod Truss Glass Curtain Wall System



Fin Glass Curtain Wall System



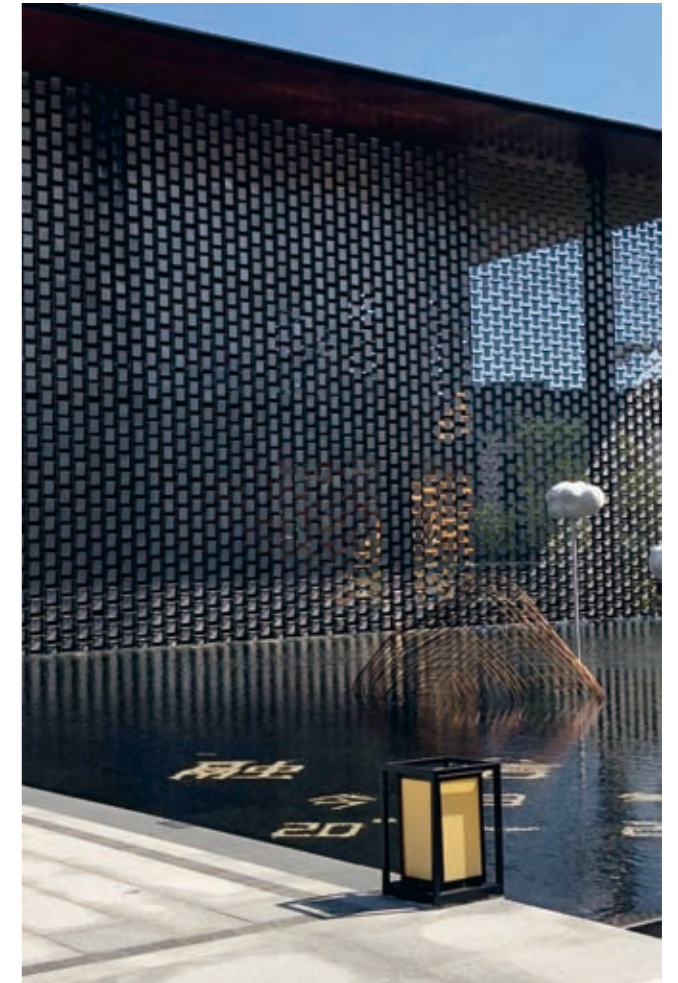
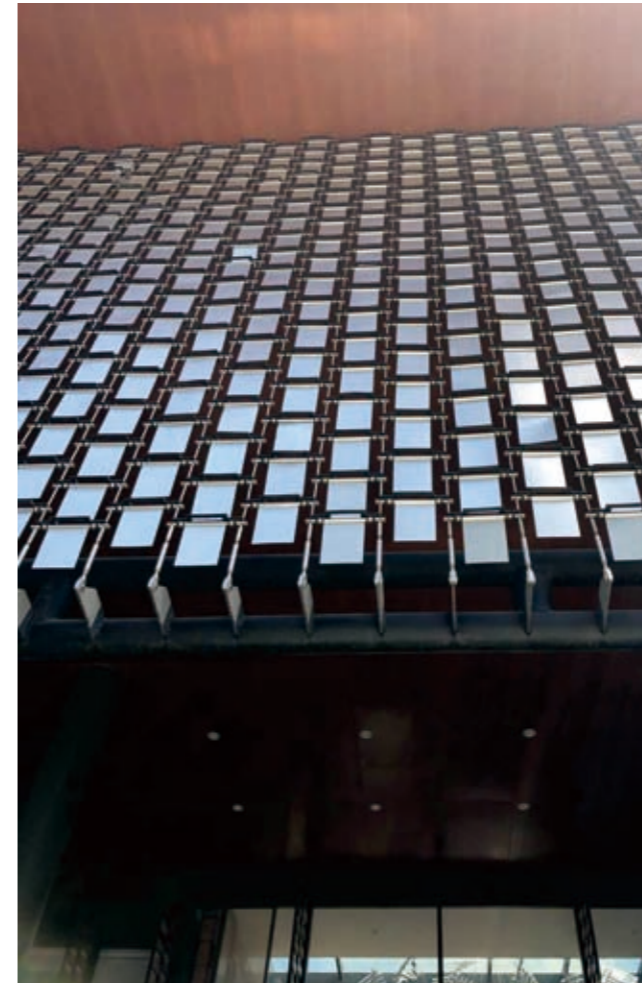
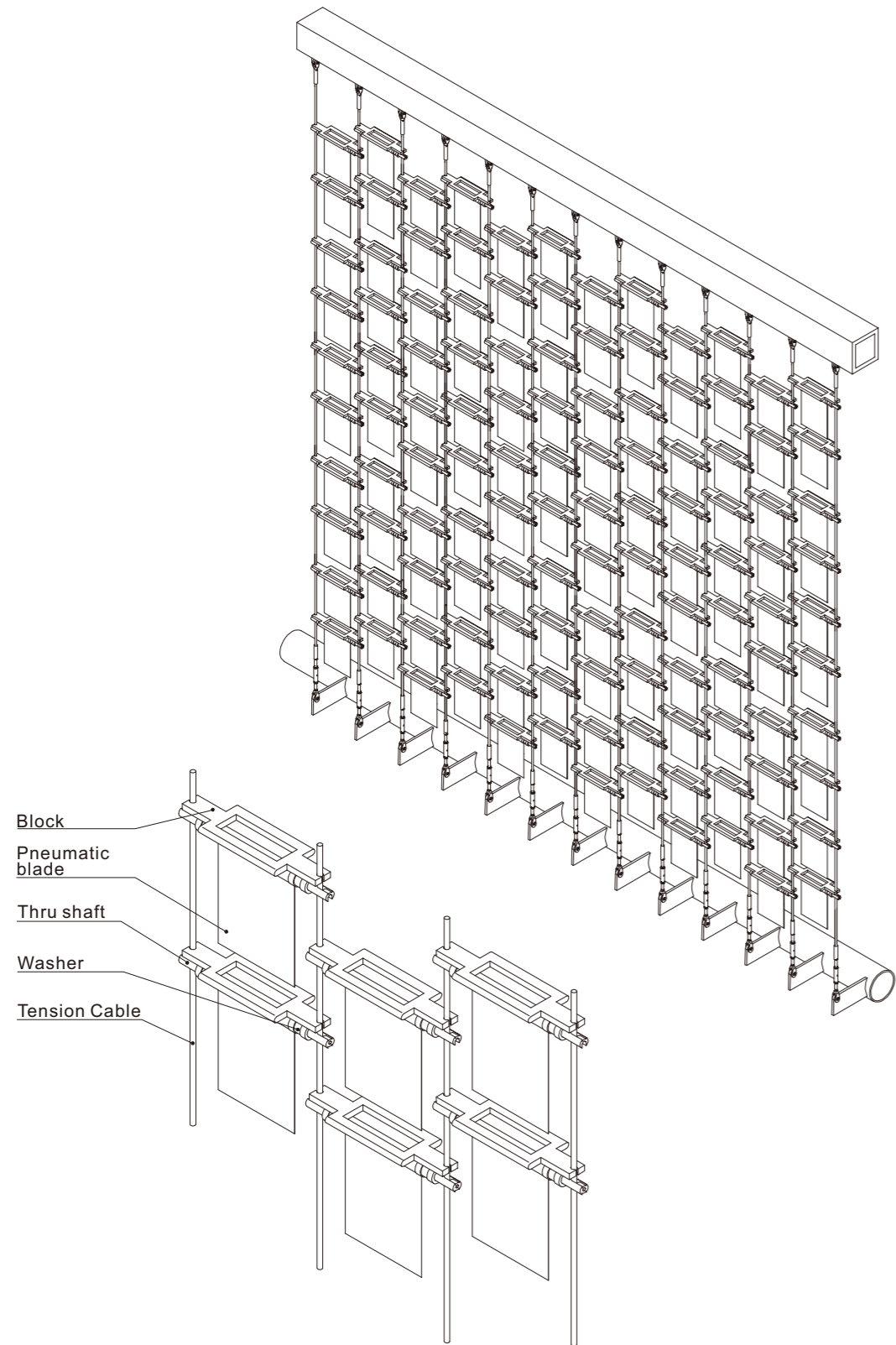
Steel Fin Curtain Wall System

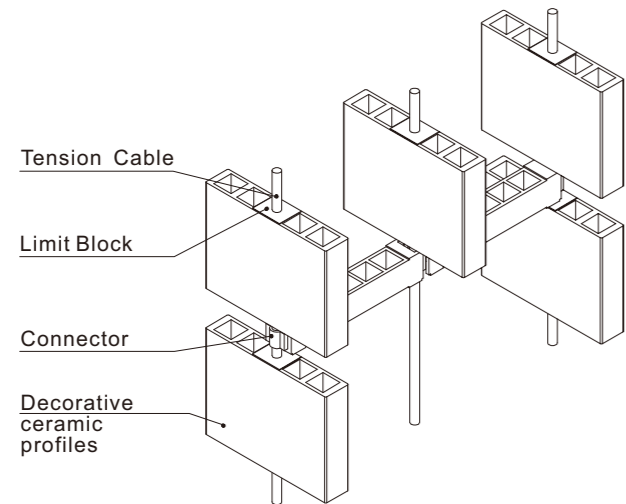
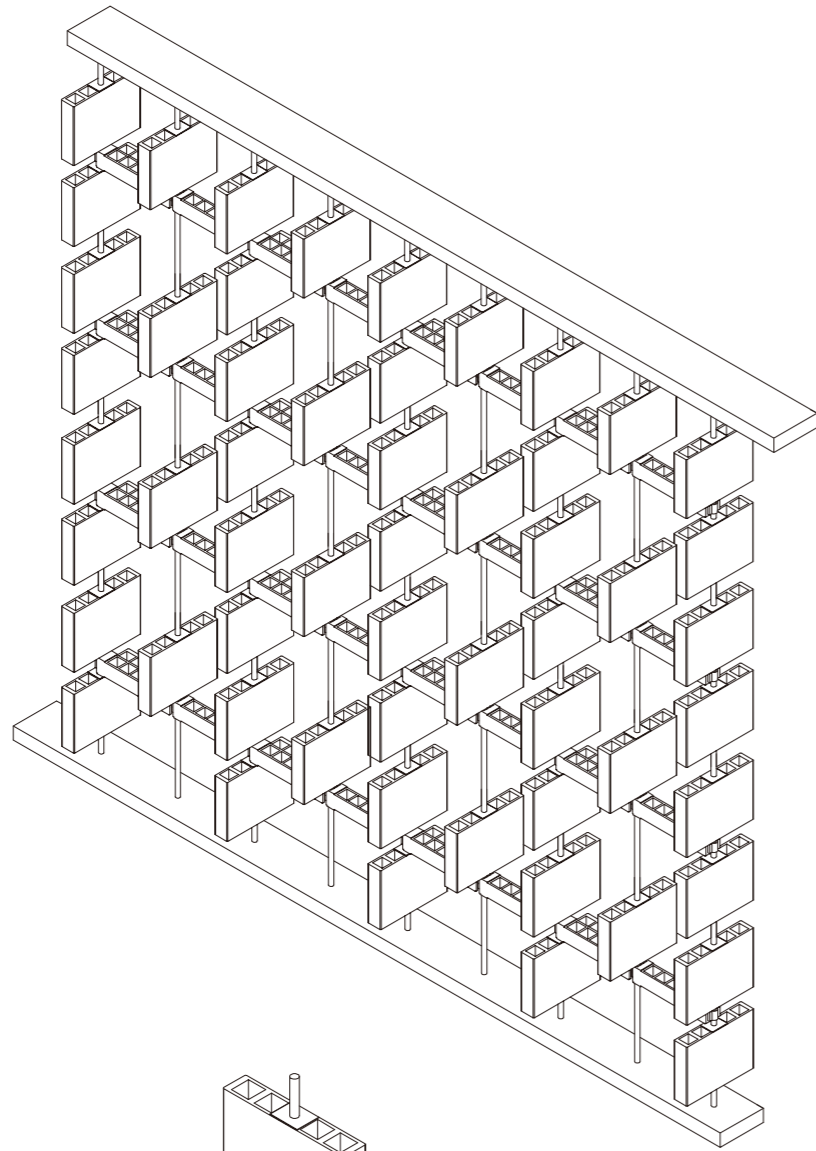


Glass Fin Curtain Wall System

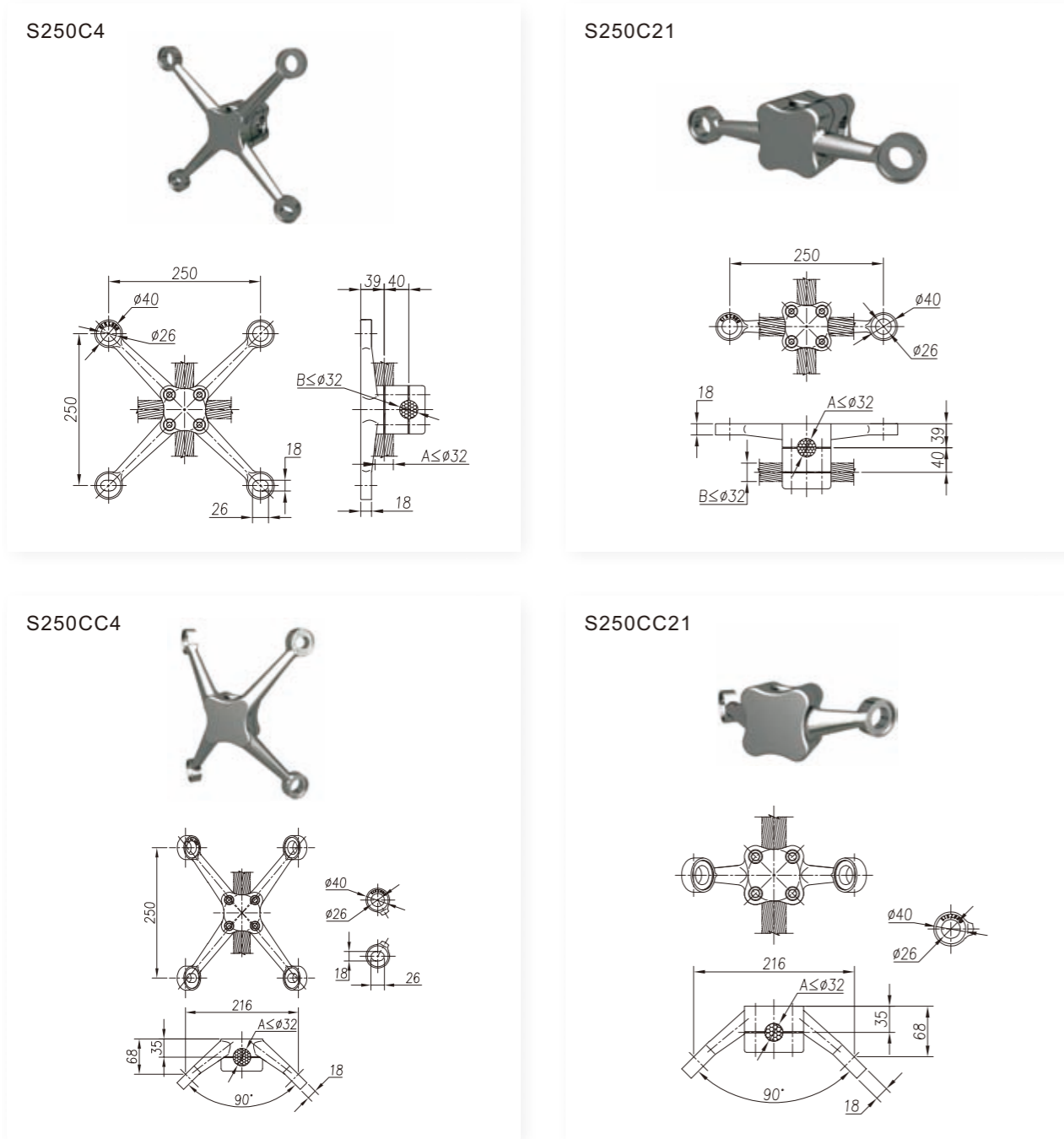


Decorative Curtain Wall System

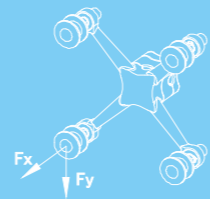




Cable Spider



| The Recommended Value of Load Capacity(N) | Model | Material:CF8M、CF8 | | Material:CD3MN | |
|---|--------------|-------------------|------|----------------|------|
| | | Fx≤ | Fy≤ | Fx≤ | Fy≤ |
| | S250C Series | 2500 | 1500 | 3300 | 2000 |
| S250CC Series | | | | | |



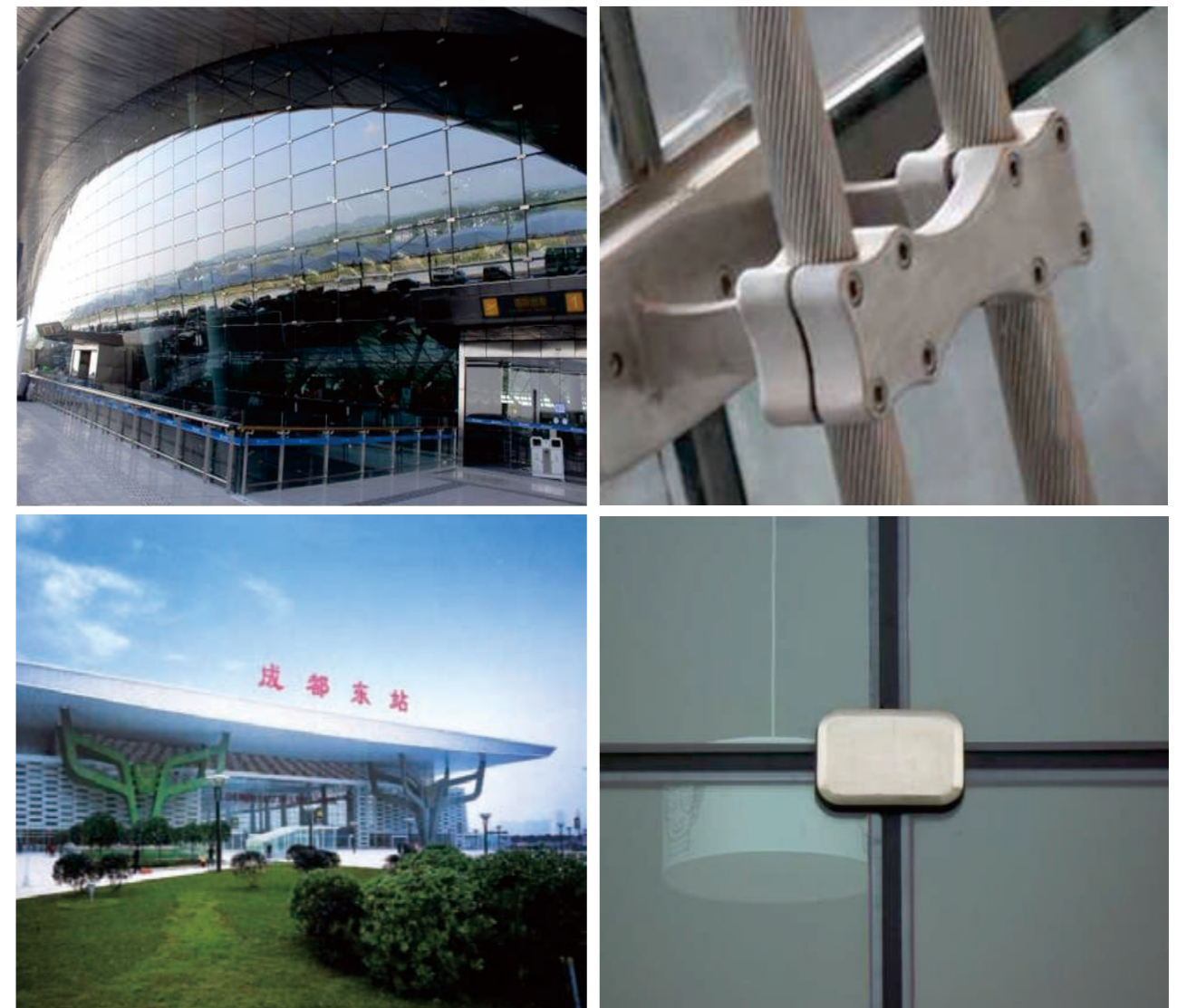
Clamp

I. Clamp supporting advantages:

1. Simplified structure, lower cost;
2. No need drilling hole, can avoid glass manufacture defects and reduce the drilling cost;
3. No hole sealing issue of double glazing.
4. Lots of washers type for different project options.
5. Clamp hole the panel close to the structure which reduce the bending effect from the dead load
6. The appearance can be customized.

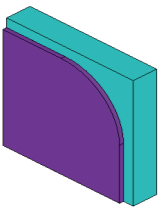
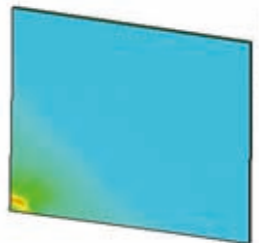

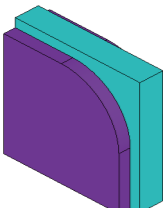
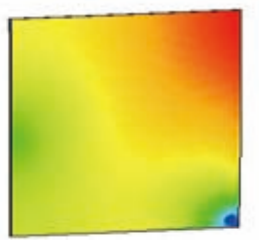
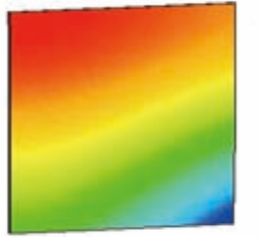
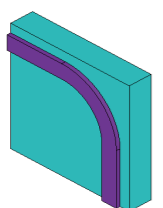
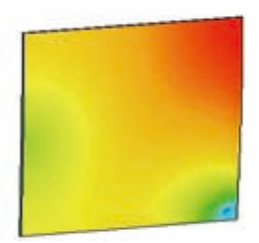

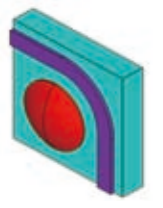
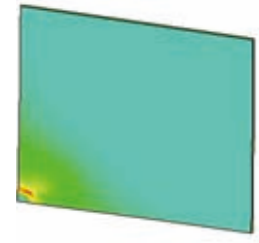

II. Clamp supporting disadvantages:

1. Dead load be beared by the bottom of glass causing glass bending.
2. Supporting plates locate at the glue-line , so curtain wall glue-line need to be designed more wider;
3. Since clamp loading point is on the corner, glass calculation span will not be reduced.
4. Large dimension of hardware.
5. Having a long glue side and located at the glue-line, so it has a high construction requirement for silicone sealant.



III. The glass loading features under the clamp supporting

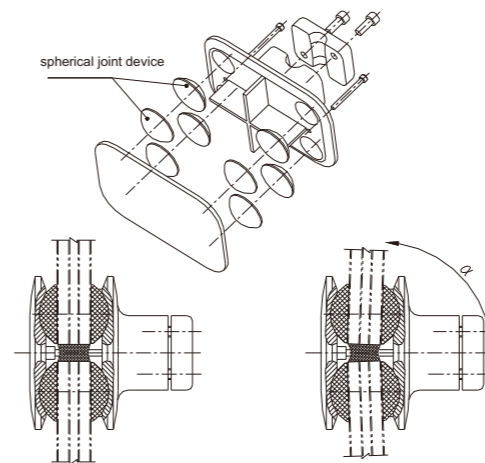
The glass loading, when it's under clamp supporting, has the relation with glass dimension, thickness, shape, etc. After the glass dimension confirmed, the glass loading will be more effected by clamp gasket. Common gasket supporting type and loading features as following:

| Corner Supporting Manner | Stress (N/mm ²) | Deflection (mm) | Features |
|---|---|---|---|
|  <p>2mm rubber gasket</p> |  <p>maximum stress 55.702N/mm²</p> |  <p>maximum deflection 37.955mm</p> | The thinner the gasket, the greater the constraint on the rotation of the glass corner. The analysis result shows that the stress is large and the deflection is small. |
|  <p>6mm rubber gasket</p> |  <p>maximum stress 41.315N/mm²</p> |  <p>maximum deflection 46.326mm</p> | The thicker the gasket, the smaller the constraint on the rotation of the glass corner. The analysis result shows that the stress is small and the deflection is large. |
|  <p>2mm banded rubber gasket</p> |  <p>maximum stress 40.073 N/mm²</p> |  <p>maximum deflection 43.369mm</p> | The narrower (or smaller) gaskets have less constraint on the rotation of the glass corners. The analysis results are small stress and large deflection. |
|  <p>Nylon spherical hinge + 2mm banded rubber gasket</p> |  <p>maximum stress 46.427N/mm²</p> |  <p>maximum deflection 38.624mm</p> | The constraint of the spherical hinge on the corner of the glass is actually determined by the peripheral gasket (or glue joint). In this case, the analysis result is that the stress is large and the deflection is small. It has big difference with the simple spherical hinge support. |

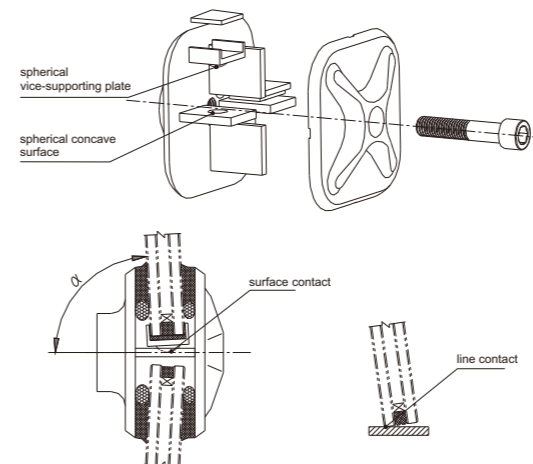
Analysis & Conclusion:

- In the above comparison, the glass specification is 1800mm*2000mm. Glass type is 12mm tempered glass. Wind stress is 2.0Kpa. Glass strength design value is 84 N/mm².
- From the comparison, the more rotating restrain capacity of corner supporting, the bigger glass stress but the smaller deflection. So put more restrain to the glass corner, the deflection will decrease. (or less glass thickness)
- The main purpose of this analysis is contrast different supporting glass force features. The result accuracy just can responsible for the model. And it may be small difference between other models. This analysis for reference only.

Lateral Spherical Joint Clamp (patent: 200820092149.7)



Supporting Spherical Joint Clamp (patent: 200920204817.5)



IV. Clamp instructions:

1. Attentions during application

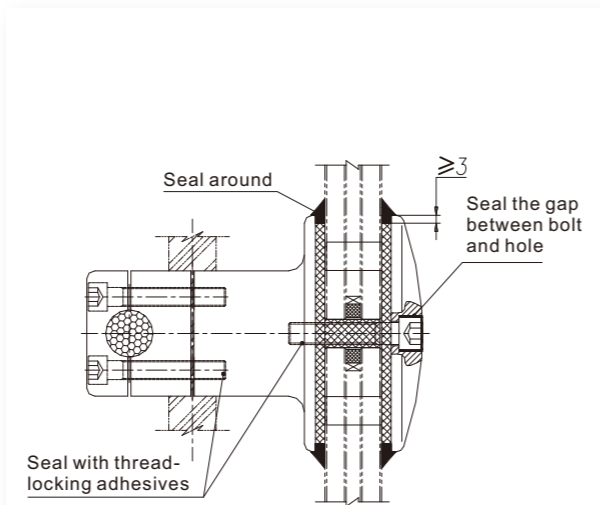
- (1) To avoid the sealant color changing to yellow (as below picture) and effect the appearance, so suggesting choose black sealant.
- (2) Before sealing, suggest to dye or compatibility test between the glue and gasket according to the manufacture standard.
- (3) Sealant suggesting use it with neutral silicone weather-proof attributes.
- (4) The glue area must be clean before sealing, and the exact requirement can consult the supplier.

2. Sealing measurement

- (1) RG unilateral distance design should be ≥ 3 mm between clamp edge and two glass facade sides.
- (2) Clear the glue area before sealing and glue continuously to provide good glue-line. guarantee the glue-line quality.

3. Anti-loose measurement

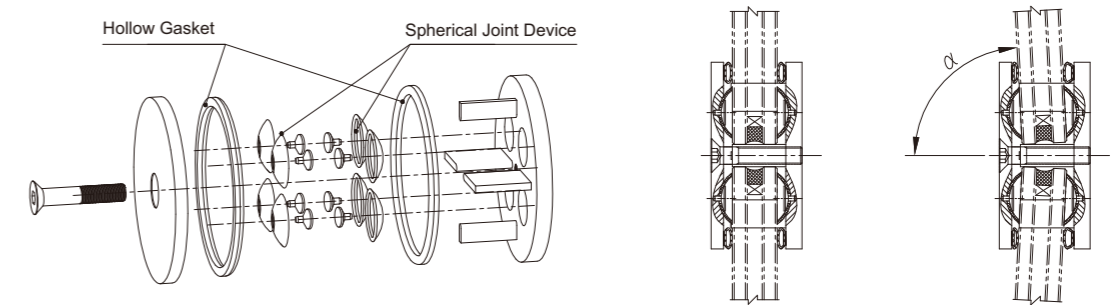
Suggest to lock the screw with thread-locking adhesives to prevent clamp screw from loose after long time vibration.



Picture One
Water Proof & Anti-loose Illustrate Diagram

V. Clamp new technique

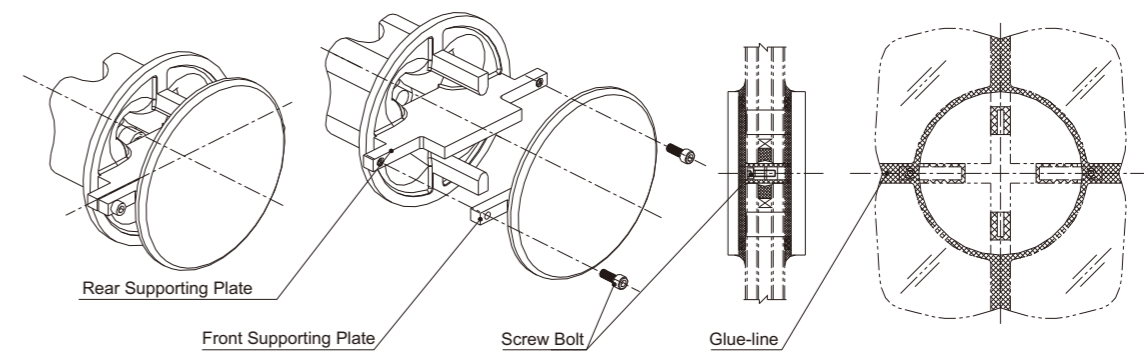
New spherical clamp



Product highlights:

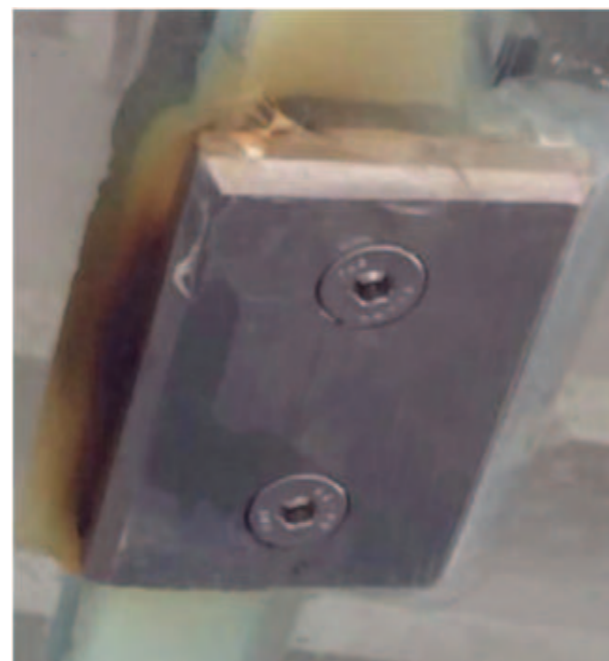
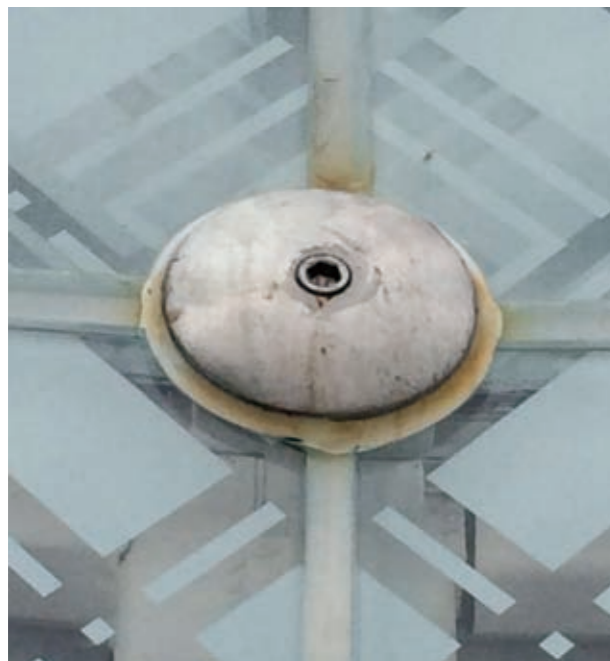
- 1. Decrease the glass restriction effect of the edge gasket and sealing, give full play to spherical joint.
- 2. No need fill in foam stick before sealing and it can get the same wide sealant, which increases the installation efficiency.

Screw concealed clamp

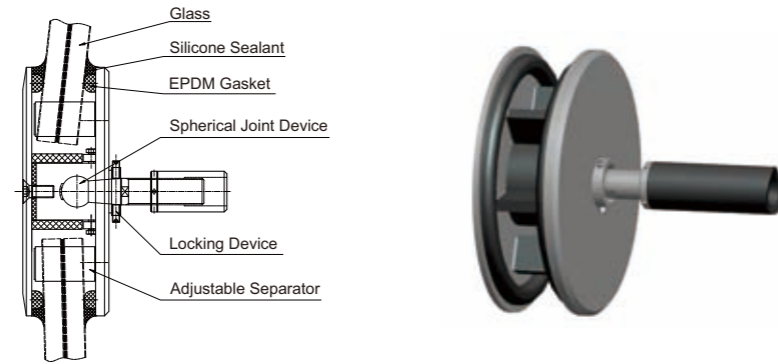


Product highlights:

- 1. The installation blot is invisible from indoor & outdoor, good appearance.
- 2. It can prevent clamp screw bolt become loose after long time vibration.
- 3. No screw hole sealing and can perfect solve the water leakage problem of screw hole screw hole water leakage.



Clamp for Curved Glass



Features of the Clamp Special for Curved Glass

1. The EPDM thick gasket, formed by injection molding, is used at the outer edge of clamp, providing point support to glass corner and adaptation to the changing of angle between glass and clamp.
2. Removable and adjustable separators are easy for the installation of multi panels in different angle.
3. The spherical joint device inside the clamp is easy for adjusting the angle of clamp. The locking device in the rear can locate the clamp after the angle adjustment, to avoid the interaction effect between glasses during installing or under stress.

Note: the adjustable separator and locator is the patent of KIN LONG, right reserved.

Project Cases:

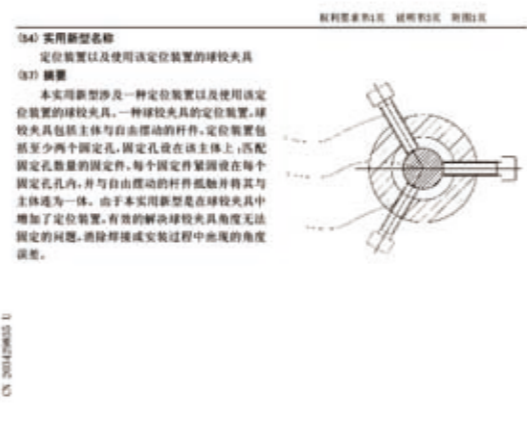
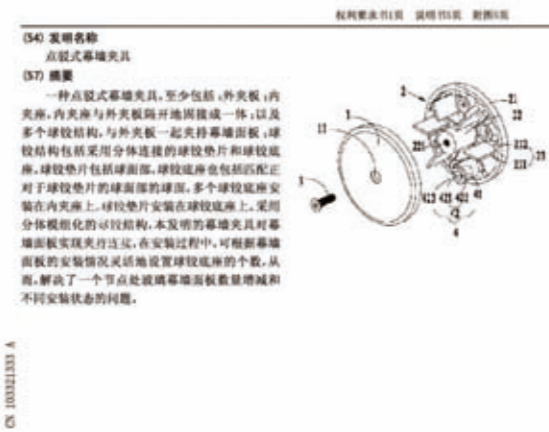
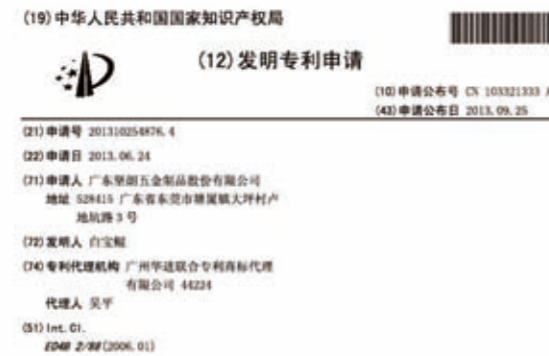
Beijing Huaifang Sports Complex // Henan Provincial Tennis Stadium // Qingdao World Horticulture Expo Park
Nanjing Xiaohonghua Art Primary School // Yunnan Science and Technology Museum // Dali Taiye International Plaza
Nanjing Xianlin Wanda MAO // Quanzhou Public Cultural Center // Yangjiang Yingxin Plaza



▲ Nanjing Small Red Flower Art Primary School



▲ Yangjiang Yingxin Plaza



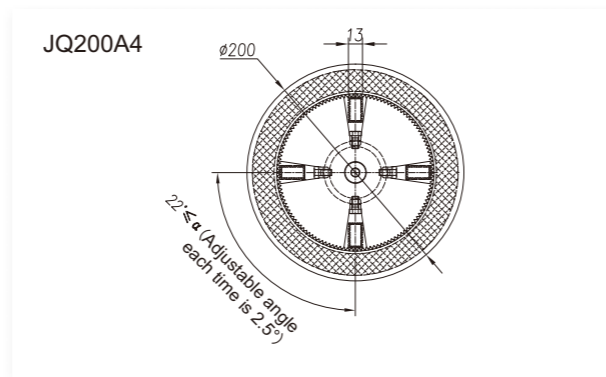
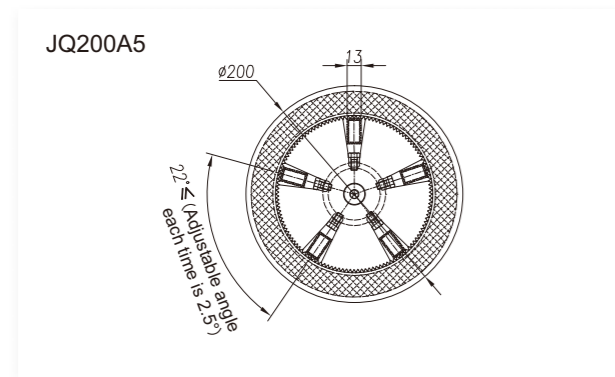
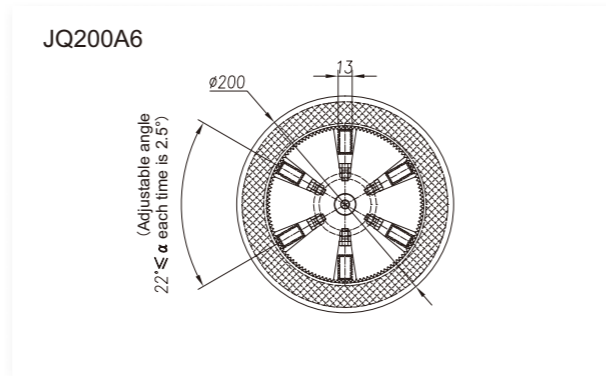
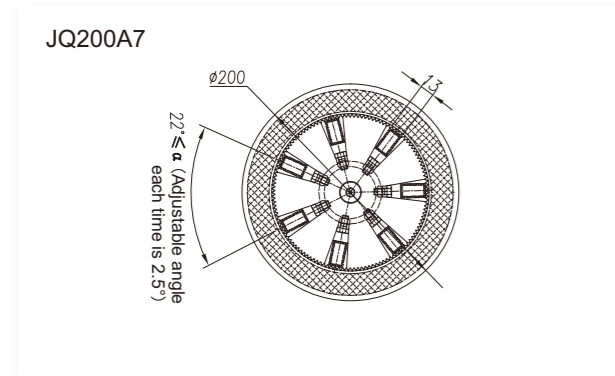
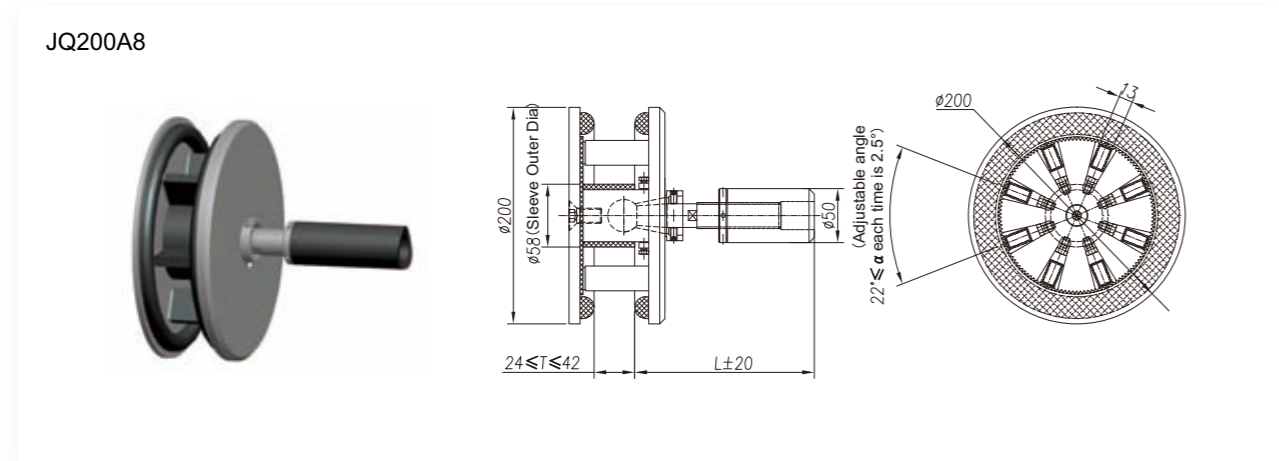
▼ Installation Section



▼ Installation Section

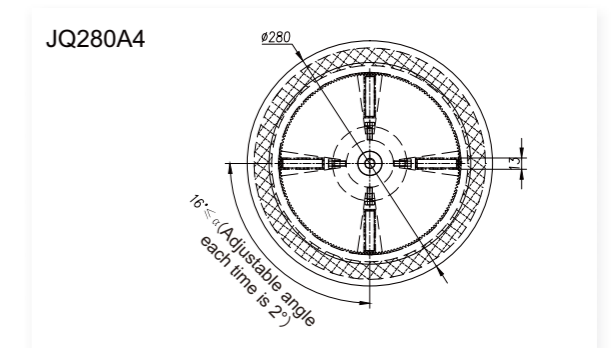
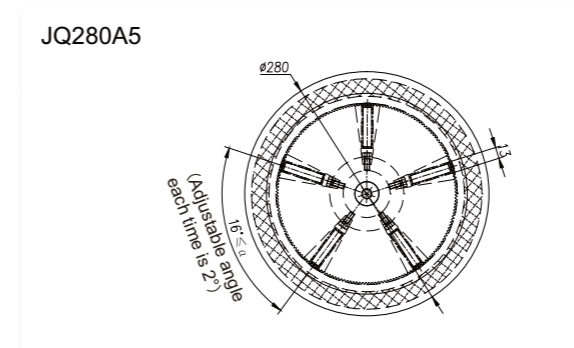
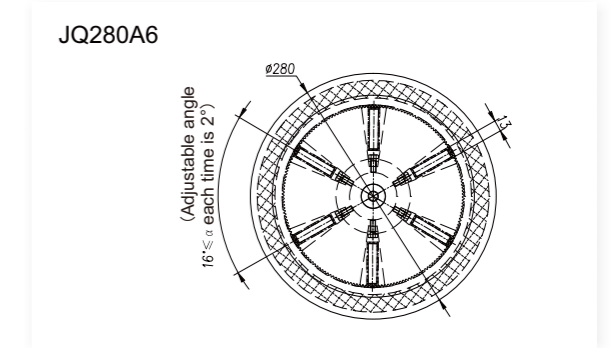
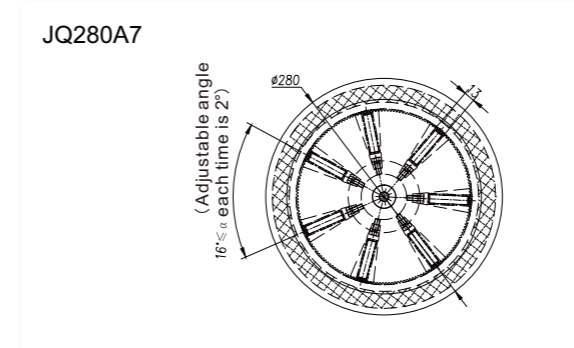
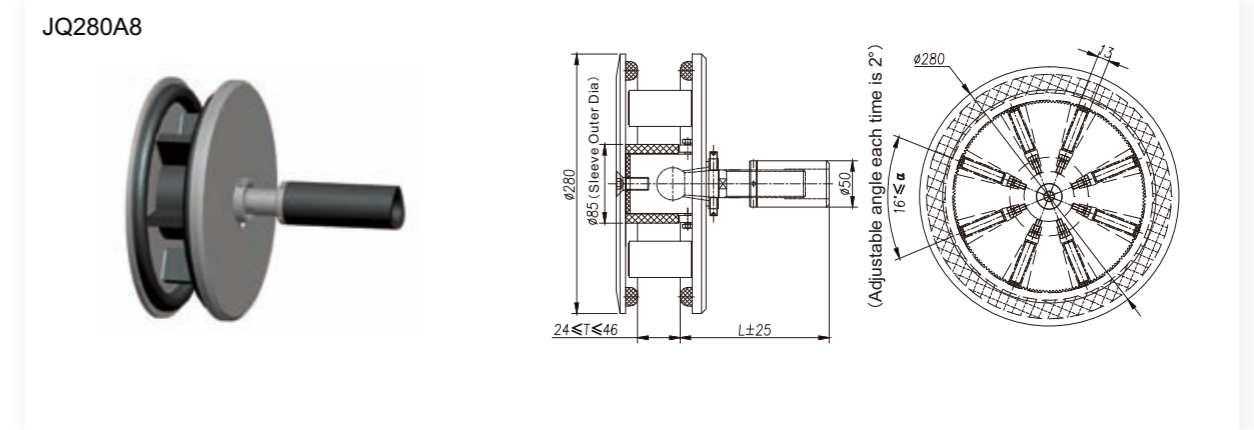


JQ200A Series



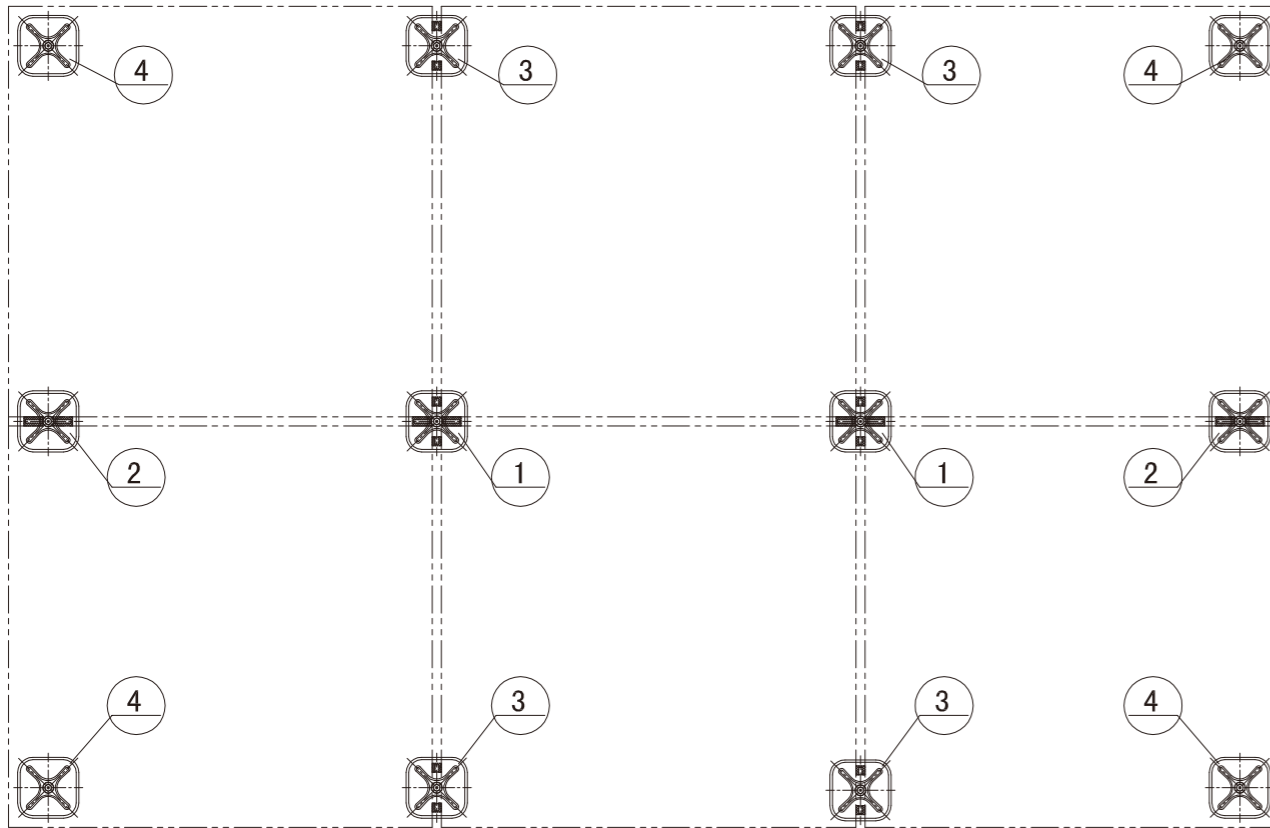
| | | | |
|---|-------------------|---|--|
| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | | |
| | $F_x \leq$ | Single Reinforcement Plate $F_{yd} \leq$ | |
| | 10000 | 1000 | |

JQ280A Series



| | | | |
|---|-------------------|---|--|
| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | | |
| | $F_x \leq$ | Single Reinforcement Plate $F_{yd} \leq$ | |
| | 10000 | 1000 | |

Clamp code Rule



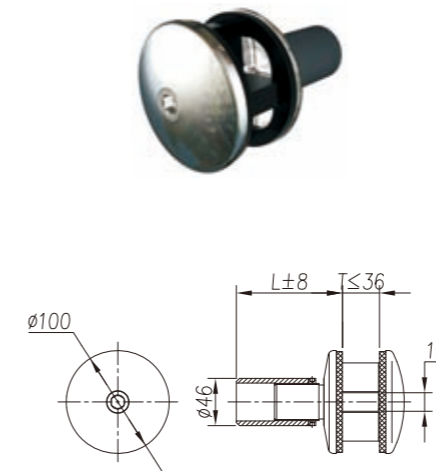
| Curtainwall Node | ① | ② | ③ | ④ |
|--------------------|---------------------------------|-------------------|--------------------|--------------------|
| Diagram | | | | |
| Separator Quantity | 4 ribs (two long and two short) | 2 ribs (two long) | 2 ribs (two short) | without rib plates |
| Product Code | Regular Code | Regular Code+WS | Regular Code+WH | Regular Code+W |
| Regular Number | J120B11 | J120B11WS | J120B11WH | J120B11W |

Note:

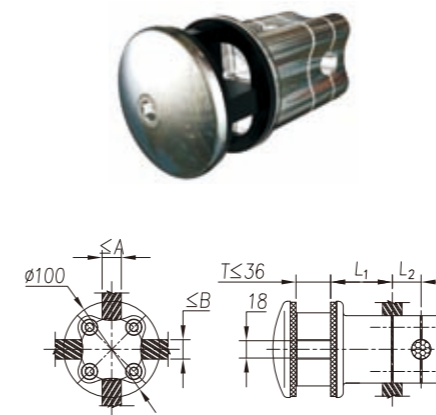
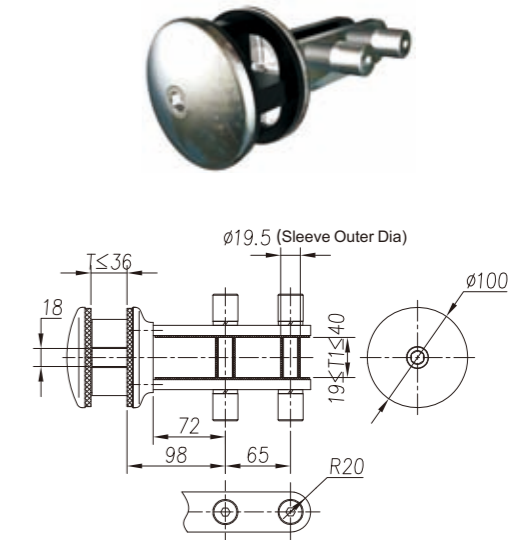
1. Regular number means the clamp has both vertical and horizontal ribs, regular code+W/WS/WH means clamp without ribs/ without vertical separator/ without horizontal separator.
2. Regular Code+W clamp needs glass drilling, different clamp may have different drilling, please consult KIN LONG for more details.

J100A Series Clamp(round shape)

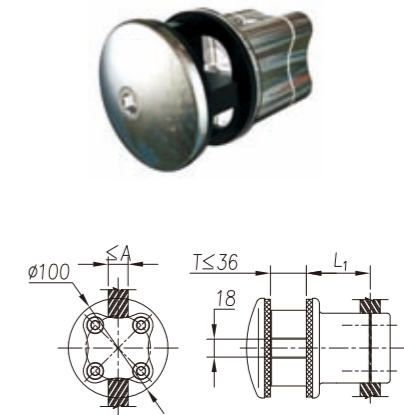
J100A11



J100A71

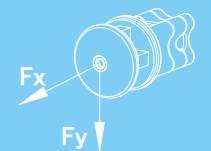


| Model | Size | A | B | L ₁ | L ₂ |
|---------|------|-----|-----|----------------|----------------|
| J100A31 | φ20 | φ20 | φ20 | 64 | 30 |
| J100A32 | φ32 | φ32 | φ32 | 84 | 40 |



| Model | Size | A | L ₁ |
|---------|------|-----|----------------|
| J100A41 | φ20 | φ20 | 64 |
| J100A42 | φ32 | φ32 | 84 |

| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | |
|---|-------------------|------------------|
| | F _x ≤ | F _y ≤ |
| | 16000 | 3000 |



J120B Series (square shape)

JH120B Series (square shape)

J120B11

J120B71

JH120B11

JH120B71

| Size Model | A | B | L ₁ | L ₂ |
|------------|-----|-----|----------------|----------------|
| J120B31 | φ20 | φ20 | 67 | 30 |
| J120B32 | φ32 | φ32 | 87 | 40 |

| Size Model | A | L ₁ |
|------------|-----|----------------|
| J120B41 | φ20 | 67 |
| J120B42 | φ32 | 87 |

JH120B32

JH120B42

| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | | |
|---|-------------------|------------------|--|
| | F _x ≤ | F _y ≤ | |
| | 16000 | 3000 | |

| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | | |
|---|-------------------|------------------|--|
| | F _x ≤ | F _y ≤ | |
| | 16000 | 5000 | |

J120C Series(square shape)

J120C11

J120C71

| Model | Size | A | B | L ₁ | L ₂ |
|---------|------|-----|----|----------------|----------------|
| J120C31 | Φ20 | Φ20 | 64 | 30 | |
| J120C32 | Φ32 | Φ32 | 84 | 40 | |

| Model | Size | A | L ₁ |
|---------|------|----|----------------|
| J120C41 | Φ20 | 64 | |
| J120C42 | Φ32 | 84 | |

| | | | |
|---|-------------------|------------|--|
| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | | |
| | $F_x \leq$ | $F_y \leq$ | |
| | 16000 | 3000 | |

J120D Series (rectangle shape)

J120D11

J120D71

| Model | Size | A | B | L ₁ | L ₂ |
|---------|------|-----|----|----------------|----------------|
| J120D31 | Φ20 | Φ20 | 64 | 30 | |
| J120D32 | Φ32 | Φ32 | 84 | 40 | |

| Model | Size | A | L ₁ |
|---------|------|----|----------------|
| J120D41 | Φ20 | 64 | |
| J120D42 | Φ32 | 84 | |

| | | | |
|---|-------------------|------------|--|
| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | | |
| | $F_x \leq$ | $F_y \leq$ | |
| | 16000 | 4000 | |

J150A Series(round shape)

JH150A Series (round shape)

J150A11

J150A71

JH150A11

JH150A71

| Model | Size | A | B | L ₁ | L ₂ |
|---------|------|-----|----|----------------|----------------|
| J150A31 | Φ20 | Φ20 | 64 | 30 | |
| J150A32 | Φ32 | Φ32 | 84 | 40 | |

| Model | Size | A | L ₁ |
|---------|------|----|----------------|
| J150A41 | Φ20 | 64 | |
| J150A42 | Φ32 | 84 | |

JH150A32

JH150A42

| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | | |
|---|-------------------|------------------|--|
| | F _x ≤ | F _y ≤ | |
| | 16000 | 4000 | |

| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | | |
|---|-------------------|------------------|--|
| | F _x ≤ | F _y ≤ | |
| | 16000 | 6000 | |

J152A Series(rhombus shape)

JH152A Series (rhombus shape)

J152A11

J152A71

JH152A11

JH152A71

| Size Model | A | B | L ₁ | L ₂ |
|------------|-----|-----|----------------|----------------|
| J152A31 | φ20 | φ20 | 67 | 30 |
| J152A32 | φ32 | φ32 | 87 | 40 |

| Size Model | A | L ₁ |
|------------|-----|----------------|
| J152A41 | φ20 | 67 |
| J152A42 | φ32 | 87 |

JH152A32

JH152A42

| | | | |
|---|-------------------|------------|--|
| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | | |
| | $F_x \leq$ | $F_y \leq$ | |
| | 16000 | 4000 | |

| | | | |
|---|-------------------|------------|--|
| The Recommended Value of Load Capacity(N) | Material:CF8M、CF8 | | |
| | $F_x \leq$ | $F_y \leq$ | |
| | 16000 | 6000 | |

J160A Series(rectangle shape)

JH160A Series (rectangle shape)

J160A11

J160A71

JH160A11

JH160A71

| Size Model | A | B | L ₁ | L ₂ |
|------------|-----|-----|----------------|----------------|
| J160A31 | Φ20 | Φ20 | 66 | 30 |
| J160A32 | Φ32 | Φ32 | 86 | 40 |

| Size Model | A | L ₁ |
|------------|-----|----------------|
| J160A41 | Φ20 | 66 |
| J160A42 | Φ32 | 86 |

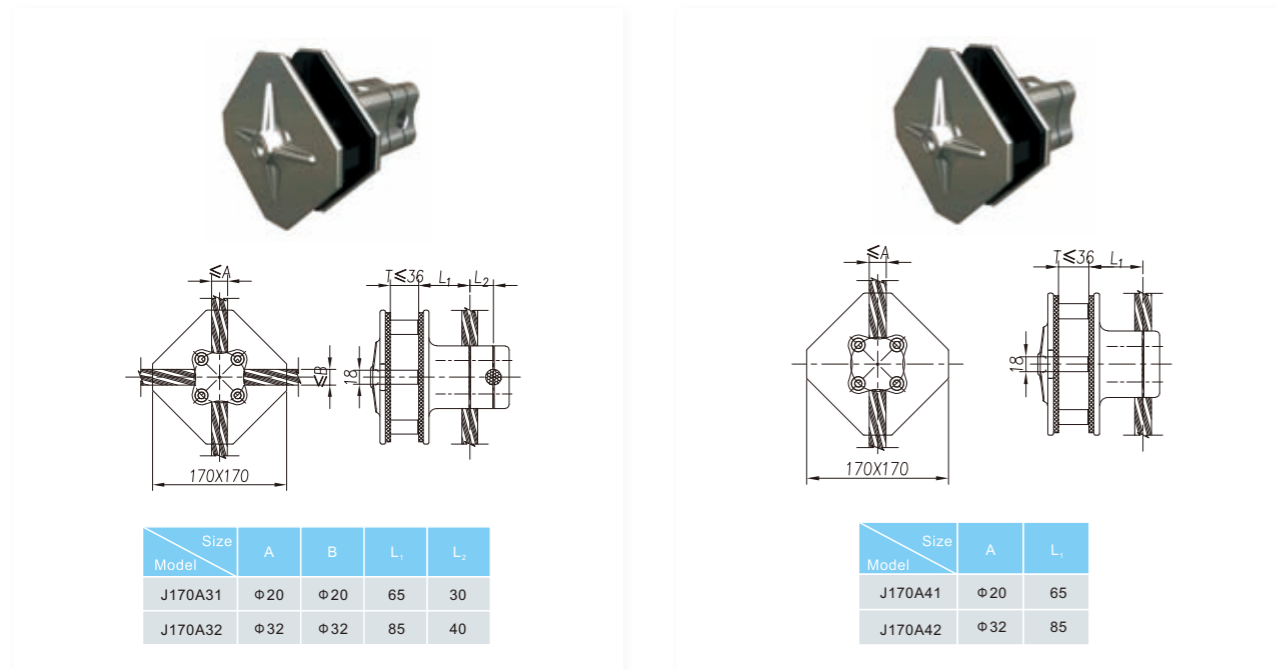
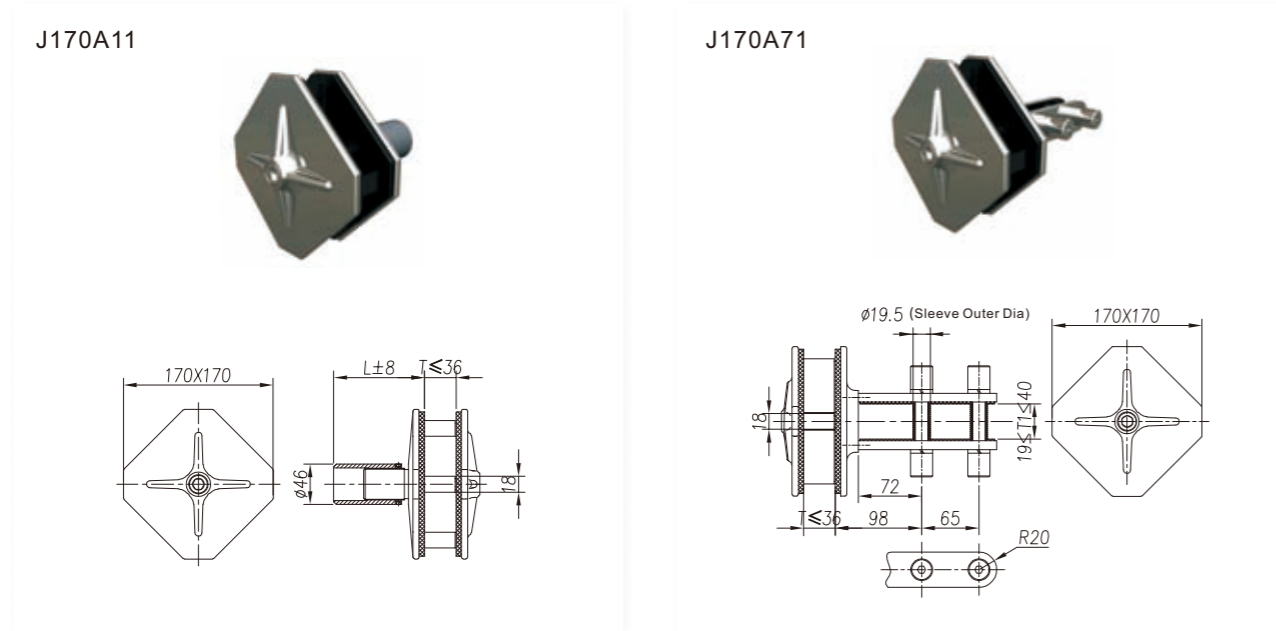
JH160A32

JH160A42

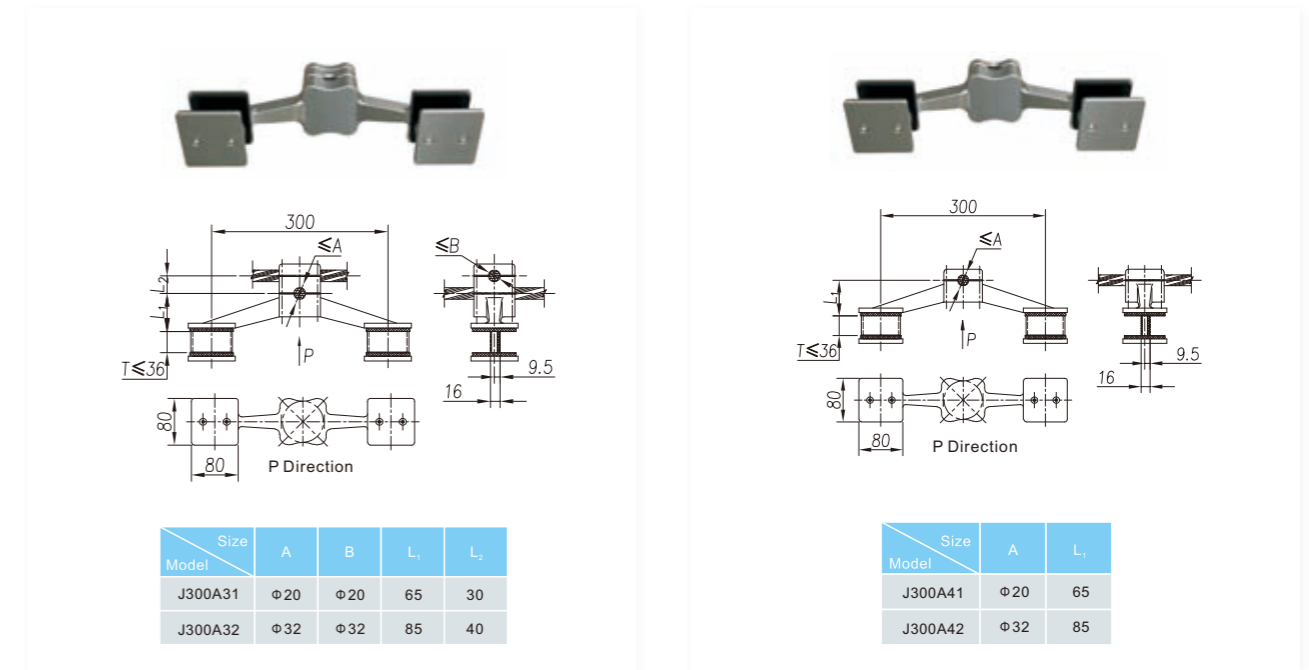
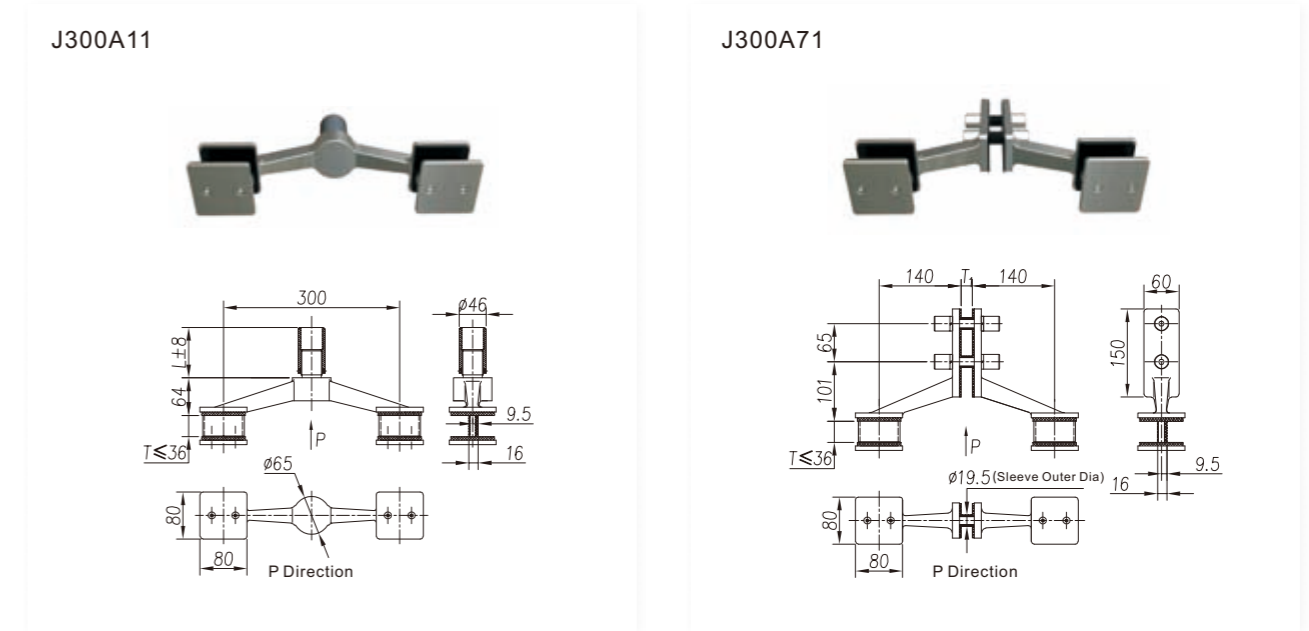
| The Recommended Value of Load Capacity(N) | Material: CF8M, CF8 | | |
|---|---------------------|------------------|--|
| | F _x ≤ | F _y ≤ | |
| | 16000 | 4000 | |

| The Recommended Value of Load Capacity(N) | Material: CF8M, CF8 | | |
|---|---------------------|------------------|--|
| | F _x ≤ | F _y ≤ | |
| | 16000 | 6000 | |

J170A Series(rhombus shape)



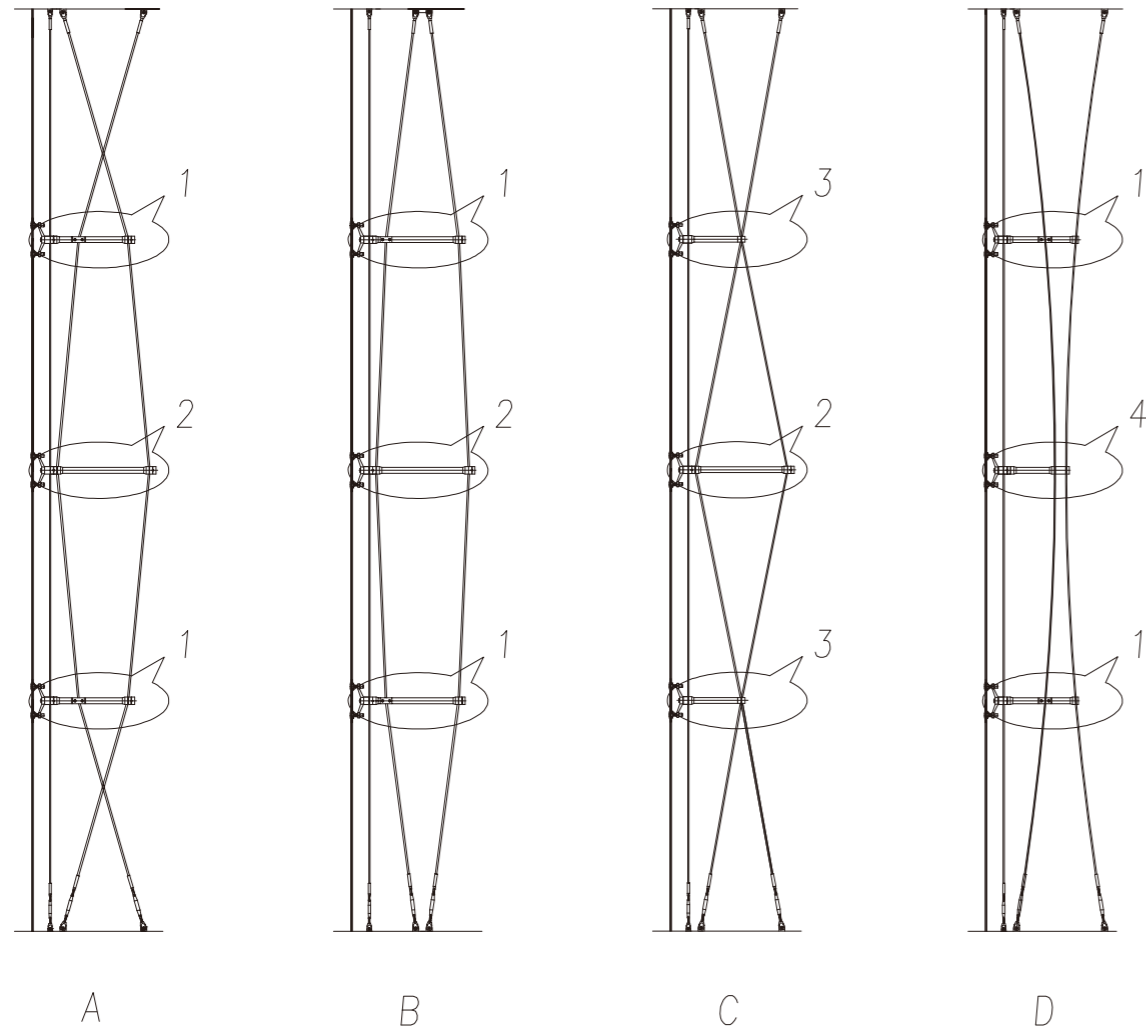
J300A Series(shape of spider)



| The Recommended Value of Load Capacity(N) | Material: CF8M,CF8 | | |
|---|--------------------|------------------|--|
| | F _x ≤ | F _y ≤ | |
| | 16000 | 4500 | |

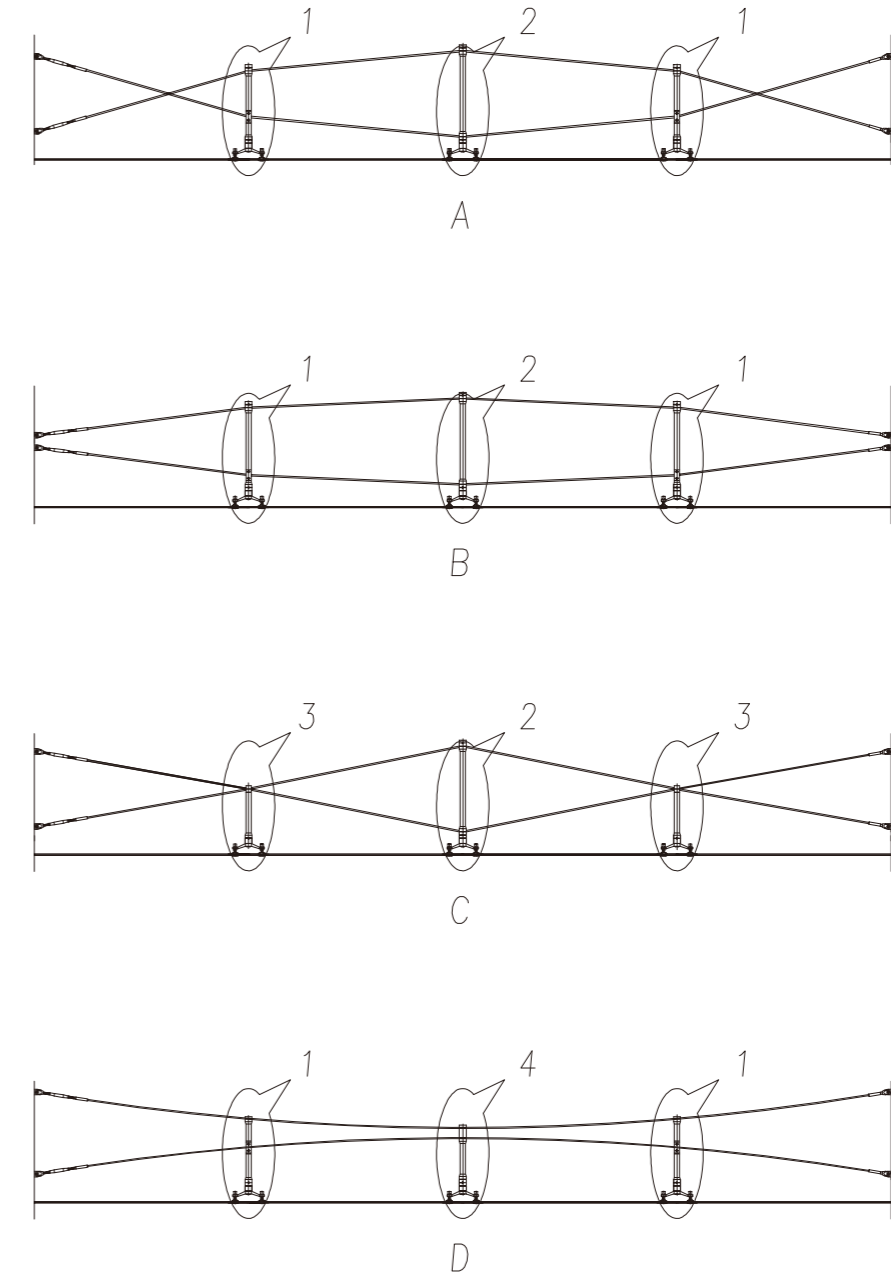
| The Recommended Value of Load Capacity(N) | Material: CF8M,CF8 | | |
|---|--------------------|------------------|--|
| | F _x ≤ | F _y ≤ | |
| | 5000 | 2500 | |

Strut Bar of Tension Cable



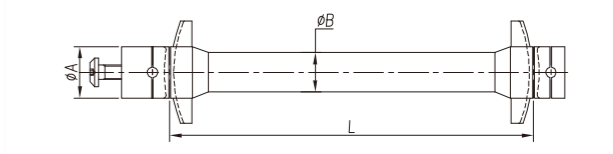
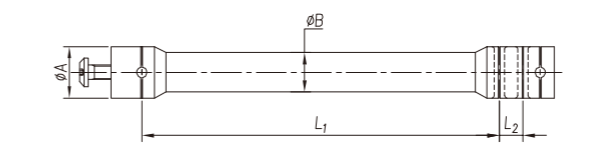
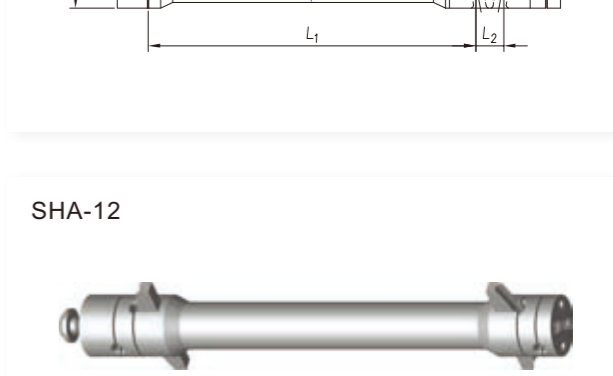
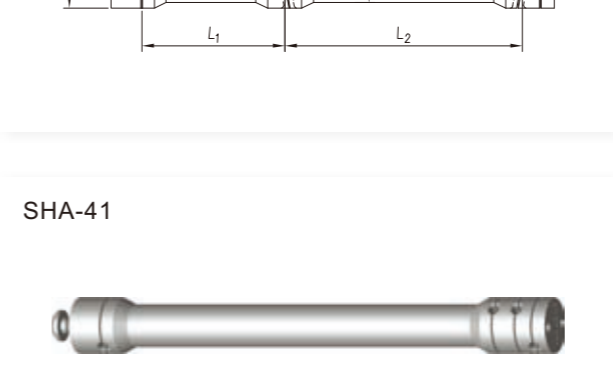
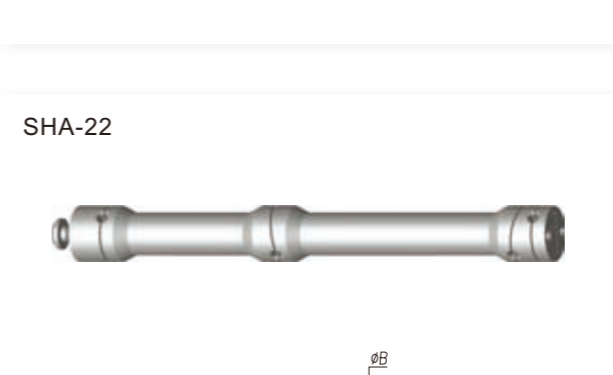
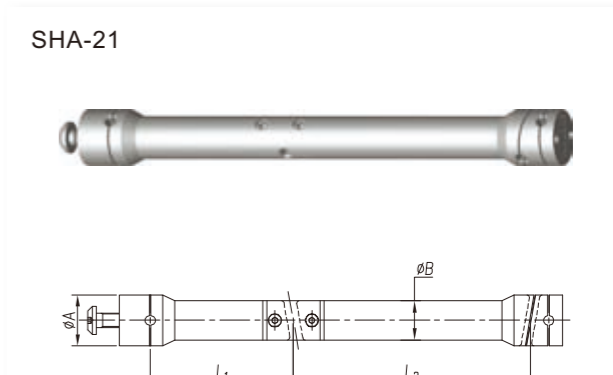
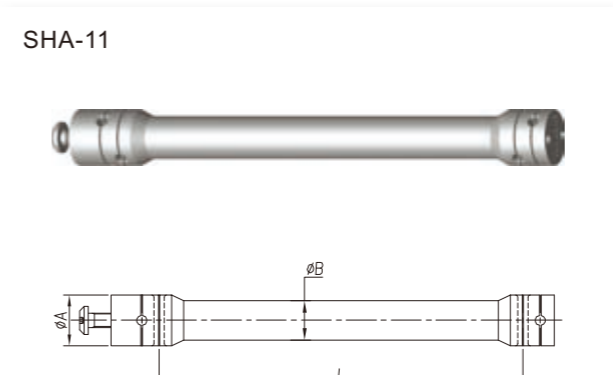
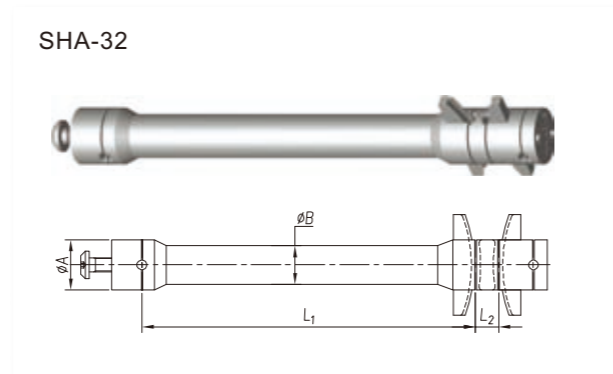
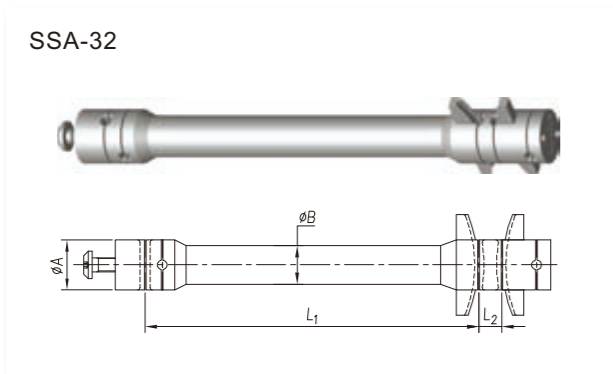
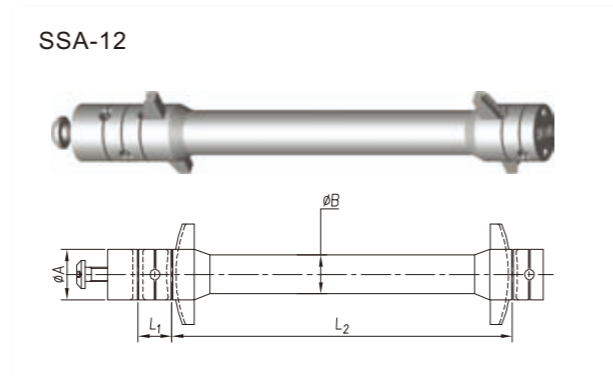
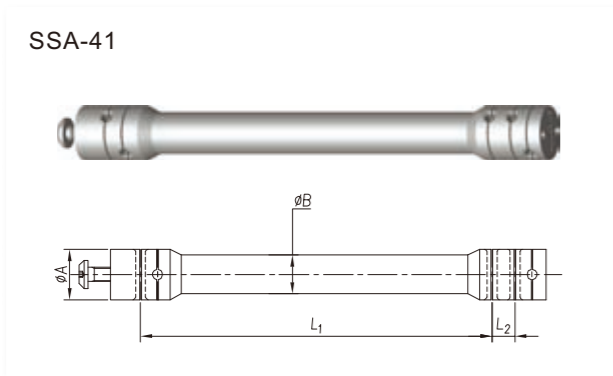
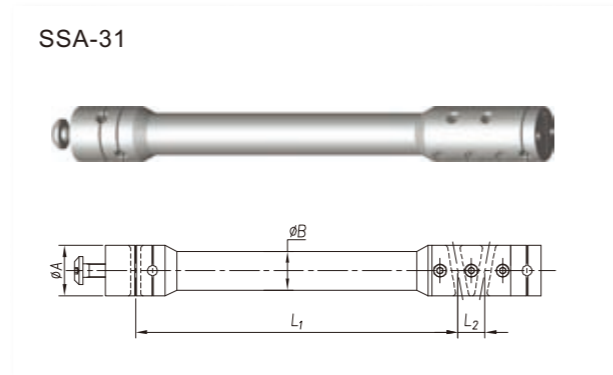
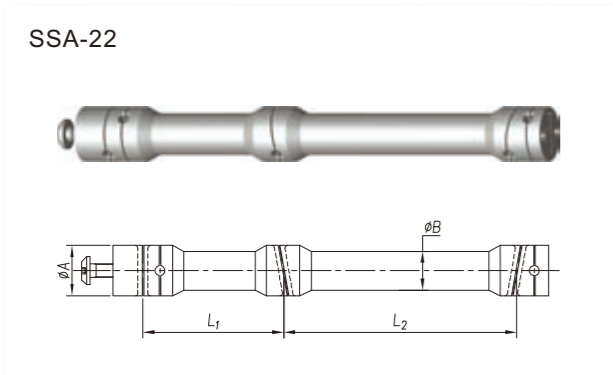
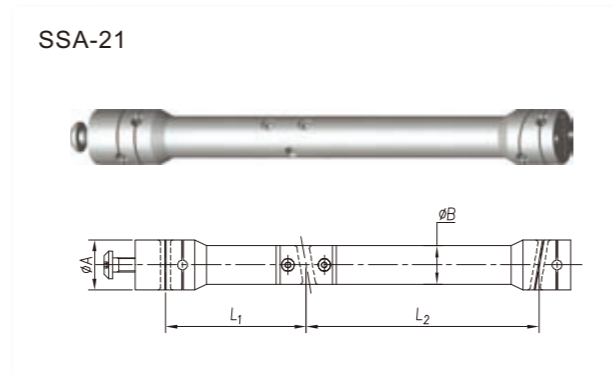
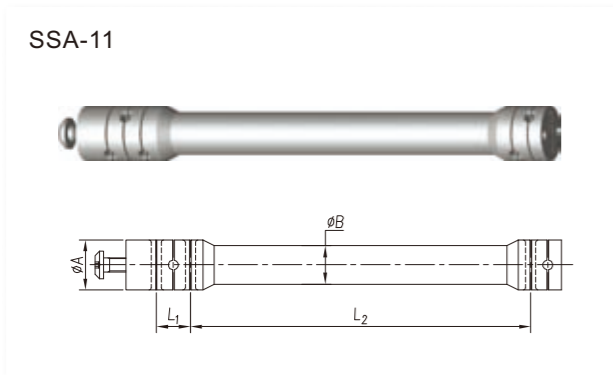
Forms of Vertical Cable Truss

| | |
|--|----------------|
| Available support bar type at detail 1 | SSA-21, SSA-22 |
| Available support bar type at detail 2 | SSA-11, SSA-12 |
| Available support bar type at detail 3 | SSA-31, SSA-32 |
| Available support bar type at detail 4 | SSA-41 |



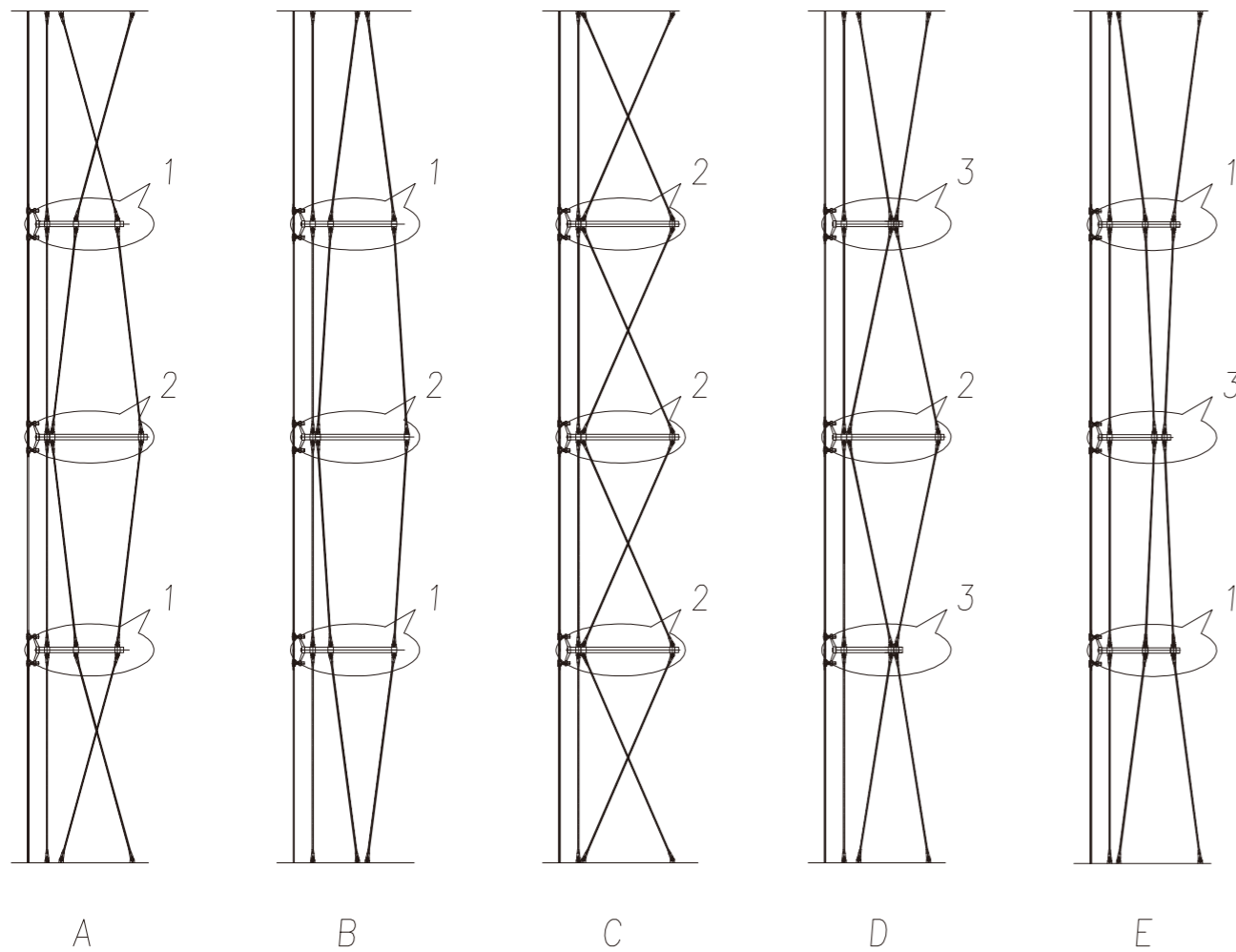
Forms of Horizontal Cable Truss

| | |
|--|----------------|
| Available support bar type at detail 1 | SHA-21, SHA-22 |
| Available support bar type at detail 2 | SHA-11, SHA-12 |
| Available support bar type at detail 3 | SHA-31, SHA-32 |
| Available support bar type at detail 4 | SHA-41 |



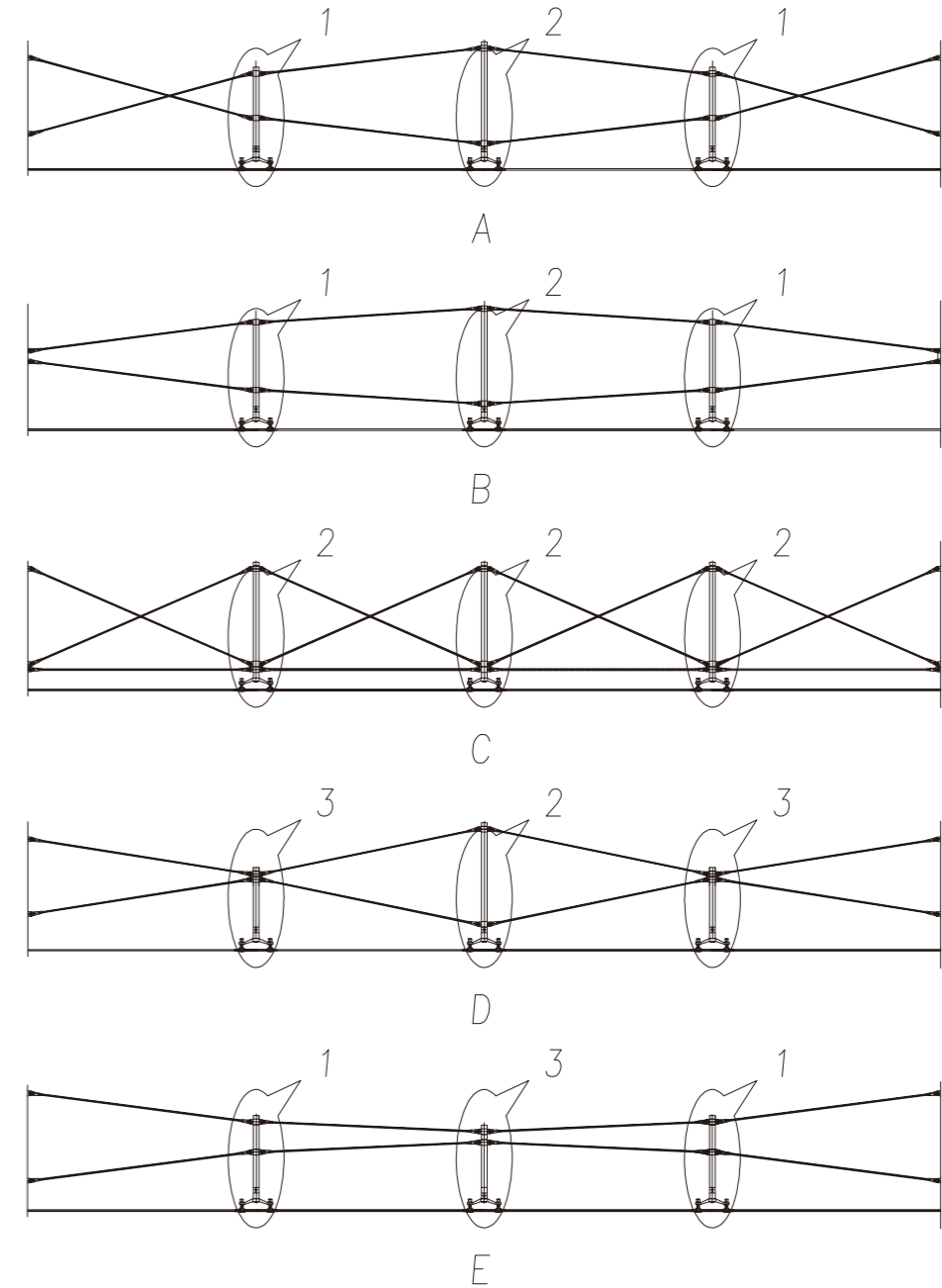
- Notes:
1. There are two types of diameter of lock block ϕA : $\phi 65$ and $\phi 75$, select proper one according to the diameter of cable.
 2. There are two specifications of the joint sleeve ϕB of the strut: $\phi 50 \times 5$ and $\phi 60 \times 8$, the exact dimension is based on the calculation.

Strut Bar for Tension Rod



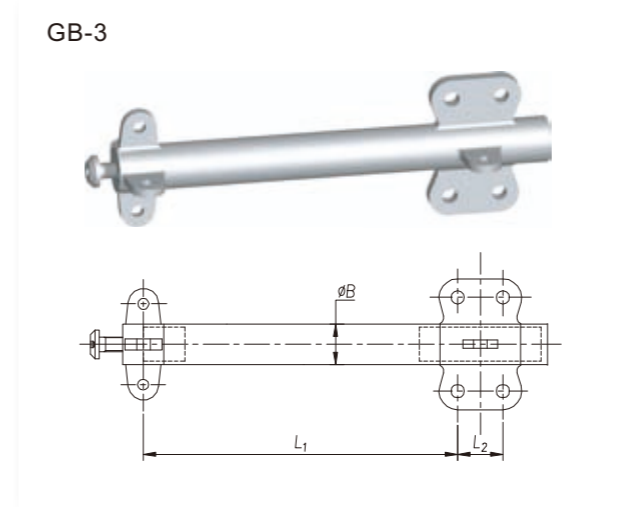
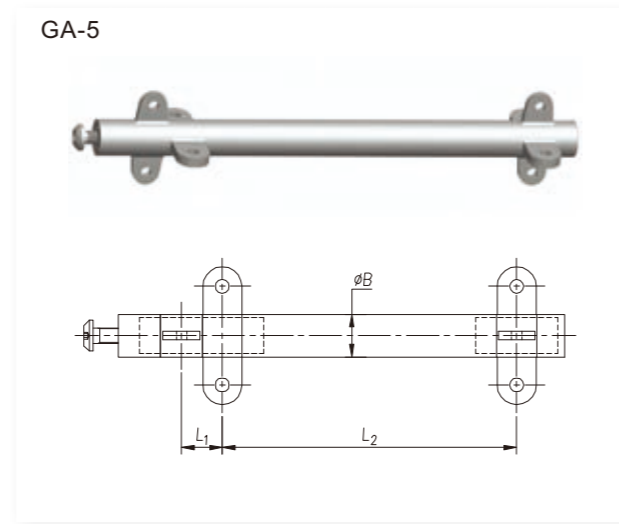
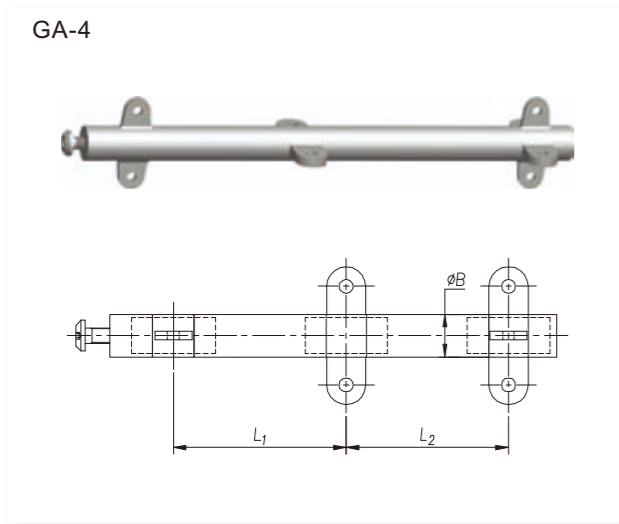
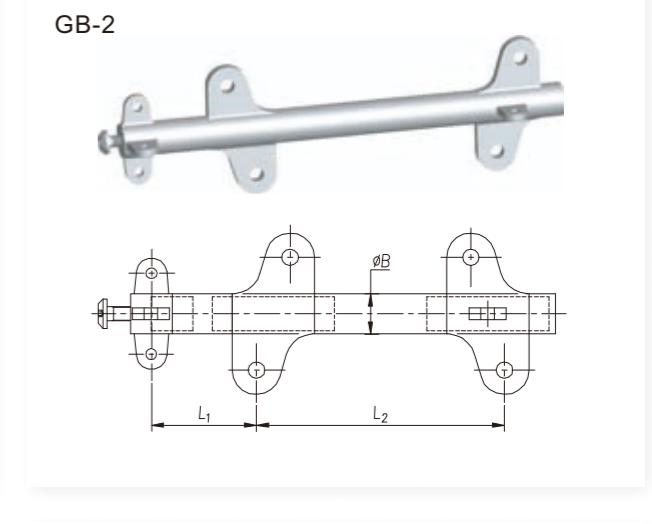
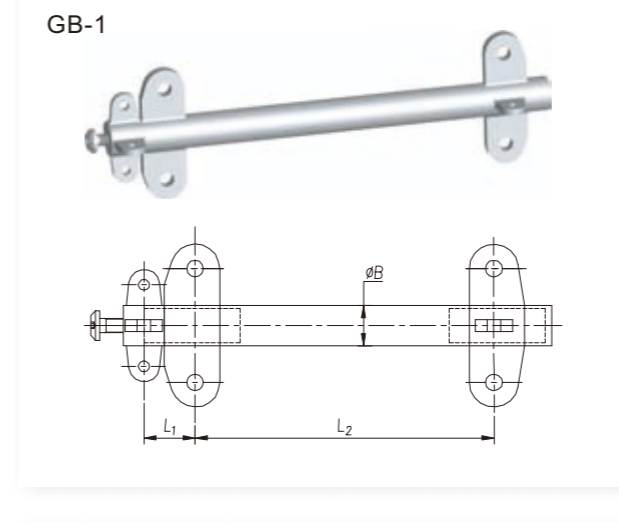
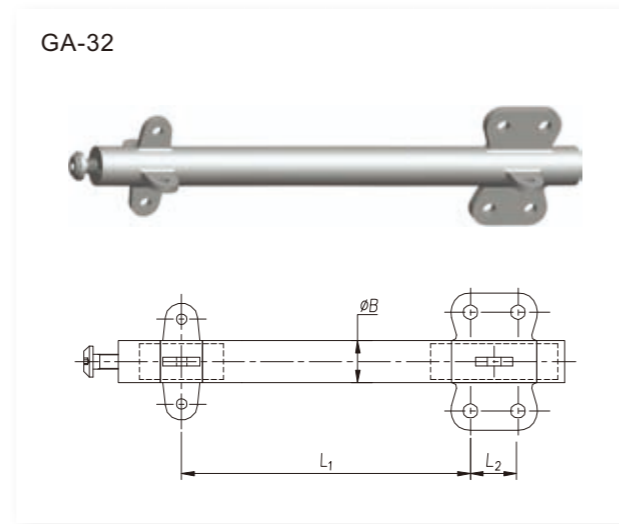
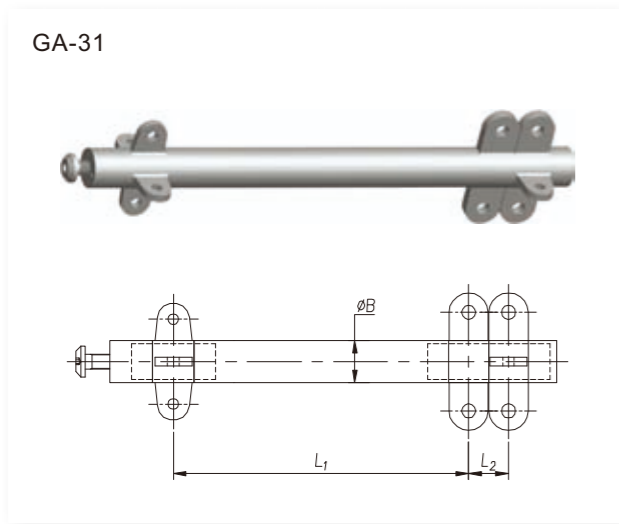
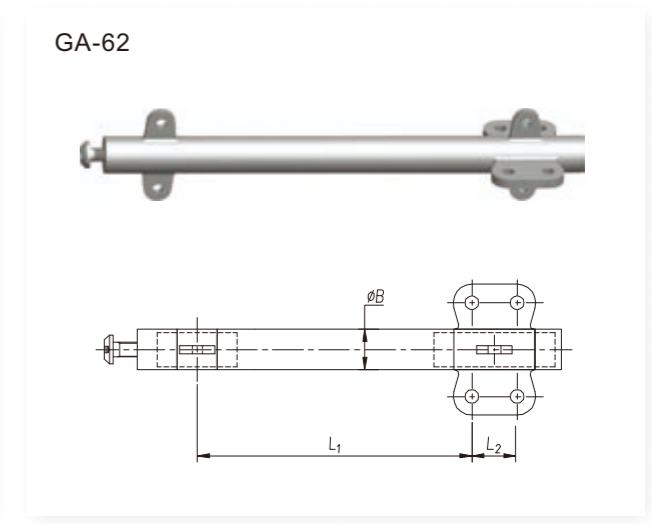
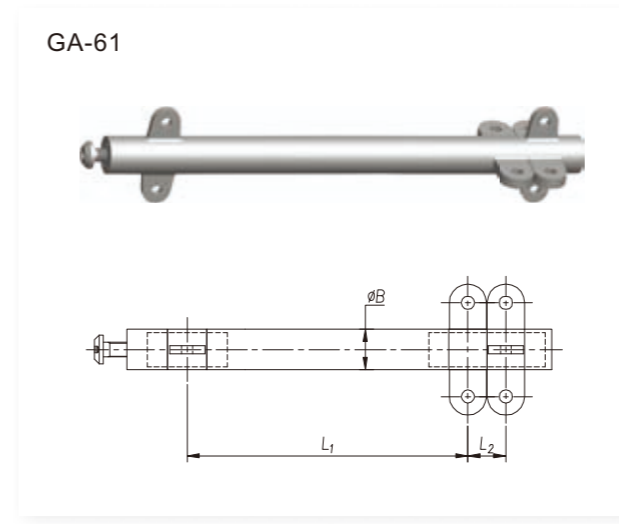
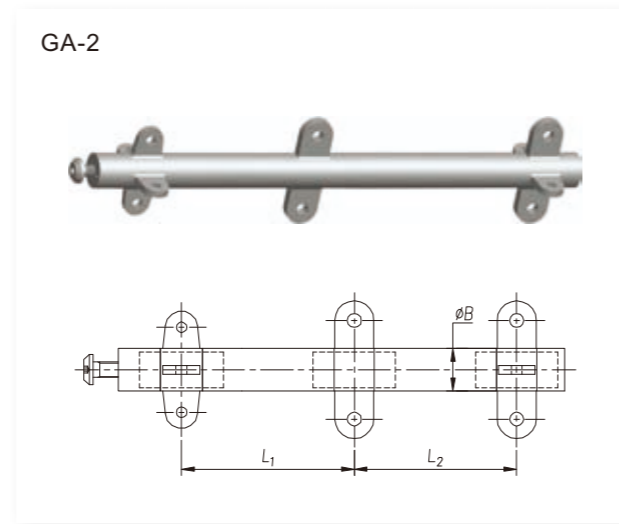
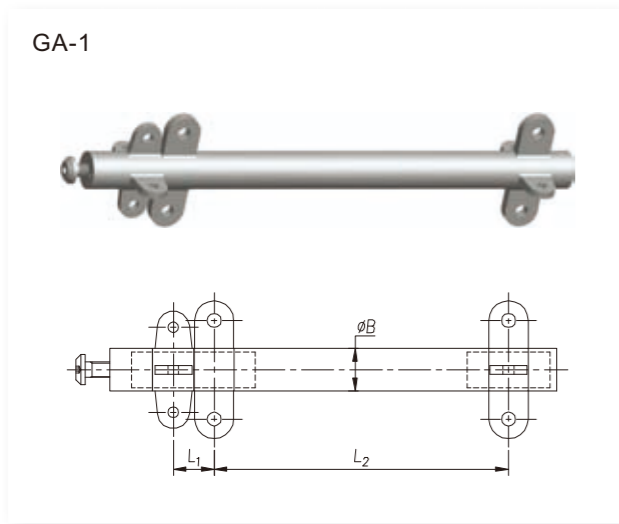
Diversified Rod Truss Structures in Vertical Direction

| | |
|--|------------------|
| Available support bar type at detail 1 | GA-2、GB-2 |
| Available support bar type at detail 2 | GA-1、GB-1 |
| Available support bar type at detail 3 | GA-31、GA-32、GB-3 |



Diversified Rod Truss Structures in Horizontal Direction

| | |
|--|----------------|
| Available support bar type at detail 1 | GA-4 |
| Available support bar type at detail 2 | GA-1、GB-1、GA-5 |
| Available support bar type at detail 3 | GA-61、GA-62 |



Note: The equipped ear plate of strut bar is depended on the size of tension rod. Two specifications ($\phi B = \phi 50 \times 5$ & $\phi 60 \times 8$) are available for the connecting sleeve ϕB of strut bar.

Stainless Steel Tension Rod



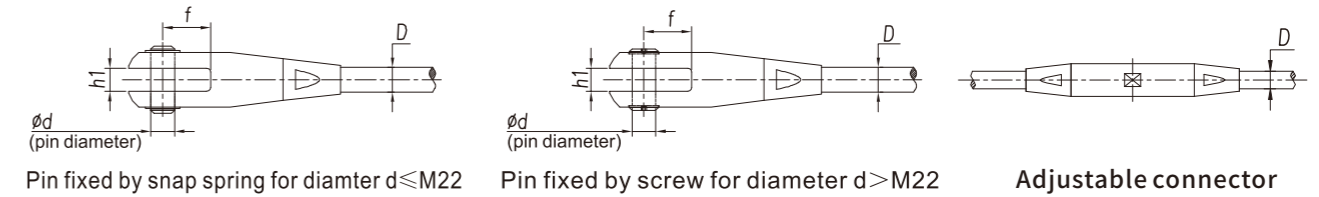
Material

| Type | Product | Screw Rod | Fastener | Tension Rod Joint | Product Range |
|-------------|---------|-----------|----------------------------|-------------------|---------------|
| Q01A Series | | 316, 304 | 316, 304 (A4-70, A2-70) | CF8M, CF8 | Φ 10-Φ 36 |
| Q01B Series | | 316, 304 | 316, 304 (A4-70, A2-70) | CF8M, CF8 | Φ 10-Φ 36 |

The parameters of the rod body

| No. | Thread Diameter (mm) | Effective Section Area (mm ²) | Yield Strength $\sigma_{0.2}$ (MPa) | Tensile Strength σ_b (MPa) | Elongation $\delta\%$ |
|-----|----------------------|---|-------------------------------------|-----------------------------------|-----------------------|
| 1 | M10 | 57.99 | 515 | 650 | ≥25 |
| 2 | M12 | 84.27 | | | |
| 3 | M14 | 115.44 | | | |
| 4 | M16 | 156.67 | | | |
| 5 | M18 | 192.47 | | | |
| 6 | M20 | 244.79 | | | |
| 7 | M22 | 303.40 | | | |
| 8 | M24 | 352.50 | | | |
| 9 | M27 | 459.40 | | | |
| 10 | M30 | 560.59 | | | |
| 11 | M33 | 693.60 | | | |
| 12 | M36 | 816.72 | | | |

Model

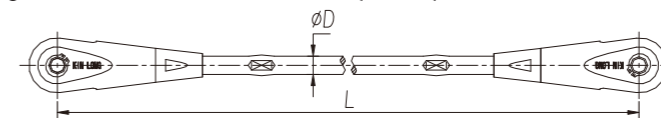


Specification

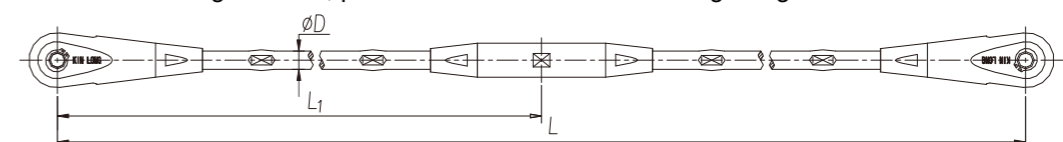
| Type | OD of Screw | D | f | h_1 | d | Single Side Adjustment Capacity |
|---------|-------------|--------|----|-------|----|---------------------------------|
| Q01A-10 | M10 | Φ 9 | 23 | 11 | 13 | ±12.5 |
| Q01A-12 | M12 | Φ 10.8 | 23 | 11 | 13 | |
| Q01A-14 | M14 | Φ 12.6 | 25 | 13 | 15 | |
| Q01A-16 | M16 | Φ 14.6 | 28 | 15 | 16 | |
| Q01A-18 | M18 | Φ 16.3 | 35 | 17 | 18 | |
| Q01A-20 | M20 | Φ 18.3 | 35 | 17 | 20 | |
| Q01A-22 | M22 | Φ 20.3 | 42 | 21 | 22 | ±14 |
| Q01A-24 | M24 | Φ 24 | 48 | 21 | 24 | |
| Q01A-27 | M27 | Φ 27 | 52 | 25 | 27 | |
| Q01A-30 | M30 | Φ 30 | 60 | 25 | 30 | |
| Q01A-33 | M33 | Φ 33 | 65 | 27 | 33 | |
| Q01A-36 | M36 | Φ 36 | 72 | 29 | 37 | |
| Q01B-10 | M10 | Φ 9 | 23 | 11 | 13 | ±5 |
| Q01B-12 | M12 | Φ 10.8 | 23 | 11 | 13 | |
| Q01B-14 | M14 | Φ 12.6 | 25 | 13 | 15 | |
| Q01B-16 | M16 | Φ 14.6 | 28 | 15 | 16 | |
| Q01B-18 | M18 | Φ 16.3 | 35 | 17 | 18 | |
| Q01B-20 | M20 | Φ 18.3 | 35 | 17 | 20 | |
| Q01B-22 | M22 | Φ 20.3 | 42 | 21 | 22 | |
| Q01B-24 | M24 | Φ 24 | 48 | 21 | 24 | |
| Q01B-27 | M27 | Φ 27 | 52 | 25 | 27 | |
| Q01B-30 | M30 | Φ 30 | 60 | 25 | 30 | |
| Q01B-33 | M33 | Φ 33 | 65 | 27 | 33 | |
| Q01B-36 | M36 | Φ 36 | 72 | 29 | 37 | |

Order Instruction

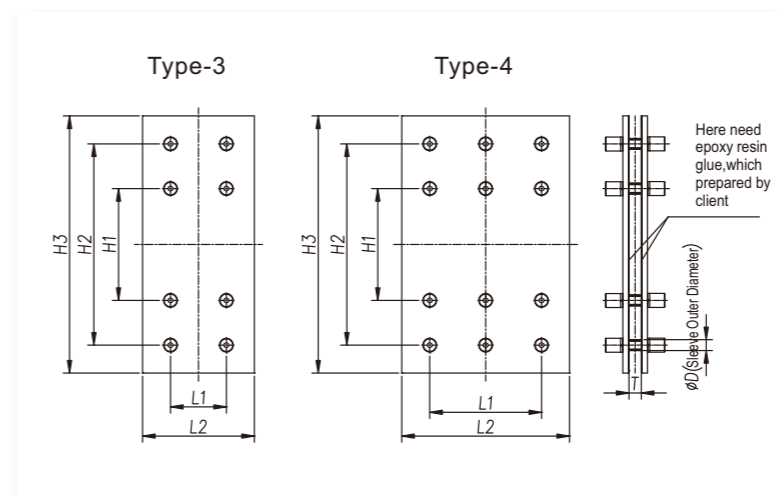
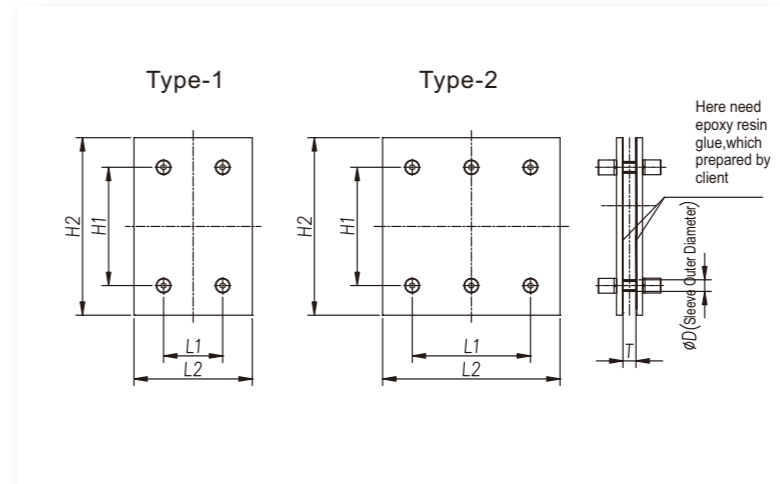
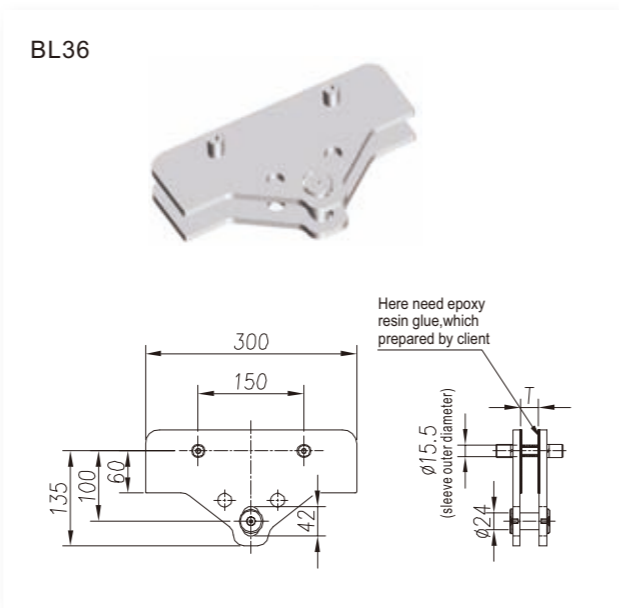
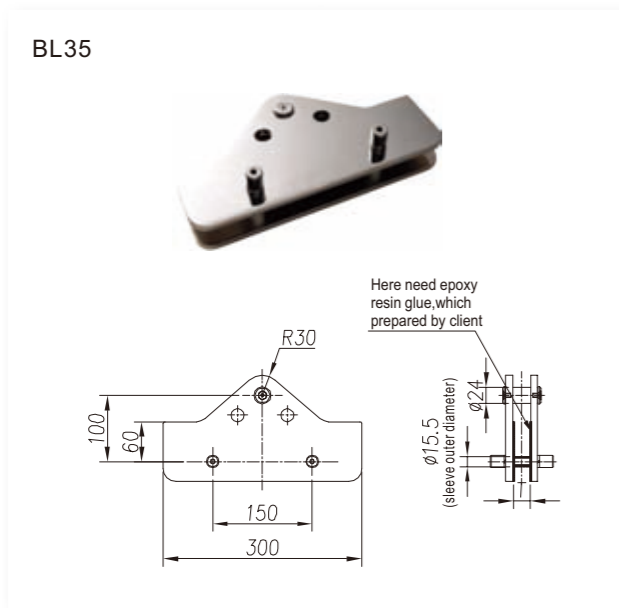
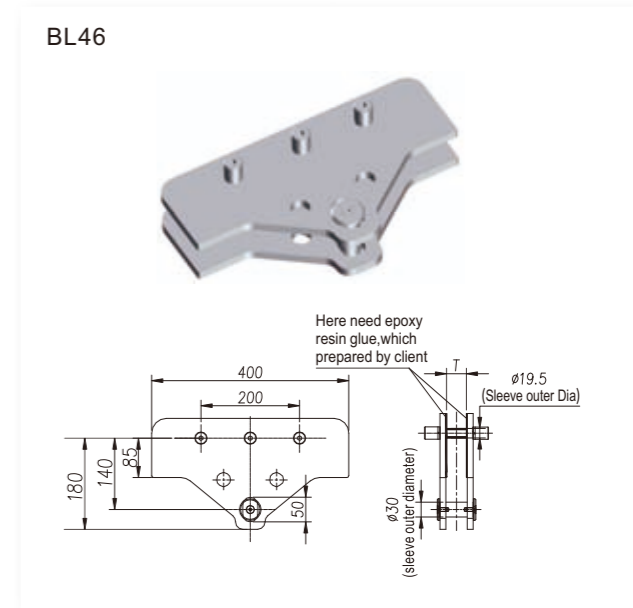
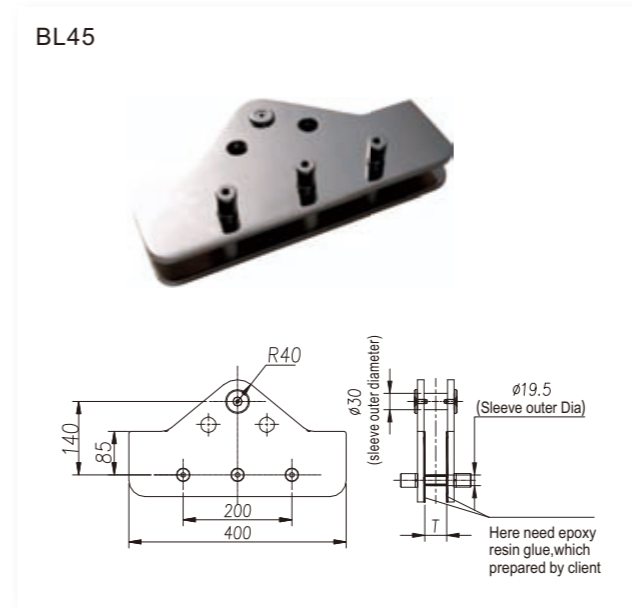
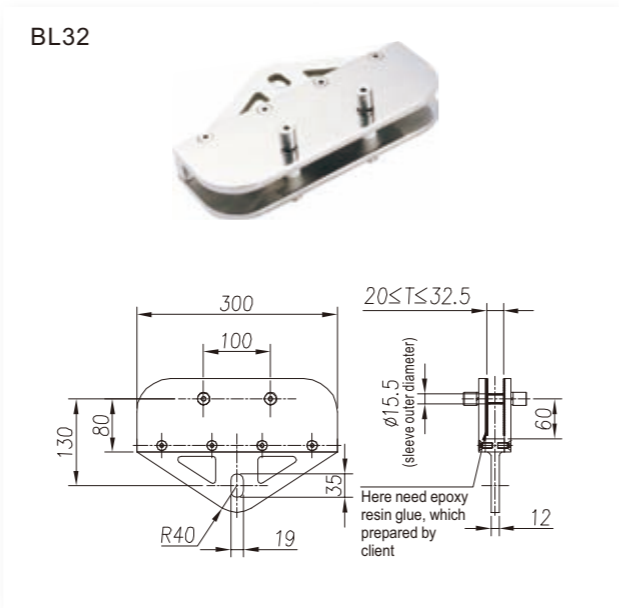
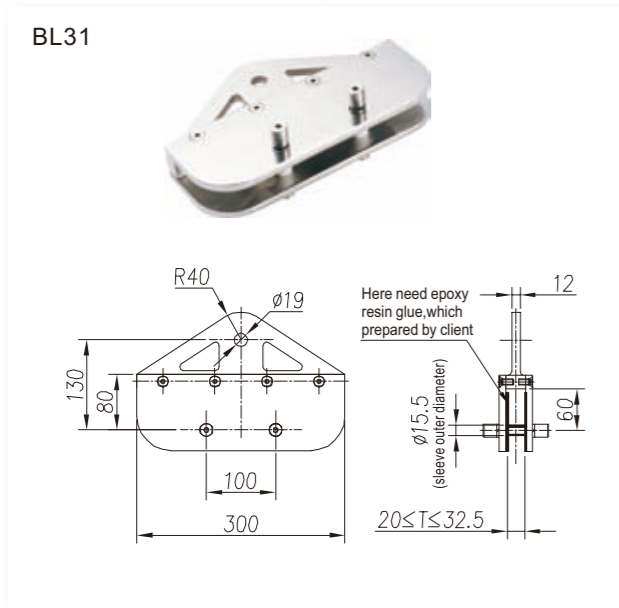
The Length of the tension rod is from pin to pin.



When the tension rod length > 6m, please connect as the following image.



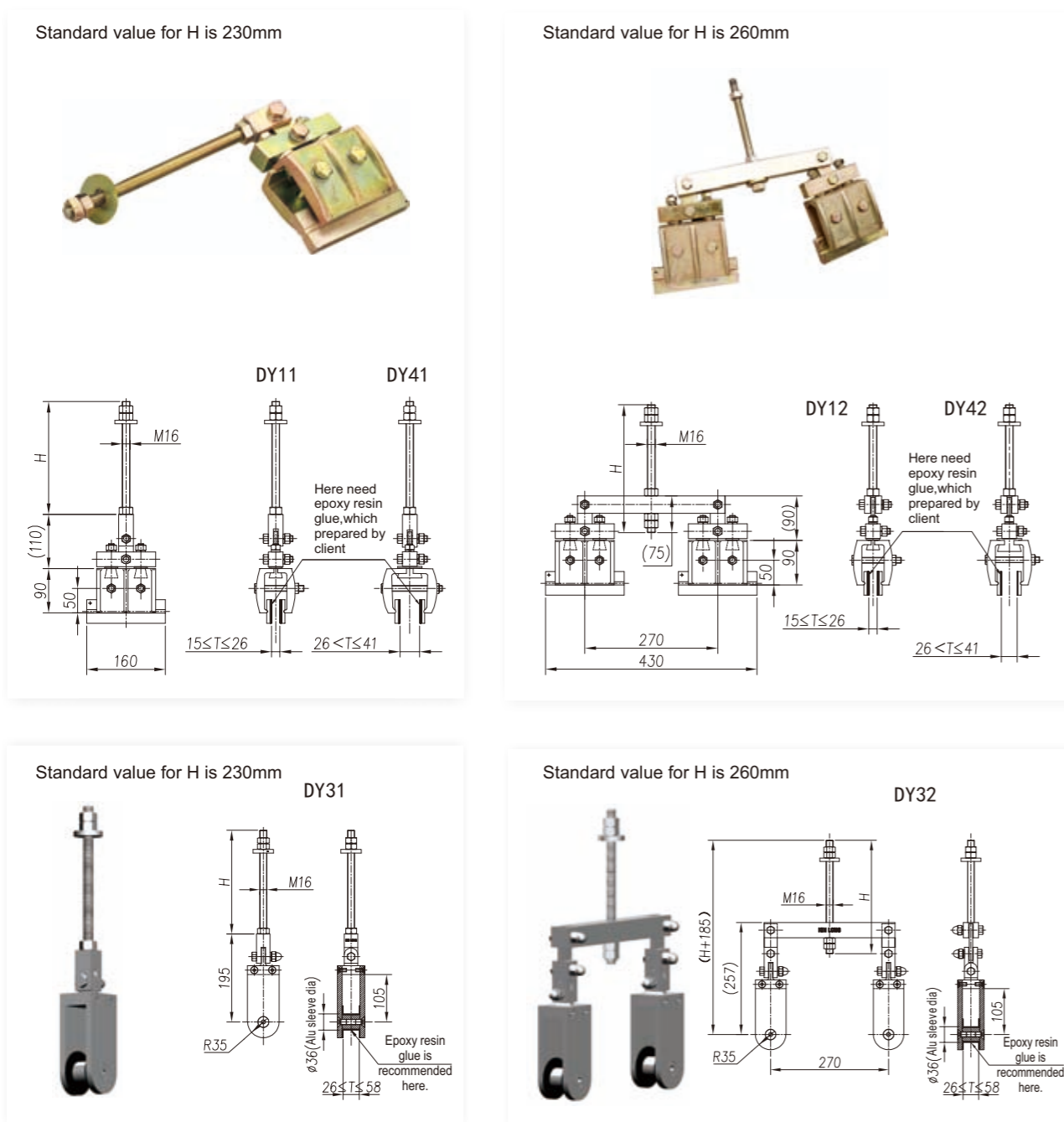
Products for Glass/Steel Fin System



Middle fin clamp application

| The Recommended Value of Load Capacity (N) | Model | Main material: CF8M/316, CF8/304 | |
|--|-------|----------------------------------|------------|
| | | $F_x \leq$ | $F_y \leq$ |
| | BL31 | 12000 | 12000 |
| | BL32 | | / |
| | BL35 | 15000 | 15000 |
| | BL36 | | / |
| | BL45 | 22000 | 22000 |
| | BL46 | | / |

Glass Suspending Clamp



| The Recommended Value of Load Capacity (N) | | | | | | |
|--|--------------|------|------|------|---------|-------|
| Material | Carbon steel | | | | 316/304 | |
| Model | DY11 | DY12 | DY41 | DY42 | DY31 | DY32 |
| Bearing Capacity(N) | 4000 | 7000 | 4000 | 7000 | 6000 | 12000 |

Note: These products can not bear the horizontal load.

Stainless Steel Tension Cable

Material

| Type | Product | Steel Strand | Fastener | Swaged End With Adjustor, Lock Pin | Anchor | Product Range |
|-------------|---------|--------------|------------|------------------------------------|--------|---------------|
| A01、B01、M01 | | 316/2205 | 316(A4-70) | 2205 | CD3MN | φ 8- φ 30 |

Ordinary Tension Cable



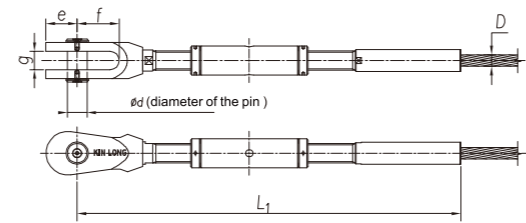
Performance Parameter

| Cable Diameter (mm) | Reference Configuration | Steel Wire Diameter (mm) | Sectional Area (mm ²) | Minimum Breaking Load(kN) | Modules Elasticity (10 ⁴ N/mm ²) |
|---------------------|-------------------------|--------------------------|-----------------------------------|---------------------------|---|
| 8 | 1X19 | 1.60 | 38.20 | 45.38 | 1.30±0.10 |
| 10 | | 2.00 | 59.69 | 70.91 | |
| 12 | | 2.40 | 85.95 | 102.11 | |
| 14 | | 2.80 | 116.99 | 138.99 | |
| 16 | 1X37 | 2.29 | 152.39 | 181.04 | |
| 18 | | 2.57 | 192.15 | 225.68 | |
| 20 | | 2.86 | 237.22 | 278.62 | |
| 22 | 1X61 | 2.44 | 286.27 | 336.23 | |
| 24 | | 2.67 | 340.69 | 400.14 | |
| 26 | | 2.89 | 399.84 | 469.61 | |
| 28 | | 3.11 | 463.71 | 537.37 | |
| 30 | 1X91 | 2.73 | 531.60 | 624.37 | |

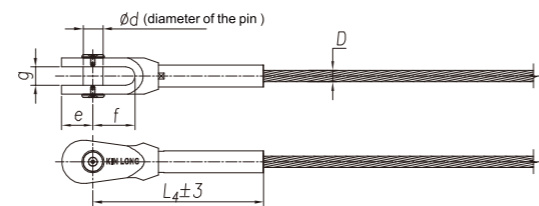
Note: Besides the above tension cables, we also can fabricate the cable with higher strength. Send your enquiry if in need, please.

Model

Adjustable Swaged Anchor A01



Fixed Swaged Anchor B01

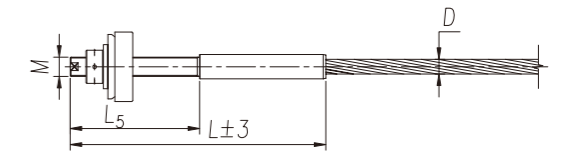


Specification

| 2205 Anchor(A01/B01) | | | | | | |
|----------------------|----|----|----|----|----------------|----------------|
| D | d | g | e | f | L ₁ | L ₂ |
| φ8 | 12 | 11 | 20 | 24 | ≤275 | 107 |
| φ10 | 14 | 13 | 23 | 30 | ≤305 | 134 |
| φ12 | 16 | 15 | 26 | 34 | ≤442 | 163 |
| φ14 | 20 | 18 | 32 | 42 | ≤466 | 191 |
| φ16 | 22 | 20 | 36 | 46 | ≤492 | 209 |
| φ18 | 24 | 23 | 39 | 52 | ≤523 | 237 |
| φ20 | 27 | 25 | 43 | 58 | ≤655 | 262 |
| φ22 | 30 | 27 | 48 | 65 | ≤684 | 294 |
| φ24 | 33 | 29 | 53 | 74 | ≤728 | 321 |
| φ26 | 33 | 32 | 53 | 74 | ≤746 | 339 |
| φ28 | 36 | 34 | 58 | 80 | ≤778 | 364 |
| φ30 | 39 | 37 | 62 | 88 | ≤935 | 394 |

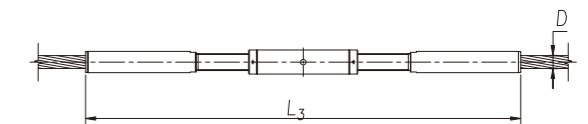
Model

Adjustable End of Spherical Hinge C01



Note: Material of ball joint seat is carbon steel.

Adjustable Center Connector M01

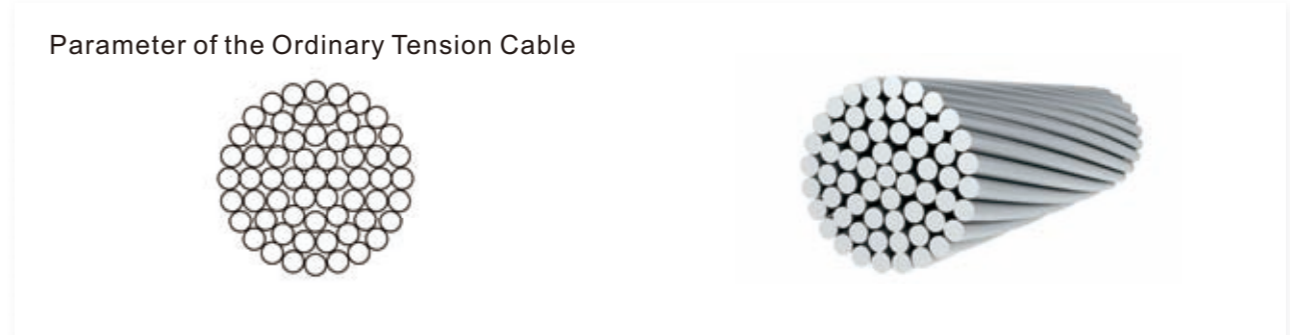


Specification

| 2205 Anchor(M01/C01) | | | | |
|----------------------|-------|-----|----------------|----------------|
| D | M | L | L ₅ | L ₃ |
| φ8 | M12 | 158 | 90 | ≤304 |
| φ10 | M16 | 178 | 92 | ≤342 |
| φ12 | M18x2 | 228 | 119 | ≤497 |
| φ14 | M20x2 | 250 | 124 | ≤523 |
| φ16 | M22x2 | 270 | 132 | ≤552 |
| φ18 | M24x2 | 294 | 140 | ≤596 |
| φ20 | M27x2 | 350 | 177 | ≤736 |
| φ22 | M30x2 | 378 | 187 | ≤773 |
| φ24 | M33x2 | 398 | 190 | ≤819 |
| φ26 | M33x2 | 413 | 190 | ≤855 |
| φ28 | M36x3 | 453 | 212 | ≤893 |
| φ30 | M39x3 | 502 | 245 | ≤1061 |

Material

| Type | Product | Steel Strand | Fastener | Swaged End With Adjustor, Lock Pin | Anchor | Product Range |
|---------------|---------|--------------|-------------|------------------------------------|--------|---------------|
| G02, H02, K02 | | 316/2205 | 316 (A4-70) | 2205 | CD3MN | φ30- φ100 |



Ordinary Tension Cable

Locked Coil Strand



| Cable Diameter (mm) | Reference Configuration | Steel Wire Diameter (mm) | Sectional Area (mm ²) | Minimum Breaking Force (kN) | Modules Elasticity (10 ⁵ N/mm ²) |
|---------------------|-------------------------|--------------------------|-----------------------------------|-----------------------------|---|
| 30 | 1x91 | 2.73 | 531.60 | 693.74 | 1.30±0.10 |
| 32 | | 2.91 | 604.85 | 789.33 | |
| 34 | | 3.09 | 682.82 | 879.20 | |
| 36 | | 3.27 | 765.51 | 985.67 | |
| 38 | | 3.45 | 852.93 | 1098.23 | |
| 40 | | 3.64 | 945.07 | 1216.87 | |
| 42 | | 3.82 | 1041.94 | 1341.61 | |
| 45 | | 4.09 | 1196.11 | 1456.86 | |
| 48 | 4.36 | 1360.91 | 1657.59 | | |
| 52 | 1x127 | 4.00 | 1595.93 | 1943.84 | |
| 56 | | 4.31 | 1850.90 | 2254.40 | |
| 60 | 1x169 | 4.00 | 2123.72 | 2556.96 | |
| 65 | | 4.33 | 2492.42 | 3000.87 | |
| 70 | 1x217 | 4.12 | 2889.67 | 3479.16 | |
| 75 | 1X271 | 3.95 | 3316.46 | 3993.02 | |
| 80 | | 4.21 | 3773.39 | 4543.16 | |
| 85 | 1X331 | 4.05 | 4259.09 | 5127.94 | |
| 90 | | 4.29 | 4774.90 | 5748.98 | |
| 95 | | 4.52 | 5320.18 | 6405.50 | |
| 100 | | 4.76 | 5894.94 | 7097.51 | |

Note: Besides the above mentioned tension cables, we also can fabricate the cable with higher strength. Send your enquiry if in need.

Parameters of Locked Coil Strand

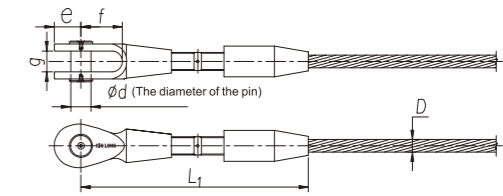


| Cable Diameter (mm) | Sectional Area (mm ²) | Minimum Breaking Force (kN) | Modules Elasticity (10 ⁵ N/mm ²) |
|---------------------|-----------------------------------|-----------------------------|---|
| 36 | 817.38 | 1025.00 | 1.30±0.10 |
| 40 | 1006.08 | 1261.63 | |
| 46 | 1386.76 | 1739.00 | |
| 52 | 1724.62 | 2162.68 | |
| 56 | 2043.06 | 2548.68 | |
| 60 | 2299.92 | 2867.65 | |
| 66 | 2869.25 | 3584.73 | |
| 70 | 3185.13 | 3977.71 | |
| 75 | 3635.36 | 4502.95 | |
| 82 | 4310.58 | 5336.05 | |
| 86 | 4781.53 | 5915.54 | |
| 90 | 5176.15 | 6111.92 | |
| 95 | 5764.6 | 6801.28 | |
| 100 | 6350.2 | 7485.98 | |

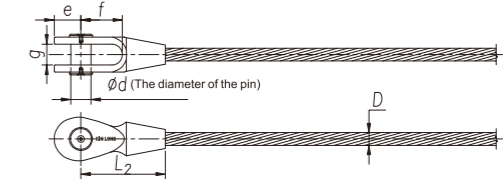
Note: Beside the cable strength and diameters above, our company can produce cables in higher strength and bigger diameter. If any need, just contact us freely, please.

Model

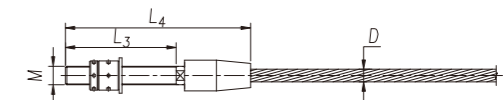
Adjustable Swaged Anchor G02



Fixed Swaged Anchor H02



Screw Anchor K02



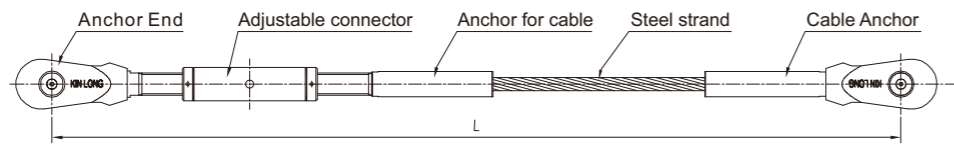
Note: Suggest to use spherical hinged shim at screw end.

Specification

| D | d | g | e | f | L ₁ | L ₂ | L ₃ | L ₄ | M |
|------|-----|-----|-----|-----|----------------|----------------|----------------|----------------|---------|
| φ30 | 46 | 50 | 64 | 99 | ≤ 630 | 205 | 250 | 435 | M45 |
| φ32 | 50 | 53 | 68 | 105 | ≤ 673 | 220 | 260 | 456 | M48 |
| φ34 | 52 | 57 | 71 | 112 | ≤ 701 | 230 | 269 | 472 | M52 |
| φ36 | 56 | 60 | 76 | 115 | ≤ 729 | 236 | 280 | 493 | M56 |
| φ38 | 60 | 63 | 81 | 118 | ≤ 758 | 250 | 290 | 509 | M56 |
| φ40 | 62 | 65 | 85 | 132 | ≤ 797 | 262 | 300 | 530 | M60x4 |
| φ42 | 66 | 70 | 88 | 138 | ≤ 817 | 280 | 305 | 541 | M60x4 |
| φ45 | 70 | 75 | 95 | 148 | ≤ 875 | 300 | 318 | 568 | M64 |
| φ48 | 74 | 80 | 100 | 156 | ≤ 944 | 320 | 330 | 595 | M68 |
| φ52 | 80 | 85 | 108 | 170 | ≤ 994 | 340 | 360 | 647 | M72x6 |
| φ56 | 88 | 93 | 117 | 185 | ≤ 1063 | 370 | 380 | 684 | M80x6 |
| φ60 | 94 | 100 | 126 | 196 | ≤ 1122 | 395 | 395 | 710 | M85x6 |
| φ65 | 102 | 108 | 136 | 214 | ≤ 1205 | 435 | 411 | 756 | M90x6 |
| φ70 | 108 | 117 | 147 | 230 | ≤ 1285 | 460 | 435 | 806 | Tr100x6 |
| φ75 | 116 | 125 | 158 | 246 | ≤ 1360 | 500 | 455 | 855 | Tr105x6 |
| φ80 | 124 | 133 | 167 | 263 | ≤ 1413 | 530 | 460 | 880 | Tr110x6 |
| φ85 | 132 | 141 | 177 | 280 | ≤ 1460 | 556 | 470 | 910 | Tr115x6 |
| φ90 | 140 | 150 | 190 | 296 | ≤ 1528 | 595 | 485 | 950 | Tr120x6 |
| φ95 | 148 | 159 | 200 | 312 | ≤ 1593 | 625 | 485 | 985 | Tr130x6 |
| φ100 | 156 | 167 | 210 | 328 | ≤ 1652 | 660 | 490 | 1005 | Tr135x6 |

Notes: The above specifications are the corresponding sizes of ordinary cables. For the specifications of locked coil strand, please consult our company.

Order Instruction



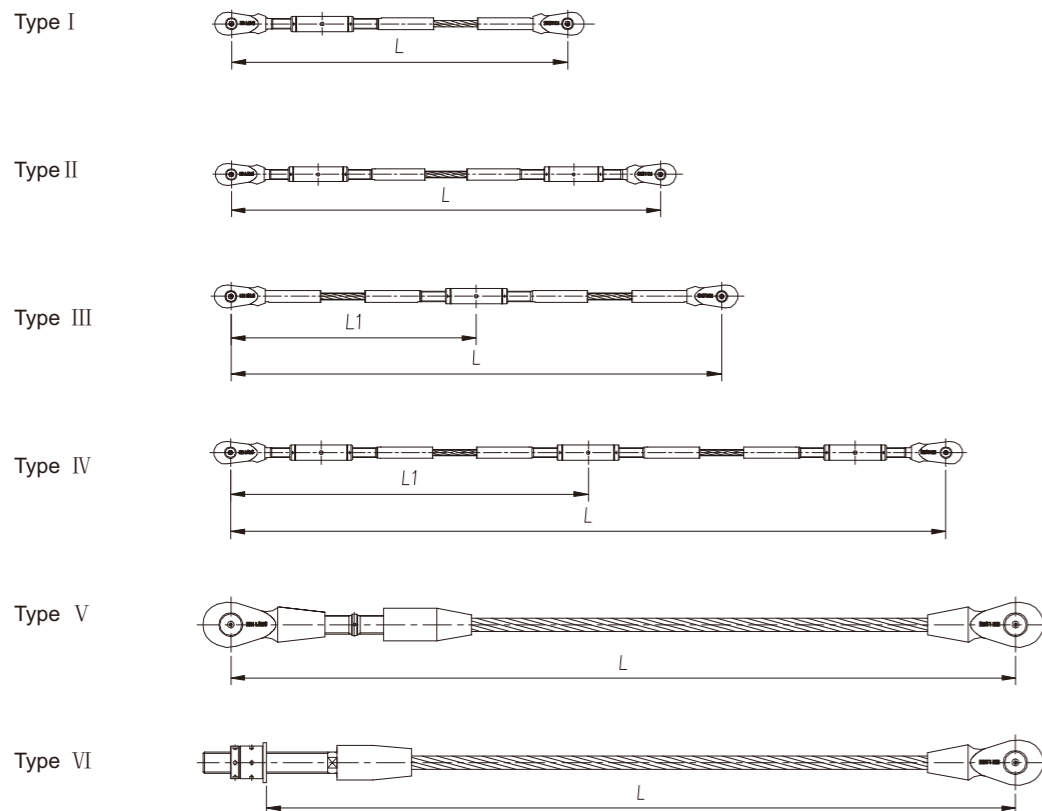
When order the products, please pay attention to the following:

- 1.L is the length as your requirement.(L means pin to pin).
- 2.The below format is the cable length that one adjusting end normally can adjust(L),if the needed cable length is more than L of the below format ,it needs to add adjusting anchors or consult KIN LONG company.

| | | | | | | | | | | | | | | | |
|--------------------------------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Tension cable diameter Φ D | Φ 8 | Φ 10 | Φ 12 | Φ 14 | Φ 16 | Φ 18 | Φ 20 | Φ 22 | Φ 24 | Φ 26 | Φ 28 | Φ 30 | Φ 32 | Φ 34 | Φ 36 |
| Adjustable tension cable length L(m) | ≤ 5 | ≤ 5 | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 10 | ≤ 16 | ≤ 16 | ≤ 16 | ≤ 16 | ≤ 20 | ≤ 25 | ≤ 25 | ≤ 25 | ≤ 25 |

- 3.When purchasing this product, please provide the value of pretension force.
- 4.For Φ 8 and Φ 10 cable ,the anchor is hexagon.

Tension cable common combination types as below figure



Stainless Steel Tension Cable Application Instructions

Stainless steel tension cable has high strength, good corrosion resistance, and high stiffness characteristic. Brightness appearance can maximum reflect metallic texture. It gets most of architects & clients approval. Therefore, stainless steel tension cable gets widely application in construction cable structure. In order to avoid abnormal appearing, we suggest paying attention to following points during the application:

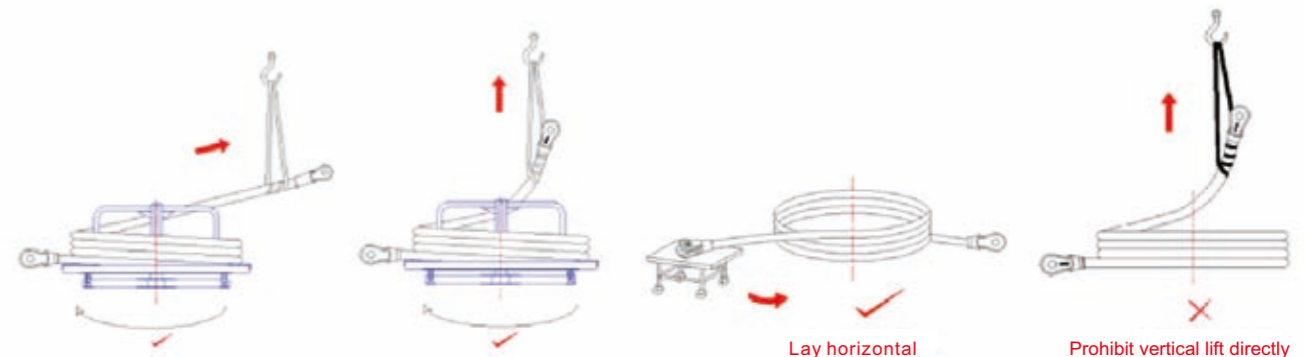
1.Storage:

After the tension cable shipped to the construction site, it shall be inspected as soon as possible. If not use immediately after the inspection qualified, the product should be still kept in the original packaging box, and then deposits it according to the following conditions:

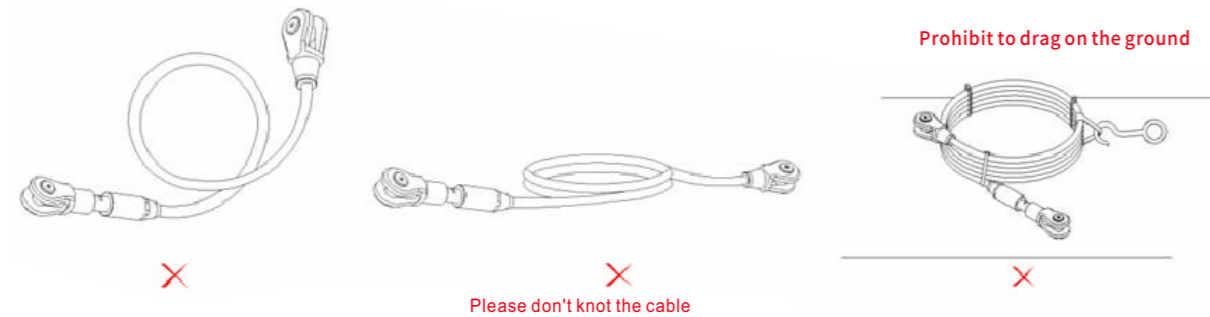
- (1) Tension cable deposit location should be indoors, storage environment should be ventilated, dry, no acid, alkali, salt and water vapor in high temperature which bad medium could lead to stainless steel corrosion. Such as the storage time more than one month, then half a month need to unpack to check regularly, to check if the surface is rust. If there is any rust, need to find and eliminate the cause of the corrosion products, when the reason belongs to the storage environment, its location should be changed to another proper one.
- (2) If the indoor storage conditions are not available, please pay attention to the above attentions and make waterproof protection. besides weather enclosure or rain cover, please pad the product to prevent rainwater from the bottom into the packages. If packages get wet, the product must be cleaned and change into new packages. When in outdoor storage, the inspect period can be reduced to a week.
- (3)Please keep the packages for a period of time after taking out the tension cables for installation. The rest tension cables must be stored in the original packages; Any product return or repair needs to send back to supplier with original package.

2. Installation:

- (1) Before lifting, please check the thread engagement of the adjustable anchor, the thread engagement of tension cable should be smoothly without stress, If can't goes smoothly, then should find the reason and eliminate them. Common problems are like thread out of shape, thread damage, having sand & soil on the thread. Solution refer to maintain with file, clear with steel brush, change the accessories etc. If the problems can not be solved accordingly on site, please contact us timely.
- (2) When lifting, for the small diameter tension cable, please straight the cable reverse to pay-off spool; For the big diameter tension cable, pay-off while lifting, the lifting speed shall be same as pay-off speed to make sure lift up the tension cable naturally. Prohibit vertical lift directly before the cable pay-off naturally. If the cable is spiral when lifting, the lifting work must be stopped immediately. It can go on only after the cable is in a natural state, please lift and pay-off with folk-lift or manpower if no pay-off spool is available. Two anchors on both sides should be protected and the cable packaging should not be torn off when lifting to prevent scratching and crashing.



- (3) There is no need to use pay-off spool if the cable is short or have the enough space. Specific operations are: keep the pay-off spool still, lift the anchor and pay-off opposite to the spool, then begin to lift.
- (4) Once improper lifting operation caused cable warp, wire skip, strands loose or injured, please contact the professional person to repair and check whether the product is available.
- (5) After the cable lifting at proper position, confirm the length and dimension to make sure no dismounting any more, then coat the thread locking adhesives on the pin bolt thread and tighten the bolt with 3N·m torque.



3. Construction protection:

- (1) Tension cable should be handled gently on site, no throw or drop products, in order to avoid collision between products or damaged by other hard products; During the installation, the product should also be well protected to prevent scratches and crash, especially the thread part of the tension cable.
- (2) During installation, try to avoid welding. If have to, protection measures should be taken to avoid welding spark or slag to splash down to the surface of the tension cable. Particular attention is that cable can not be used as a welding lead.
- (3) If there are multi-cross operations on site, please protect the surface of tension cables away from cement mortar, coating and other pollutants of other type of works. If the products getting pollution and corrosion, clients should consult our company for solution and improve protection after cleaning.

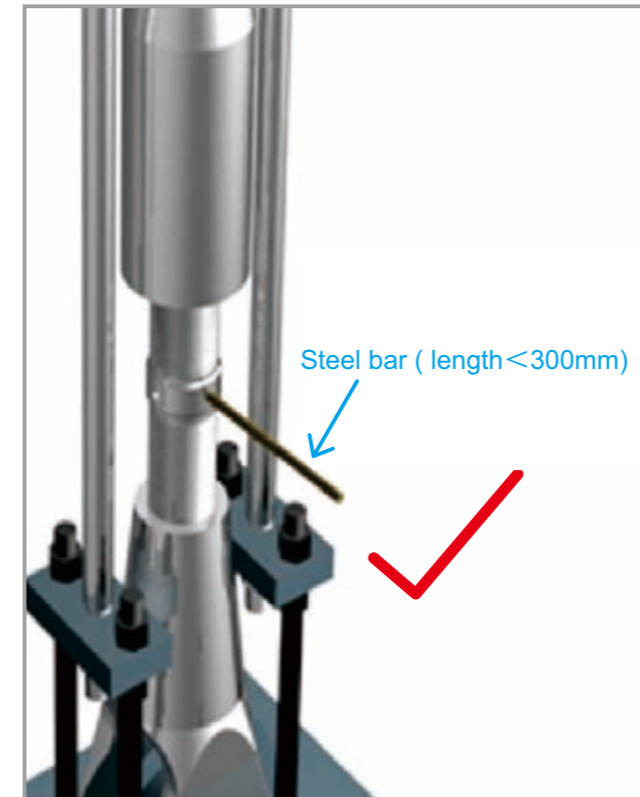
4. Maintenances:

- (1) Surface cleaning:
Stainless steel means it can have certain chemical stability around the corrosion mediums of air, water, acid, alkali, salt or others. But it does not mean the stainless steel will never rust. When come into service, the dust and other pollutants on product surface may lead to stainless steel corrosion and even rupture. Therefore, stainless steel tension cable must be regularly and daily cleaning. Regular cleaning cycle should within one year; daily cleaning cycle depends on the pollution, if it will cause corrosion, then cleaning or clearing. Since tension cable is multi-gap structure, liquid like water and detergent is not allowed to spray on it, please wring the wet towel out or clean it with few detergent on the soft fabric.

Please pay attention to the following points during maintenance:

- ① In any case, it is forbidden to clean with chlorinated solution (such as bleaching fluid, 84 disinfectant and etc.). When chlorinated solution be used for other purpose (e.g. disinfection), the stainless steel should also be in a good protection.
 - ② Stainless steel gets rust is not only concerned with pollutants, but also with the ambient temperature, humidity, atmospheric composition and so on. If the product get rust without any obvious pollutants, besides timely rust cleaning, it need to find out the reason of corrosion and solution.
- (2) Others:
Any product maintenance (such as prestress inspection and adjustment and etc.) doesn't mention above, please carry on according to the current industry standard Glass Curtain Wall Engineering Specifications.

Instruction of Installation for Tension Cable by "Easy Pretention" Series



Please pay attention to the following matters when tensioning the cable:

- 1. Before tensioning, the thread should be checked again and remove the attached sand, welding slag and so on.
- 2. Before tensioning, make sure the exposed thread length is equal as picture shows.
- 3. Specified tension tools shall be use.
- 4. During tensioning, it is recommended to hand screw or screw by inserting steel bar (L≤300mm) into wrench hole. Normally, one hand can easily turn the screw (no more than 5KG force). If the above method can not easily turn the screw, it may cause by improper tools or adjustment, please readjust or consult our company.
- 5. It is forbidden to add extension bar, chain wrench, pipe wrench or any similar tools to screw. If any operation against above causes tension difficulty or product damage. KIN LONG will not take any responsibility.

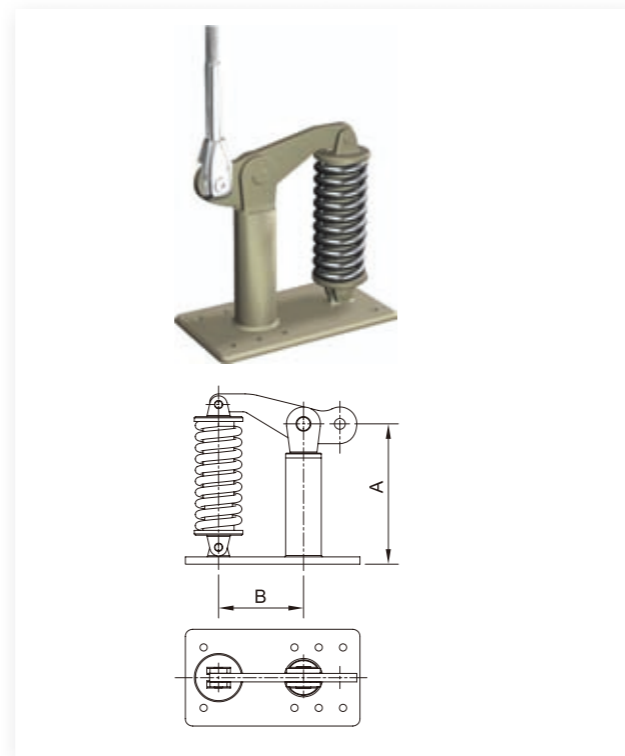
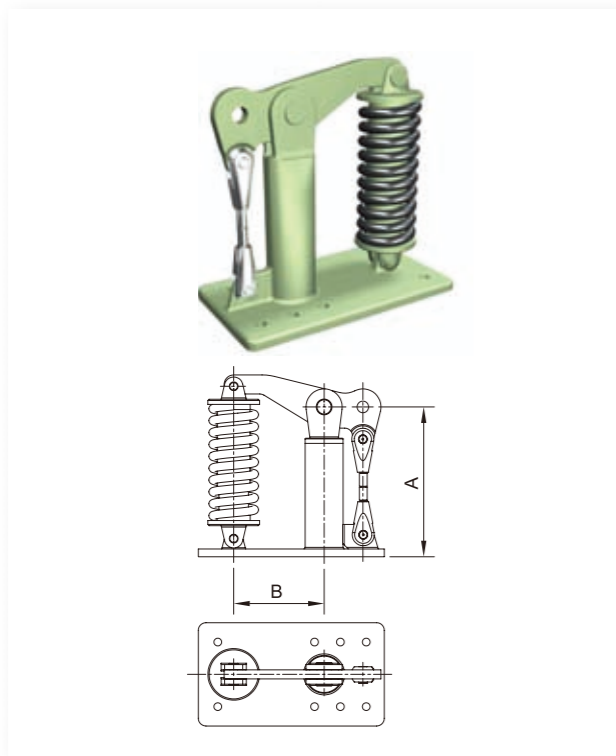


Typical Fittings for Cable

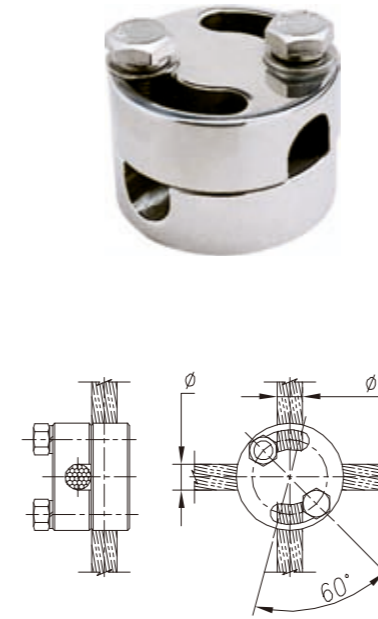


Overload Protection Device

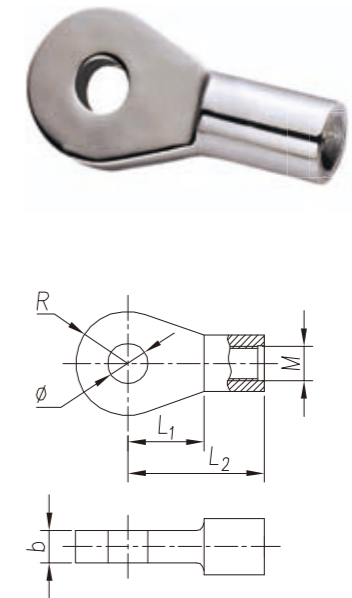
Pretension Keeping Device



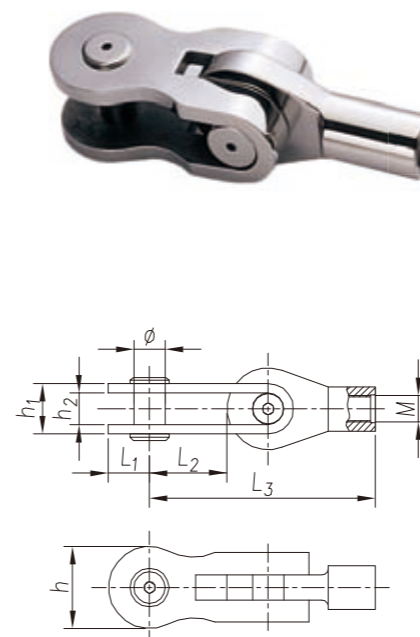
SGP-02



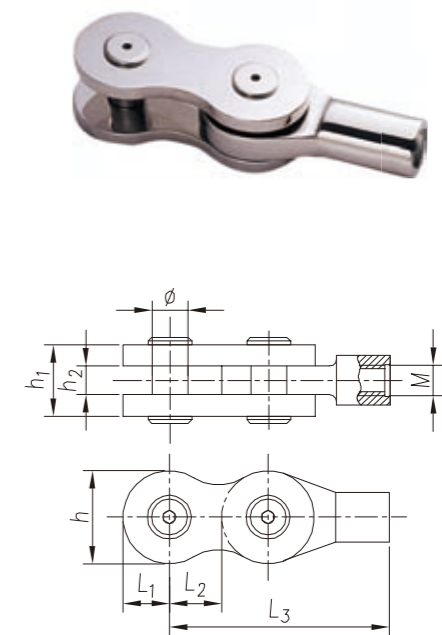
SGP-03



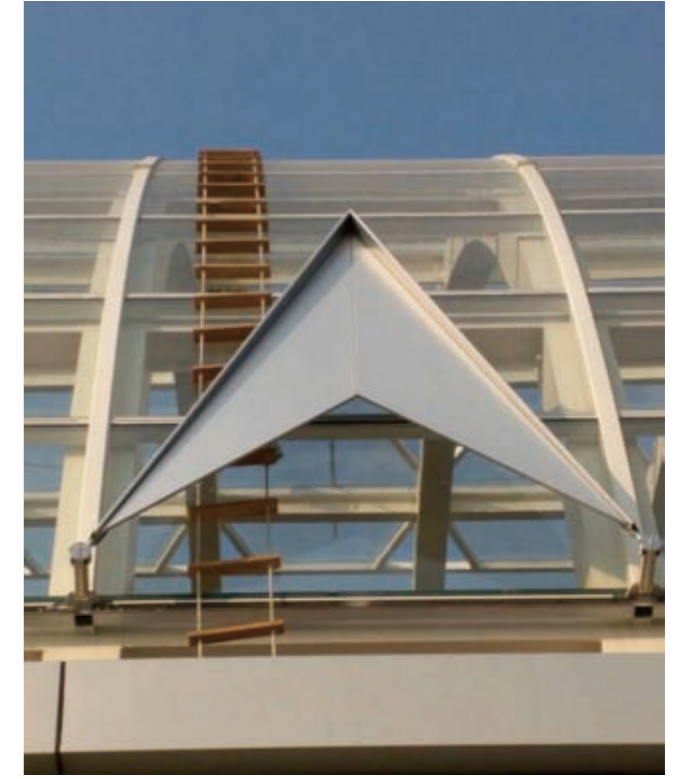
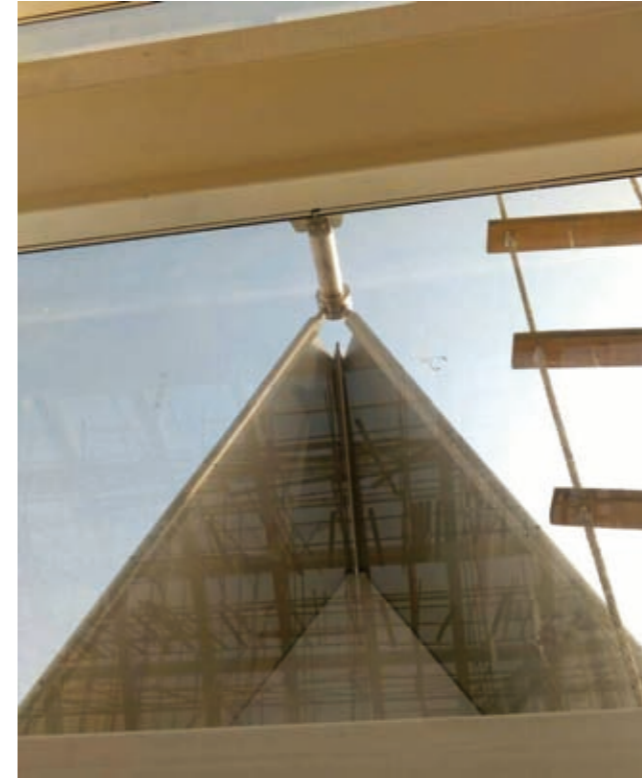
SGP-05



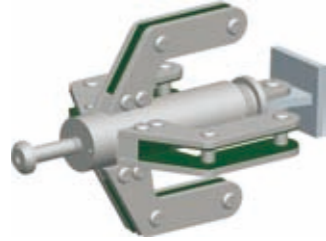
SGP-06



Customized Products



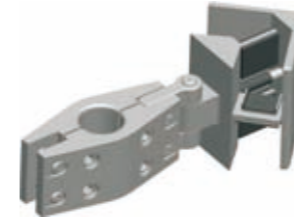
Zhenjiang Sports International Convention and Exhibition Center



Shenzhen Ping An International Financial Center



Shenyang Hanglung Plaza



HTC Headquarters Mansion in Taiwan



Beijing Golden Center



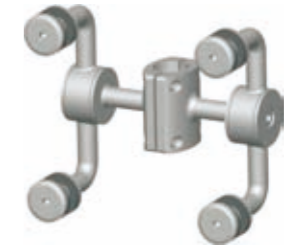
Project in California, U.S.A



ASOK Terminal 21 in Thailand



Dongguan Wing Lung Business Hotel



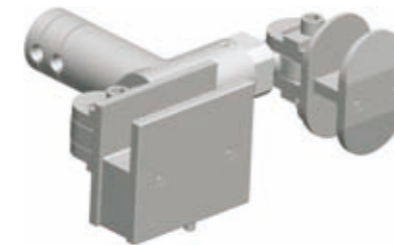
Sydney Green Center High-rise Apartment Building



HK West Kowloon



Guangzhou West Tower



Shanghai Siemens



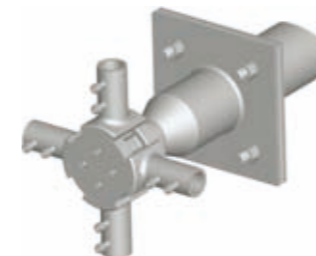
Burj Khalifa in Dubai



Shijiazhuang Airport



Shenzhen Stock Exchange



Shanghai Zhongjian Building



Installation Tools

Shenzhen Gangxia Parkway



Shenzhen Baoan District Children's Palace



Nanchang International Expo City



Taiwan United Daily



Shanghai Bund International Financial Center



Hong Kong Drama Centre



Huaya Square Curtain Wall System



Shenzhen Zuotingyoyuan



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