

# **ADSS and OPGW Fittings**

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# CONTENT

1.	Preformed Tension Clam for ADSS Cable.....	5
1.1	Low Tensile force Tension Clamp for ADSS Cable .....	6-7
1.2	Middle and Low Tensile Force Tension Clamp for ADSS Cable.....	8
1.3	Middle and Low Tensile Force Tension Clamp for ADSS Cable.....	9
1.4	Middle and Low Tensile Force Tension Clamp for ADSS Cable.....	10
1.5	Middle Tensile Force Tension Clamp for ADSS Cable.....	11
1.6	High Tensile Force Tension Clamp for ADSS Cable .....	12
2.	Preformed Tension Clamp for OPGW Cable.....	13-14
2.1	70 KN Grip Strength of Tension Clamp for OPGW Cable.....	15
2.2	100KN Grip Strength of Tension Clamp for OPGW Cable .....	16
3.	Preformed Suspension Clamp for ADSS Cable.....	17
3.1	Short Span Tangential Suspension Clamp for ADSS Cable .....	18
3.2	Middle Short Span Tangential Suspension Clamp For ADSS Cable (With Armor Rods) .....	19
3.3	Middle Short Span Suspension Clamp for ADSS Cable.....	20
3.4	Middle Span Suspension Clamp for ADSS Cable.....	21
3.5	Large Span Suspension Clamp for ADSS Cable.....	22
3.6	X-large Span Double Suspension Clamp For ADSS Cable.....	23-24
4.	Preformed Suspension Clamp for OPGW Cable.....	25

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4.1	Single Suspension Clamp for OPGW Cable.....	26
4.2	Double Suspension Clamp for OPGW Cable .....	27
5.	Vibration Damper.....	28
5.1	Spiral Vibration Damper.....	28
5.2	Clamp Type Vibration Damper.....	29-30
5.3	Preformed Vibration Damper.....	31-32
6.	Corona Suppression Ring.....	33
6.1	Corona Suppression Ring for Tension Clamps.....	33
6.2	Corona Suppression Ring for Suspension Clamp .....	34
7.	Cable Joint Box .....	35
7.1	Drum Type Metal Joint Box for ADSS,OPGW Cable.....	36
7.2	Cap Type Metal Joint Box for ADSS,OPGW Cable.....	37
7.3	Cable Storage Shelf.....	37
7.4	Fix Clamp(GXJ) .....	37
7.5	Stainless Steel Band.....	37
8.	Cable Terminal Box .....	38
9.	Down Lead Clamp.....	39
9.1	Galvanized Steel Down Lead Clamp for Tower .....	39
9.2	Stainless Steel Down Lead Clamp for Pole.....	39
10.	Ground Clamp.....	40
11.	Fastening Clamp .....	41
11.1	Fastening Clamp for Tower.....	41

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11.2 Fastening Clamp for Pole.....	42
12. Traction Clamp.....	43
13. Helical formed distribution products.....	44
13.1 Strand Splice.....	44
13.2 Armor Rods.....	44

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# 1. Preformed Tension Clamp For ADSS Cable

## Application :

Tension Clamps are designed to connect ADSS cables and poles/towers . Armor rods can provide protection and cushioning to the ADSS cables. The special design of Preformed rods makes ensure that Tension Clamps can't cause undue stress to the ADSS cables, so as to ensure the normal lifetime of cables system.



## Structure and Raw Material:

**Shackle**--Hot dip galvanized steel. Shackle is connected with Reinforcing Pole units.

**Twisted Chain Link**--Hot dip galvanized steel. Twisted Chain Link is intended for connecting Shackle and Thimble.

**Thimble**---Hot dip galvanized cast steel. Thimble is plugged in shackle of Tension Clamp for protection and connection.

**Armor Rods**---- Aluminum clad steel wire. Armor Rods increase friction with a layer of particle emery inside to cables. Rods are assembled into four subsets in workshop which reduce misalignment errors and speeds installation. The ends are bent outward to provide stress relief at the critical cable departure areas.

**Preformed Dead End** -- Preformed Dead End are made of hot dip galvanized steel wire or aluminum clad steel wire, it is assembled into one subset with a layer of firm emery inside in workshop for increasing grip strength of Tension Clamps while decreasing side pressure.

## Direction :

1. It is designed to connect continue pole (tower) and Terminal pole(tower), tensile pole or line angles above 25° Pole (tower). The special specification: one unit per Terminal pole (tower), two units per tensile pole (tower), two units per continue pole (tower).

2. You can select the Specification Model corresponding to the appropriate cable diameter range, maximum

allowable tension (MAT) or Span Length from Data Sheet.

## 1.1 Low Tensile force Tension Clamp for ADSS Cable

The tension clamp is single preformed rods structure, simple and reliable ,convenient and quick installation, It is specially designed for short span length low tensile force ADSS cables.

### Technical Data:

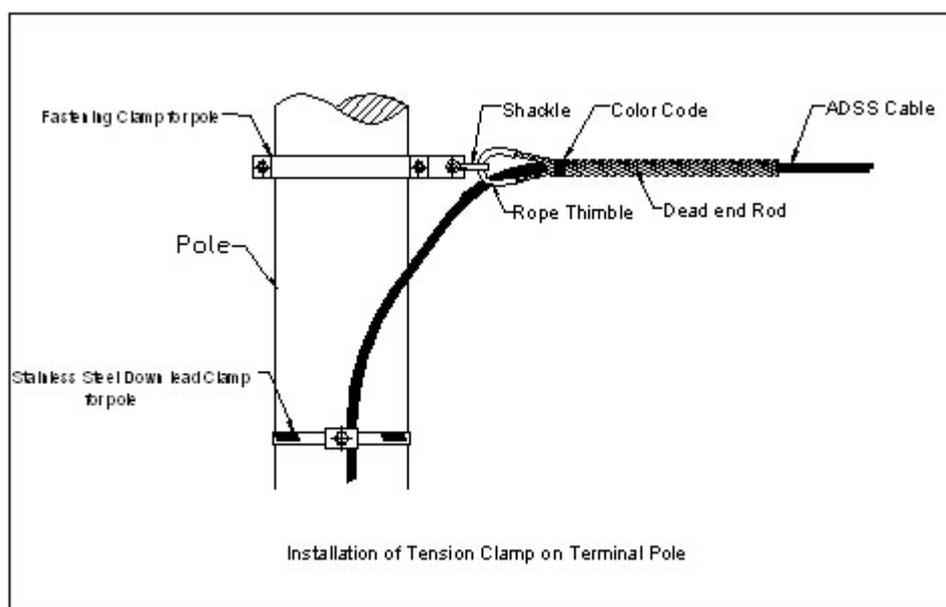
Grip Force: 10KN

Recommended Span Length:  $\leq 100\text{m}$

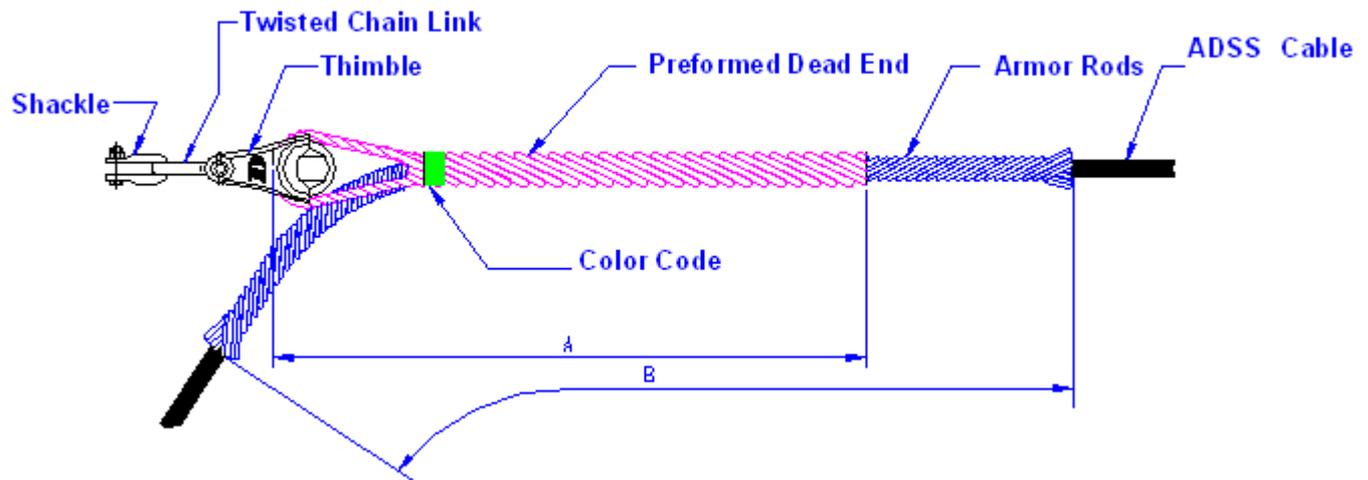
### Data Sheet

Specification Model	Suitable Cable Dia. (mm)	Dead end rods Length (mm)	Color Code
ANF 0900 010	8.1-9.0	725	Black
ANF 1000 010	9.1-10.0	750	Red
ANF 1110 010	10.1-11.1	800	Orange
ANF 1220 010	11.2-12.2	850	Yellow
ANF 1330 010	12.3-13.3	900	Green
ANF 1440 010	13.4-14.4	950	Cyan
ANF 1550 010	14.5-15.5	1000	Blue
ANF 1660 010	15.6-16.6	1050	purple
ANF 1770 010	16.7-17.7	1100	Black
ANF 1880 010	17.8-18.8	1150	Red

**One set of Tension Clamp includes a unit of Dead end Rod, a Rope Thimble, and a unit of Shackle (U-4).**



## 1.2 Middle and Low Tensile Force Tension Clamp for ADSS Cable



### Technical Data:

Grip Force: 20KN

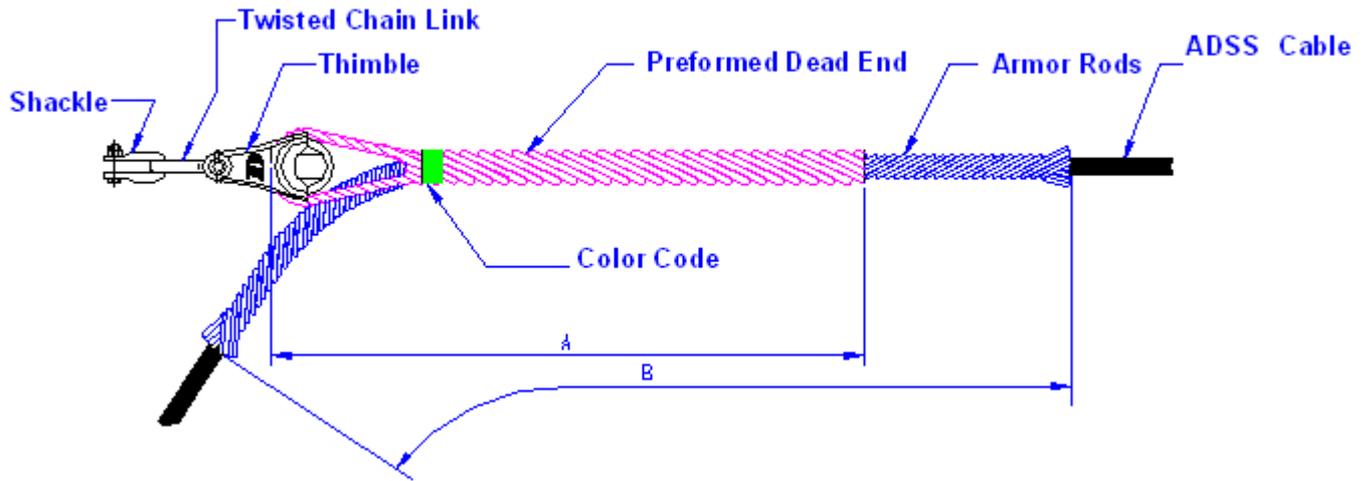
Recommended Span Length:  $\leq 200\text{m}$

### Data Sheet:

Specification Model	Suitable Cable Diameter (mm)	Armor Rod Length (mm)	Dead end Rod Length (mm)	Color Code
ANF 0900 020	8.1-9.0	1200	700	Black
ANF 1000 020	9.1-10.0	1200	700	Red
ANF 1110 020	10.1-11.1	1200	700	Orange
ANF 1220 020	11.2-12.2	1200	700	Yellow
ANF 1330 020	12.3-13.3	1200	700	Green
ANF 1440 020	13.4-14.4	1200	700	Cyan
ANF 1550 020	14.5-15.5	1200	700	Blue
ANF 1660 020	15.6-16.6	1200	700	Purple
ANF 1770 020	16.7-17.7	1200	700	Black
ANF 1880 020	17.8-18.8	1200	700	Red

One set of Tension Clamp includes a unit of Armor Rods, a unit of Dead End Rods, an Shackle U-4, A Twisted Chain Link ZH-4 and a Thimble NHG-040.

## 1.3 Middle and Low Tensile Force Tension Clamp for ADSS Cable



### Technical Data:

Grip Force: 30KN

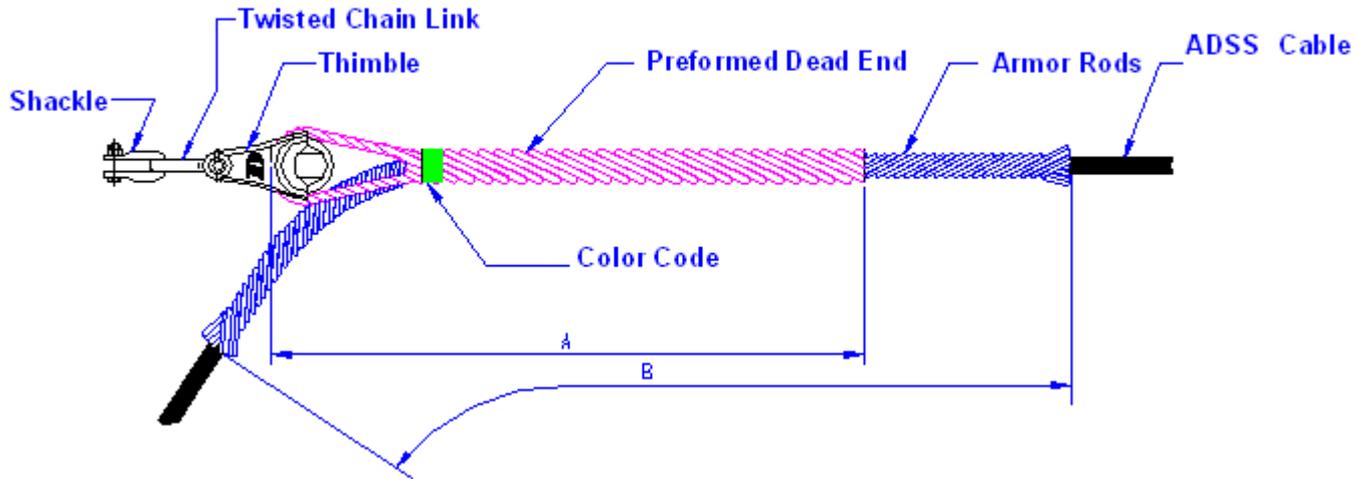
Recommended Span Length:  $\leq 400\text{m}$

### Data Sheet:

Specification Model	Suitable Cable Diameter (mm)	Armor Rods Length (mm)	Dead End Rods Length (mm)	Color Code
ANF 0900 030	8.1-9.0	1400	900	Black
ANF 1000 030	9.1-10.0	1400	900	Red
ANF 1110 030	10.1-11.1	1400	900	Orange
ANF 1220 030	11.2-12.2	1400	900	Yellow
ANF 1330 030	12.3-13.3	1400	900	Green
ANF 1440 030	13.4-14.4	1400	900	Cyan
ANF 1550 030	14.5-15.5	1400	900	Blue
ANF 1660 030	15.6-16.6	1400	900	Purple
ANF 1770 030	16.7-17.7	1400	900	Black
ANF 1880 030	17.8-18.8	1400	900	Red

One set of Tension Clamp includes a unit of Armor Rods, a unit of Dead End Rods, an Shackle U-4, a Twisted Chain Link ZH-4, a Thimble NHG-040.

## 1.4 Middle and Low Tensile Force Tension Clamp for ADSS Cable



### Technical Data:

Grip Force: 40KN

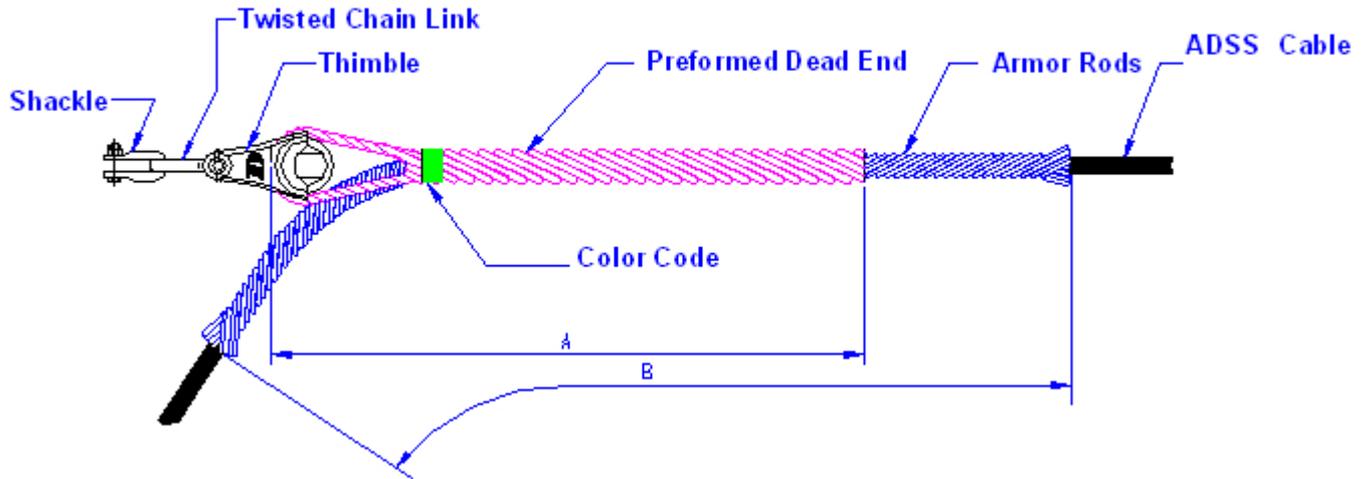
Recommended Span Length: 400-600m

### Data Sheet:

Specification Model	Suitable Cable Diameter (mm)	Armor Rods Length (mm)	Dead End Rods Length (mm)	Color Code
ANF 0900 040	8.1-9.0	1600	1050	Black
ANF 1000 040	9.1-10.0	1600	1050	Red
ANF 1110 040	10.1-11.1	1600	1050	Orange
ANF 1220 040	11.2-12.2	1600	1050	Yellow
ANF 1330 040	12.3-13.3	1600	1050	Green
ANF 1440 040	13.4-14.4	1600	1050	Cyan
ANF 1550 040	14.5-15.5	1600	1050	Blue
ANF 1660 040	15.6-16.6	1600	1050	Purple
ANF 1770 040	16.7-17.7	1600	1050	Black
ANF 1880 040	17.8-18.8	1600	1050	Red

One set of Tension Clamp includes a unit of Armor Rods, a unit of Dead End Rods, an Shackle U-4, a Twisted Chain Link ZH-4, a Thimble NHG-040.

## 1.5 Middle Tensile Force Tension Clamp for ADSS Cable



### Data Sheet:

Grip Force: 50KN

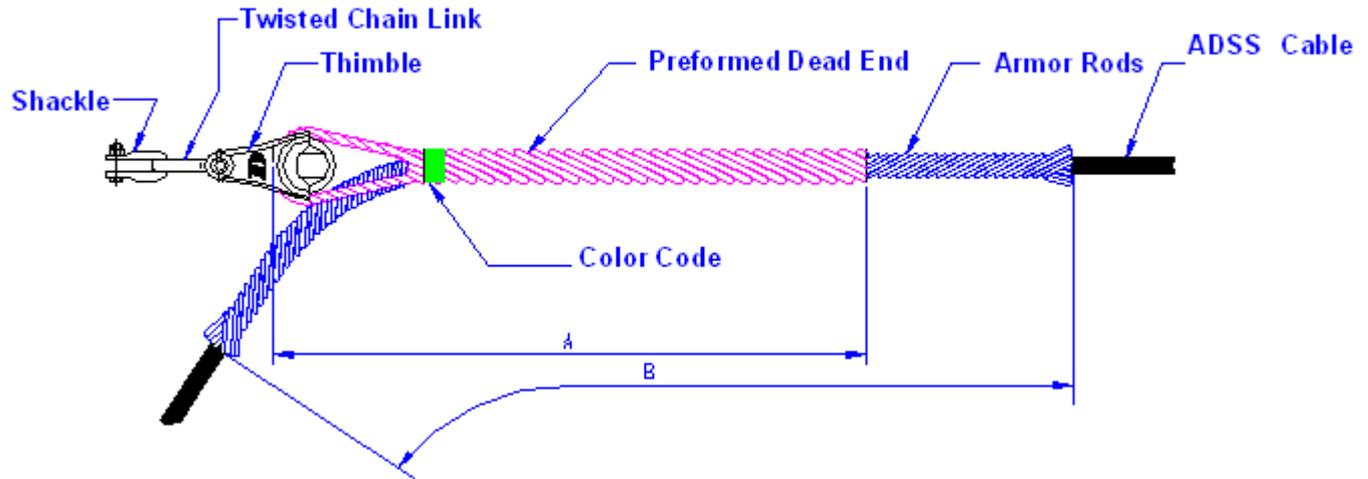
Recommended Span Length:  $\leq 700\text{m}$

### Data Sheet:

Specification Model	Suitable Cable Diameter (mm)	Armor Rods Length (mm)	Dead End Rods Length (mm)	Color Code
ANF 1110 050	10.1-11.1	1800	1200	Orange
ANF 1220 050	11.2-12.2	1800	1200	Yellow
ANF 1330 050	12.3-13.3	1800	1200	Green
ANF 1440 050	13.4-14.4	1800	1200	Cyan
ANF 1550 050	14.5-15.5	1800	1200	Blue
ANF 1660 050	15.6-16.6	1800	1200	Purple
ANF 1770 050	16.7-17.7	1800	1200	Black
ANF 1880 050	17.8-18.8	1800	1200	Red

One set of Tension Clamp includes a unit of Armor Rods, a unit of Dead End Rods, a Shackle U-7, a Twisted Chain Link and a Thimble NHG-070.

## 1.6 High Tensile Force Tension Clamp for ADSS Cable



### Technical Data:

Grip Force: 70KN

Recommended Span Length: 700~1200m

### Data Sheet:

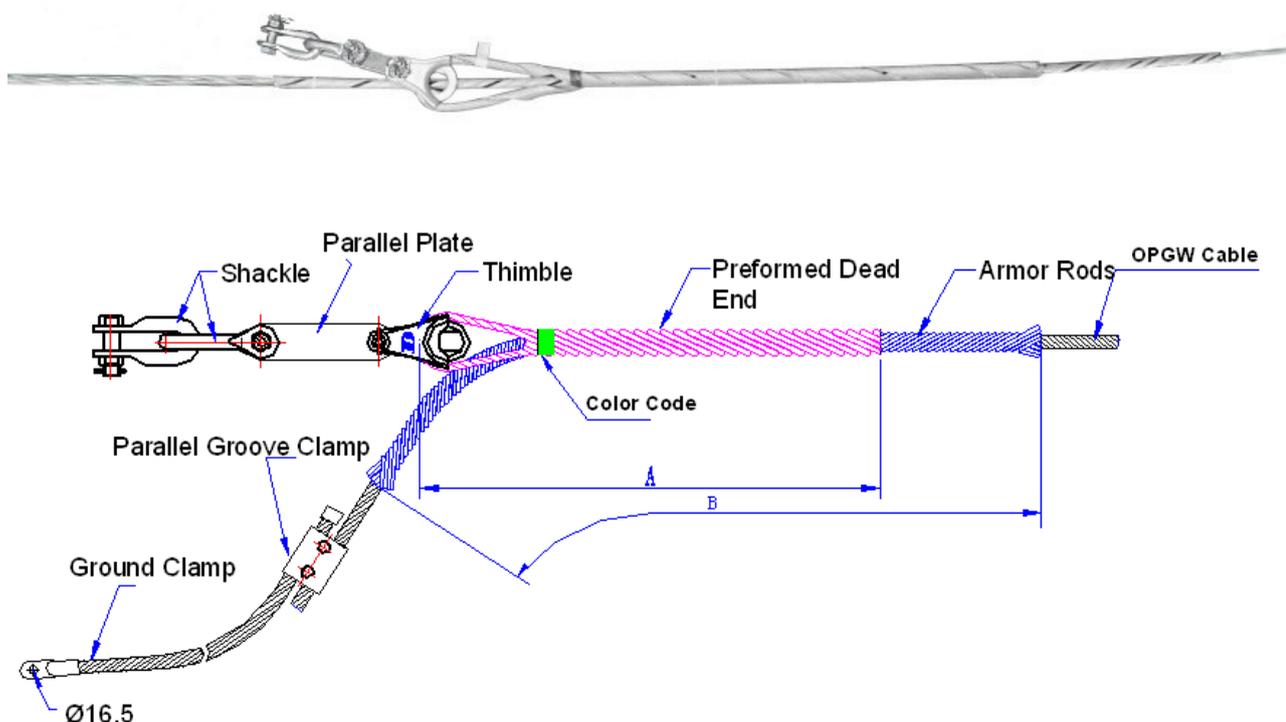
Specification Model	Suitable Cable Diameter (mm)	Armor Rods Length (mm)	Dead End Rods Length (mm)	Color Code
ANF 1110 070	10.1-11.1	2600	1800	Orange
ANF 1220 070	11.2-12.2	2600	1800	Yellow
ANF 1330 070	12.3-13.3	2600	1800	Green
ANF 1440 070	13.4-14.4	2600	1800	Cyan
ANF 1550 070	14.5-15.5	2600	1800	Blue
ANF 1660 070	15.6-16.6	2600	1800	Purple
ANF 1770 070	16.7-17.7	2600	1800	Black
ANF 1880 070	17.8-18.8	2600	1800	Red

One Set of Tension Clamp includes a unit of Armor Rods, a unit of Dead End Rods, a Shackle U-7, a Twisted Chain Link ZH-7, a Thimble NHG-070.

## 2. Preformed Tension Clamp for OPGW Cable

### Application:

Tension Clamps are designed to connect OPGW cables and tensile poles (or towers). Armor rods can protect and provide cushioning to the OPGW cables. The special design of Armor rods makes ensure that Tension Clamps can not cause undue stress to the OPGW cables, so that the normal lifetime of cable system is ensured.



### Structure and Material:

**Shackle** ----- Hot dip galvanized steel. Shackle is connected with fastening clamp on tensile pole (or tower).

**Parallel Plate**----- Hot dip galvanized steel. Parallel Plate is connected Thimble and U-shackle.

**Thimble**----- Hot galvanized cast steel. Thimble is plugged in bend of

Preformed Dead End for protection and connected.

**Armor Rods**-----Armor Rods are made of aluminum clad steel wires. With a layer of particle emery inside, Armor Rods can increase friction to cable. Rods are made into four subsets which can reduce misalignment errors and speeds installation. The ends are bent outward to avoid stress to OPGW cables.

**Preformed Dead End**---Aluminum clad steel wire. Preformed Dead End are made into one subset with a layer of firm emery inside, in order to increase gripping strength of Tension Clamp while decreasing side pressure.

**Direction:**

1. It is designed to connect Terminal pole (tower), tensile pole (tower) and Continue pole (or tower). The special specification: one unit per Terminal pole (tower), two units per tensile pole (tower) and two units per Continue pole (tower).
  2. Select the Specification Model for Tension Clamp corresponding to the cable diameter range and Rated Tensile Strength.
  3. Ground Clamps are sold together with Tension Clamps, and prohibited directly installing on the Preformed Dead End and Armor Rods.
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## 2.1 70 KN Grip Strength of Tension Clamp for OPGW Cable

### Technical Data:

Grip Strength: 70KN

### Data Sheet:

Specification Model	Suitable Cable Diameter (mm)	Armor Rods Length (mm)	Preformed Dead End (mm)	Color Code
ONF 1000 070	9.0-10.0	1350	900	Red
ONF 1110 070	10.1-11.1	1350	900	Orange
ONF 1220 070	11.2-12.2	1400	1000	Yellow
ONF 1330 070	12.3-13.3	1400	1000	Green
ONF 1440 070	13.4-14.4	1400	1000	Cyan
ONF 1550 070	14.5-15.5	1700	1200	Blue
ONF 1660 070	15.6-16.6	1700	1200	Purple

**One set of Tension Clamp includes a unit of Armor Rods, a unit of Preformed Dead end, two Shackle (U-7), a Parallel Plate( PD-7), A Thimble (NHG-070).**

## 2.2 100KN Grip Strength of Tension Clamp for OPGW Cable

### Technical Data:

Grip Strength: More than 100KN

### Data Sheet

Specification Model	Suitable Cable Diameter (mm)	Armor Rods Length (mm)	Preformed Dead End (mm)	Color Code
ONF 1000 100/120/160	9.0-10.0	1600	1100	Red
ONF 1110 100/120/160	10.1-11.1	1700	1200	Orange
ONF 1220 100/120/160	11.2-12.2	1800	1300	Yellow
ONF 1330 100/120/160	12.3-13.3	1900	1400	Green
ONF 1440 100/120/160	13.4-14.4	2000	1500	Cyan
ONF 1550 100/120/160	14.5-15.5	1900	1400	Blue
ONF 1660 100/120/160	15.6-16.6	2000	1500	Purple
ONF 1770 100/120/160	16.7-17.7	2100	1600	Black
ONF 1880 100/120/160	17.8-18.8	2200	1700	Red

**One set of Tension Clamp includes a unit of Armor Rods, a unit of Preformed Dead End, Two Shackles(U-10), A Parallel Plate(PD-10), A Thimble (NHG-100).**

**For 120KN: two Anchor Shackle (U-12), a Parallel Plate (PD-12) and a Clevis Thimble (NHG-120).**

**For 160KN: two Anchor Shackle (U-16), a Parallel Plate (PD-16) and a Clevis Thimble (NHG-160).**

## 2.2 The Connectors for Tension Clamp

Shackle	Parallel Plate	Thimble	Rated Tensile Strength (KN)	Material
U-7*2	PD-7	NHG-070	70	Hot Dip Galvanized Steel
U-10*2	PD-10	NHG-100	100	Hot Dip Galvanized Steel
U-12*2	PD-12	NHG-120	120	Hot Dip Galvanized Steel
U-16*2	PD-16	NHG-160	160	Hot Dip Galvanized Steel

### 3. Preformed Suspension Clamp for ADSS Cable

#### Application:

The Preformed Suspension Clamp is the connecting hardware of ADSS cable which hanging in transmission line pole (tower). It can reduce static stress at the support point, improve cable ant-vibration ability, and cushioned against the dynamic stress of Aeolian vibration. as well as ensure that the cable bending will not exceed the permissible values, make the cable does not produce bending stress, so that the fiber optic don' t produce extra loss in the cables.

#### Structure and Material:

**Housing**--- It is made of corrosion resistance cast aluminum alloy, which is stable, better anticorrosive in aero and mechanical performance.

**Rubber Insert**--- It consists of high-class rubber and center reinforcing assembly, rubber insert is with ozone resistance, chemical resistances, weather resistance performance, with high and low temperature performance, high strength and elasticity, small compression deformation.

**Bolt, Flat Washer, Spring Washer, Nut, Split Lock, Shackle**--- Standard Parts of Electric Power.

**Inner Preformed Rods**---According to the mechanical performance and chemical composition to custom-made the aluminum alloy wire, with high tensile strength, hardness strength and excellent elasticity and strong rust resistance , it can be used for a long time in the bad weather condition.

**Outer Preformed Rods**--- The same as the Inner Preformed Rods.

#### Direction:

1.It is designed to connect straight or elevation angel less than 25° pole (tower) and ADSS cables, The special specification: one unit per pole.

2. Select the specification model for Suspension Clamp is corresponding to the appropriate Cable Diameter, Load Weight or span length.

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### 3.1 Short Span Tangential Suspension Clamp for ADSS Cable



Breaking Strength: 10KN

Recommended Span Length:  $\leq 100\text{m}$

Data Sheet:

Specification Model (Without Preformed Rods)	Suitable Cable Diameter (mm)	Length (mm)	Rubber Model
AXJ 1110 010	9.0-11.1	116	TD 1110
AXJ 1330 010	11.2-13.3	116	TD 1330
AXJ 1550 010	13.4-15.5	116	TD 1550
AXJ 1770 010	15.6-17.7	116	TD 1770

**One set of Tangential Suspension Clamp includes Housing, Rubber Insert and a Shackle U-4.**

### 3.2 Middle Short Span Tangential Suspension Clamp For ADSS Cable (With Armor Rods)



Breaking Strength: 20KN

Recommended Span Length:  $\leq 200\text{m}$

#### Data Sheet:

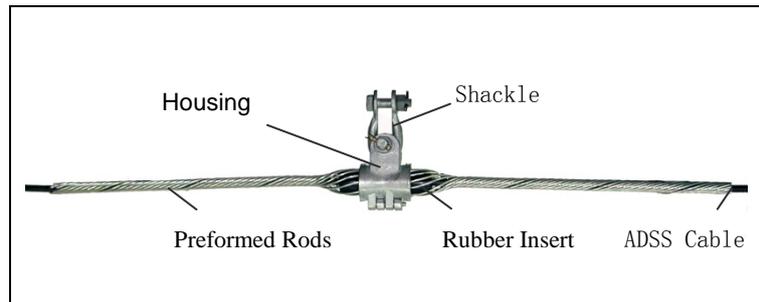
Specification Model (With Preformed Rod)	Suitable Cable Diameter (mm)	Preformed Rods Length (mm)	Preformed Rods Length (mm)	Color Code
ACL 0890 020	7.9-8.9	720	TD 1330	Black
ACL 1000 020	9.0-10.0	740	TD 1550	Red
ACL 1110 020	10.1-11.1	760	TD 1550	Orange
ACL 1220 020	11.2-12.2	780	TD 1770	Yellow
ACL 1330 020	12.3-13.3	800	TD 1770	Green
ACL 1440 020	13.4-14.4	820	TD 1990	Cyan
ACL 1550 020	14.5-15.5	840	TD 1990	Blue

**One set of Middle Short Span Tangential Suspension Clamp includes Housing, Rubber Insert, Armor Rod and a Shackle U-4.**

### 3.3 Middle Short Span Suspension Clamp for ADSS Cable

#### Application:

Single layer of Preformed Rods design can be used reliably and stably for a long time, as well as offers a cheaper solution for ADSS cable projects for the users.



Breaking Strength: 40KN

Recommended Span Length:  $\leq 400\text{m}$

#### Data Sheet:

Specification Model	Suitable Cable Diameter (mm)	Preformed Rods Length (mm)	Color Code
AXL 1010 040	9.5-10.1	840	Orange
AXL 1080 040	10.2-10.8	860	Yellow
AXL 1150 040	10.9-11.5	880	Green
AXL 1220 040	11.6-12.2	900	Cyan
AXL 1290 040	12.3-12.9	920	Blue
AXL 1360 040	13.0-13.6	940	Purple
AXL 1430 040	13.7-14.3	960	Black
AXL 1500 040	14.4-15.0	1060	Red
AXL 1570 040	15.1-15.7	1080	Orange
AXL 1640 040	15.8-16.4	1100	Yellow
AXL 1710 040	16.5-17.1	1120	Green
AXL 1780 040	17.2-17.8	1140	Cyan

One set of Suspension Clamp includes a unit of Preformed Rods, a Housing, a Rubber Insert and a Shackle U-4.

### 3.4 Middle Span Suspension Clamp for ADSS Cable



Breaking Strength: 50KN

Recommended Span Length:  $\leq 700\text{m}$

#### Data Sheet:

Specification Model	Suitable Cable Diameter (mm)	Inner Preformed Rods Length (mm)	Outer Preformed Rods (mm)	Color Code
AXF 1010 050	9.5-10.1	1380	780	Orange
AXF 1080 050	10.2-10.8	1400	800	Yellow
AXF 1150 050	10.9-11.5	1420	820	Green
AXF 1220 050	11.6-12.2	1440	840	Cyan
AXF 1290 050	12.3-12.9	1460	860	Blue
AXF 1360 050	13.0-13.6	1480	880	Purple
AXF 1430 050	13.7-14.3	1500	900	Black
AXF 1500 050	14.4-15.0	1600	1000	Red
AXF 1570 050	15.1-15.7	1620	1020	Orange
AXF 1640 050	15.8-16.4	1640	1040	Yellow
AXF 1710 050	16.5-17.1	1660	1060	Green
AXF 1780 050	17.2-17.8	1680	1080	Cyan
AXF 1850 050	17.9-18.5	1700	1100	Blue

**One set of Suspension Clamp includes a unit of Inner Preformed Rods, Outer Preformed Rods, a Housing, a Rubber Insert, a Shackle U-7.**

### 3.5 Large Span Suspension Clamp for ADSS Cable

Breaking Strength: 70KN

Recommended Span Length: 700-1000 m



#### Data Sheet:

Specification Model	Suitable Cable Diameter (mm)	Inner Preformed Rods (mm)	Outer Preformed Rods (mm)	Color Code
AXF 1150 070	10.9-11.5	1740	1100	Green
AXF 1220 070	11.6-12.2	1760	1120	Cyan
AXF 1290 070	12.3-12.9	1780	1140	Blue
AXF 1360 070	13.0-13.6	1800	1160	Purple
AXF 1430 070	13.7-14.3	1820	1180	Black
AXF 1500 070	14.4-15.0	2000	1400	Red
AXF 1570 070	15.1-15.7	2040	1440	Orange
AXF 1640 070	15.8-16.4	2080	1480	Yellow
AXF 1710 070	16.5-17.1	2120	1520	Green
AXF 1780 070	17.2-17.8	2160	1560	Cyan
AXF 1850 070	17.9-18.5	2200	1600	Blue

**One set of Suspension Clamp includes a unit of Inner Preformed Rods, a unit of Outer Preformed Rods, a Housing, a Rubber Insert and a Shackle U-7.**

### 3.6 X-large Span Double Suspension Clamp For ADSS Cable

#### Application:

The X-large Span Preformed Double Suspension Clamp is designed to connect ADSS cable and straight towers (or poles) or big elevation angel lines for long span length, it can decrease static stress at support points and increase ant-vibration ability for ADSS cable, and cushioned against the dynamic stress of aeolian vibration. Provide gentle bend angle for ADSS cable which is support on the large angle suspension Pole(tower), reduce the bending stress of ADSS cable, to avoid various harmful stress concentration, so that the optical fiber of cable does not generate additional loss.

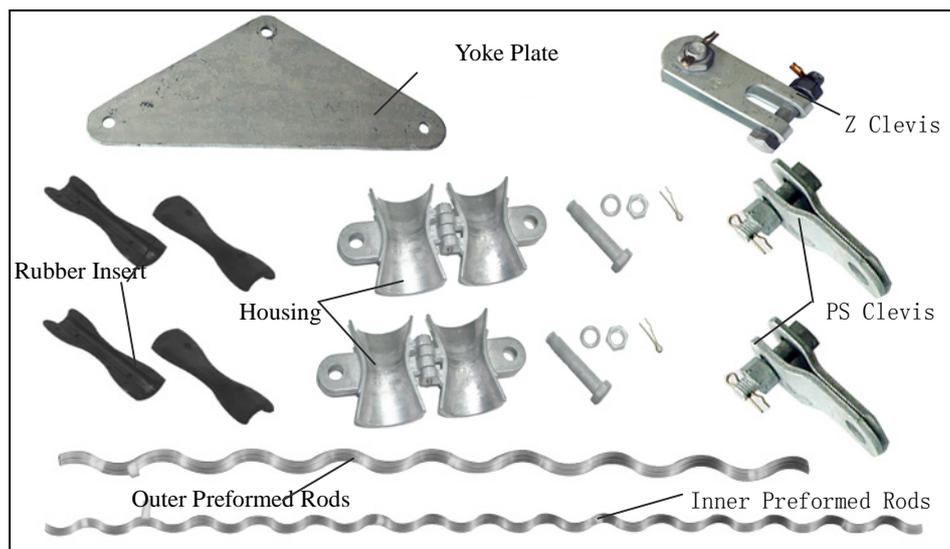
#### Structure:

The product is combine with two number of Housings, two number of Rubber Inserts, one unit of Outer Preformed Rods, one unit of Inner Preformed Rods.

Inner Preformed Rods, which are directly wrapped outside of the cables and gripped by Rubber Insert, to provide protection and hardness strength for the cables. Outer Preformed Rods are gripped by Housing and pressed the Rubber Insert.

The same to the Single Suspension Clamps.

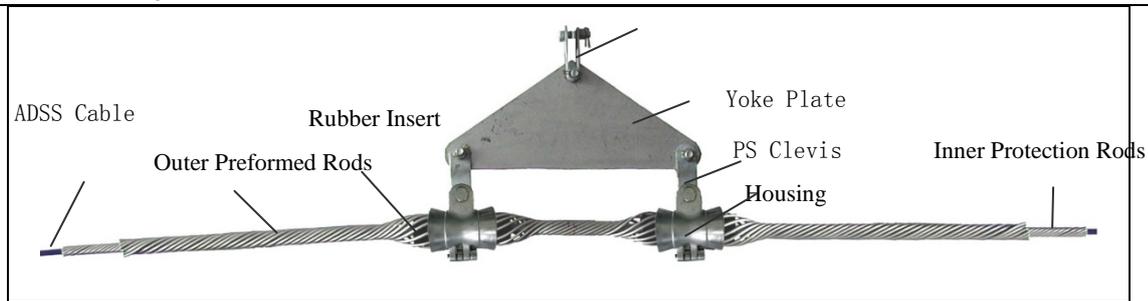
#### Components:



#### Direction:

1. It is designed to connect Straight Towers(or poles) and ADSS cables, One set per tower(or pole).
2. Select the specification model corresponding to the cable diameter and maximum load-weight.

#### Installation:



Breaking Strength: Greater Than 100KN

Recommended Span Length: >1000m

### Data Sheet:

Specification Model	Suitable Cable Diameter (mm)	Inner Preformed Rods (mm)	Outer Preformed Rods (mm)	Color Code
AXF 1150 070S	10.9-11.5	2100	1500	Green
AXF 1220 070S	11.6-12.2	2200	1600	Cyan
AXF 1290 070S	12.3-12.9	2200	1600	Blue
AXF 1360 070S	13.0-13.6	2300	1700	Purple
AXF 1430 070S	13.7-14.3	2300	1700	Black
AXF 1500 070S	14.4-15.0	2500	1900	Red
AXF 1570 070S	15.1-15.7	2500	1900	Orange
AXF 1640 070S	15.8-16.4	2600	2000	Yellow
AXF 1710 070S	16.5-17.1	2600	2000	Green
AXF 1780 070S	17.2-17.8	2600	2000	Cyan
AXF 1850 070S	17.9-18.5	2600	2000	Blue

**One set of Double Suspension Clamp includes one unit of Inner Preformed Rods, one unit of Outer Preformed Rods, two number of Housings, a Yoke Plate, two number PS Clevis PS-7 and a Z Clevis Z-7.**

## 4. Preformed Suspension Clamp for OPGW Cable

### Application:

The Preformed Suspension Clamps are intended for connecting for OPGW Cable and Poles(Towers), reducing static stress to the OPGW Cables at support points and increase ant-vibration ability of ADSS cables, cushioning against the dynamic stress of Aeolian vibration, as well as ensure that the cable bending will not exceed the permissible value, make the cable does not generate bending stress, so that the fiber optic don't produce extra loss in the cable after installation.

### Structure and Material

The preformed Suspension Clamp is combine with Suspension Splint ( Suspension Splint is made of Rubber Insert, Housing, Bolt, Spring Washer, Flat Washer, Nut, Splint pin ), Outer Preformed Rods, inner Preformed Rods.

Inner Preformed Rods, which are directly wrapped outside of the cables and gripped by Rubber Insert, to provide protection and hardness strength for the cables. Outer Preformed Rods are gripped by Housing and pressed the Rubber Insert.

**Housing**-----It is made of cast aluminum alloy, which is stable, better anticorrosive in aero and mechanical performance.

**Rubber Insert**----It is made of high-class rubber, compounded for resistance to ozone and chemical, weathering extreme high and low temperature variations and compression set.

**Bolt、Spring Washer、Flat Washer、Nut**--- Hot dip galvanized standard.

**Splint Pin**---- Standard part of Electric Power.

**Inner Preformed Rods**--- According to the mechanical performance and chemical composition to custom-made the aluminum alloy wire, with high tensile strength, hardness strength and excellent elasticity and strong rust resistance , it can be used for a long time in the bad weather condition.

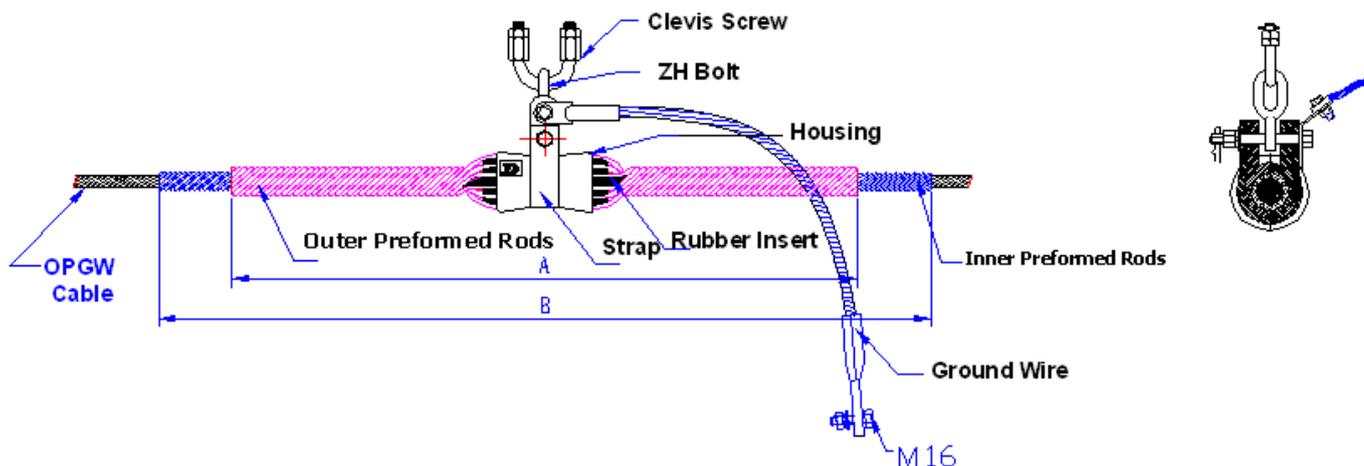
**Outer Preformed Rods**--- The same to Inner Preformed Rods.

**Connection Hardware**--- Shackle, U-bolt, UB Clevis、ZH Clevis are the standard parts of Electric Power.

### Direction:

1. It is designed to connect corner/ elevation angel which is smaller than 25° pole(tower) and cable, double suspension clamp can be apply to large span length and large elevation angle of straight pole(tower). A unit of Suspension Clamp per Pole(tower).
  2. Select the specification model for Suspension Clamp is corresponding to the appropriate cable range and Span Length / Load-weight.
  3. It is suitable to OPGW Cable.
  4. Select the different connection hardware matching the Suspension Clamp is according to the different method of actual line on Pole(Tower).
-

## 4.1 Single Suspension Clamp for OPGW Cable

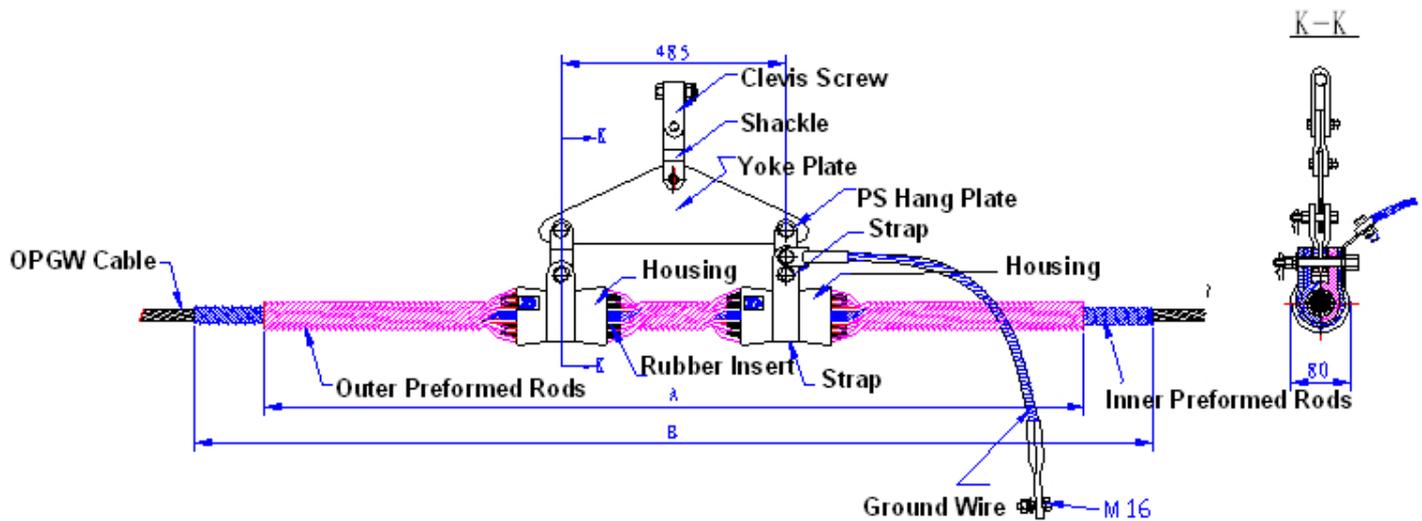


### Data Sheet:

Specification Model	Suitable Cable Diameter (mm)	Inner Preformed Rods Length (mm)	Outer Preformed Rods Length (mm)	Color Code
OXF 0870 070	8.1-8.7	1660	1060	Black
OXF 0940 070	8.8-9.4	1680	1080	Red
OXF 1010 070	9.5-10.1	1700	1100	Orange
OXF 1080 070	10.2-10.8	1720	1120	Yellow
OXF 1150 070	10.9-11.5	1740	1140	Green
OXF 1220 070	11.6-12.2	1760	1160	Cyan
OXF 1290 070	12.3-12.9	1780	1180	Blue
OXF 1360 070	13.0-13.6	1800	1200	Purple
OXF 1430 070	13.7-14.3	1820	1220	Black
OXF 1500 070	14.4-15.0	2000	1400	Red
OXF 1570 070	15.1-15.7	2040	1440	Orange
OXF 1640 070	15.8-16.4	2080	1480	Yellow
OXF 1710 070	16.5-17.1	2120	1520	Green
OXF 1780 070	17.2-17.8	2160	1560	Cyan
OXF 1850 070	17.9-18.5	2200	1600	Blue

One set of Single Suspension Clamp includes a unit of Inner Preformed Rods, a unit of Outer Preformed rods, Suspension Splint, ZH Clevis and U-bolt. ( Connection Hardware can be available on request)

## 4.2 Double Suspension Clamp for OPGW Cable



### Data Sheet:

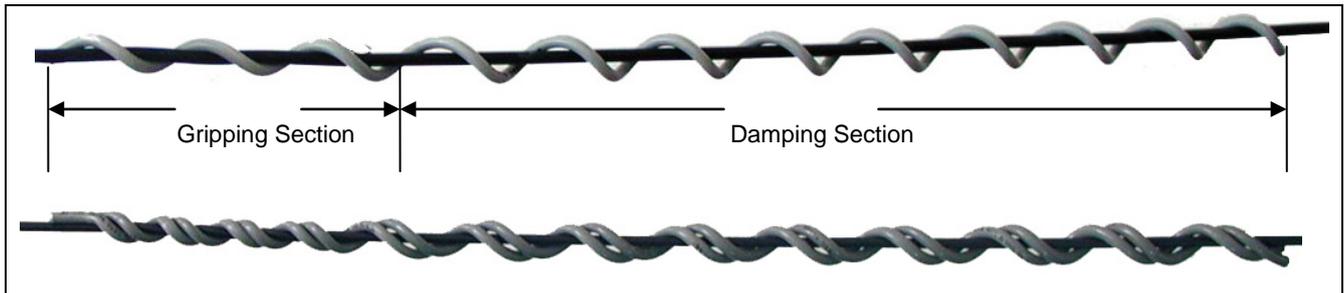
Specification Model	Suitable Cable Diameter (mm)	Inner Preformed Rods Length (mm)	Outer Preformed Rods Length (mm)	Color Code
OXF 0870 070S	8.1-8.7	2000	1400	Black
OXF 0940 070S	8.8-9.4	2000	1400	Red
OXF 1010 070S	9.5-10.1	2100	1500	Orange
OXF 1080 070S	10.2-10.8	2100	1500	Yellow
OXF 1150 070S	10.9-11.5	2100	1500	Green
OXF 1220 070S	11.6-12.2	2200	1600	Cyan
OXF 1290 070S	12.3-12.9	2200	1600	Blue
OXF 1360 070S	13.0-13.6	2300	1700	Purple
OXF 1430 070S	13.7-14.3	2300	1700	Black
OXF 1500 070S	14.4-15.0	2500	1900	Red
OXF 1570 070S	15.1-15.7	2500	1900	Orange
OXF 1640 070S	15.8-16.4	2600	2000	Yellow
OXF 1710 070S	16.5-17.1	2600	2000	Green
OXF 1780 070S	17.2-17.8	2600	2000	Cyan
OXF 1850 070S	17.9-18.5	2600	2000	Blue

One set of Double Suspension Clamp includes a unit of Inner Preformed Rods, Outer Preformed Rods, two Suspension Splints, two PS Clevis, Yoke plate, Shackle and U-bolt. (Connection Hardware can be available on request)

## 5. Vibration Damper

### 5.1 Spiral Vibration Damper

Spiral Vibration Damper is made of high-strength, antigenic and high-elasticity PVC plastic, easy to be installed on ADSS cables and OPGW cables which diameter are smaller than 12mm. It is an interference type damper designed to attenuate the energy of cable vibration and restrain cable vibration amplitude by impacting with its damping section, so as to protect cables.



Specification Model	Suitable Cable Diameter (mm)	Gripping Section (mm)	Total Length (mm)	Net Weight (kg)	Color Code
FTL 0829 125	6.30-8.29	250	1250	0.26	Orange
FTL 1170 130	8.30-11.70	250	1300	0.28	Yellow
FTL 1430 135	11.71-14.30	250	1350	0.30	Green
FTL 1930 165	14.31-19.30	330	1650	0.65	Blue

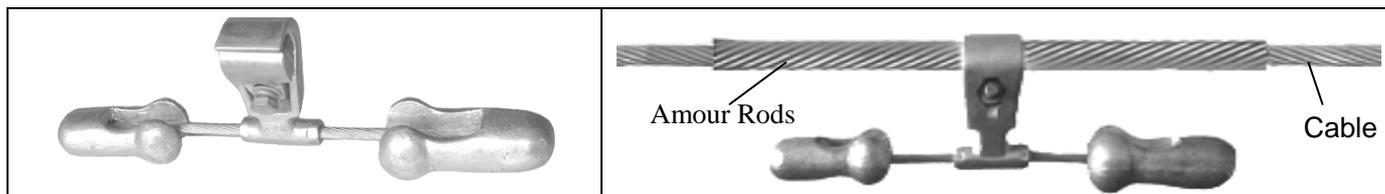
#### Direction:

1. Select the specification model for Spiral Vibration Damper is according to cable diameter.
2. The installed Spiral Vibration Damper may be several along the cable or at the same point. Gripping section is close to pole or tower and the length from the end of Damping Section to the end of Inner Preformed Rods for Tension Clamp or Suspension Clamp is 12mm.
3. The quantity of damper per span is confirmed by cable strength and span length. The normal specification is as below:

Span Length	Quantity
<100m	0
100—250m	2
250—400m	4
400—800m	6

## 5.2 Clamp Type Vibration Damper

Clamp Type Vibration Damper for ADSS/OPGW cables, with tuning fork structure of Damper Weight, is validated by China Electric Power Research Institute that there are four frequency between 5~150HZ, and its vibration range is wider than FG Damper or FD Damper. Plenty Vibration Dampers have been installed on ADSS cables.



### Material:

Damper Weight---Hot dip galvanized cast iron;

Messenger Wire---19 strand galvanized steel wires

Clamp--- Aluminum Alloy;

Amour Rods--- Aluminum Alloy.

### Direction:

1. Vibration Damper can't be directly installed on the ADSS/OPGW Cable, it should install with armor rods.

1. Calculate the installation distance, if it is within the Armor Rods then install as usual (Install on Armor Rods directly). If the installation position of Vibration Damper is outside of the Inner Preformed Rods, you should install Armor Rods. The distance between the end of Amor Rod of Vibration Damper and Inner Preformed Rods of Fittings must be more than 70mm.

3. The big Damper Weight of low frequency is close to pole or tower.

4. The quantity of damper per span length is according to cable strength, span length and topography. The normal specification is as follows:

Cable Diameter Of ADSS/OPGW (mm)	Span Length (m)			
	1 (Both Two Side)	1 (Each Side)	2 (Each Side)	3 (Each side)
$d < 12$	$\leq 200$	200-300	300-600	600-900
$12 \leq d \leq 22$	$\leq 200$	200-350	350-700	700-1000

## 5.2.1 Vibration Damper for ADSS Cable

### Data Sheet:

Vibration Damper				Amour Rods				
Specification Model	Cable Dia. (mm)	Length (mm)	Weight (Kg)	Specification Model	Cable Dia. (mm)	Length (mm)	Quantity	Color Code
TFY 1010 10	9.5-10.1	344	1.0	FYH 1010 10	9.5-10.1	400	10	Orange
TFY 1080 10	10.2-10.8	344	1.0	FYH 1080 10	10.2-10.8	400	11	Yellow
TFY 1150 10	10.9-11.5	344	1.0	FYH 1150 10	10.9-11.5	400	11	Green
TFY 1220 10	11.6-12.2	344	1.0	FYH 1220 10	11.6-12.2	400	12	Cyan
TFY 1290 10	12.3-12.9	344	1.0	FYH 1290 10	12.3-12.9	400	13	Blue
TFY 1360 10	13.0-13.6	344	1.0	FYH 1360 10	13.0-13.6	400	13	Purple
TFY 1430 10	13.7-14.3	344	1.0	FYH 1430 10	13.7-14.3	400	13	Black
TFY 1500 10	14.4-15.0	344	1.0	FYH 1500 10	14.4-15.0	400	14	Red
TFY 1570 10	15.1-15.7	344	1.0	FYH 1570 10	15.1-15.7	400	15	Orange
TFY 1640 10	15.8-16.4	344	1.0	FYH 1640 10	15.8-16.4	400	16	Yellow
TFY 1710 10	16.5-17.1	344	1.0	FYH 1710 10	16.5-17.1	400	17	Green

## 5.2.2 Vibration Damper for OPGW Cable

### Data Sheet:

Vibration Damper				Amour Rods				
Specification Model	Cable Dia. (mm)	Length (mm)	Weight (kg)	Specification Model	Cable Dia. (mm)	Length (mm)	Quantity	Color Code
TFY 1010 15	9.5-10.1	350	1.5	FYH 1010 15	9.5-10.1	400	10	Orange
TFY 1080 15	10.2-10.8	350	1.5	FYH 1080 15	10.2-10.8	400	11	Yellow
TFY 1150 15	10.9-11.5	350	1.5	FYH 1150 15	10.9-11.5	400	11	Green
TFY 1220 15	11.6-12.2	350	1.5	FYH 1220 15	11.6-12.2	400	12	Cyan
TFY 1290 15	12.3-12.9	350	1.5	FYH 1290 15	12.3-12.9	400	13	Blue
TFY 1360 15	13.0-13.6	350	1.5	FYH 1360 15	13.0-13.6	400	13	Purple
TFY 1430 15	13.7-14.3	350	1.5	FYH 1430 15	13.7-14.3	400	13	Black
TFY 1500 15	14.4-15.0	350	1.5	FYH 1500 15	14.4-15.0	400	14	Red
TFY 1570 15	15.1-15.7	350	1.5	FYH 1570 15	15.1-15.7	400	15	Orange
TFY 1640 15	15.8-16.4	350	1.5	FYH 1640 15	15.8-16.4	400	16	Yellow
TFY 1710 15	16.5-17.1	350	1.5	FYH 1710 15	16.5-17.1	400	17	Green
TFY 1780 24	17.2-17.8	390	2.4	FYH 1780 24	17.2-17.8	400	18	Cyan
TFY 1850 24	17.9-18.5	390	2.4	FYH 1850 24	17.9-18.5	400	19	Blue

**Vibration Damper is sold as an assembly. Select the specification model of Vibration Damper and Armour Rods according to cable diameter.**

## 5.3 Preformed Vibration Damper

Traditional Vibration Damper is installed with torque wrench, and fixed with bolt, it can cause the torque too bigger or smaller. It can cause damage of conductions and bolts by too bigger torque, Contrarily, the grip strength of Vibration Damper and conductor can't meet the requirement by too smaller torque. Even the grip strength of Vibration Damper and conductor can meet the requirement by being installed with torque wrench. With the vibration between Vibration Damper and conductor during the line operation, the stress of Vibration Damper and bolt get loose, the grip strength of Vibration Damper and conductor will decrease, it can also cause the Vibration Damper loose.

Preformed Vibration Damper solve the shortage of traditional Vibration Damper. Preformed Vibration Damper can be installed quickly and conveniently by hands without any tools. The grip strength is distributed evenly within 60cm area of Preformed Rods and conductor, and it avoids stress concentration of conductors. The excellent performance of aluminum clad steel installation with Preformed Rods ensure the sustained stable and reliable grip strength between Preformed Rods and Conductor.

Preformed Vibration Damper has four frequency with tuning fork structure of Damper Weight, it can cover the vibration frequency range of conductors and ground wires. Damper Weight stuck with Messenger Wires enduringly can bear the machine load under installation, maintain and operation condition. Special appearance design can prevent icing and ponding. The Preformed Vibration Damper can't damage the conductors and ground wires by installation convenience and safety. The Preformed Vibration Damper design to resist corona.

### Technical Data:

General technical condition of Vibration Damper and Armor Rods is meet the requirement of GB 2314-1997 «Common Technique Condition of Electric Power Fittings».

Vibration Damper meet the requirement of GB/T 2336-2000 «Technique Data of Vibration Damper».

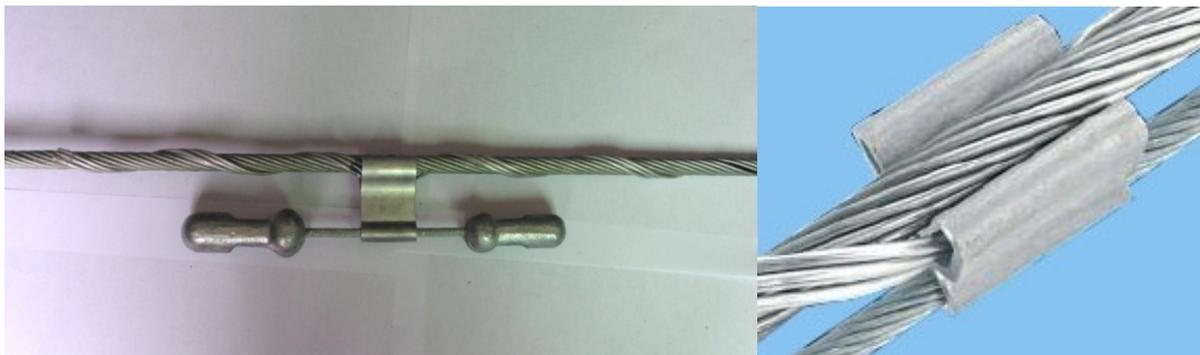
Aarmor Rods meet the requirement of GB 2337-1985 《Armor Rods》

### Material:

Damper Weight--- Hot dip galvanized cast iron; Messenger Wire---19 strand galvanized steel wires;

Clamp---Aluminum Alloy;

Amour Rods--- Aluminum Clad Steel Wire.



### Direction:

1. Calculate the installation distance, the distance between the end of Vibration Damper and Amour Rods must be more than 70mm.
- 2.The big Damper Weight of low frequency is close to pole or tower.
3. The quantity of damper per span length is according to cable , span length and topography.

The normal specification is as follows :

Cable Diameter (mm)	Span Length (m)			
	(Both sides)	(Each Side)	(Each Side)	(Each Side)
$d < 12$	$\leq 200$	200-300	300-600	600-900
$12 \leq d \leq 22$	$\leq 200$	200-350	350-700	700-1000

### Data Sheet of Preformed Vibration Damper:

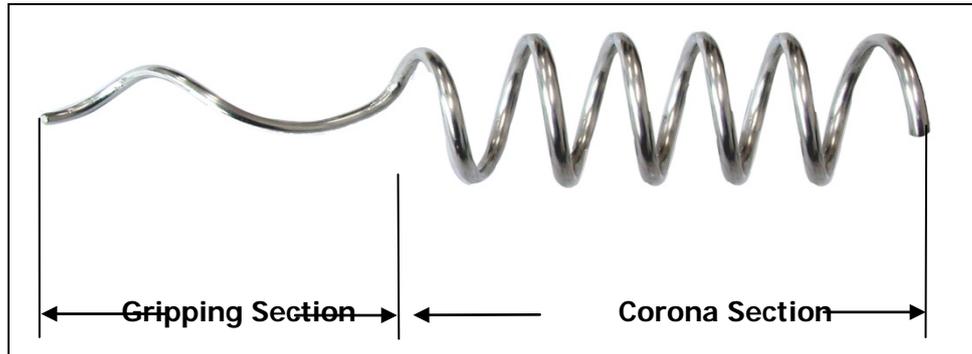
Specification Damper	Cable Dia. (mm)	Damper Length (mm)	Rods Length (mm)	Weight (Kg)	Color Code
FYL-1508	7.1-8.0	350	600	1.5	Purple
FYL-1509	8.1-9.0	350	600	1.5	Black
FYL-1510	9.1-10.0	350	600	1.5	Red
FYL-1511	10.1-11.0	350	600	1.5	Orange
FYL-1512	11.1-12.0	350	600	1.5	Yellow
FYL-1513	12.1-13.0	350	600	1.5	Green
FYL-1514	13.1-14.0	350	600	1.5	Cyan
FYL-1515	14.1-15.0	350	600	1.5	Blue
FYL-1516	15.1-16.0	350	600	1.5	Purple
FYL-2414	13.1-14.0	390	600	2.4	Green
FYL-2415	14.1-15.0	390	600	2.4	Blue
FYL-2416	15.1-16.0	390	600	2.4	Purple
FYL-2417	16.1-17.0	390	600	2.4	Black
FYL-2418	17.1-18.0	390	600	2.4	Red
FYL-2419	18.1-19.0	390	600	2.4	Orange
FYL-2420	19.1-20.0	390	600	2.4	Yellow
FYL-2421	20.1-21.0	390	600	2.4	Green
FYL-2422	21.1-22.0	390	600	2.4	Cyan
FYL-5023	22.1-23.0	500	750	5.0	Blue
FYL-5024	23.1-24.0	500	750	5.0	Purple
FYL-5025	24.1-25.0	500	750	5.0	Black
FYL-5026	25.1-26.0	500	750	5.0	Red
FYL-5027	26.1-27.0	500	750	5.0	Orange
FYL-5028	27.1-28.0	500	750	5.0	Yellow
FYL-5029	28.1-29.0	500	750	5.0	Green
FYL-5030	29.1-30.0	500	750	5.0	Cyan
FYL-5031	30.1-31.0	500	750	5.0	Blue

**Note:** The meaning of letters and figures for product specification model: F-anti vibration, L- Spiral twist wire fixed, rear figure of "-": The first two numbers mean the weight of vibration damper; the last two mean the dimension of conductor.

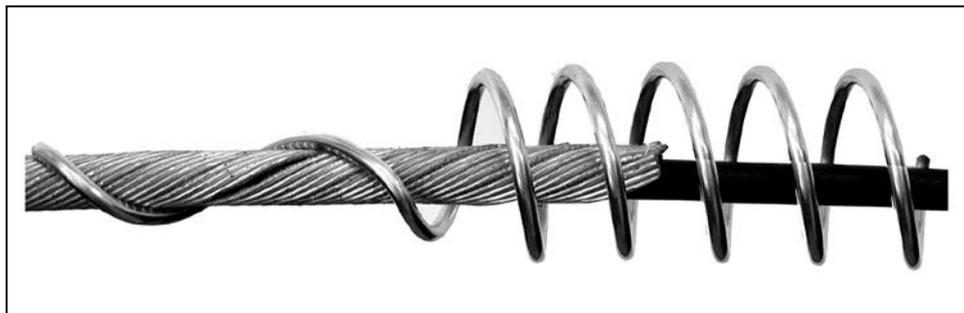
## 6. Corona Suppression Ring

### Application:

Corona Suppression Ring is designed to protect ADSS Cable Outer and prolong the ADSS Cable lifetime in the trolley wire. After installation, homogeneous electric field is produced to resist corona and protect the cable.



### 6.1 Corona Suppression Ring for Tension Clamps



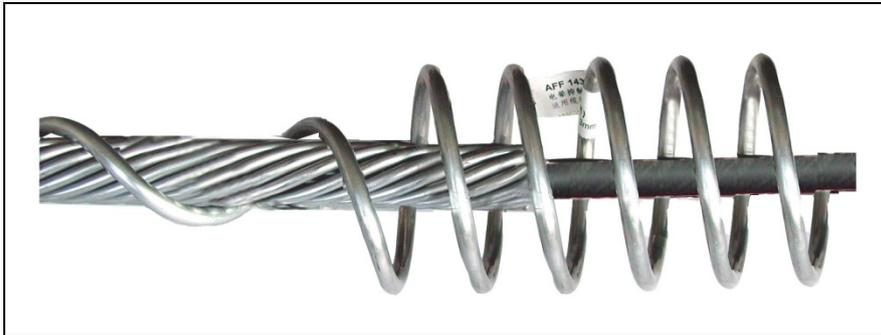
### Data Sheet:

Specification Model	Cable Diameter (mm)	Length (mm)	Weight (Kg)	Color Code
AFF 1000-N	9.0-10.0	288	0.1	Red
AFF 1110-N	10.1-11.1	288	0.1	Orange
AFF 1220-N	11.2-12.2	288	0.1	Yellow
AFF 1330-N	12.3-13.3	288	0.1	Green
AFF 1440-N	13.4-14.4	288	0.1	Cyan
AFF 1550-N	14.5-15.5	288	0.1	Blue
AFF 1660-N	15.6-16.6	288	0.1	Purple
AFF 1770-N	16.7-17.7	288	0.1	Black
AFF 1880-N	17.8-18.8	288	0.1	Red

### Direction:

1. Select the specification model is according to cable diameter.
2. One set of Tension Clamp matches a corona suppression ring.

## 6.2 Corona Suppression Ring for Suspension Clamp



### Data Sheet:

Specification Model	Cable Diameter (mm)	Total Length (mm)	Net Weight (Kg)	Color Code
AFF 1010-X	9.5-10.1	288	0.1	Orange
AFF 1080-X	10.2-10.8	288	0.1	Yellow
AFF 1150-X	10.9-11.5	288	0.1	Green
AFF 1220-X	11.6-12.2	288	0.1	Cyan
AFF 1290-X	12.3-12.9	288	0.1	Blue
AFF 1360-X	13.0-13.6	288	0.1	Purple
AFF 1430-X	13.7-14.3	288	0.1	Black
AFF 1500-X	14.4-15.0	288	0.1	Red
AFF 1570-X	15.1-15.7	288	0.1	Orange
AFF 1640-X	15.8-16.4	288	0.1	Yellow
AFF 1710-X	16.5-17.1	288	0.1	Green
AFF 1780-X	17.2-17.8	288	0.1	Cyan
AFF 1850-X	17.9-18.5	288	0.1	Blue

### Direction:

1. Select the specification model is according to cable diameter.
2. One set of Suspension Clamp matches a corona suppression ring.

## 7. Cable Joint Box

Cable Joint Box is designed for splicing ADSS,OPGW cables and the normal cables, including two to four sleeves for input and output.

Loose storage space makes storage more conveniently, quickly and cable bending radius big enough, avoiding fiber optic extra loss and ensuring transmission performance.

The double sealed designs make Cable Joint Box more reliable. Easy to install and fix on pole(tower) or tubes.

### 7.1 Drum Type Metal Joint Box for ADSS,OPGW Cable



#### Data Sheet:

Specification Model	Suitable Range	Weight (kg)	Material
TJG 2 012	Two Ports, 12 Fibers	4.0	Aluminum Alloy
TJG 2 024	Two Ports, 24 Fibers	4.0	Aluminum Alloy
TJG 2 036	Two Ports, 36 Fibers	4.0	Aluminum Alloy
TJG 2 048	Two Ports, 48 Fibers	4.0	Aluminum Alloy
TJG 3 012	Three Ports, 12 Fibers	4.1	Aluminum Alloy
TJG 3 024	Three Ports, 24 Fiber	4.1	Aluminum Alloy
TJG 3 036	Three Ports, 36 Fibers	4.1	Aluminum Alloy
TJG 3 048	Three Ports, 48 Fibers	4.1	Aluminum Alloy
TJG 4 012	Four Ports, 12 Fiber	4.2	Aluminum Alloy
TJG 4 024	Four Ports, 24 Fiber	4.2	Aluminum Alloy
TJG 4 036	Four Ports, 36 Fiber	4.2	Aluminum Alloy
TJG 4 048	Four Ports, 48 Fiber	4.2	Aluminum Alloy

Cable Joint Box is sold as an assembly. A Cable Storage shelf and four Fix Clamps are needed when installed on the tower. A Cable storage shelf and four Stainless Steel Bands are needed when installed on the pole.

## 7.2 Cap Type Metal Joint Box for ADSS, OPGW Cable



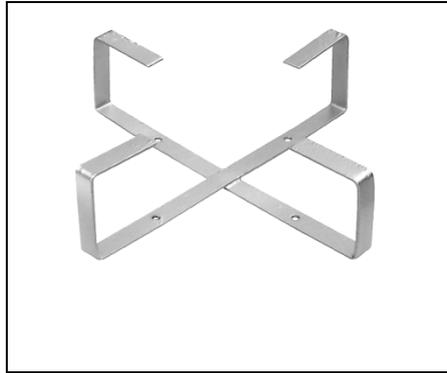
### Data Sheet:

Specification Model	Suitable Range	Weight (kg)	Material
TJM 2 012	Two Ports, 12 Fibers	4.1	Aluminum Alloy
TJM 2 024	Two Ports, 24 Fibers	4.1	Aluminum Alloy
TJM 2 036	Two Ports, 36 Fibers	4.1	Aluminum Alloy
TJM 2 048	Two Ports, 48 Fibers	4.1	Aluminum Alloy
TJM 2 060	Two Ports, 60 Fibers	4.1	Aluminum Alloy
TJM 3 012	Three Ports, 12 Fibers	4.2	Aluminum Alloy
TJM 3 024	Three Ports, 24 Fibers	4.2	Aluminum Alloy
TJM 3 036	Three Ports, 36 Fibers	4.2	Aluminum Alloy
TJM 3 048	Three Ports, 48 Fibers	4.2	Aluminum Alloy
TJM 3 060	Three Ports, 60 Fibers	4.2	Aluminum Alloy

**Cable Joint Box is sold as an assembly. A Cable Storage Shelf and Fix Clamp are needed when installed on the tower,. A Cable Storage Shelf and three Stainless Steel Bands are needed when installed on the pole.**

### 7.3 Cable Storage Shelf

Cable Storage Shelf is attended for coiling the surplus cable on the splicing pole.



### 7.4 Fix Clamp(GXJ)

Fix Clamp is attended for installing Cable Joint Box and Cable Storage Shelf on the tower.



### 7.5 Stainless Steel Band

Stainless Steel Band is designed to install Cable Joint Box and Cable Storage Shelf on poles.



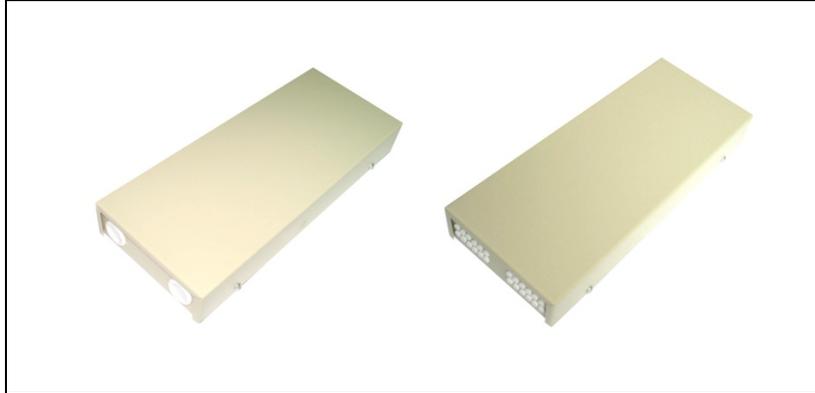
Data Sheet:

Specification Model	Pole Diameter Range (mm)	Weight (kg)	Material
TGJ-I-300	φ 150- φ 300	0.36	Stainless Steel
TGJ-II-600	φ 300- φ 600	0.43	Stainless Steel
TGJ-III-1000	φ 600- φ 1000	0.50	Stainless Steel

## 8. Cable Terminal Box

### Application:

Cable Terminal Box is installed with end cable and pigtail after the cable enter the computer center.



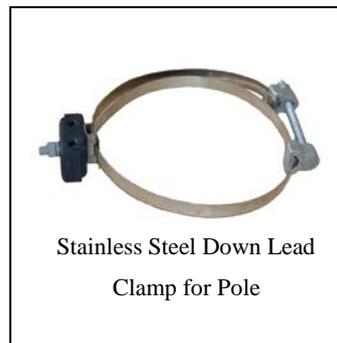
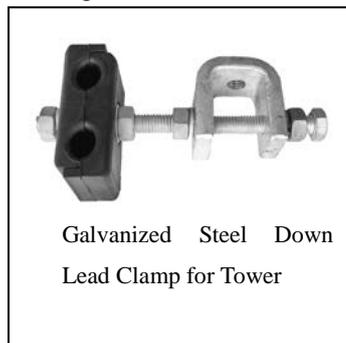
### Data Sheet

Specification Model	Suitable Range	Weight (kg)
TZX 012	For 12 Cores	1.70
TZX 024	For 24 Cores	1.78
TZX 036	For 36 Cores	1.86
TZX 048	For 48 Cores	1.94
TZX 060	For 60 Cores	2.02
TZX 072	For 72 Cores	2.10

**Note: More than 72 Cores or multi-inputs and other special requirement can be ordered corresponding to the user's requirements.**

## 9. Down Lead Clamp

Down Lead Clamp is designed to lead down cables on splicing and terminal pole/tower and to fix the arch section on the middle reinforcing pole/tower. Normally, a unit of Down Lead Clamp is needed 1.5meters, and it is also used in other fixing area.



### 9.1 Galvanized Steel Down Lead Clamp for Tower

#### Data Sheet:

Specification Model	Cable Diameter Range (mm)	Weight (kg)	Material
TGY 1330-A	9.0-13.3	0.8	Hot Galvanized Steel/Rubber
TGY 1770-A	13.4-17.7	0.8	Hot Galvanized Steel/Rubber

### 9.2 Stainless Steel Down Lead Clamp for Pole

#### Data Sheet:

Specification Model	Cable Dia. Rang (mm)	Pole Dia. Range (mm)	Weight (kg)	Material
TGY- I -1330-A	9.0-13.3	φ 150- φ 300	0.53	Stainless Steel/Rubber
TGY- I -1770-A	13.4-17.7	φ 150- φ 300	0.53	Stainless Steel/Rubber
TGY- II -1330-A	9.0-13.3	φ 300- φ 600	0.60	Stainless Steel/Rubber
TGY- II -1770-A	13.4-17.7	φ 300- φ 600	0.60	Stainless Steel/Rubber
TGY-III-1330-A	9.0-13.3	φ 600- φ 1000	0.67	Stainless Steel/Rubber
TGY-III-1770-A	13.4-17.7	φ 600- φ 1000	0.67	Stainless Steel/Rubber

#### Note:

The Stainless Steel Down Lead Clamp of upper table is suitable to the normal cement pole. It must be designed according to the actual size for other size pole diameter.

## 10. Ground Clamp

### Application:

Ground Clamp is designed to ground connection with OPGW Cables providing channel for short-circuit current. Normally the length of Ground Clamp is 1.5m and 2.0m. We can produce the Ground Clamp according to users' requirement.



**Ground Clamp for Tension Hardware**



**Ground Clamp for Suspension Hardware.**

### Data Sheet:

Specification Model	Cable Dia. Range (mm)	Length (mm)	Connector Terminal	Rods	Groove Parallel Clamp	Band
OJD 1110 1500N	8.0-11.1	1500	70(one pcs)	LGJ-70/10	JB-1	G70
OJD 1440 1500N	11.2-14.4	1500	95(1one pcs)	LGJ-95/15	JB-2	G95
OJD 1770 1500N	14.5-17.7	1500	120(1one pcs)	LGJ-120/25	JB-3	G120
OJD 1110 2000N	8.0-11.1	2000	70(1one pcs)	LGJ-70/10	JB-1	G70
OJD 1440 2000N	11.2-14.4	2000	95(1one pcs)	LGJ-95/15	JB-2	G95
OJD 1770 2000N	14.5-17.7	2000	120(1one pcs)	LGJ-120/25	JB-3	G120
OJD 1110 1500X	8.0-11.1	1500	70(2two pcs)	LGJ-70/10		G70
OJD 1440 1500X	11.2-14.4	1500	95(two pcs)	LGJ-95/15		G95
OJD 1770 1500X	14.5-17.7	1500	120(2two pcs)	LGJ-120/25		G120
OJD 1110 2000X	8.0-11.1	2000	70(two pcs)	LGJ-70/10		G70
OJD 1440 2000X	11.2-14.4	2000	95( two pcs)	LGJ-95/15		G95
OJD 1770 2000X	14.5-17.7	2000	120(two pcs)	LGJ-120/25		G120

**Please refer to the installation of Ground Clamp for Tension Clamp and Suspension Clamp for OPGW Cables.**

## 11. Fastening Clamp



### 11.1 Fastening Clamp for Tower

Series of Fastening Clamps are designed to connect Tension Clamps, Suspension Clamps and towers, it is according to the tower type of hanged points and the size of main material.

#### (1) Data Sheet of Fastening Clamp for Less Than 400m Span Length:

Tower Type	Specification Model	Suitable Range	Weight (kg)	Material
Suspension Tower	TTZ 080 040	For size of cable hanged position $\leq 80$ mm	2.7	A3 Steel
	TTZ 100 040	For size of cable hanged position 81 ~ 100mm	3.1	A3 Steel
	TTZ 125 040	For size of cable hanged position 101 ~ 125mm	3.5	A3 Steel
	TTZ 145 040	For size of cable hanged position 126 ~ 145mm	3.9	A3 Steel
	TTZ 165 040	For size of cable hanged position 146 ~ 165mm	4.3	A3 Steel
	TTZ 200 040	For size of cable hanged position 166 ~ 200mm	4.7	A3 Steel
Corner Tower	TTJ 100 040	For size of cable hanged position $\leq 100$ mm	3.4	A3 Steel
	TTJ 125 040	For size of cable hanged position 101 ~ 125mm	3.7	A3 Steel
	TTJ 145 040	For size of cable hanged position 126 ~ 145mm	4.0	A3 Steel
	TTJ 165 040	For size of cable hanged position 146 ~ 165mm	4.3	A3 Steel
	TTJ 200 040	For size of cable hanged position 166 ~ 200mm	4.6	A3 Steel

#### (2) Data Sheet of Fastening Clamp for More Than 400m Span Length:

Tower Type	Specification Model	Suitable Range	(kg)	Material
Suspension Tower	TTZ 080 070	For size of cable hanged position $\leq 80$ mm	3.0	A3 Steel
	TTZ 100 070	For size of cable hanged position 81 ~ 100mm	3.4	A3 Steel
	TTZ 125 070	For size of cable hanged position 101 ~ 125mm	3.8	A3 Steel
	TTZ 145 070	For size of cable hanged position 126 ~ 145mm	4.2	A3 Steel
	TTZ 165 070	For size of cable hanged position 146 ~ 165mm	4.6	A3 Steel
	TTZ 200 070	For size of cable hanged position 166 ~ 200mm	5.0	A3 Steel
Corner Tower	TTJ 100 070	For size of cable hanged position $\leq 100$ mm	3.7	A3 Steel
	TTJ 125 070	For size of cable hanged position 101 ~ 125mm	4.0	A3 Steel
	TTJ 145 070	For size of cable hanged position 126 ~ 145mm	4.3	A3 Steel
	TTJ 165 070	For size of cable hanged position 146 ~ 165mm	4.6	A3 Steel
	TTJ 200 070	For size of cable hanged position 166 ~ 200mm	4.9	A3 Steel

### 11.2 Fastening Clamp for Pole

**Series of Fastening Clamps for Poles are designed to connect Tension Clamps, Suspension Clamps and cement poles, it is according to the pole type of hanged points and the size of main material.**

(1) Data Sheet of Fastening Clamp for Pole for Less Than 400m Span Length:

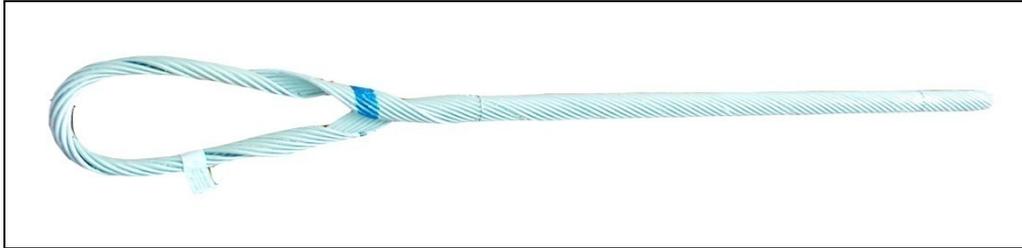
Specification Model	Suitable Range	Weight (kg)	Material
TGX 220 040	For installation position of cement pole $\Phi$ 190-220	2.7	A3 Steel
TGX 250 040	For installation position of cement pole $\Phi$ 221-250	3.1	A3 Steel
TGX 280 040	For installation position of cement pole $\Phi$ 221-250	3.5	A3 Steel
TGX 310 040	For installation position of cement pole $\Phi$ 281-310	3.9	A3 Steel

(2) Data Sheet of Fastening Clamp for Pole for More Than 400m Span Length:

Specification Model	Suitable Range	Weight (kg)	Material
TGX 220 070	For installation position of cement pole $\Phi$ 190-220	3.0	A3 Steel
TGX 250 070	For installation position of cement pole $\Phi$ 221-250	3.4	A3 Steel
TGX 280 070	For installation position of cement pole $\Phi$ 251-280	3.8	A3 Steel
TGX 310 070	For installation position of cement pole $\Phi$ 281-310	4.2	A3 Steel
TGX 340 070	For installation position of cement pole $\Phi$ 311-340	4.6	A3 Steel
TGX 370 070	For installation position of cement pole $\Phi$ 341-370	5.0	A3 Steel
TGX 400 070	For installation position of cement pole $\Phi$ 371-400	5.4	A3 Steel

## 12. Traction Clamp

Traction Clamp is specially intended for connecting the tightening wires and the cable during the installation of ADSS and OPGW Cables. The Preformed Traction Clamps can keep the cables steady without causing mechanical stress. The structure is simple and reliable. Traction Clamps can be reused no more than three times.



### Data Sheet:

Specification Model	Cable Dia. (mm)	Preformed Rods Length (mm)	Color Code
TJF 0900	8.1-9.0	880	Black
TJF 1000	9.1-10.0	900	Red
TJF 1110	10.1-11.1	1000	Orange
TJ F 1220	11.2-12.2	1100	Yellow
TJF 1330	12.3-13.3	1200	Green
TJF 1440	13.4-14.4	1300	Cyan
TJF 1550	14.5-15.5	1400	Blue
TJF 1660	15.6-16.6	1500	Purple
TJF 1770	16.7-17.7	1600	Black
TJF 1880	17.8-18.8	1700	Red

### Direction:

1. Traction Clamps are suitable for ADSS and OPGW Cables.
2. Select the Specification of Traction Clamp is according to the cable diameter.
3. Traction Clamps can be reused no more than three times.

## 13 Helical formed distribution products

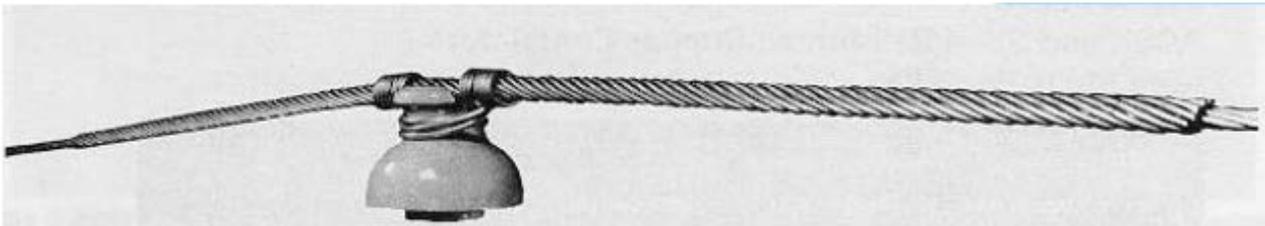
### 13.1 Conductor splice



Intended use: To repair damaged conductor where up to all aluminum wires are broken.

Design Parameters: 1) Must restore 100 % conductivity of conductor when all aluminum conductor wires are broken 2) Must achieve 100% mechanical properties when all aluminum conductor wires are broken 3) Must not have electrical noise.

### 13.2 Armor Rods



Intended use: To protect conductor against bending, compression, and abrasion.

Armor Rods

Design Parameters: 1) Must hold minimum tension 2) Must be of similar material to minimize galvanic corrosion 3) Must restore mechanical and electrical properties when there is minimal damage to conductor 4) Must not have electrical noise.