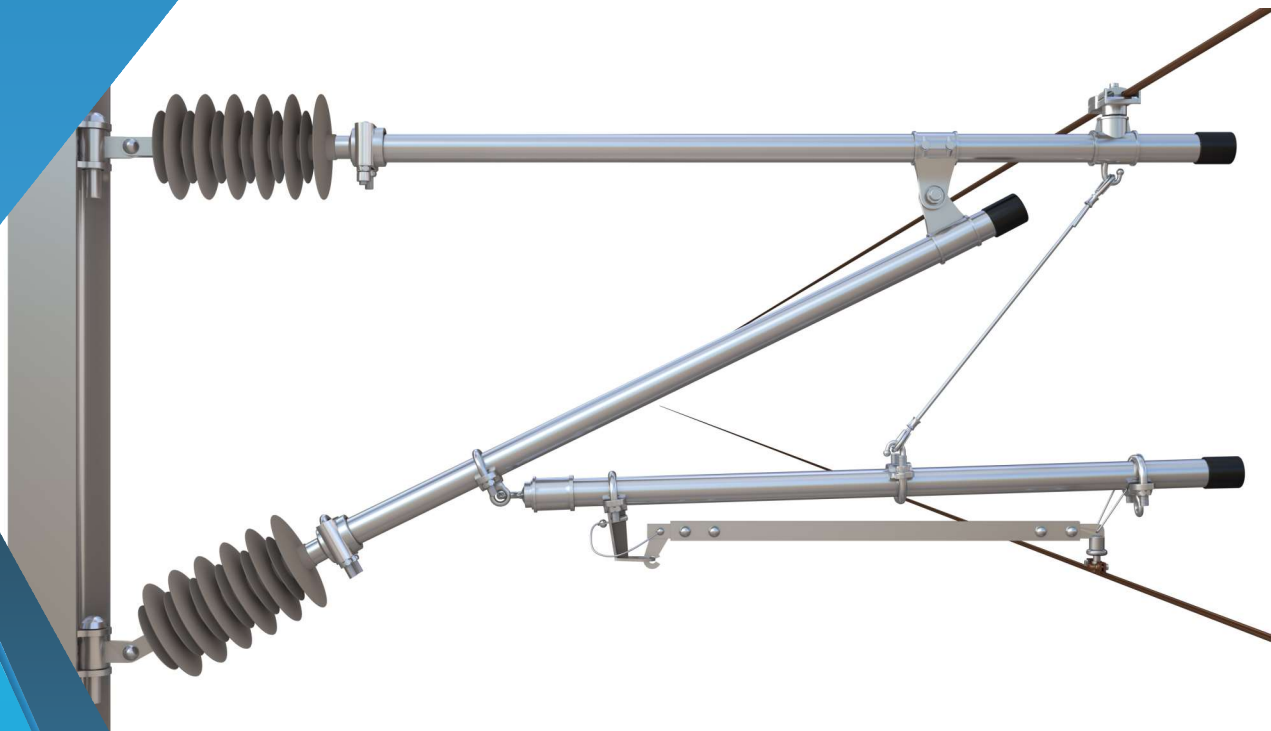


ALUMINIUM CANTILEVER ASSEMBLY FOR RAILWAYS / METROS



PPS International Private Limited

(www.ppsinternational.in)

IRISTM
Certified

INDEX

ALUMINIUM CANTILEVER SYSTEMS

1-3

MAJOR ASSEMBLIES

4-23

OHE FITTINGS

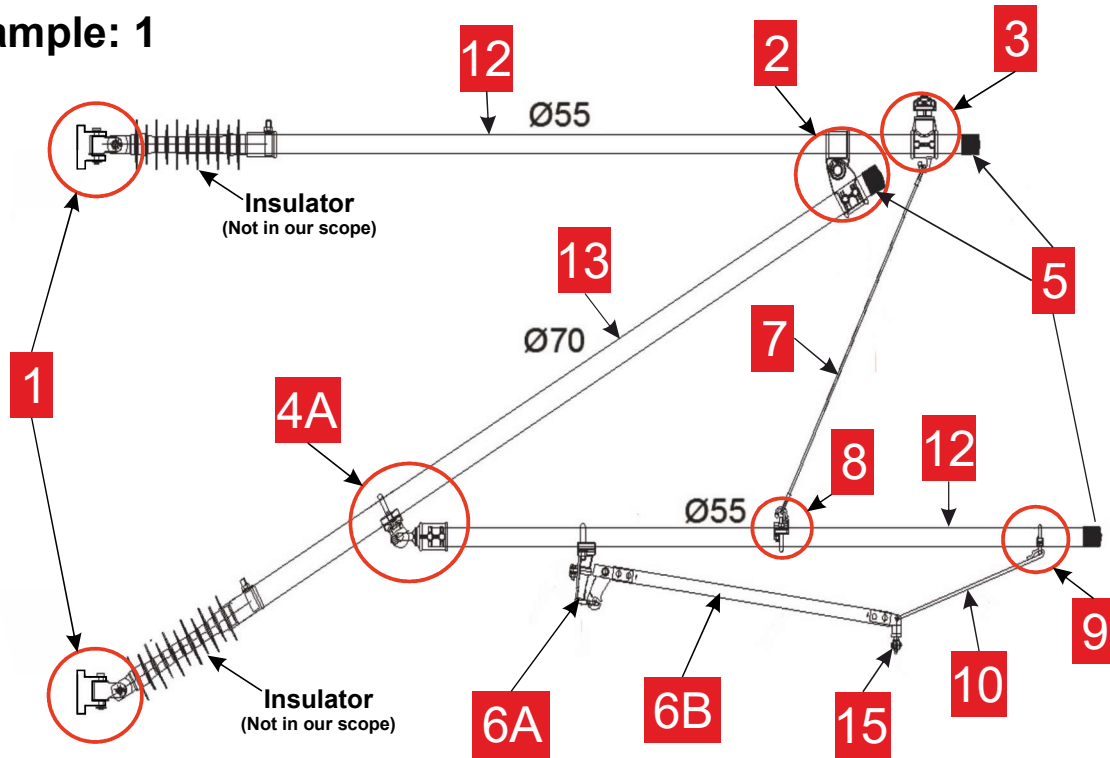
24-25

CURRENT CARRYING DROPPERS

26-27

ALUMINIUM CANTILEVER FOR CONVENTIONAL RAILWAYS / METRO LINES

Example: 1



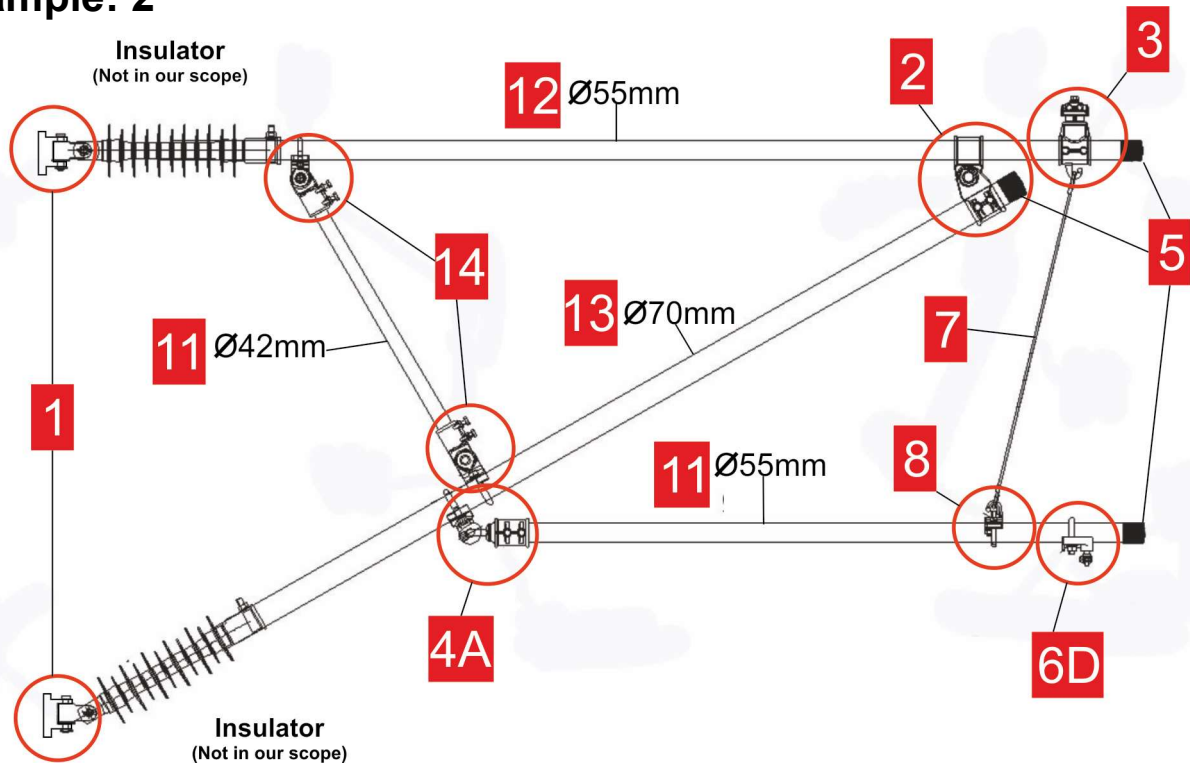
No.	Description	Part No.	Qty
1	Mast Bracket Assembly	10.20.571	2
2	Double Tube Holder 55-70 Assembly	10.20.509	1
3	Catenary wire support D-55 Assembly with bimetallic sleeve	10.20.517	1
4A	Hook and eye type clamp 55 - 70 assembly	10.20.572	1
5	PVC tube cap Ø55mm/Ø70mm	10.20.074	2(55)+1(70)
6A	Steady arm bracket AD 55 assembly	10.20.535	1
6B	Steady arm straight assembly	10.20.562	1
7	Registration arm dropper	10.20.520	1
8	Hook clip D-55 assembly	10.20.519	1
9	Eye clamp for windstay D 55 assembly	10.20.532	1
10	Windstay rod	10.20.040	1
12	Cantilever tube 55mm	10.20.071	2
13	Cantilever tube 70mm	10.20.072	1
15	Contact wire clip assembly	10.20.570	1

The alphabet in the part no. indicated alternate/optional design.

1. In general all the materials are made of special aluminium alloy with A2/A4 grade stainless steel hardware.
2. Aluminium pipes are also made of special aluminium alloy with T6 heat treatment.
3. PVC tube caps are made of special rubber, which can withstand adverse/ambient environmental condition for long life.

ALUMINIUM CANTILEVER FOR OVERLAP / CROSS OVER

Example: 2



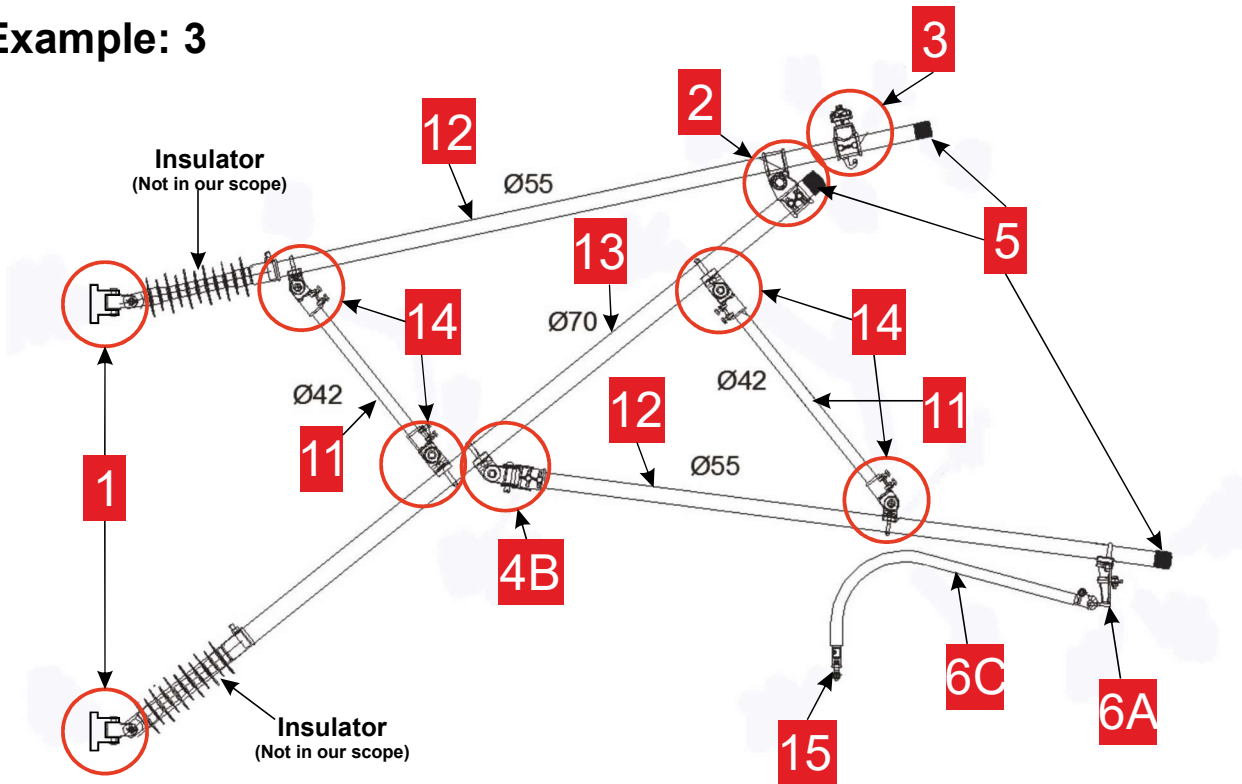
No.	Description	Part No.	Qty
1	Mast Bracket Assembly	10.20.571	2
2	Double Tube Holder Assembly	10.20.509	1
3	Catenary wire support with bimetallic sleeve	10.20.517	1
4A	Hook and eye type clamp assembly	10.20.572	1
5	PVC tube cap Ø55mm/Ø70mm	10.20.074	2(55)+1(70)
6D	Contact wire holder clamp with wire clip assembly	10.20.576	1
7	Registration arm dropper	10.20.520	1
8	Hook clip assembly	10.20.519	1
11	Cantilever tube 42mm	10.20.070	1
12	Cantilever Tube 55mm	10.20.071	2
13	Cantilever Tube 70mm	10.20.072	1
14	End Fitting D-42 with eye clamp assembly	10.20.577	2

The alphabet in the part no. indicated alternate/optional design.

1. In general all the materials are made of special aluminium alloy with A2/A4 grade stainless steel hardware.
2. Aluminium pipes are also made of special aluminium alloy with T6 heat treatment.
3. PVC tube caps are made of special rubber, which can withstand adverse/ambient environmental condition for long life.

ALUMINIUM CANTILEVER FOR LINE OVERLAP

Example: 3



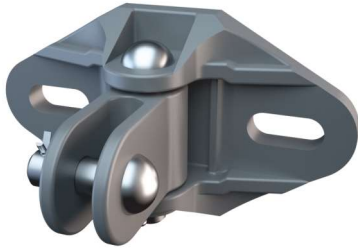
No.	Description	Part No.	Qty
1	Mast Bracket Assembly	10.20.571	2
2	Double Tube Holder Assembly	10.20.509	1
3	Catenary wire support with bimetallic sleeve	10.20.517	1
4B	Axel and Cardan clamp assembly	10.20.573	1
5	PVC tube cap Ø55mm/Ø70mm	10.20.074	2(55)+1(70)
6A	Steady arm bracket	10.20.535	1
6C	Steady arm round for overlap with support & contact wire clip assembly	10.20.586	1
11	Cantilever tube 42mm	10.20.070	2
12	Cantilever Tube 55mm	10.20.071	2
13	Cantilever Tube 70mm	10.20.072	1
14	End Fitting D-42 with eye clamp assembly	10.20.577	4
15	Contact wire clip assembly	10.20.570	1

The alphabet in the part no. indicated alternate/optional design.

1. In general all the materials are made of special aluminium alloy with A2/A4 grade stainless steel hardware.
2. Aluminium pipes are also made of special aluminium alloy with T6 heat treatment.
3. PVC tube caps are made of special rubber, which can withstand adverse/ambient environmental condition for long life.

MAJOR ASSEMBLIES

1



Mast Bracket Assembly

PART NO. 10.20.571

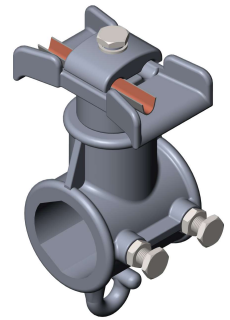
2



Double Tube Holder 55-70 Assembly

PART NO. 10.20.509

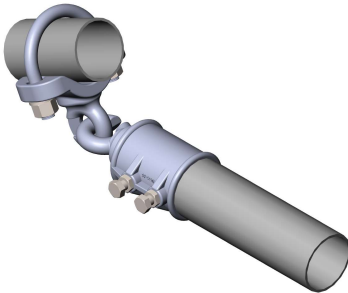
3



Catenary Wire Support D-55 Assembly with Bimetallic Sleeve

PART NO. 10.20.517

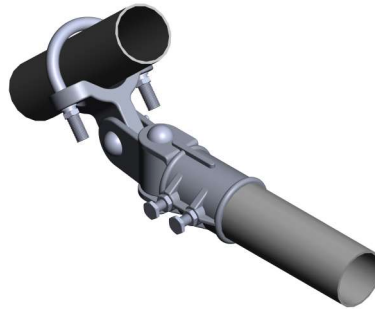
4A



Hook and Eye Type Clamp 55-70 Assembly

PART NO. 10.20.572

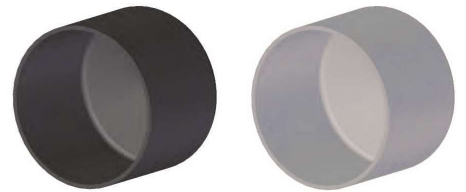
4B



Axel and Cardan clamp assembly

PART NO. 10.20.573

5



Aluminum / PVC tube cap 55-70

PART NO. 10.20.074 (55mm)
PART NO. 10.20.075 (70mm)

6A



Steady Arm Bracket-A D-55 Assembly

PART NO. 10.20.535

6B



Steady arm straight Assembly

PART NO. 10.20.562

6C



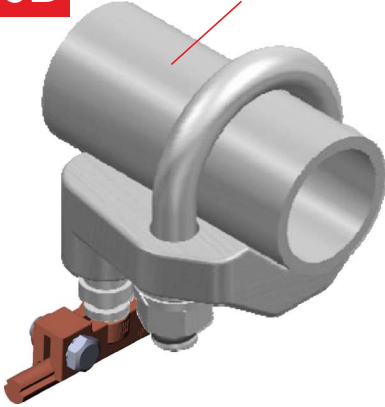
Steady arm round

PART NO. 10.20.542

MAJOR ASSEMBLIES

6D

Pipe Not Included



**Contact Wire Holder
Clamp D-55 Assembly**

PART NO. 10.20.568

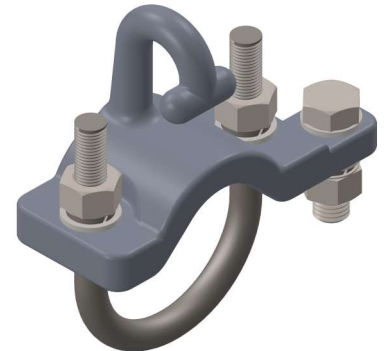
7



**Registration Arm
Dropper**

PART NO. 10.20.520

8



Hook Clip D-55 Assembly

(Ø55) PART NO. 10.20.519

9



**Eye Clamp for
Windstay D-55 Assembly**

PART NO. 10.20.532

10



Windstay Rod

PART NO. 10.20.040

11

Cantilever tube 42mm

PART NO. 10.20.070

12

Cantilever tube 55mm

PART NO. 10.20.071

13

Cantilever tube 70mm

PART NO. 10.20.072



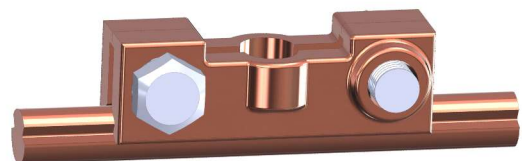
14



**End fitting D-42 with
eye clamp assembly**

PART NO. 10.20.577

15

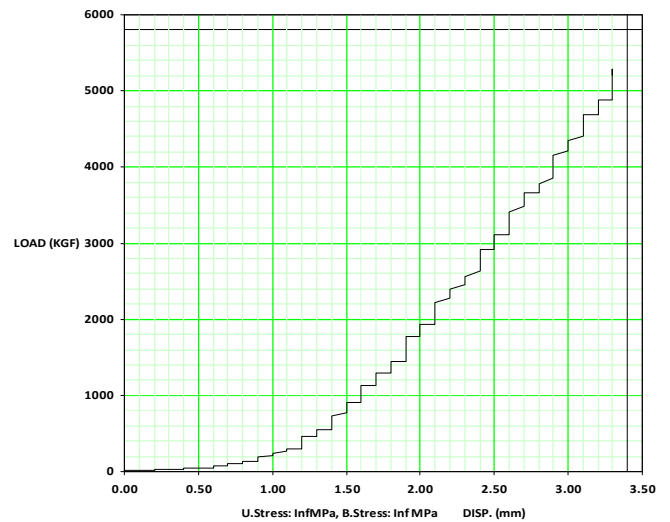
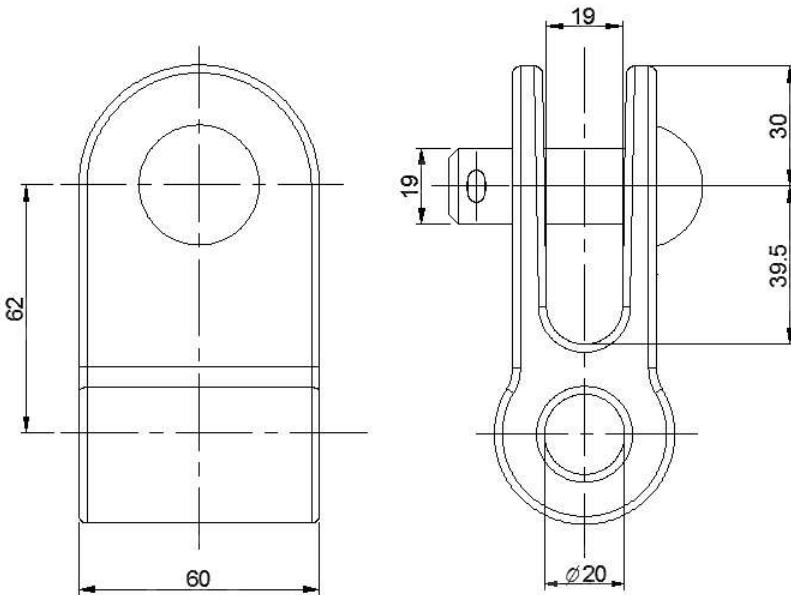


Contact wire clip

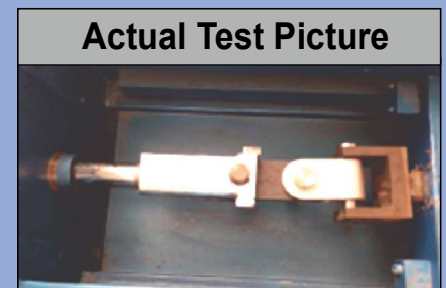
PART NO. 10.20.570

BALL & SOCKET ASSEMBLY

PART NO. 10.20.524

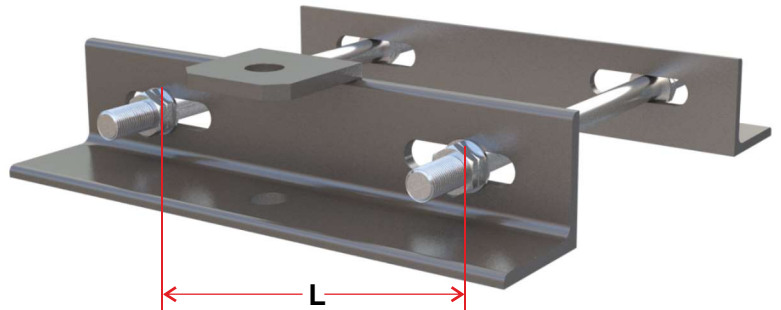


Part No.	FEA Results			Actual FAT Results	
	Working load in Kgf	Factor of Safety	Failing load as per EN 50119	Failing Load in Kgf	Factor Of Safety Achieved
10.20.029 Ball & Socket	556	2.5	1390	5289	9.51

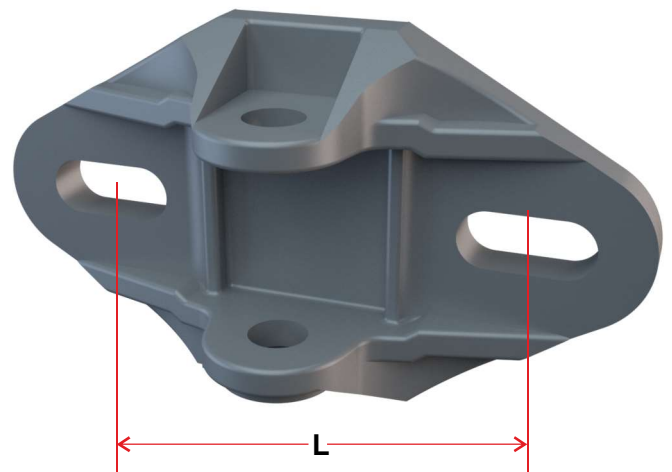


MAST BRACKET

Part No.	Mounting Distance A (mm)
10.20.595	150-250



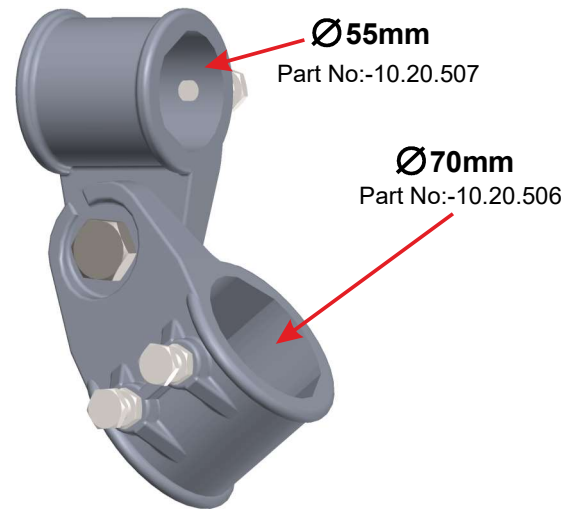
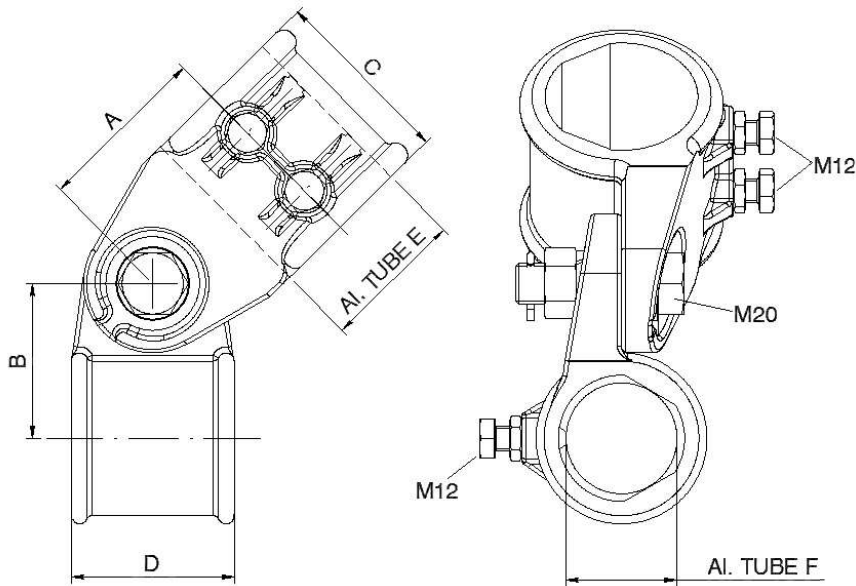
Part No.	Mounting Distance L (mm)
10.20.076	120-140
10.20.077	140-165
10.20.087	150-250



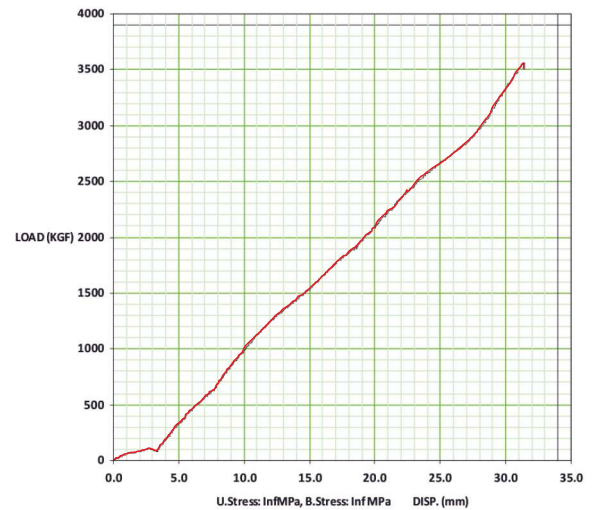
Part No.	A (mm)
10.20.001	17
10.20.002	21



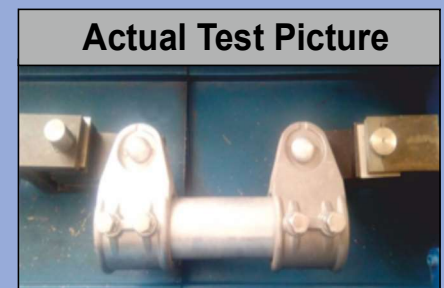
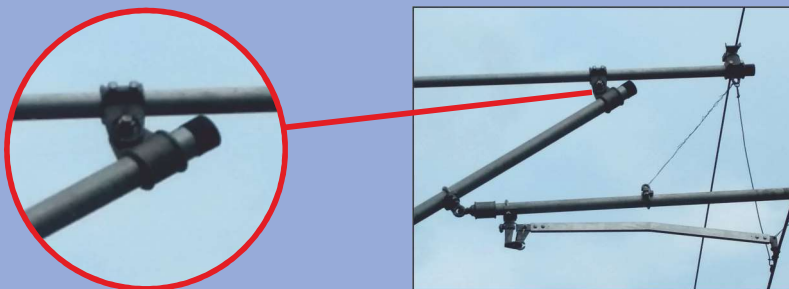
DOUBLE TUBE HOLDER ASSEMBLY



Part No.	Dia Combination (mm)
10.20.508	55-55
10.20.509	55-70
10.20.510	70-70

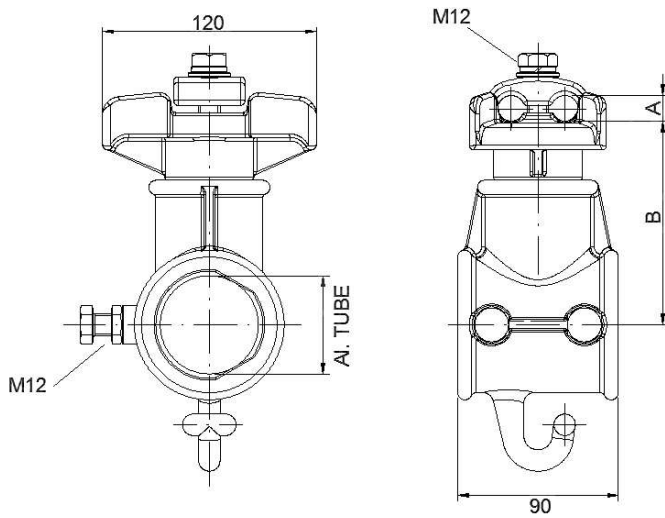


Part No.	FEA Results			Actual FAT Results	
	Working load in Kgf	Factor of safety	Failing load as per EN 50119	Failing Load in Kgf	Factor Of Safety Achieved
10.20.008 Tube Holder Ø 55	456	2.5	1140	1802	3.95
10.20.007 Tube Holder Ø 70	456	2.5	1140	3561	7.8



CATENARY WIRE SUPPORT ASSEMBLY

PART NO. 10.20.517

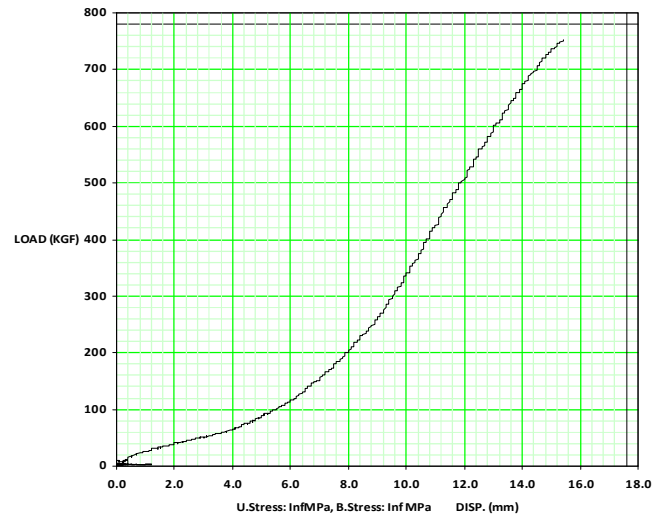


Part No:-10.20.016

Part No:-10.20.013

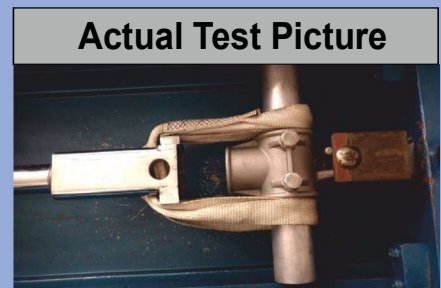
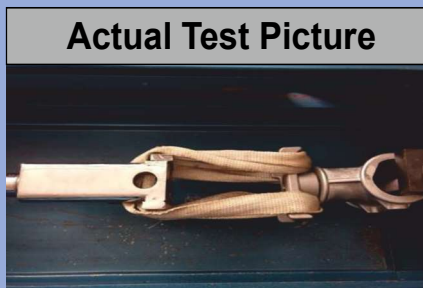
Ø55mm
Part No:-10.20.511

Part No:-10.20.513



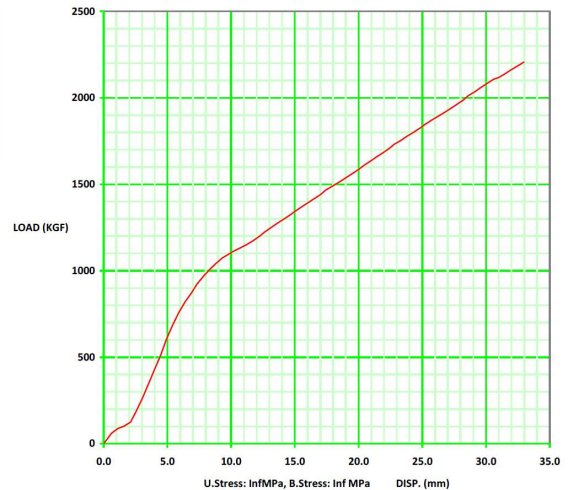
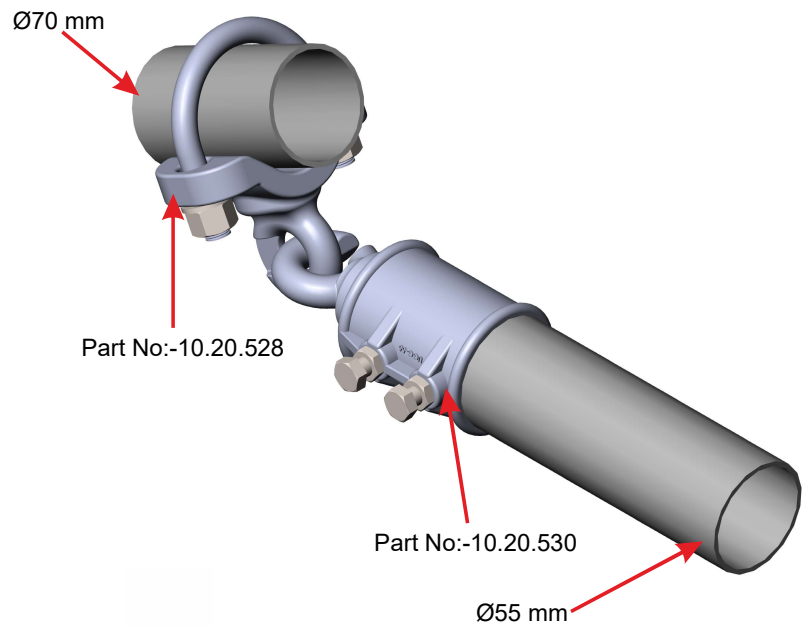
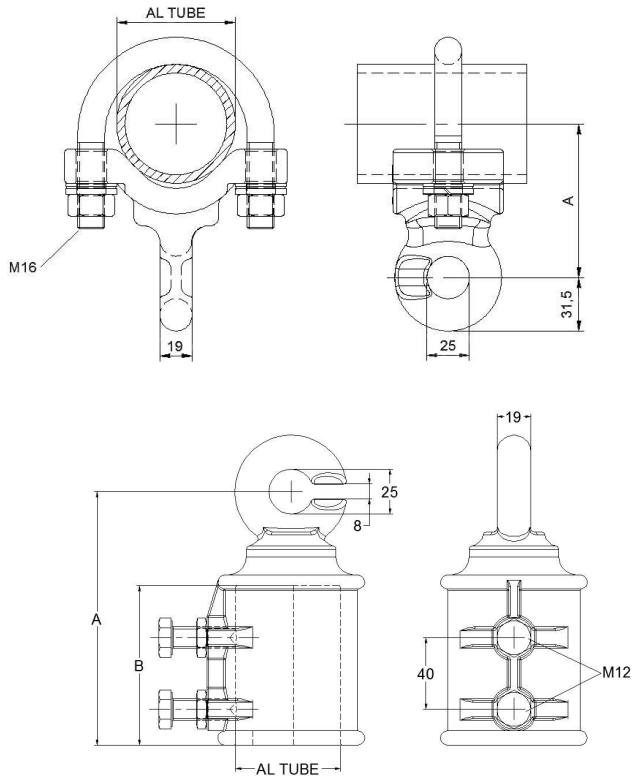
Part No.	Tube Dia	Messenger Wire (mm ²)	Dimension (mm)	
			A	B
10.20.009	55	50-95	11-15	114
10.20.010	70	50-95	11-15	112

Part No.	FEA Results			Actual FAT Results	
	Working load in Kgf	Factor of safety	Failing load as per EN 50119	Failing Load in Kgf	Factor Of Safety Achieved
10.20.009 (Clamp A)	100	2.5	250	752	7.52
10.20.011 (Clamp B)	310	2.5	775	2624	8.46



HOOK AND EYE CLAMP ASSEMBLY

PART NO. 10.20.572



Part No.	Dia Combination (mm)
10.20.584	42-55
10.20.572	55-70

Part No.	FEA Results			Actual FAT Results	
	Working load in Kgf	Factor of safety	Failing load as per EN 50119	Failing Load in Kgf	Factor Of Safety Achieved
10.20.035 Hook End Fitting D-55	168	2.5	420	1407	8.37
10.20.033 Eye Clamp BD-70	168	2.5	420	2258	13.44

Actual Test Picture



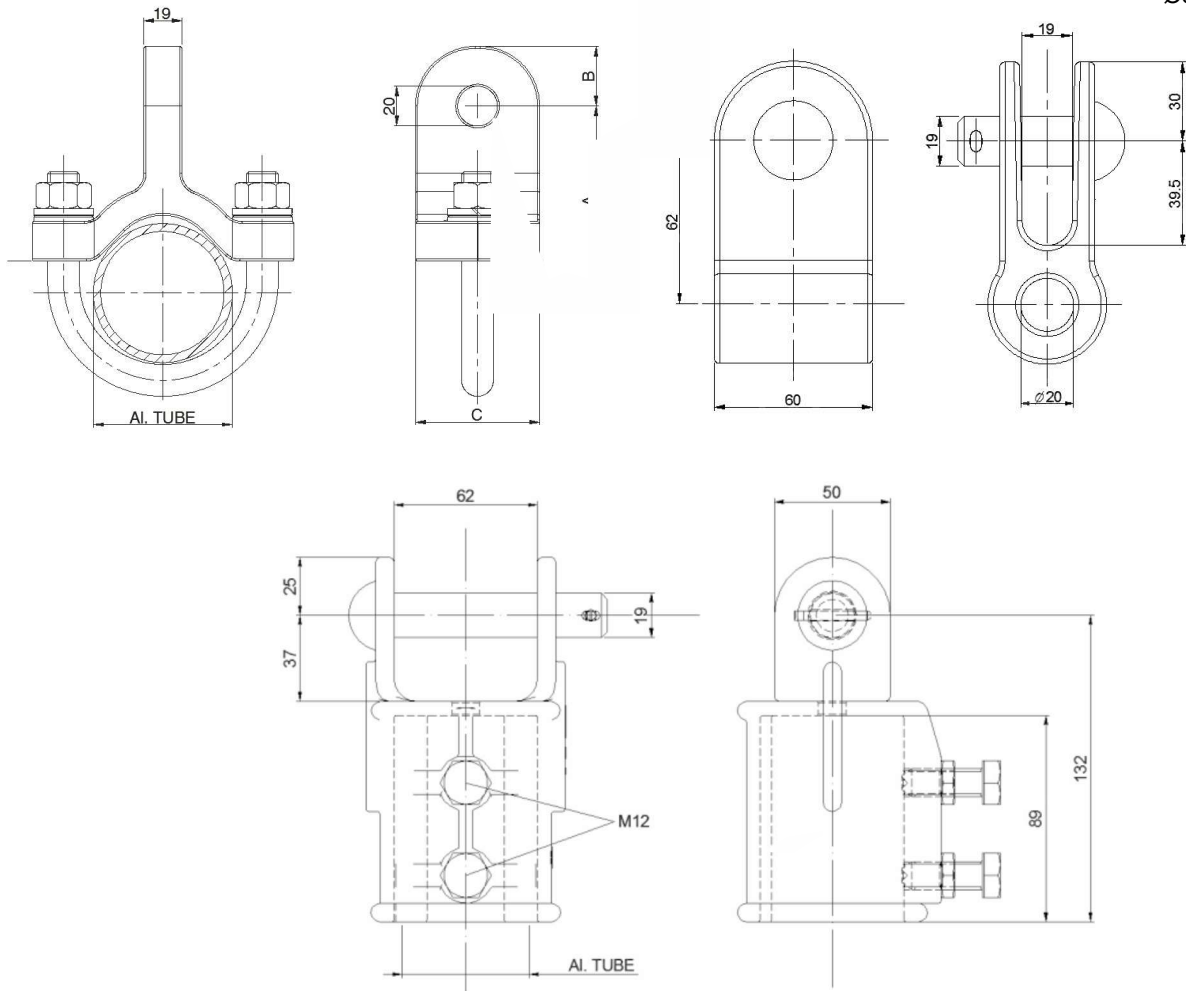
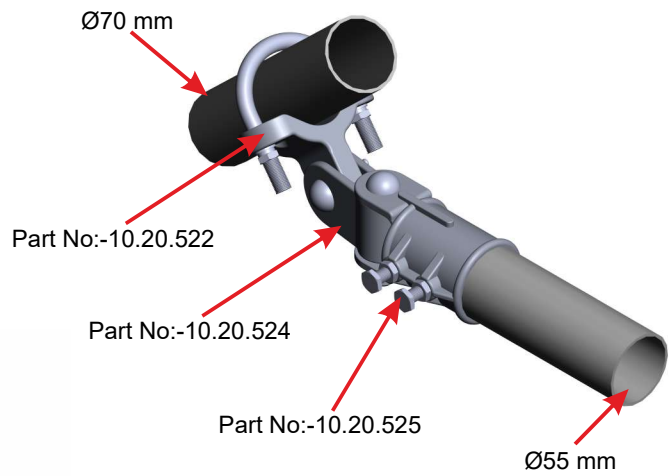
Actual Test Picture



AXEL AND CARDAN CLAMP ASSEMBLY

(Optional)

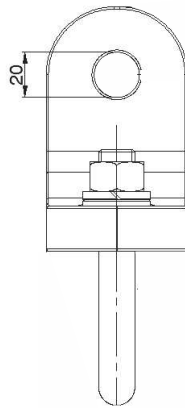
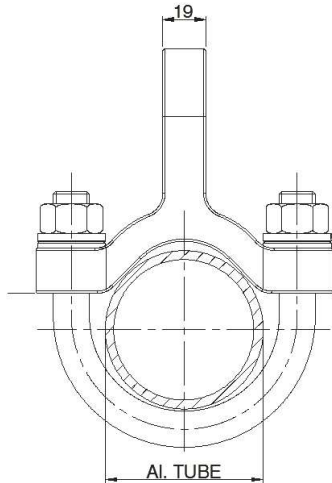
PART NO. 10.20.573



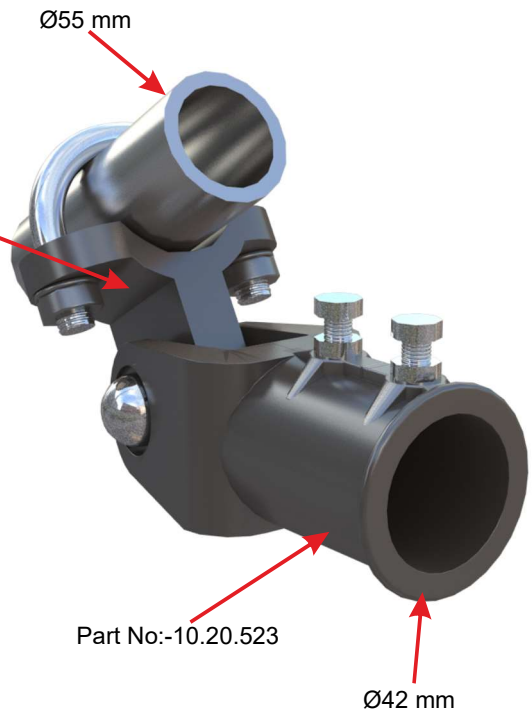
END FITTING D-42 WITH EYE CLAMP ASSEMBLY (Optional)

PART NO. 10.20.577

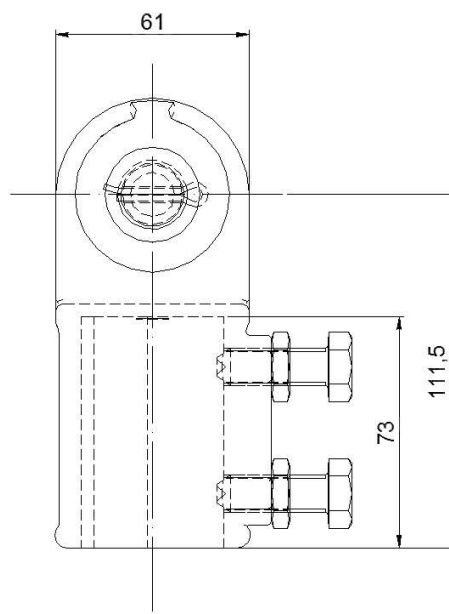
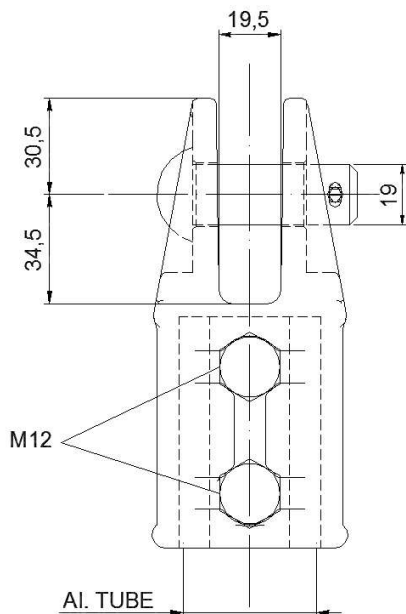
EYE CLAMP Part No:- 10.20.521



Part No:-10.20.521

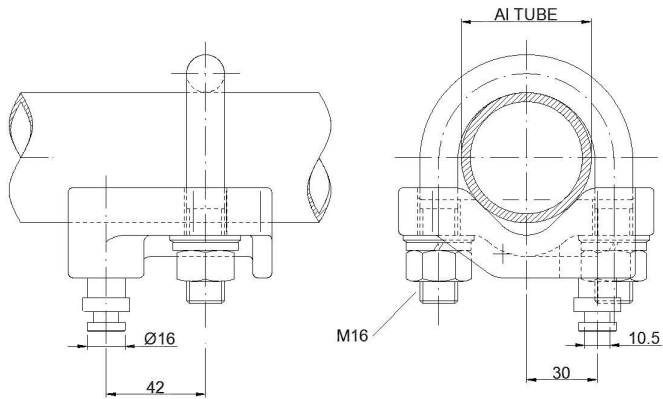


END FITTING Part No:- 10.20.523



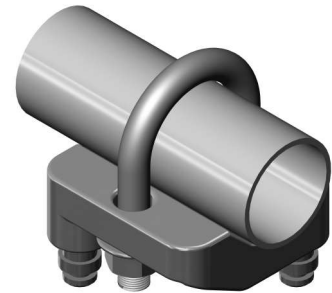
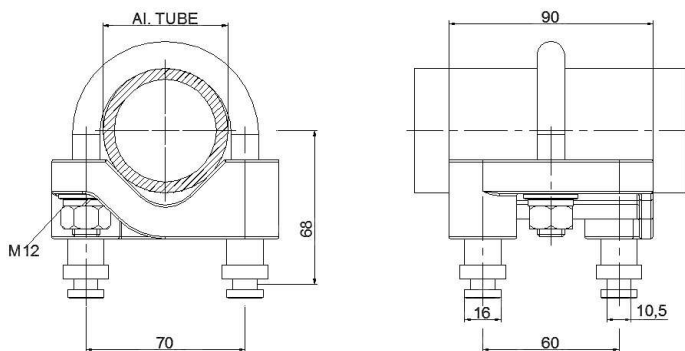
CONTACT WIRE HOLDER CLAMP

PART NO. 10.20.568



Part No.	Dia Combination (mm)
10.20.567	42
10.20.568	55

DUAL CONTACT WIRE HOLDER CLAMP ASSEMBLY



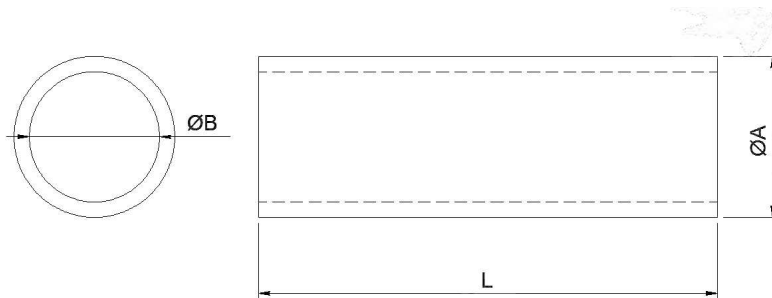
Part No.	Dia Combination (mm)
10.20.567	42
10.20.568	55

Part No.	FEA Results			Actual FAT Results	
	Working load in Kgf	Factor of safety	Failing load as per EN 50119	Failing Load in Kgf	Factor Of Safety Achieved
10.20.066 (CW holder clamp)	321	2.5	803	5262	16.40



CANTILEVER TUBE

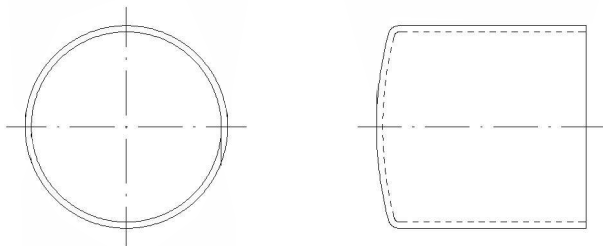
PART NO. 10.20.070(Ø42mm)



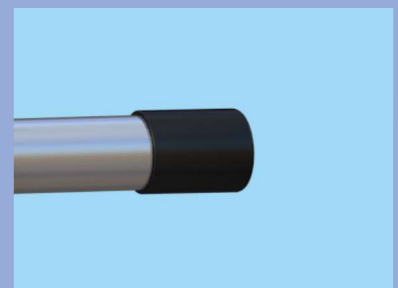
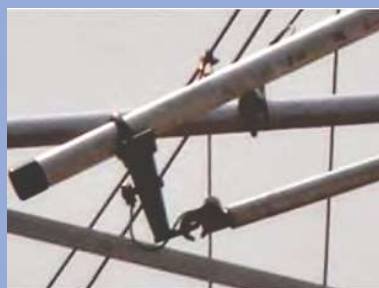
Part No.	Exterior diameter A (mm)	Internal diameter B (mm)
10.20.070	42	34
10.20.071	55	43
10.20.072	70	58

PVC TUBE CAP

PART NO. 10.20.073 (Ø 42mm)
10.20.074 (Ø 55mm)
10.20.075 (Ø 70mm)



PVC tube caps are made of special rubber which can withstand environmental condition for long life.



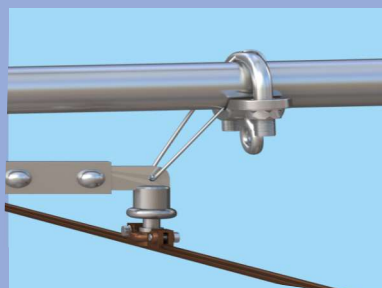
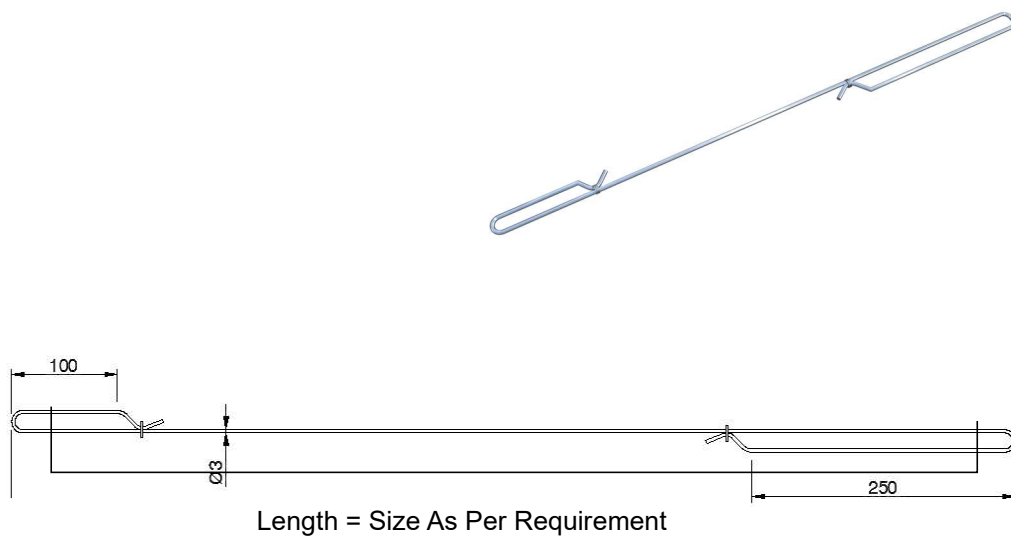
REGISTRATION ARM DROPPER

PART NO. 10.20.520



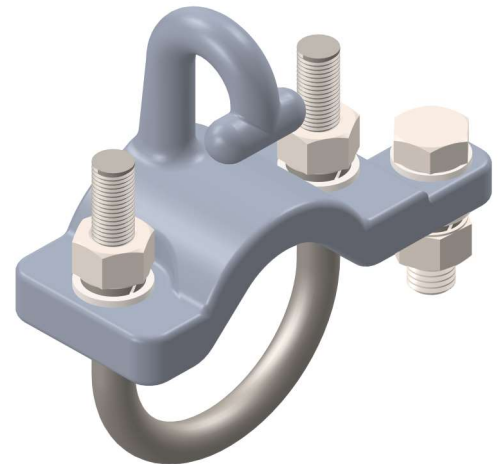
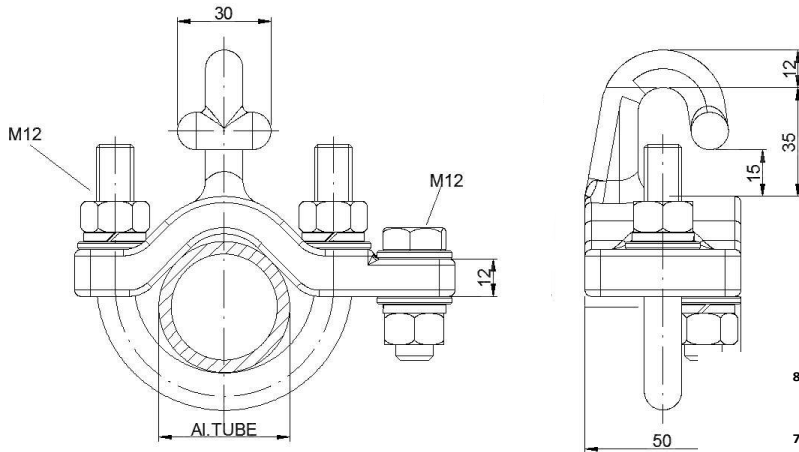
WINDSTAY ROD

PART NO. 10.20.040

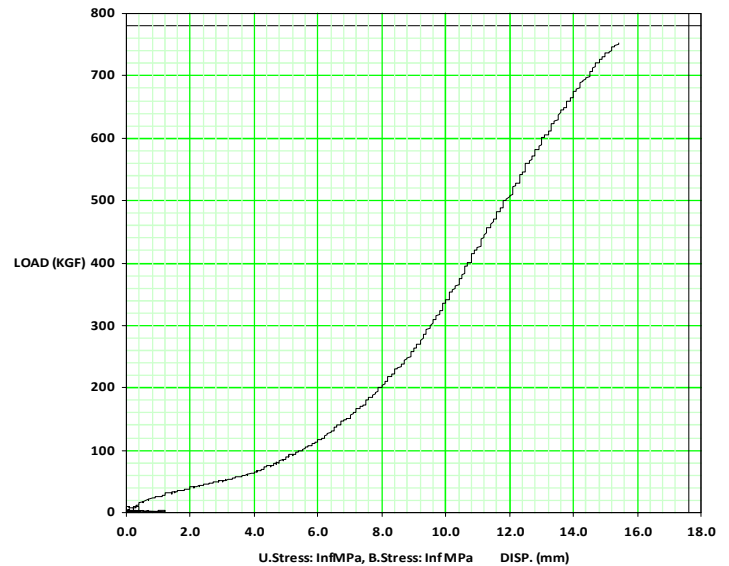


HOOK CLIP

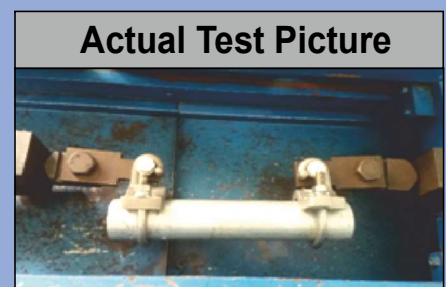
PART NO. 10.20.519



Part No.	Tube Diameter (mm)
10.20.518	42
10.20.519	55

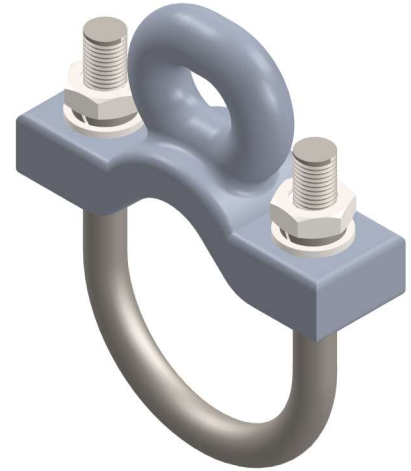
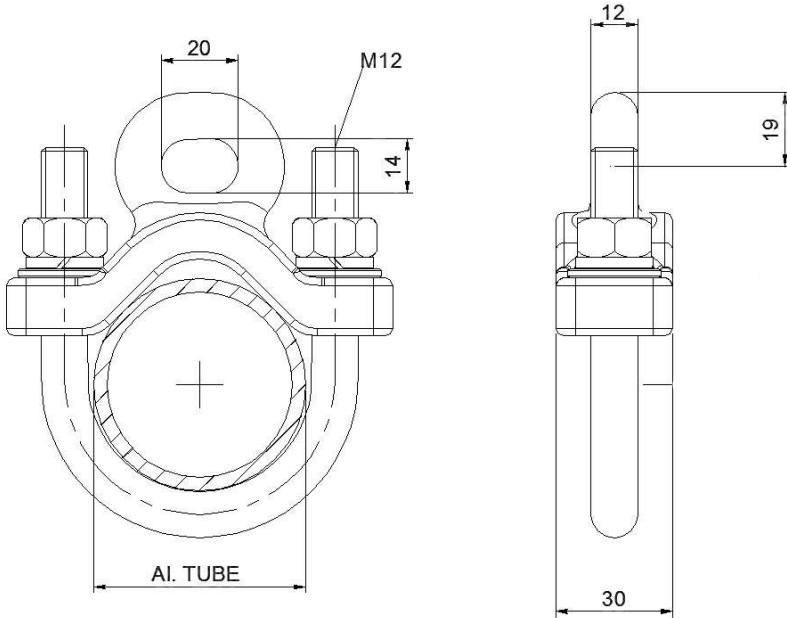


Part No.	FEA Results			FAT Results	
	Working load in Kgf	Factor of safety	Failing load as per EN 50119	Failing Load in Kgf	Factor Of Safety Achieved
0.20.021 (Hook Clip)	102	2.5	255	767	7.52

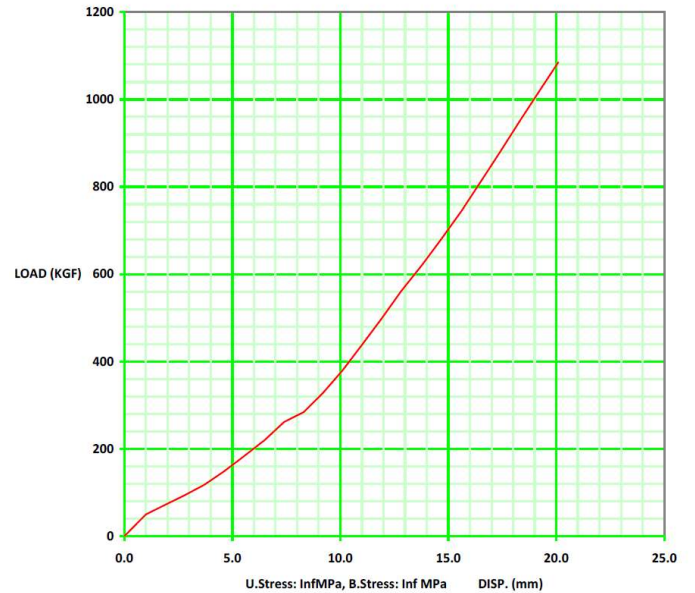


EYE CLAMP FOR WINDSTAY

PART NO. 10.20.532



LOAD vs DISP



Part No.	Tube Diameter (mm)
10.20.531	42
10.20.532	55

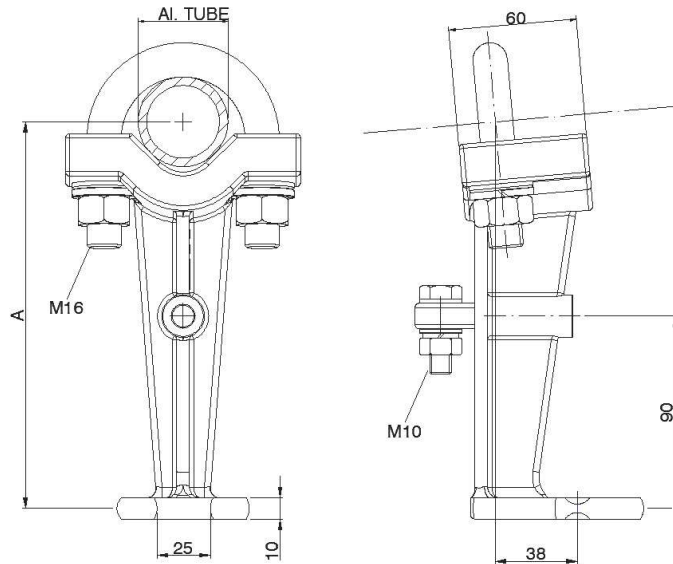
Part No.	FEA Results			FAT Results	
	Working load in Kgf	Factor of Safety	Failing load as per EN 50119	Failing Load in Kgf	Factor Of Safety Achieved
10.20.037 (Eye Clamp)	15	2.5	38	1142	76.67



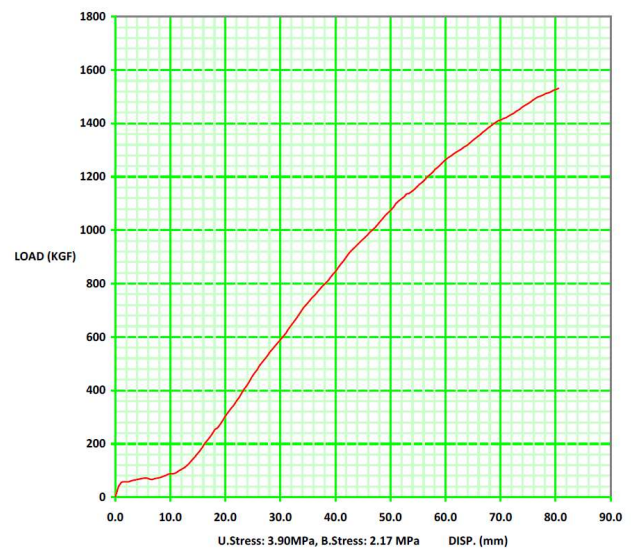
Actual Test Picture

STEADY ARM BRACKET

PART NO. 10.20.535

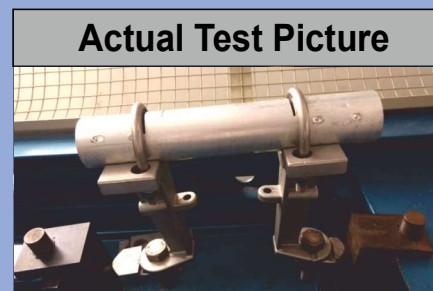


LOAD vs DISP

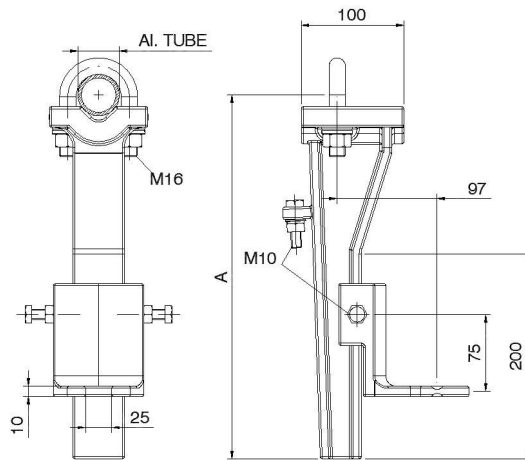


Part No.	Diameter tube (mm)	Dimension A (mm)
10.20.536	42	180
10.20.535	55	189

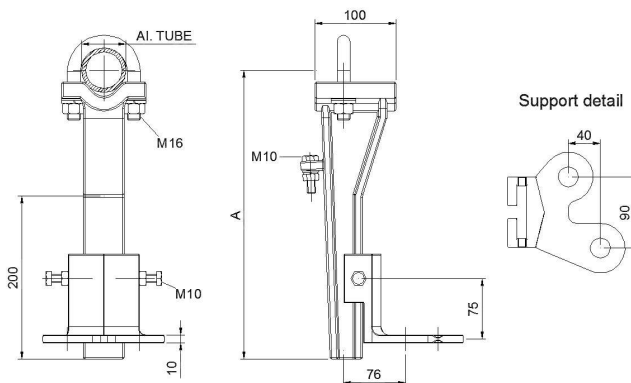
Part No.	FEA Results			FAT Results	
	Working load in Kgf	Factor of Safety	Failing load as per EN 50119	Failing Load in Kgf	Factor Of Safety Achieved
10.20.046 (Steady Arm Bracket)	168	2.5	420	1522	9.05



ADJUSTABLE STEADY ARM BRACKET



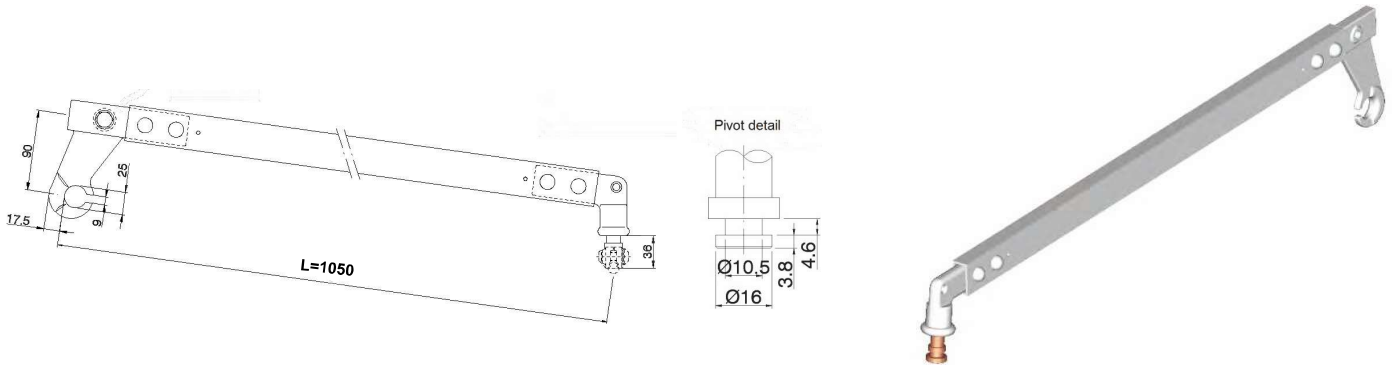
Part No.	Diameter tube (mm)	Dimension A (mm)
10.20.537	42	348
10.20.538	55	357



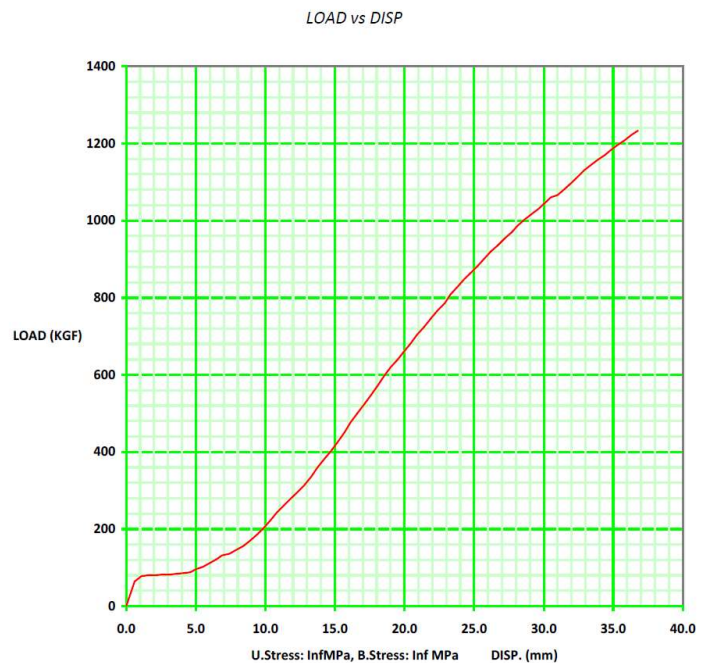
Part No.	Diameter tube (mm)	Dimension A (mm)
10.20.539	42	348
10.20.540	55	357



STEADY ARM STRAIGHT



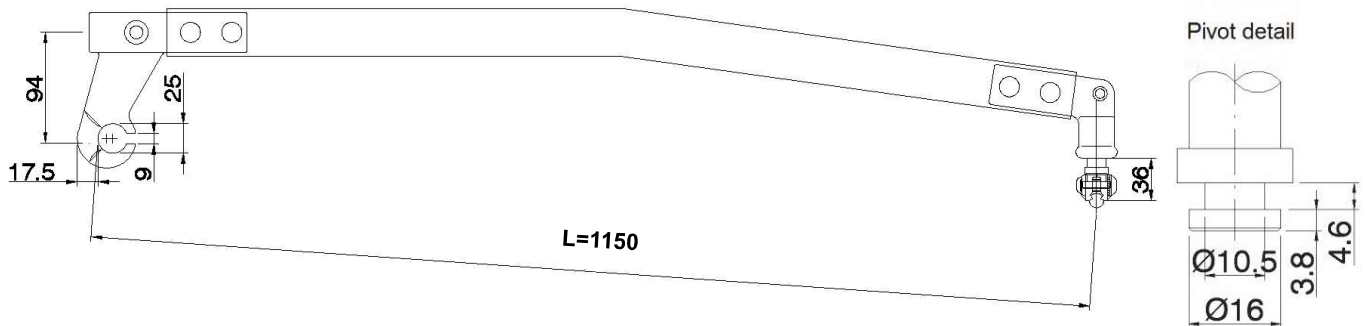
Part No.	Length L (m)
10.20.593	650
10.20.556	700
10.20.557	750
10.20.558	850
10.20.559	900
10.20.560	950
10.20.561	1000
10.20.562	1050
10.20.563	1100
10.20.564	1150
10.20.579	1200
10.20.565	1250
10.20.566	1385
10.20.580	1400
10.20.581	1500



Part No.	FEA Results			FAT Results	
	Working load in Kgf	Factor of safety	Failing load as per EN 50119	Failing Load in Kgf	Factor Of Safety Actual
10.20.562 (1050)	168	2.5	420	1242	7.40



STEADY ARM BENT

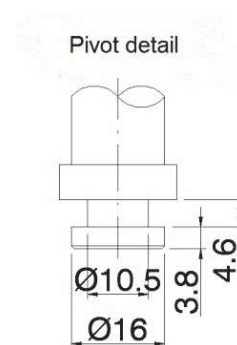
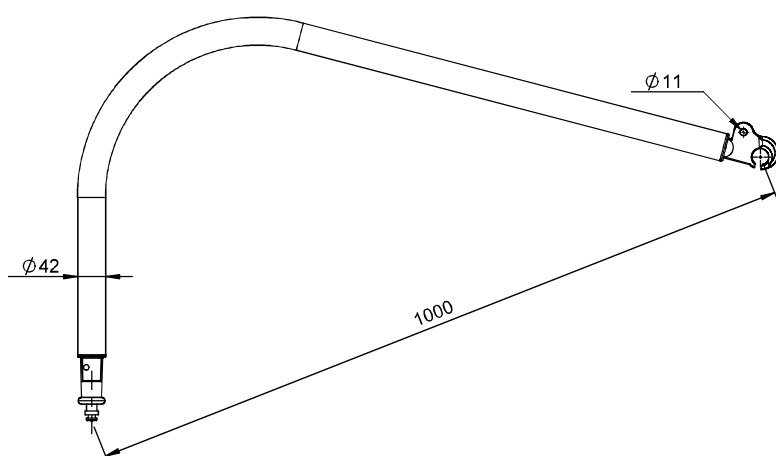
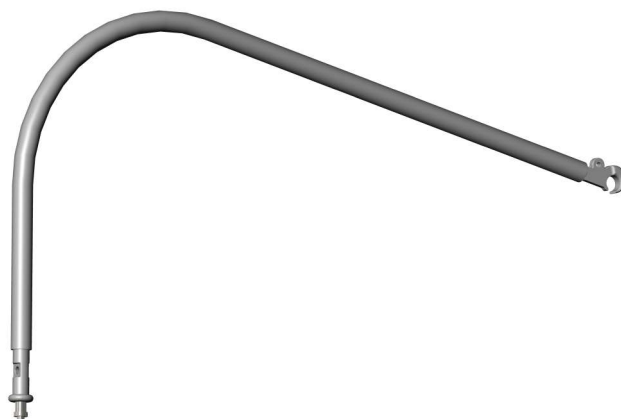


Part No.	Length
	L (mm)
10.20.543	700
10.20.544	750
10.20.545	800
10.20.546	850
10.20.547	900
10.20.548	950
10.20.549	1000
10.20.550	1050
10.20.551	1100
10.20.552	1150
10.20.553	1200
10.20.554	1250
10.20.555	1300
10.20.582	1450



STEADY ARM ROUND (1000mm)

PART NO. 10.20.542



Part No.	Length L (mm)
10.20.541	968
10.20.542	1000



CONTACT WIRE CLIP

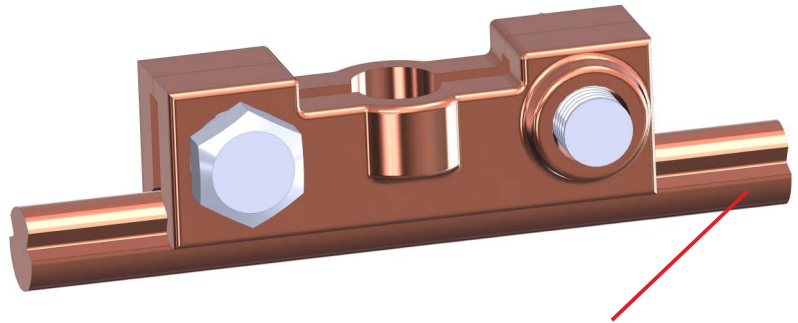
PART NO. 10.20.570

MATERIAL:-

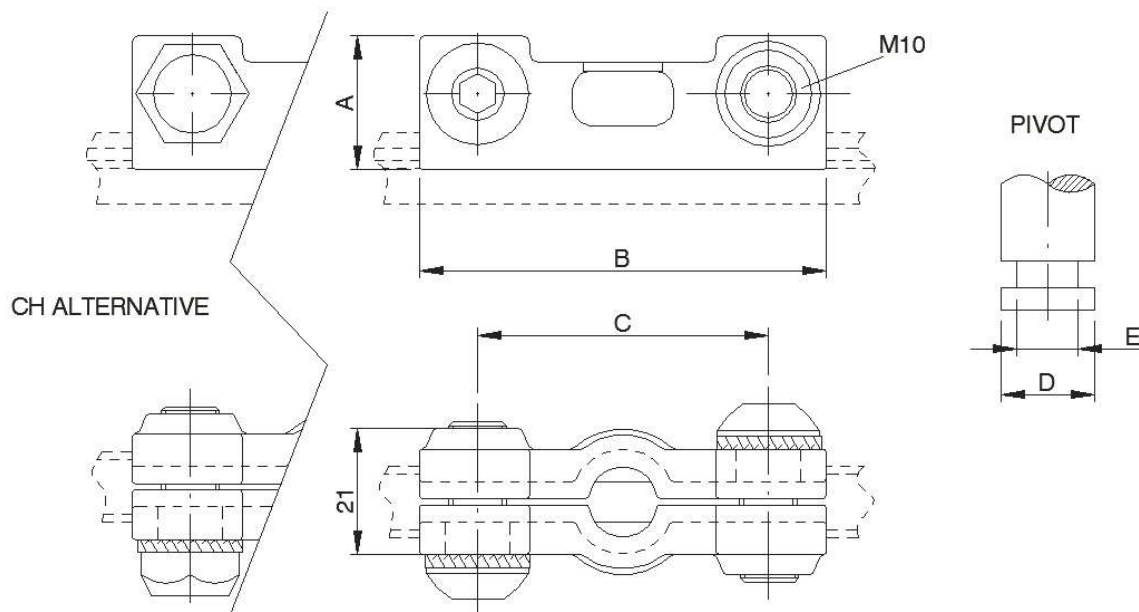
Forged parts:-CuNi2Si

Washer:- St. Steel

Screw: St. Steel



Contact Wire Not Included



Contact wire	Dimensions			Pivot Dimensions	
	A	B	C	D	E
	(mm)	(mm)	(mm)	(mm)	(mm)
AC/DC 80/150	23.5	75	53	23.7	15.7
AC/DC 80/150	23	70	50	16	10.5
AC/DC 80/150	23.5	75	53	23.7	15.7
AC/DC 80/150	23	70	50	16	10.5



BRIDGING CLAMP ASSEMBLY 70/150

PART NO. 400.000.014

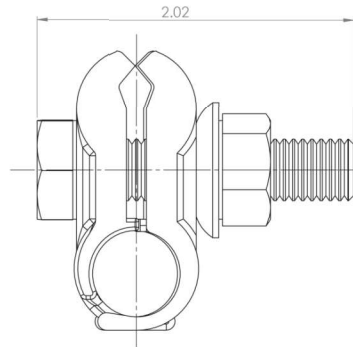
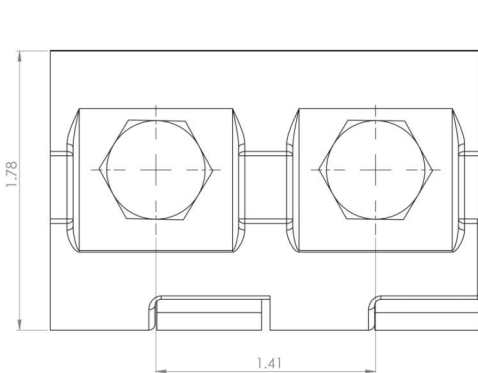
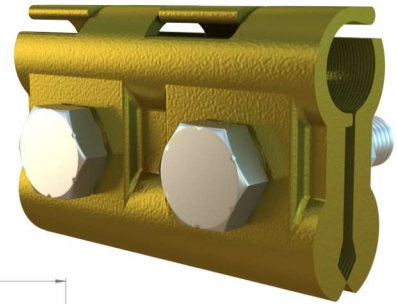
MATERIAL:-

Forged parts:-CuNi2Si

Washer:- St. Steel

Screw:- St. Steel

Nut:- St. Steel



PG CLAMP ASSEMBLY 35/300 mm²

PART NO. 400.000.004

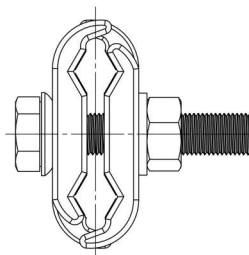
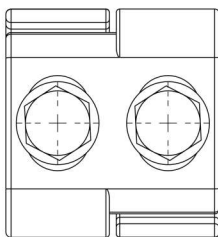
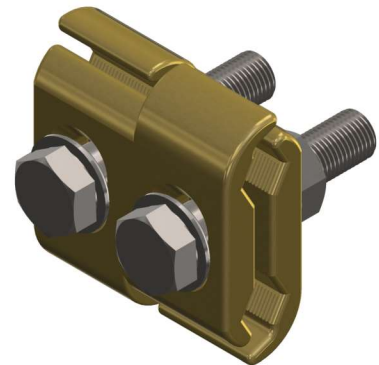
MATERIAL:-

Forged parts:-Brass

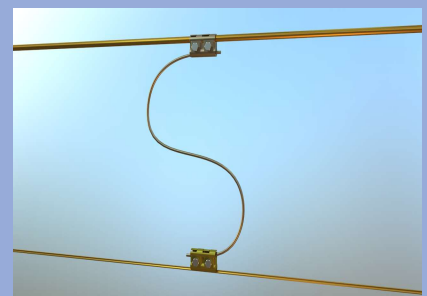
Washer:- St. Steel

Screw:- St. Steel

Nut:- St. Steel



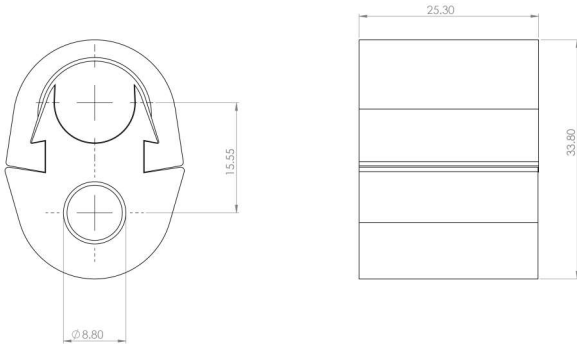
For wire size 35-300 mm²



COMPRESSION SLEEVE

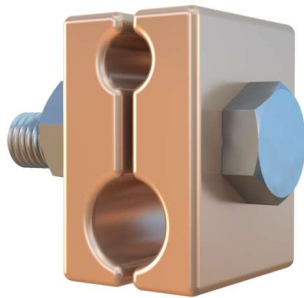
PART NO. 400.000.018

MATERIAL:- Copper

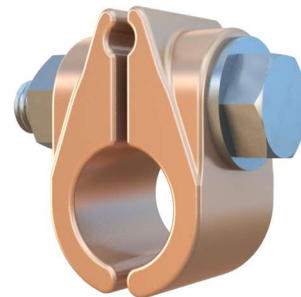


Part No.	Part Name
400-000-18	Compression Sleeve 65/26mm ² (Small)
400-000-19	Compression Sleeve-A 65/26mm ²
400-000-21	Compression Sleeve-B 65/164mm ²
400-000-22	Compression Sleeve-C 164/164mm ²
400-000-23	Compression Sleeve-D 145/164mm ²
400-000-24	Compression Sleeve-E 120/26mm ²
400-000-26	Compression Sleeve-F 145/120mm ²
400-000-28	Compression Sleeve-G 120/120mm ²

PG CLAMP



Cu Clamp for
12-26 mm²

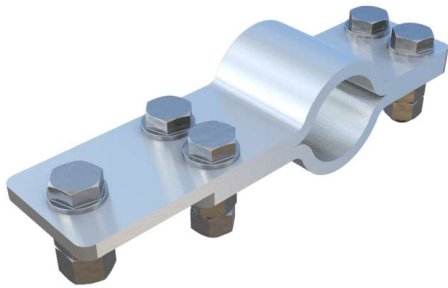


Cu Clamp for
12-164 mm²

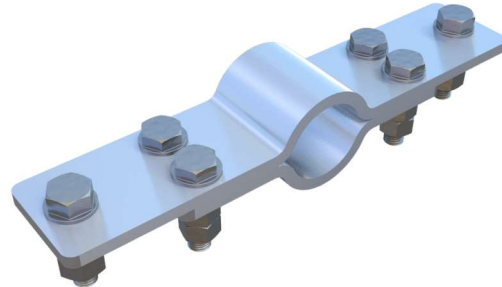


JUMPER STAY TUBE CLAMP

PART NO. 10.20.622 (Single)
PART NO. 10.20.623 (Double)



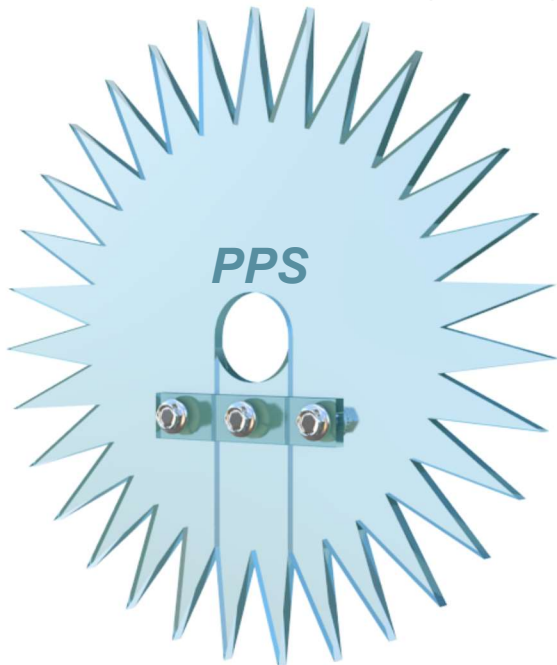
Single



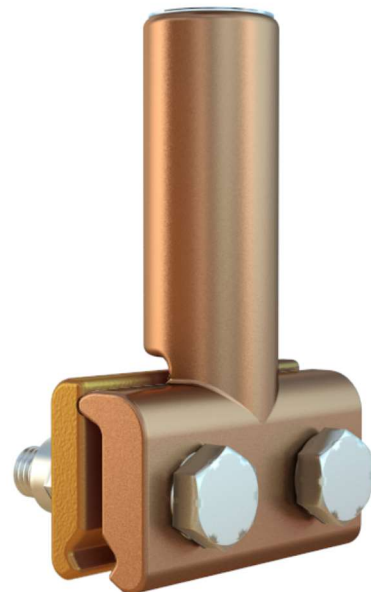
Double

ANTI-BIRD DISK

PART NO. 10.20.620 (47mm)
PART NO. 10.20.621 (54mm)

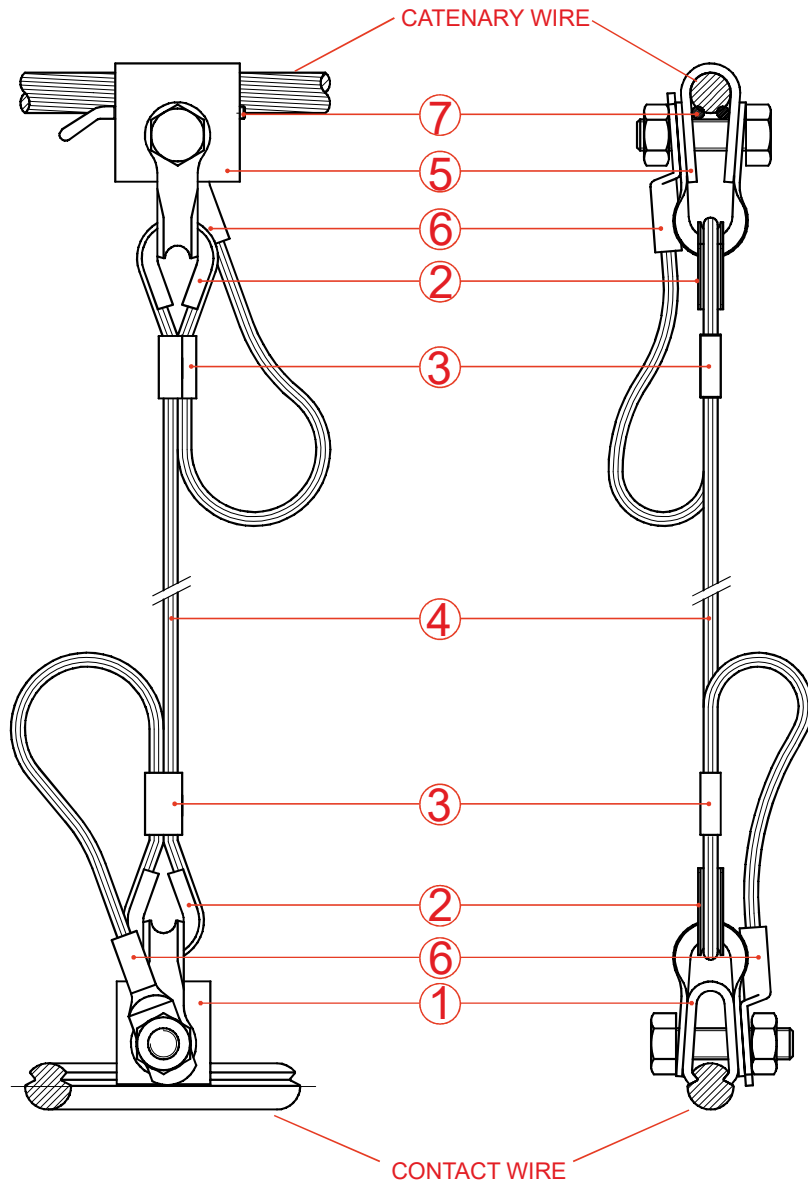


T-CLAMP



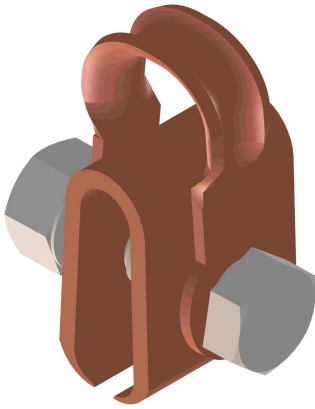
DROPPER

PART NO. 10.20.592



1. Contact wire clamp
2. Thimble
3. Sleeve
4. Dropper wire
5. Catenary wire clamp
6. Lug
7. Stopper pin

DROPPER ASSEMBLY



**1. Contact Wire
Clamp Assembly**

PART NO. 10.20.589

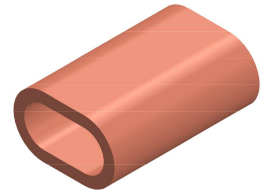
Material : CuNi2Si
Loop : CuNi2Si
Screw : St. Steel (A2) (EN ISO 3506)
Nut : St. Steel (A2) (EN ISO 3506)



**2. Thimble
(Dropper Wire)**

PART NO. 10.20.084

Material : Cu- ETP



**3. Sleeve
(Dropper Wire)**

PART NO. 10.20.085

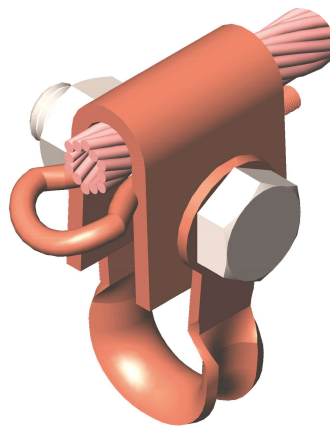
Material : Cu- ETP



4. Dropper Wire

PART NO. 10.20.086

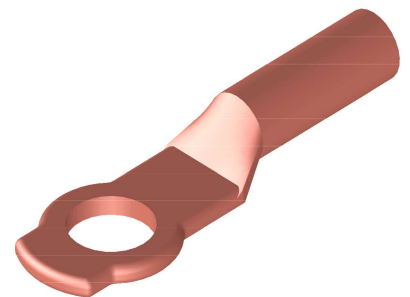
Material : Bronze
Size : (10/12 sq mm)
Multi strand



**5. Catenary Wire
Clamp Assembly**

PART NO. 10.20.591

Material : CuNi2Si
Screw : St. Steel (A2)
Nut : St. Steel (A2)
Pin : Bronze

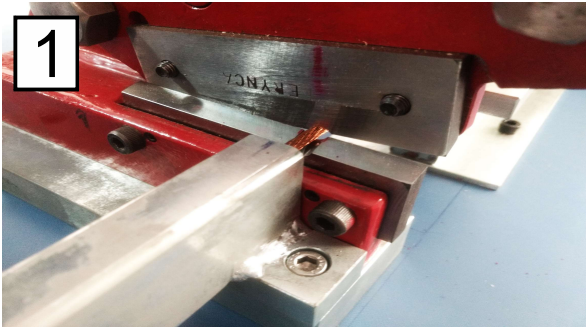


**6. Lug
(Dropper Wire)**

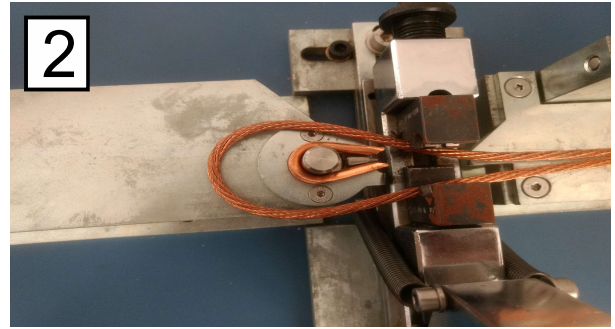
PART NO. 10.20.078

Material : Cu- ETP

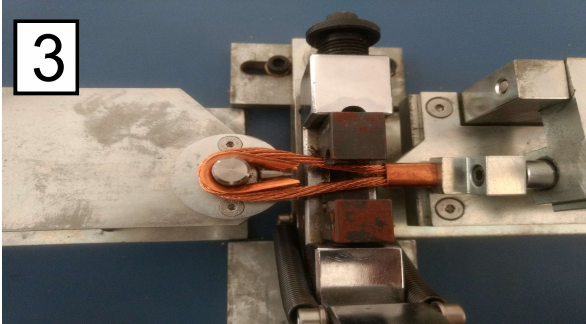
IN-HOUSE ASSEMBLY OF DROPPER



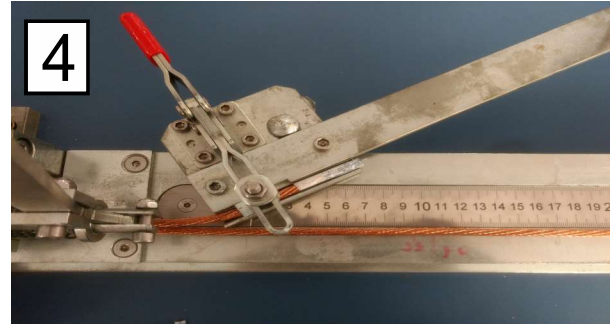
Dropper Cutting



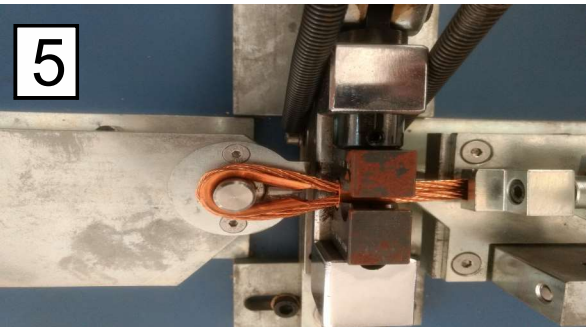
Thimble Placement



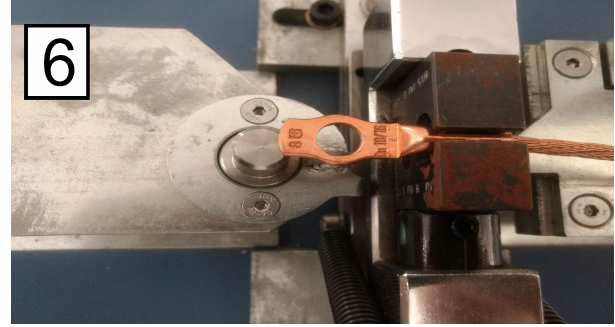
Sleeve Insertion



Dropper Straightening



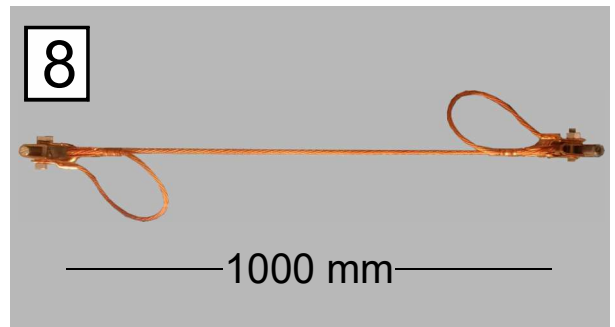
Sleeve crimping



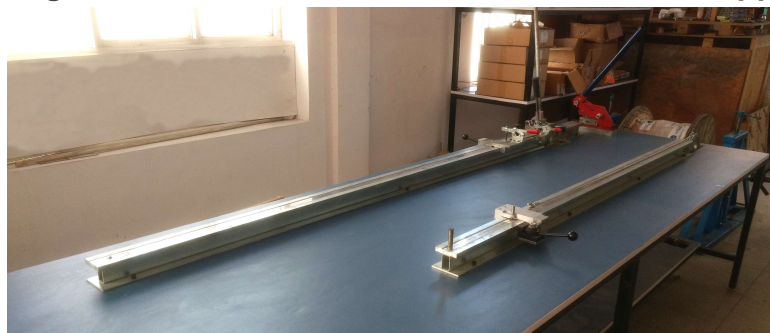
Lug Crimping



Dropper Length Verification



Final Dropper Assembly



Dropper Assembly Table

UNIT-1 Corporate Office



UNIT-2 Factory



UNIT-3 Factory



PPS International Private Limited

(www.ppsinternational.in)

Unit 1 :- Corporate Office
Plot No-32, Udyog Kendra
Ecotech - 3, Greater Noida
UP- 201308

Unit 2 :-
Plot No-85, Ecotech - XII
Greater Noida
UP- 201306

Unit 3 :-
Plot No-116C, Ecotech - XII
Greater Noida
UP- 201306

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Revision:- 6.0
2 /2025

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