

Ref : BAJAJ/NOA-07,08,09&10/2022-23/087
Dated : 21.09.2022

To,
✓ **The Chief Engineer (P&E),**
Bihar State Power Transmission Company Limited,
Vidyut Bhawan, Bailey Road,
Patna - 800001

Subject: - (1) Design, manufacturing, testing at manufacture's works and delivery of equipment's required for construction of 220Kv D/C TL from Begusarai to IOCL Barauni refinery partly on monopole tower and shifting of 4 nos. of 220 KV towers of existing TL required for M/s IOCL on M/C monopole Towers on turnkey Basis under scheme of IOCL against **NIT No. - 40/PR/BSPTCL/2020.**

(2) Design, manufacturing, testing at manufacture's works and delivery of equipment's required for construction of 132 KV D/C Chandauti (New) to GSS Barachatti (Dist.-Gaya) Transmission Line (RL-35KM) and LILO of 132KV Barhi-Rajgir(L-29) and Barhi- Nalanda(L-28) Transmission lines (Each line length-1km) each at GSS Bhore (Dist.-Gaya) against **NIT No. - 12/PR/BSPTCL/2021.**

---Regarding Approval of Vendor along with GTP & Drawings of M/s Legion Energy Products Pvt. Ltd., Bangalore for OPGW hardware fittings & FODP panel.

Reference: - (1) NOA No: 07/Trans/Misc/P-II/103/2020 Dated 30/06/2021.
(2) NOA No: 08/Trans/Misc/P-I/428/2019 part II Dated 30/06/2021.
(3) NOA No: 09/Trans/P-II/24/2021 Dated 17.08.2021.
(4) NOA No: 10/Trans/P-II/24/2021 Dated 17.08.2021.

Dear Sir,

With reference to the above cited subject, we are hereby applying for the approval of vendor along with GTP & Drawing of M/s Legion Energy Products Pvt. Ltd., Bangalore for OPGW hardware fittings & FODP panel for our NIT No. 40/PR/BSPTCL/2020 & NIT No. 12/PR/BSPTCL/2021.

Hence, you are requested to kindly grant your approval so that we can start further course of activity.

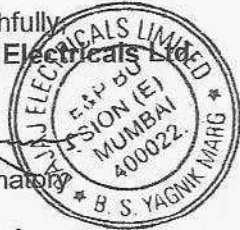
Thanking you and assuring you of our best services always.

Yours faithfully,

For Bajaj Electricals Ltd.

Auth. Signatory

Encl: As above



Sailant
21.09.2022
केन्द्रीय निर्माण शाखा
बिहार स्टेट पावर ट्रांसमिशन कंपनी लिमिटेड
विद्युत भवन, बेली रोड, पटना-21

Engineering & Projects Business Unit

801 (8th Floor), Rustomjee Aspiree, Bhanu Shankar Yagnik Marg, Off Eastern Express Highway Sion (E), Mumbai - 400 022
Tel. : +91-22-2406 4000 | Fax : +91-22-2406 4003 | www.bajajelectricals.com

Regd. Office : 45/47, Veer Nariman Road, Mumbai 400 001, India



BIHAR STATE POWER TRANSMISSION COMPANY LTD., PATNA

A subsidiary company of Bihar State Power (Holding) Company Ltd., Patna

CIN – U74110BR2012SGC018889

[SAVE ENERGY FOR BENEFIT OF SELF AND NATION]

Head Office, Vidyut Bhawan, Bailey Road, Patna – 800021

E-mail address – ceplanningengg@gmail.com,

Website - www.bsptcl.in

Letter No. CE(P&E)-88/2022.2.21./BSPTCL

Dated..12/10/2022.....

From,

Deepak Kumar Jha,
Planning and Engineering
BSPTCL, Patna

To,

M/s Bajaj Electricals Ltd.
801, Rustomjee Aspiree, Bhanu Shankar Yagnik Marg
Off Eastern Express Highway Sion(E)
Mumbai 400 002

Sub- Regarding the approval of vendor M/s Legion Energy Products Pvt. Ltd. along with the approval of GTP-drawing of Hardware fittings of OPGW, FODP Panel and Joint Box for construction of 220KV D/C Begusarai GSS to IOCL Barauni Refinery Transmission line against NIT-40/PR/BSPTCL/2020.

Ref:- 1. NIT No.-40/PR/BSPTCL/2020
2. Your Office letter no. BAJAJ/NOA-07, 08, 09 & 10/2022-23/087 Dated 21.09.2022

Sir,

With reference to above, this is to inform that your request for the approval of vendor M/s Legion Energy Products Pvt. Ltd. along with the approval of GTP-drawing of Hardware fittings of OPGW, FODP Panel and Joint Box for construction of 220KV D/C Begusarai GSS to IOCL Barauni Refinery Transmission line against NIT-40/PR/BSPTCL/2020 is hereby accorded on the risk and responsibility of M/s Bajaj Electricals Ltd. Details of the items approved are as follows:-

Sl. No.	Item	Drawing no.
1	GTP for Suspension Assembly for OPGW	-
2	GTP for U Shackle	-
3	GTP for Suspension Clamp	-
4	GTP for PG Clamp	-
5	GTP for Aluminium Bond for Earthing arrangement	-
6	Drawing for Suspension Assembly for OPGW	LE-DT-OPGW
7	Drawing for U Shackle	LE-F-OPGW-US
8	Drawing for Suspension Clamp	LE-DT-P-Z
9	Drawing for AGS Clamp	LE-D-OPGW
10	Drawing for U strap	LE-D-PG
11	Drawing for Rubbersied Insert	LE-D-OPGW
12	Drawing for Retaining Rod	LE-DT-P-OPGW
13	Drawing for Armour Rod	LE-DT-P-OPGW
14	Drawing for PG Clamp	LE-DT-P-TG
15	Drawing for Armour Rod For Vibration Damper	LE-DT-P-OPGW
16	Drawing for Aluminium EarthBond	LE-F-P-OPGW
17	GTP for Tension Assembly for OPGW	-
18	GTP for Eyelink	-
19	GTP for Anchor Shackle	-
20	GTP for Clevis Thimble	-
21	GTP for Yoke Plate	-
22	Drawing for Tension Assembly for Dead End Location	LE-DT-P-OPGW
23	Drawing for Tension Assembly for Pass through location	LE-DT-P-OPGW
24	Drawing for Tension Assembly Joint Box Location	LE-DT-OPGW
25	Drawing for Tension Assembly on Suspension Tower	LE-DT-P-OPGW

bx

26	Drawing for Eyelink	LE-D-PG
27	Drawing for Anchor Shackle	LE-F-OPGW-AS
28	Drawing for Clevis Thimble	LE-F-OPGW-CT
29	Drawing for Deadend Grip (Outer Rods)	LE-DT-P-OPGW
30	Drawing for Reinforcing Rods	LE-DT-P-OPGW
31	Drawing for Yoke Plate	LE-DT-P-ZTT
32	GTP for Vibration Damper	-
33	Drawing for Vibration Damper for OPGW	LE-DT-P-OPGW
34	Drawing for Messenger Cable	LE-DT-P
35	Drawing for Damper Mass Big	LE-DT-OPGW
36	Drawing for Damper Mass Small	LE-D-OPGW
37	Drawing for Keeper	LE-DT-OPGW
38	Drawing for Clamp Body	LE-D-OPGW
39	GTP for Down Lead Clamp	-
40	Drawing for Down Lead Clamp	LE-DT-OPGW
41	GTP for Loop Bracket	-
42	GTP for Loop Bracket	LE-D-PG
43	GTP for OPGW Joint Box	-
44	Drawing for Joint Box for OPGW - 2 Way- 24F	LE-DT-P-OPGW
45	Drawing for Joint Box for OPGW - 2 Way- 48F	LE-DT-P-OPGW
46	GTP for FODP	-
47	Drawing for FODP - 96F	LE-DT-P-AR

It may be noted that this approval and issue of the letter does not absolve you from any contractual responsibility in terms of quality and correctness of material and shall be strictly in accordance with tender specification/ISS/IEC/CBIP Manual as well as BSPTCL specification and latest amended ISS/IEC/CBIP Manual update and if at any time, any abnormality is observed, BSPTCL reserves the right to withdraw this approval with immediate effect without any pre-intimation.

Encl: As Above

Yours faithfully

(Signature)
(Deepak Kumar Jha)
Chief Engineer, (P&E)

Submitted by	BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

LEGION ENERGY		GUARANTEED TECHNICAL PARTICULARS FOR SUSPENSION ASSEMBLY FOR OPGW		Doc. No:00/Rev. No: 00 Prep. By: Krishnaraj Ckd by: Satish Date: 15-12-2021
S. NO.	DESCRIPTION	UNIT	PARTICULARS	
1	Manufacturer's Name and address		M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area, KIADB Phase -III, Doddaballapura, Bangalore - 561 203	
2	Component Description		Suspension assembly for OPGW	
3	Suitable for (Cable size)	mm	Ø11.4	
4	Part no		MF50313	
5	Minimum Vertical strength	kN	70	
6	Minimum slip strength	kN	12	
7	Maximum slip strength	kN	17	
8	Total drop includes shackle	mm	148	
9	Tightening torque (Nominal)	Nm	46	
10	Details of Protection rods (Reinforcing/ Retaining rods/Inner rods)			
	a) No. Of rods per set		12	
	b) Direction of lay		Right hand lay	
	c) Overall length	mm	2000	
	d) Diameter of each rod	mm	Ø3	
	e) Tolerances		± 0.1	
	(i) Dia of each rod	mm	±5%	
	(ii) Length of each rod	mm		
	f) Material of wire		Aluminium alloy	
	g) UTS of each rod	kN	35kg/mm2	
	h) Weight	kg	0.46 ±2%	
11	Details of Armour rod set (Outer rods)			
	a) No. Of rods per set		12	
	b) Direction of lay		Left hand lay	
	c) Overall length	mm	1400	
	d) Diameter of each rod	mm	Ø5.18	
	e) Tolerances		± 0.1	
	(i) Dia of each rod	mm	±5%	
	(ii) Length of each rod	mm		
	f) Material of wire		Aluminium alloy	
	g) UTS of each rod	kN	35kg/mm2	
	h) Weight	kg	0.95 ±2%	
12	UTS of OPGW	kN	72	

FOR NIT NO. 12/PR/BSPTCL/2020 & NIT NO. 40/2020


 (Authorised Signatory)

APPROVED
 Subject to the condition that we are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
 (Planning and Engineering)
 Bihar State Power Transmission Company Limited
 Jayut Bhawan, Patna-800021

07 OCT 2022

LEGION ENERGY		GUARANTEED TECHNICAL PARTICULARS FOR U SHACKLE		Doc. No:00/Rev. No: 01
				Prep. By: Krishnaraj
				Ckd by: Satish
				Date: 04-01-2022
S. NO.	DESCRIPTION	UNIT	PARTICULARS	
1	Manufacturer's Name and address		M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area,KIADB Phase -III, Doddaballapura, Bangalore - 561 203	
2	Component Description		U Shackle	
3	Part no		MW3097S	
4	Material		Forged steel, CI-IV	
5	Weight	kg	0.49 ± 2%	
6	Breaking strength	kN	90	
7	Bolt Size	mm	M16	
8	Bolt grade		5.6	
9	Nut size	mm	M16	
10	Nut grade		5	
11	Washer size	mm	M16	
12	Tightening Torque	Nm	58.8	
13	Shear strength of bolt	N/mm2	≥88.2	
 (Authorised Signatory)  NISHKARSH RAJKUMAR AGM-PROJECTS, APAR INDUSTRIES LTD. 				

For NIT NO. 12/PRI/BSPTCL/2021 & NIT. 40/2020.

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per the above.

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

107 OCT 2022

BSPTU



AD corrected
APPROVED

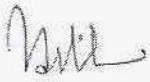
[Signature]



107 OCT 2022 *Snier*

1849
(सिंह)

Client :	Power Grid Corporation of India Ltd. BSPTCL
Contractor :	APAR Industries Limited
Project Name :	Supply of Goods & Services Contract for Package-I: Communication System Package for Reliable Communication Scheme under Central Sector for North Eastern Region
NoA No. :	CC-CS/892-NER/OPGW-4223/3/G4/NoA-I/NER-550009 & NoA-II/NER-550010 dated 12.11.2021

LEGION ENERGY		GUARANTEED TECHNICAL PARTICULARS FOR PG CLAMP		Doc. No:00/Rev. No: 01
				Prep. By: Krishnaraj
				Ckd by: Satish
				Date: 04-01-2022
S. NO.	DESCRIPTION	UNIT	PARTICULARS	
1	Manufacturer's Name and address		M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area, KIADB Phase -III, Doddaballapura, Bangalore - 561 203	
2	Component Description		PG Clamp	
3	Part no		MR05370	
4	Material		Aluminium Alloy	
5	Weight	kg	0.16 ± 2%	
6	Breaking strength	kN	NA	
7	Bolt Size	mm	M10	
8	Bolt grade		5.6	
9	Nut size	mm	M10	
10	Nut grade		5	
11	Washer size	mm	M10	
12	Tightening Torque	Nm	24.5	
13	Shear strength of bolt	N/mm ²	≥36.75	
14	Short circuit current	kA	6.32	
 (Authorised Signatory)  NISHKARSH RAJKUMAR AGM-PROJECTS, APAR INDUSTRIES LTD. 				

For NIT NO 12/PR/BSPTCL/2021
& NIT NO - 40/PR/BSPTCL/2020

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification


 Electrical Superintending Engineer
 (Planning and Engineering)
 Bihar State Power Transmission Company Limited
 Vidyut Bhawan, Patna-800021

07 OCT 2022

1847

(विशाल सिंह)

Client :	Power Grid Corporation of India Ltd.	BSP TCL
Contractor :	APAR Industries Limited	
Project Name :	Supply of Goods & Services Contract for Package-I: Communication System Package for Reliable Communication Scheme under Central Sector for North Eastern Region	
NoA No. :	CC-CS/892-NER/OPGW-4223/3/G4/NoA-I/NER-550009 & NoA-II/NER-550010 dated 12.11.2021	

LEGION ENERGY		GUARANTEED TECHNICAL PARTICULARS FOR AKUMINIUM BOND FOR EARTHING ARRANGEMENT		Doc. No:00/Rev. No: 01	
				Prep. By: Krishnaraj	
				Ckd by: Satish	
				Date: 04-01-2022	
S. NO.	DESCRIPTION	UNIT	PARTICULARS		
1	Manufacturer's Name and address		M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area,KIADB Phase -III, Doddaballapura, Bangalore - 561 203		
2	Component Description		Earthbond 1500mm		
3	Part no		MW3068O		
4	Material		Aluminium Alloy		
5	Weight	kg	0.615 ± 2%		
6	Pull off load (Min)	kg	300		
7	Bolt Size	mm	M16		
8	Bolt grade		5.6		
9	Nut size	mm	M16		
10	Nut grade		5		
11	Washer size	mm	M16		
12	Tightening Torque	Nm	58.8		
13	Shear strength of bolt	N/mm2	≥88.2		
14	Size of conductor	mm	19/2.62		
15	Short circuit current	kA	6.32		
 (Authorised Signatory)  NISHKARSH KAIKUMAR AGM-PRODUCTS, APAR INDUSTRIES LTD. 					

For NIT NO-12/P2/BSP TCL/2021 & NIT-20/20

APPROVED

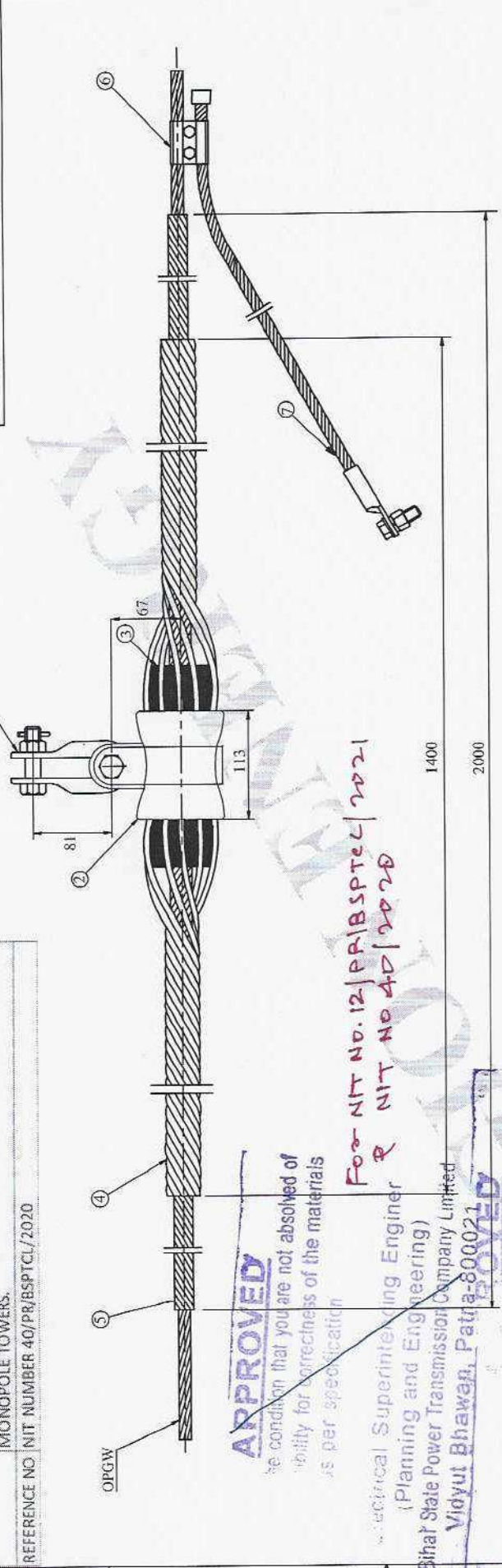
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification.


Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

TO 7 OCT 2022

Submitted by	BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

- TECHNICAL DATA:**
1. GENERAL TOLERANCE $\pm 5\%$.
 2. GALVANIZING AS PER IS 2629.
 3. MINIMUM VERTICAL BREAKING STRENGTH : 50kN
 4. UTS OF ARMOUR ROD : 35 kg/sqmm.
 5. REFERENCE STD: IS 2486 / IEEE STD 1138-2009.
 6. SLIP STRENGTH : 12-17kN



OPGW CABLE SIZE (mm)	UTS (kN)	LAY DIRECTION
11.4	72	LEFT HAND LAY

APPROVED
I hereby certify that you are not absolved of responsibility for correctness of the materials as per specification.

PROVED
I hereby certify that you are not absolved of responsibility for correctness of the materials as per specification.

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhyut Bhawan, Patna-800021

ITEM NO.	DESCRIPTION	QTY.	MATERIAL
7	EARTH BOLT	1 NO	ALUMINIUM ALLOY
6	PG CLAMP	1 NO	ALUMINIUM ALLOY
5	RETAINING ROD	1 SET	ALUMINIUM ALLOY WIRE 6061
4	ARMOUR ROD	1 SET	ALUMINIUM ALLOY WIRE 6061
3	RUBBERIZED INSERT	1 SET	NEOPRENE
2	AGS CLAMP	1 SET	ALUMINIUM ALLOY
1	M12 U BOLT	1 NO	MILD STEEL, HDG

TITLE :

SUSPENSION ASSEMBLY FOR OPGW

DRAWN BY : KRISHNARAJ
CHECKED BY : SATISH
APPROVED BY : BRITO
ISSUED DATE : 22-09-2021
FILE NAME : LE-DT-OPGW

PART NO : MF50313

SCALE : NOT TO SCALE
SIZE : A4

LEGION ENERGY
(AN ISO 9001 : 2015 COMPANY)
Plot No: 61, 62 & 63, Obednaballi Indl Area, KIADB Phase-III, 6th Road, Doddaballapur, Bangalore - 561 203
Email: sales@legionenergy.com

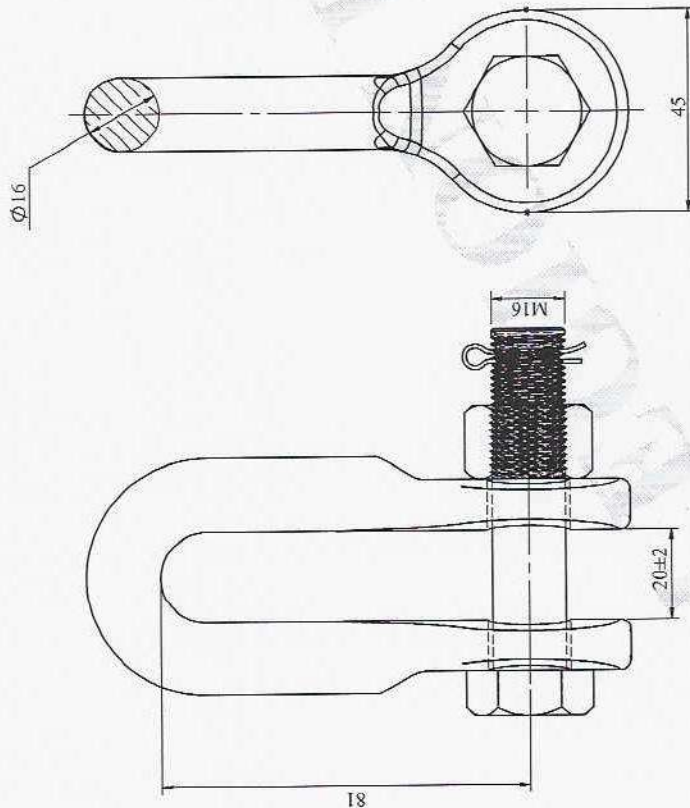
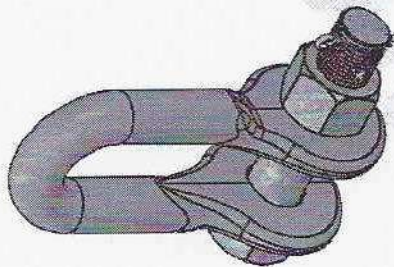
ALL DIMENSIONS ARE IN mm
PROJECTION :

834

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.
2. GALVANIZATION AS PER IS 2629.
3. UTS: 90kN
4. WEIGHT: 0.49kg $\pm 2\%$

Per NIT NO-12/PR/BSPTCL/2020
2 NIT NO. 40/2020



APPROVED

Subject to the conditions and specifications involved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)

Bihar State Power Transmission Company Limited
Vidya Bhawan, Patna-800021

Signature

107 OCT 2022

Submitted by	BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.

REFERENCE NO NIT NUMBER 40/PR/BSPTCL/2020

TITLE :

U SHACKLE

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)

Plot No: 61,62 & 63, Obaidanahalli Indl. Area,
KIADB Phase-III,6th Road,Doddaballapur,
Bangalore - 561 203

Email: sales@legionenergy.com

DRAWN BY KRISHNARAJ

CHECKED BY SATISH

APPROVED BY BRITO

ISSUED DATE 03.12.2020

FILE NAME : LE-P-OPGW-US

PART NO: MW3097S

ALL DIMENSIONS ARE IN mm

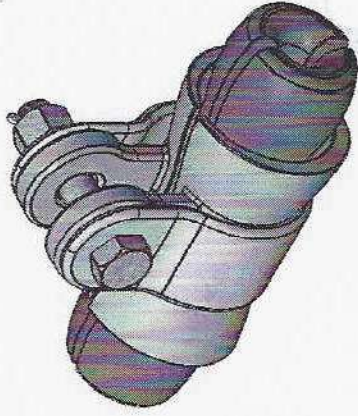
PROJECTION :

SCALE : NOT TO SCALE

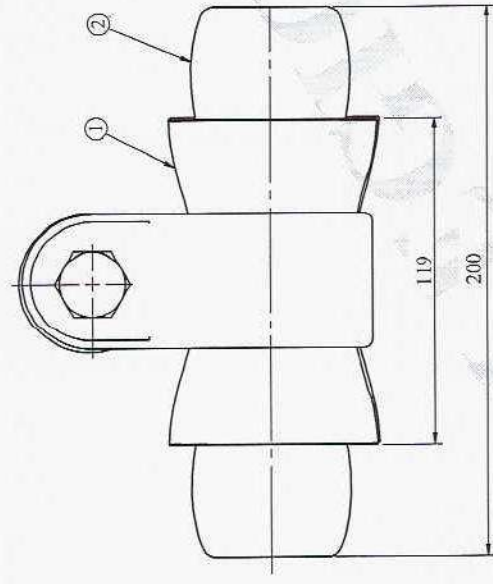
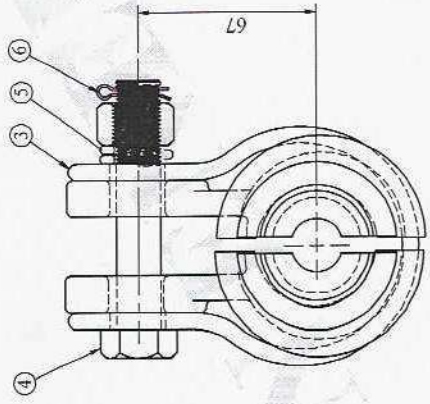
SIZE : A4

ITEM NO.	DESCRIPTION	QTY.	MATERIAL
3	SPLIT PIN	1 NO	STAINLESS STEEL (AISI 304)
2	M16 X 75 BOLT & NUT	1 NO	MILD STEEL, HDG (IS: 1364)
1	U SHACKLE	1 NO	FORGED STEEL, CL-IV (IS:2004)

TECHNICAL DATA:
1. GENERAL TOLERANCE: $\pm 5\%$.
2. VERTICAL LOAD: 70kN



FOR NIT NO-12/PR/BSPTCL/2021
9 NIT NO- 40/2020



APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyal Bhawan, Patna-800021

Signature

Submitted by	BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

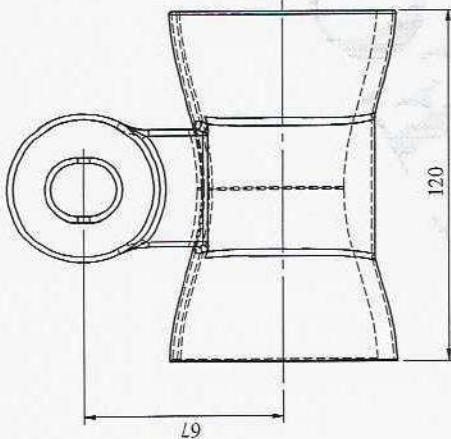
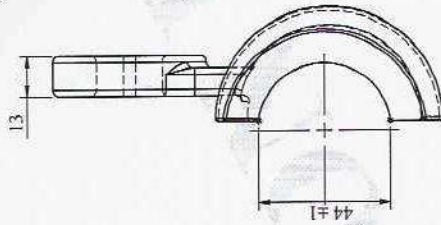
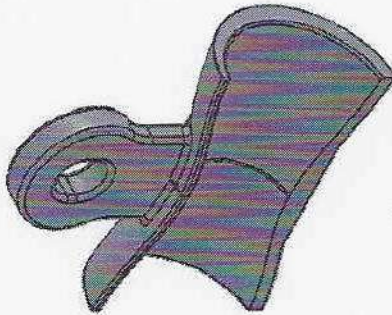
TITLE : SUSPENSION CLAMP		LEGION ENERGY (AN ISO 9001 : 2015 COMPANY) Plot. No: 61,62 & 63, Obodanahalli Indl Area, KIADB Phase-III, 6th Road, Doddaballapura, Bangalore - 561 203 Email: sales@legionenergy.com
DRAWN BY	KRISHNARAJ	ALL DIMENSIONS ARE IN mm
CHECKED BY	SATISH	PROJECTION :
APPROVED BY	BRITO	SCALE : SIZE : A4
ISSUED DATE	27-01-2021	NOT TO SCALE
FILE NAME :	LE-DT-P-Z	
PART NO:	MW28387	

ITEM NO.	DESCRIPTION	QTY.	MATERIAL
6	SPLIT PIN	1 NO	STAINLESS STEEL (AISI 304)
5	SPRING WASHER	1 NO	SPRING STEEL, ELECTROGALVANISED
4	M16 x 90 BOLT & NUT	1 NO	MILD STEEL, HDG (IS: 1364)
3	STRAP	1 NO	AL. ALLOY
2	RUBBERISED INSERT	2 NO	EPDM
1	AGS CLAMP BODY	2 NO	ALUMINIUM ALLOY

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.
2. WEIGHT: $0.325\text{kg} \pm 2\%$

For NIT NO 12/PR/BSPTCL/2021
& NIT NO-40/2020



APPROVED

Subject to the condition that the contractor shall be absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Power Transmission Company Limited
Bhawan, Patna-800021

Submitted by



BAJAJ ELECTRICALS LIMITED, MUMBAI

Issued by

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE.
FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON
MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF
EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C
MONOPOLE TOWERS.

REFERENCE NO NIT NUMBER 40/PR/BSPTCL/2020

TITLE :

AGS CLAMP

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
Plot No: 61, 62 & 63, Obedanahalli Indl. Area,
KIADB Phase-III 6th Road, Doddaballapur,
Bangalore - 561 203
Email: sales@legionenergy.com

DRAWN BY KRISHNARAJ

CHECKED BY SATISH

APPROVED BY BRITO

ISSUED DATE 15-12-2021

FILE NAME : LE-D-OPGW

PART NO: MW28319

ALL DIMENSIONS ARE IN mm



PROJECTION :

SCALE :

NOT TO SCALE

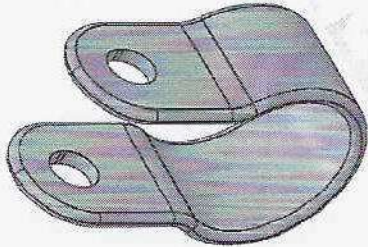
SIZE :

A4

ITEM NO.	SUSPENSION CLAMP BODY	1 NO	ALUMINIUM ALLOY
	DESCRIPTION	QTY.	MATERIAL

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.
2. WEIGHT: $0.2 \text{ kg} \pm 2\%$.



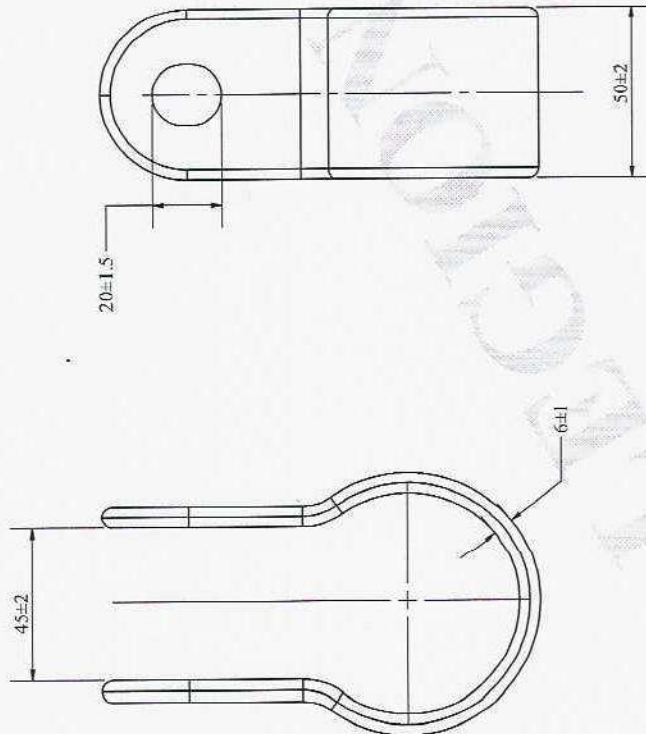
For NIT NO. 12/PR/BSPTCL/2021
 & NIT NO. 40/2020

APPROVED

Subject to the approval of the authority, the responsibility of the materials supplied as per specification

Electrical Superintending Engineer
 (Planning and Engineering)
 Bihar State Power Transmission Company Limited
 Vidya Sadan, Patna-800021

07 OCT 2022



Submitted by	BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020
TITLE :	U STRAP

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
 Plot No: 61,62 & 63, Obedanahalli Indl. Area,
 KIADB Phase-III, 6th Road, Doddaballapura,
 Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION :



SCALE : NOT TO SCALE

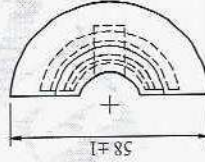
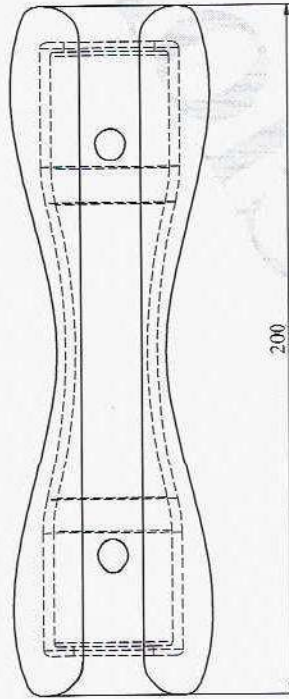
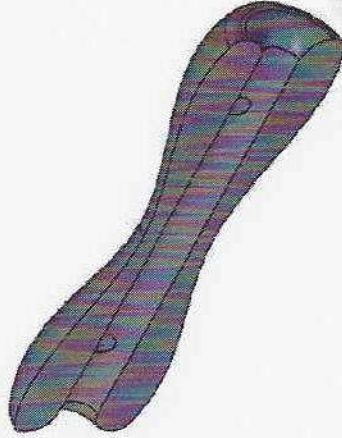
SIZE : A4

DRAWN BY	KRISHNARAJ
CHECKED BY	SATISH
APPROVED BY	BRITO
ISSUED DATE	04-01-2022
FILE NAME :	LE-D-PG
PART NO:	MW0803A

ITEM NO.	STRAP	1 NO.	AL. ALLOY	DESCRIPTION
1		2		

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.
2. WEIGHT: $0.3\text{kg} \pm 2\%$
3. SHORE HARDNESS: $65 \text{ SHORES} \pm 5$



For NIT NO. 12/PR/BSPTCL/2020
& NIT NO. 40/2020

APPROVED

Subject to the condition that you are not absolved of
the responsibility to correctness of the materials
supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidya, Ghazal, Patna-800021

Submitted by
Issued by
Project
REFERENCE NO NIT NUMBER 40/PR/BSPTCL/2020

BAJAJ ELECTRICALS LIMITED, MUMBAI
BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE
FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON
MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF
EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C
MONOPOLE TOWERS.

TITLE :

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
Plot No: 61, 62 & 63, Obedanahalli Indl. Area,
KIADB Phase-II, 6th Road, Doddaballapura,
Bangalore - 561 203

Email: sales@legionenergy.com

KRISHNARAJ

SATISH

BRITO

15-12-2021

LE-D-OPGW

PART NO: MR11085

SCALE: NOT TO SCALE

SIZE: A4

ITEM NO.	RUBBERISED INSERT	DESCRIPTION	QTY.	1 NO	EPDM	PART NUMBER
1						

TECHNICAL DATA:

1. GENERAL TOLERANCE UPTO MAX $\pm 5\text{mm}$
2. LAY DIRECTION OF RODS: OPPOSITE TO THAT OF RETAINING ROD
3. MINIMUM UTS OF ARMOUR ROD: 35kg/sq. mm.
4. WEIGHT: $0.95\text{kg} \pm 2\%$

ROD NIT NO-12/PR/BSPTCL/2021
& NIT NO-40/2020

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per above details.

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhyut Bhawan, Patna-800021

07 OCT 2022

Submitted by

BAJAJ ELECTRICALS LIMITED, MUMBAI

Issued by

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

Project

CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.

REFERENCE NO NIT NUMBER 40/PR/BSPTCL/2020

TITLE :

ARMOUR ROD
(OUTER RODS)

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
Plot. No: 61, 62 & 63, Obedanahalli Indl. Area,
KIADB Phase-III, 6th Road, Doddaballapur,
Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION :



SCALE :

NOT TO SCALE

SIZE : A4

DRAWN BY

KRISHNARAJ

CHECKED BY

SATISH

APPROVED BY

BRITO

ISSUED DATE

15-06-2020

FILE NAME :

LE-DT-P-OPGW

PART NO:

MW29741

1 SET

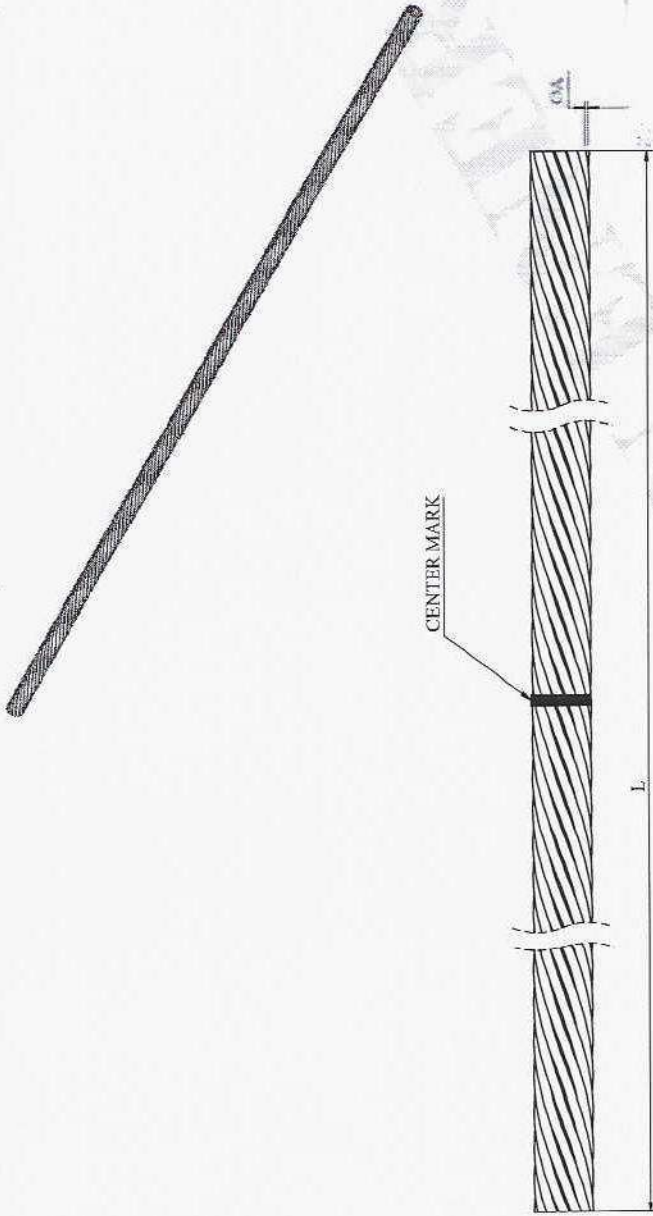
ALUMINIUM ALLOY 6061

ITEM NO.

DESCRIPTION

QTY.

MATERIAL



DESCRIPTION	ØA, WIRE DIA (mm)	NO. OF WIRES	L, LENGTH (mm)
AR-5.18-11.4-1400-L	5.18	12	1400

1

2

3

4

5

6

1

TECHNICAL DATA:
1. GENERAL TOLERANCE: $\pm 5\%$.
2. SUITABLE FOR OPCW: $\varnothing 11.4\text{mm}$

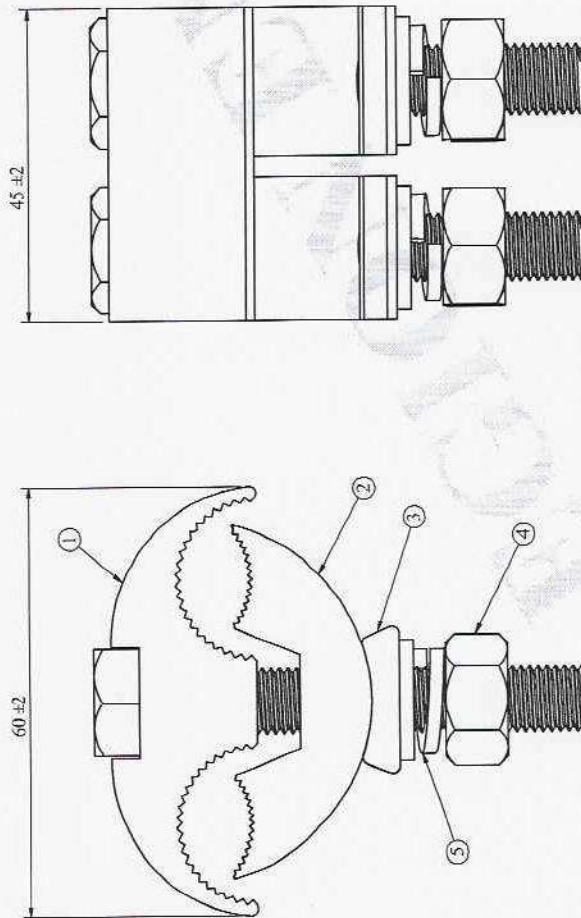
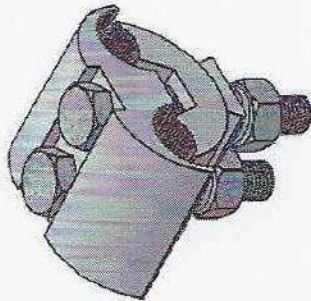
Rev HIT-NO-12/PR/BSPTCL/2021
& HIT NO-40/2020

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification.

Electrical Superintendent Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidvut Bhawan, Patna-800021

07 OCT 2022



LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
Plot No: 61, 62 & 63, Obedanahalli Indl. Area,
KIADB Phase-III, 6th Road, Doddaballapura,
Bangalore - 561 203
Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION:

SCALE: NOT TO SCALE

SIZE: A4

PG CLAMP

DRAWN BY KRISHNARAJ

CHECKED BY SATISH

APPROVED BY BRITO

ISSUED DATE 26-03-2021

FILE NAME: LE-DT-P-TG

PART NO: MR05301

REFERENCE NO NIT NUMBER 40/PR/BSPTCL/2020

TITLE:

2 NO SPRING STEEL, ELECTROGALVANIZED

2 NO MILD STEEL, HDG (IS: 1364)

2 NO AL. ALLOY

2 NO AL. ALLOY

1 NO AL. ALLOY

QTY.

DESCRIPTION

MATERIAL

ITEM NO.

PERMISSION.

TECHNICAL DATA:

1. GENERAL TOLERANCE UP TO MAX. $\pm 5\text{mm}$
2. LAY DIRECTION OF RODS: OPPOSITE TO THAT OF OPGW
3. MINIMUM UTS OF ARMOUR ROD: 35kg/sq.mm.
4. WEIGHT: $0.115\text{kg} \pm 2\%$

for NIT No. 12/PR/BSPTCL/2021
by NIT No. 40/2020

DECEMBER 1964

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhyut Bhawan, Patna-800021

07 OCT 2022

DESCRIPTION	ØA, WIRE DIA (mm)	NO. OF WIRES	L _o LENGTH (mm)	DIA AFTER APPLICATION (mm)
AR-3,7/-1,4-350-R	3.71	11	350	19.42

1	ARMOUR ROD	1 SET	ALUMINIUM ALLOY 6061
ITEM NO.	DESCRIPTION	QTY.	MATERIAL

Submitted by	 BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

11

LEGION ENERGY

ARMOUR ROD
FOR VIBRATION DAMPER

(AN ISO 9001 : 2015 COMPANY)
Plot. No: 61,62 & 63, Obedanahalli Indl.Arca,
KIADB Phase-III,6th Road,Doddeballapura,
Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION:

ISSUED DATE	15-06-2020
-------------	------------

FILE NAME: IEDT-POPGW

ALUMINIUM ALLOY 6061

MATERIAL

PART NO:

MW29766

SCALE:

E:
NOT TO SCALE

SIZE :	A4
--------	----

6

TECHNICAL DATA:
1. GENERAL TOLERANCE $\pm 5\%$.
2. FERROUS PARTS ARE GALVANIZED AS PER IS: 2629.
3. PULL OFF LOAD: 300kg (MIN.)
4. WEIGHT: $0.615\text{kg} \pm 2\%$

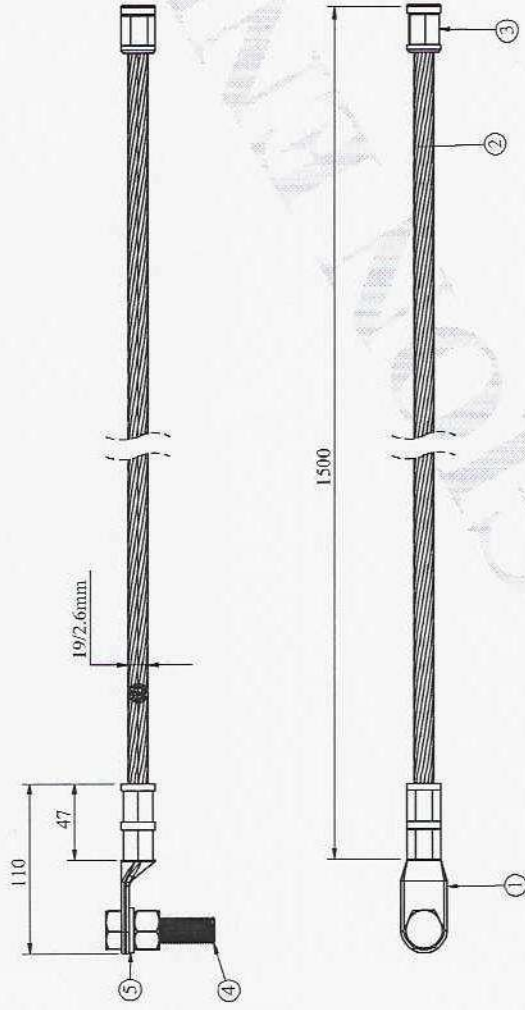
For NIT NO-12/PR/BSPTCL/2021
2 NIT NO-40/2020

APPROVED

Subscribed by: *[Signature]*
checked of *[Signature]*
supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhyut Bhawan, Patna-800021

bis



ITEM NO.	DESCRIPTION	QTY.	MATERIAL
5	FLAT WASHER	1 NO	MILD STEEL, HDG (IS: 1364)
4	M16 BOLT & NUT	1 NO	MILD STEEL, HDG (IS: 1364)
3	END CAP	1 NO	AL. ALLOY
2	ALUMINIUM WIRE	1 NO	AL. ALLOY
1	LUG	1 NO	AL. ALLOY

Submitted by	BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020
TITLE:	ALUMINIUM EARTH BOND 1500mm

LEGION ENERGY (AN ISO 9001 : 2015 COMPANY) Plot No: 61,62 & 63, Obednashali Indl Area, KIADB Phase-III, 6th Road, Doddaballapura, Bangalore - 561 203 Email: sales@legionenergy.com	ALL DIMENSIONS ARE IN mm
DRAWN BY KRISHNARAJ CHECKED BY SATISH APPROVED BY BRITO ISSUED DATE 04-12-2020 FILE NAME: LE-P-OPGW	PROJECTION:
PART NO: MW30680	SCALE: NOT TO SCALE
	SIZE: A4

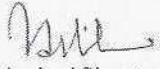
1843

Submitted by	 BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

LEGION ENERGY	GUARANTEED TECHNICAL PARTICULARS FOR TENSION ASSEMBLY FOR OPGW	Doc. No:00/Rev. No: 00
		Prep. By: Krishnaraj
		Ckd by: Satish
		Date: 15-12-2021

S. NO.	DESCRIPTION	UNIT	PARTICULARS
1	Manufacturer's Name and address		M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area, KIADB Phase -III, Doddaballapura, Bangalore - 561 203
2	Component Description		Tension assembly i) Dead end location ii) Pass through assembly iii) Joint box location iv) On suspension tower
3	Slip load strength	kN	≥ 69 (95 % of UTS of OPGW)
4	Suitable for (Cable size)	mm	$\varnothing 11.4$
5	Part no		MF50266 / MF50328/ MF50269/ MF50101
6	Details of Reinforcing rods (Inner rods)		
	a) No. Of rods per set		14 (5+5+4)
	b) Direction of lay		Right hand lay
	c) Overall length	mm	1600
	d) Diameter of each rod	mm	$\varnothing 2.59$
	e) Tolerances		
	(i) Dia of each rod	mm	± 0.1
	(ii) Length of each rod	mm	$\pm 5\%$
	f) Material of wire		Aluminium Clad Steel
	g) Breaking strength	kN	≥ 72 ($\geq 100\%$ UTS OF OPGW)
	h) Weight of each wire	kg	$0.9 \pm 2\%$
7	Details of Dead end grip (Outer rods)		
	a) No. Of rods per set		7
	b) Direction of lay		Left hand lay
	c) Overall length	mm	1200
	d) Diameter of each rod	mm	$\varnothing 3.66$
	e) Tolerances		
	(i) Dia of each rod	mm	± 0.1
	(ii) Length of each rod	mm	$\pm 5\%$
	f) Material of wire		Aluminium Clad Steel
	g) Breaking strength	kN	≥ 72 ($\geq 100\%$ UTS OF OPGW)
	h) Weight of each wire	kg	$1.3 \pm 2\%$
8	UTS of OPGW	kN	72

For NIT. NO-12/PR/BSPTCL/2020 & NIT. NO-40/2020


(Authorised Signatory)

Subject to the conditions and terms and conditions not absolved the responsibility for correctness of the materials supplied as per specification.



Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

7 OCT 2022

BSPTC

Will

APPROVED

AM

21

107 OCT 2022

REPORT

As corrected
APPROVED

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

07 OCT 2022

BSP TU

Doc. No:00/Rev. No: 01
Prep. By: Krishnaraj
Ckd by: Satish
Date: 04-01-2022

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

107 OCT 2022

BSPTC



AS GRANTED
APPROVED

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

107 OCT 2022

1

2

3

4

5

6

THIS DOCUMENT IS PROPERTY OF LEGION ENERGY, BANGALORE. IT MUST NOT BE LOANED, COPIED OR REPRODUCE WITHOUT WRITTEN PERMISSION.

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.

2. GALVANIZING AS PER IS 2629/2633.

3. REFERENCE STD: IS 2486/IEEE STD 1138-2009.

4. SLIP STRENGTH OF COMPLETE SET : 95% of OPGW UTS.

1500

81

110

52

1200

1600

OPGW

OPGW

OPGW

OPGW

OPGW

OPGW

1

2

3

4

5

APPROVED

For NIT NO.12/PR/BSPTCL/2021

& NIT NO.40/2020

electrical Superintending Engineer

(Planning and Engineering)

Bihar State Power Transmission Company Limited

Vidut Bhawan, Patna-800021

Submitted by

Issued by

Project

REFERENCE NO

BAJAJ ELECTRICALS LIMITED, MUMBAI

BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.

NIT NUMBER 40/PR/BSPTCL/2020

TENSION ASSEMBLY

FOR DEAD END LOCATION

DRAWN BY

CHECKED BY

APPROVED BY

ISSUED DATE

FILE NAME :

PART NO:

KRISHNARAJ

SATISH

BRITO

09-08-2020

LE-DT-P-OPGW

MF50266

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)

Plot No: 61,62 & 63, Obednhaliti Indl.Area,

KIADB Phase-III,6th Road,Doddaballapura,

Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION :

SCALE :

NOT TO SCALE

A4

ITEM NO.

DESCRIPTION

PART NO.

QTY.

PG CLMP

EARTH BOND

REINFORCING ROD

DEAD END GRIP

CLEVIS THIMBLE

EYE LINK

U SHACKLE

MR05301

MW30680

MW3069B

MW3069A

MW30685

ML01191

MW3097S

1 NO

1 NO

1 SET

1 SET

1 NO

1 NO

1 NO

ALUMINIUM ALLOY

ALUMINIUM ALLOY

ALUMINIUM CLAD STEEL (ASTM B415)

ALUMINIUM CLAD STEEL (ASTM B415)

S.G IRON (IS: 1865)

FORGED STEEL, CL-IV (IS:2004)

FORGED STEEL, CL-IV (IS:2004)

1

2

3

4

5

6

For NIT NO.12/PR/BSPTCL/2021
& NIT NO.40/2020

APPROVED

the condition that you are not absolved of
the correctness of the materials
as per specifications.

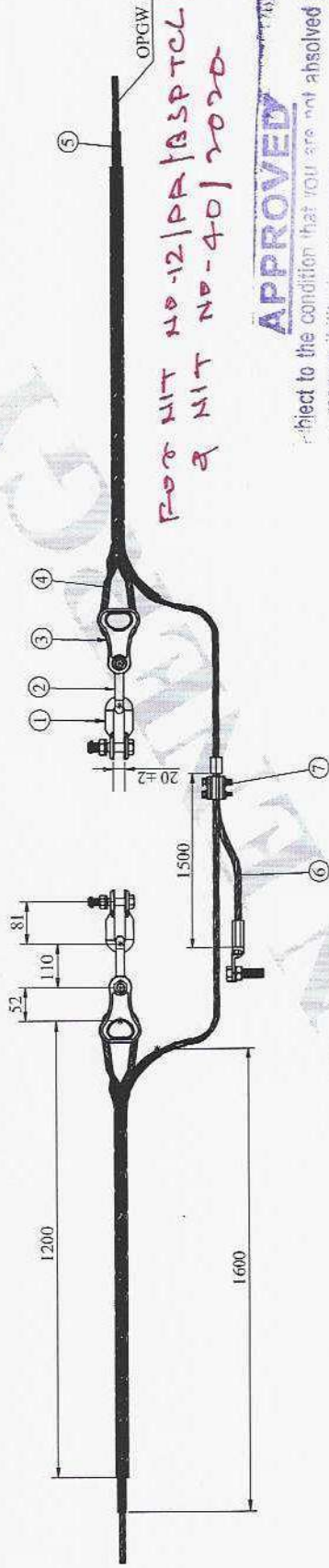
[Signature]

electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidut Bhawan, Patna-800021

[Signature]

Submitted by: **BAJAJ ELECTRICALS LIMITED, MUMBAI**
Issued by: **BIHAR STATE POWER TRANSMISSION COMPANY LIMITED**
Project: **CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.**
REFERENCE NO: **NIT NUMBER 40/PR/BSPTCL/2020**

- TECHNICAL DATA:**
- 1. GENERAL TOLERANCE $\pm 5\%$.
 - 2. GALVANIZING AS PER IS 2629/2633.
 - 3. REFERENCE STD. IS 2486/IEEE STD 1138-2009.
 - 4. SLIP STRENGTH OF COMPLETE SET : 95% of OPGW UTS.



OPGW CABLE SIZE (mm)	UTS (kN)	LAY DIRECTION
11.4	72	LEFT HAND LAY

Bihaar State Power Transmission
Vidyut Bhawan, Patna-20

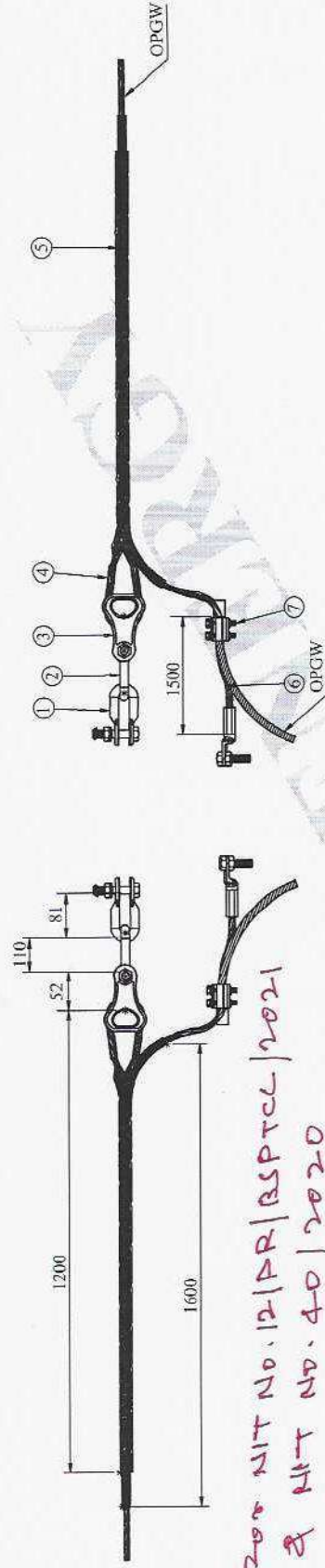
07 OCT 2022

ITEM NO.		DESCRIPTION	PART NO.	QTY	MATERIAL	TITLE :	
7	PG CLAMP	MR05301	1 NO	1 NO	AL ALLOY	TENSION ASSEMBLY FOR PASS THROUGH LOCATION	
6	EARTH BOND	MW30680	1 NO	1 NO	AL ALLOY		
5	REINFORCING ROD	MW3069B	2 SET	2 SET	ALUMINIUM CLAD STEEL (ASTM B415)	DRAWN BY	KRISHNARAJ
4	DEAD END GRIP	MW3069A	2 SET	2 SET	ALUMINIUM CLAD STEEL (ASTM B415)	CHECKED BY	SATISH
3	CLEVIS THIMBLE	MW30685	2 NO	2 NO	S.G IRON (IS: 1865)	APPROVED BY	BRITO
2	EYE LINK	ML01191	2 NO	2 NO	FORGED STEEL, CL-IV (IS:2004)	ISSUED DATE	09-08-2020
1	U SHACKLE	MW3097S	2 NO	2 NO	FORGED STEEL CL-IV (IS 2004)	FILE NAME :	LE-DT-P-OPGW
						PART NO:	MF50269
						SCALE :	NOT TO SCALE
						SIZE :	A4

LEGION ENERGY
(AN ISO 9001 : 2015 COMPANY)
Plot No: 61,62 & 63, Obaidanahalli Indl.Area,
KIADB Phase-III,6th Road,Doddaballapura,
Bangalore - 561 203
Email: sales@legionenergy.com
ALL DIMENSIONS ARE IN mm
PROJECTION : 
SCALE : NOT TO SCALE
SIZE : A4

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.
2. GALVANIZING AS PER IS 2629/2633.
3. REFERENCE STD: IS 2486.
4. SLIP STRENGTH OF COMPLETE SET : 95% of OPCW UTS.



APPROVED

to the condition that you are not absolved of responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

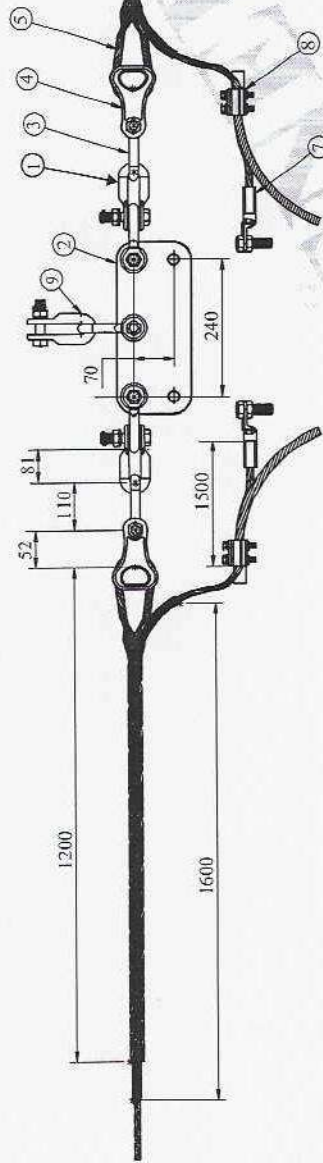
Submitted by	BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

TENSION ASSEMBLY FOR JOINT BOX LOCATION	
DRAWN BY	KRISHNARAJ
CHECKED BY	SATISH
APPROVED BY	BRITO
ISSUED DATE	09-08-2020
FILE NAME :	LE-DT-OPGW
PART NO:	MF50328
SCALE :	NOT TO SCALE
SIZE :	A4

7	PG CLMAP	MR05301	2 NO	AL ALLOY
6	EARTH BOND	MW30680	2 NO	AL ALLOY
5	REINFORCING ROD	MW3069B	2 SET	ALUMINIUM CLAD STEEL (ASTM B415)
4	DEAD END GRIP	MW3069A	2 SET	ALUMINIUM CLAD STEEL (ASTM B415)
3	CLEVIS THIMBLE	MW30685	2 NO	S.G IRON (IS: 1865)
2	EYE LINK	ML01191	2 NO	FORGED STEEL, CL-IV (IS:2004)
1	U SHACKLE	MW3097S	2 NO	FORGED STEEL, CL-IV (IS:2004)
ITEM NO.	DESCRIPTION	PART NO.	QTY.	MATERIAL

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.
2. GALVANIZING AS PER IS 2629/2633.
3. REFERENCE STD: IS 2486.
4. SLIP STRENGTH OF COMPLETE SET : 95% OF OPGW UTS.



OPGW CABLE SIZE (mm)	UTS (kN)	LAY DIRECTION
11.4	72	LEFT HAND LAY

APPROVED

It you are not absolved of
responsibility, the correctness of the materials
shall be as per specification

Electrical Superintending Engineer
(Planning and Engineering)

Bihar State Power Transmission Corporation Limited
Vidut Bhawan, Patna-800 021

Submitted by: BAJAJ ELECTRICALS LIMITED, MUMBAI

Issued by: BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

Project: CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE
FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON
MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF
EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C
MONOPOLE TOWERS.

REFERENCE NO: NIT NUMBER 40/PR/BSPTCL/2020

TITLE:

TENSION ASSEMBLY
ON SUSPENSION TOWER

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
Plot No: 61, 62 & 63, Obedanahalli Indl. Area,
KIADB Phase-III, 6th Road, Doddaballapura,
Bangalore - 561 203

Email: sales@legionenergy.com

DRAWN BY: KRISHNARAJ

CHECKED BY: SATISH

APPROVED BY: BRITO

ISSUED DATE: 01-02-2021

FILE NAME: LE-DT-P-OPGW

PART NO: MF50101

PROJECTION:

SCALE: NOT TO SCALE
SIZE: A4

ITEM NO.	DESCRIPTION	PART NO.	QTY.	MATERIAL
9	ANCHOR SHACKLE	MW01010	2 NO	FORGED STEEL, CL-IV (IS:2004)
8	PG CLAMP	MR05301	2 NO	AL. ALLOY
7	EARTH BOND	MW3068O	2 NO	AL. ALLOY
6	REINFORCING ROD	MW3069B	2 SET	ALUMINIUM CLAD STEEL (ASTM B415)
5	DEAD END GRIP	MW3069A	2 SET	ALUMINIUM CLAD STEEL (ASTM B415)
4	CLEVIS THIMBLE	MW3068S	2 NO	SG IRON (IS: 1865)
3	EYE LINK	ML01191	2 NO	FORGED STEEL, CL-IV (IS:2004)
2	YOKE PLATE	MW29393	1 NO	MILD STEEL, IS:2062
1	U SHACKLE	MW3097S	4 NO	FORGED STEEL, CL-IV (IS:2004)

1 2 3 4 5 6

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.
2. GALVANISATION AS PER IS:2629.
3. UTS: 90KN
4. WEIGHT: 0.5kg $\pm 2\%$

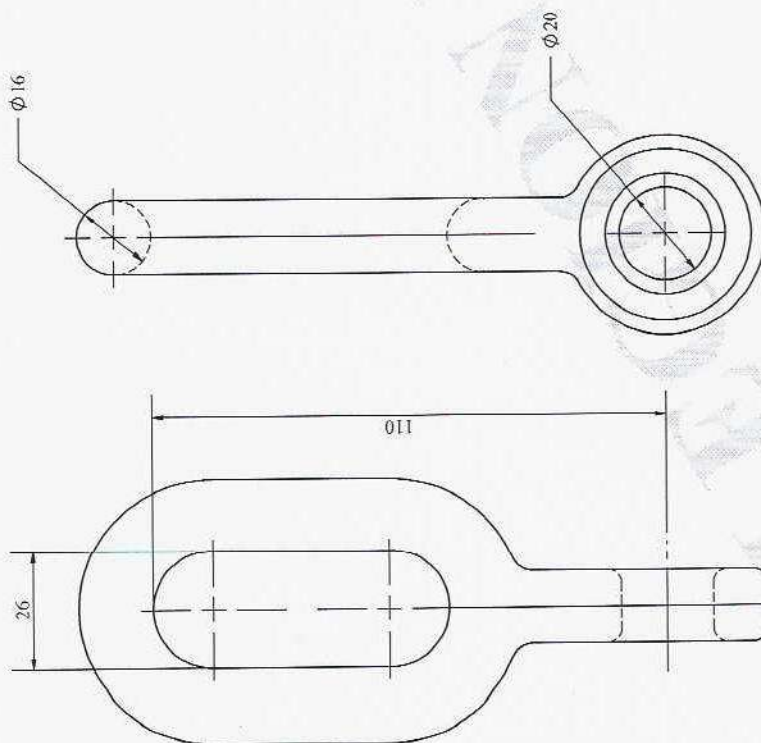
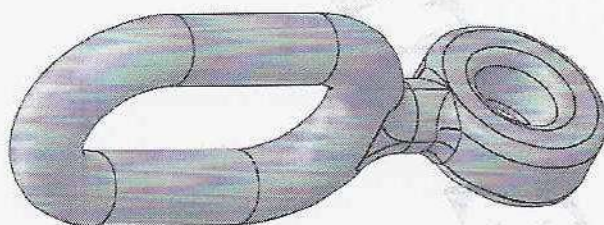
for 2 7/11 20-12/PR/BSP/TC/2021
8 2/11 20-40/2020

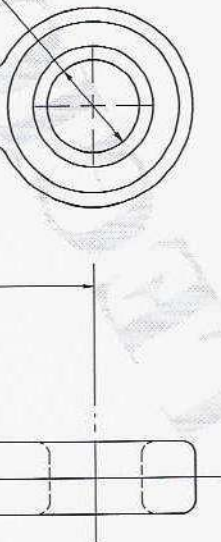
REVISED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyun Bhawan, Patna-800021

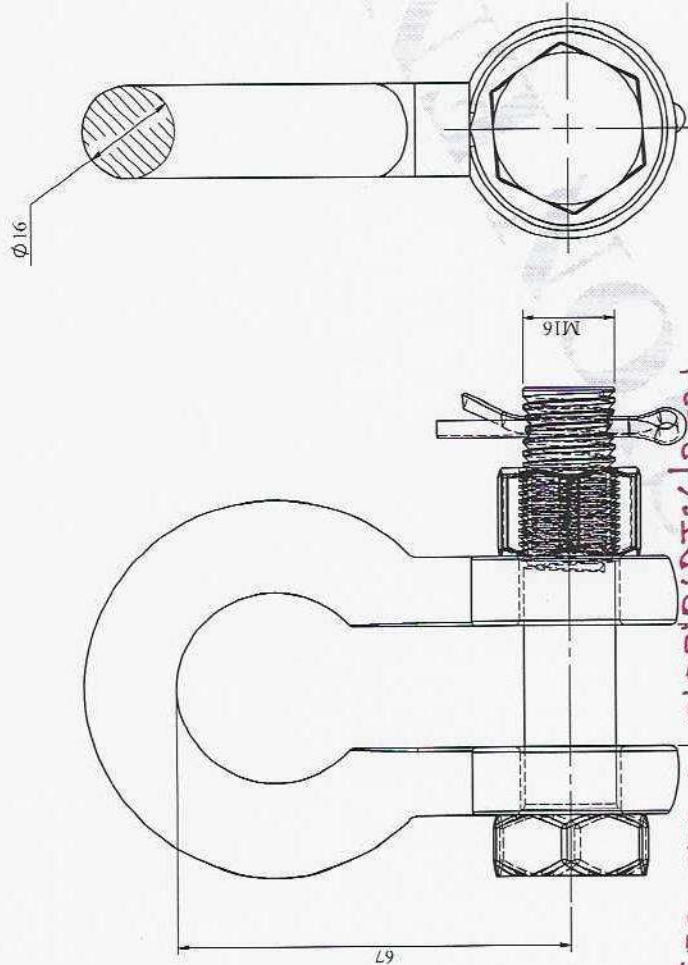
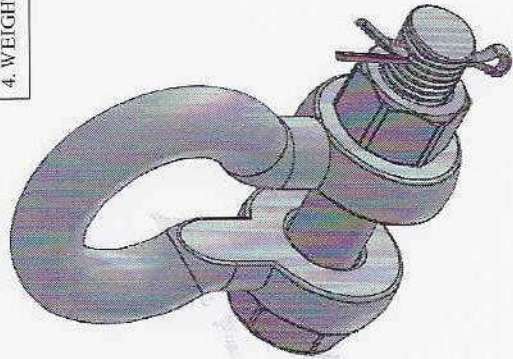
07 OCT 2022



			
1	EYE LINK	I NO	FORGED STEEL, CL-IV (IS:2004)
ITEM NO.	DESCRIPTION	QTY.	MATERIAL

Submitted by	BAJAJ ELECTRICALS LIMITED, MUMBAI		
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED		
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.		
REFERENCE NO.	NIT NUMBER 40/PR/BSPTCL/2020		
TITLE :	EYE LINK		
	LEGION ENERGY (AN ISO 9001 : 2015 COMPANY) Plot. No: 61,62 & 63, Obetanahalli Indl.Area, KIAADB Phase-III, 6th Road, Doddaballapur, Bangalore - 561 203 Email: sales@legionenergy.com		
DRAWN BY	KRISHNARAJ		
CHECKED BY	SATISH		
APPROVED BY	BRITO		
ISSUED DATE	06-01-2022		
FILE NAME :	LE-D-PG		
PART NO:	ML01191		
SCALE :	NOT TO SCALE		SIZE : A4

- TECHNICAL DATA:
1. GENERAL TOLERANCE $\pm 5\%$.
 2. GALVANIZATION AS PER IS 2629.
 3. UTS: 90KN
 4. WEIGHT : 0.6kg $\pm 2\%$



For Nit No. 12 PR/BSPTCL/2021
& Nit No. 40/2020

APPROVED
Signature of the Engineer that you are not absolved of
responsibility or correctness of the materials
specification is per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyt Bhawan, Patna-800021

27 OCT 2022

ITEM NO. DESCRIPTION QTY. MATERIAL		1		STAINLESS STEEL, AISI 304	CHECKED BY SATISH APPROVED BY BRITO ISSUED DATE 23-07-2020 FILE NAME : LE-F-OPGW-AS PART NO: MW01010 SCALE : NOT TO SCALE SIZE : A4
		1		MILD STEEL, HDG (IS: 1364)	
		1		FORGED STEEL, CL-IV (IS:2004)	
3		M16 SPLIT PIN	1		
2		M16X75 BOLT & NUT	1		
1		ANCHOR SHACKLE 16X67	1		
Email: sales@legioneenergy.com					
ALL DIMENSIONS ARE IN mm					
PROJECTION :					
					

Submitted by	BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020
TITLE:	ANCHOR SHACKLE

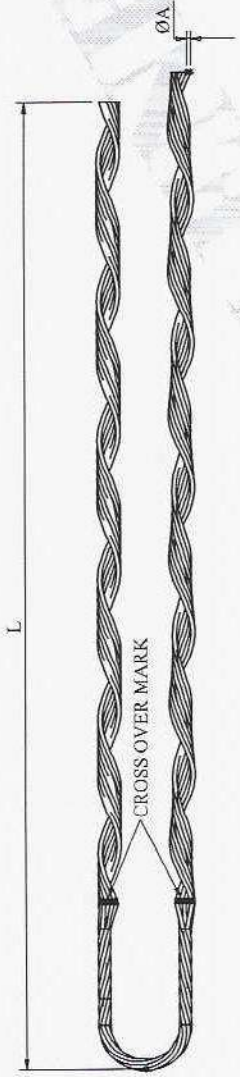
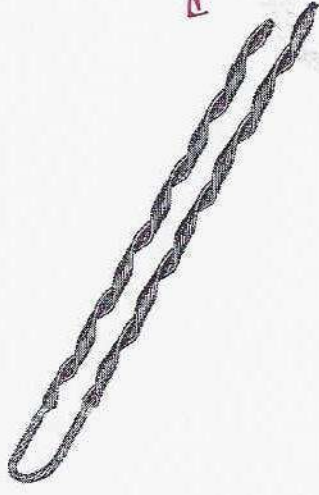
DRAWN BY		NAVVEEN
CHECKED BY		SATISH
APPROVED BY		BRITO
ISSUED DATE		23-07-2020
FILE NAME :		LE-F-OPGW-AS
PART NO:		MW01010
SCALE :		NOT TO SCALE
SIZE :		A4

LEGION ENERGY
(AN ISO 9001 : 2015 COMPANY)
Plot. No: 61/62 & 63, Obodanahalli Indl Area,
KIDDB Phase-III, 6th Road, Doddaballapura,
Bangalore - 561 203
Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm
PROJECTION : 
SCALE : **NOT TO SCALE** **A4**

1		2		3		4		5		6	
D		C		B		A					
1		2		3		4		5		6	
ITEM NO.		DESCRIPTION		QTY.		MATERIAL		PART NO:		SCALE :	
3	SPLIT PIN	1 NO	STAINLESS STEEL (AISI 304)					DRAWN BY		SIZE :	
2	M16 BOLT & NUT	1 NO	MILD STEEL, HDG (IS: 1364)					CHECKED BY		NOT TO SCALE	
1	THIMBLE BODY	1 NO	SG IRON (IS: 1865)					APPROVED BY		A4	
								ISSUED DATE			
								FILE NAME :			
								PROJECT			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			
								PROJECTION :			
								16-06-2020			
								LE-F-OPGW-CT			
								PART NO:			
								MW30685			
								SUBMITTED BY			
								ISSUED BY			
								PROJECT			
								REFERENCE NO			
								TITLE :			
								LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY)			
								Plot No: 61, 62 & 63, Obdhanahalli Indl Area,			
								KIADB Phase-III, 6th Road, Doddaballapur,			
								Bangalore - 561 203			
								Email: sales@legionenergy.com			
								ALL DIMENSIONS ARE IN mm			

1		2		3		4		5		6	
D		C		B		A		TECHNICAL DATA:			
								1. GENERAL TOLERANCE UPTO MAX $\pm 5\text{mm}$ 2. LAY DIRECTION: OPPOSITE TO THAT OF REINFORCING ROD 3. WEIGHT: $1.3\text{kg} \pm 2\%$			
D		C		B		A		DRAWN BY: KRISHNARAJ			
								CHECKED BY: SATISH			
D		C		B		A		APPROVED BY: BRITO			
								ISSUED DATE: 19-03-2021			
D		C		B		A		FILE NAME: LE-DT-P-OPGW			
								PART NO: MW3069A			
D		C		B		A		TITLE: DEAD END GRIP (OUTER RODS)			
								REFERENCE NO: NIT NUMBER 40/PR/BSPTCL/2020			
D		C		B		A		SUBMITTED BY: BAJAJ ELECTRICALS LIMITED, MUMBAI			
								ISSUED BY: BIHAR STATE POWER TRANSMISSION COMPANY LIMITED			
D		C		B		A		PROJECT: CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.			
								PROJECT: CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.			
D		C		B		A		LEGION ENERGY			
								(AN ISO 9001 : 2015 COMPANY) Plot No: 61, 62 & 63, Obchedanahalli Indl Area, KIADB Phase-III 6th Road, Doddaballapur, Bangalore - 561 203 Email: sales@legionenergy.com			
D		C		B		A		ALL DIMENSIONS ARE IN mm			
								PROJECTION:			
D		C		B		A		SCALE: NOT TO SCALE			
								SIZE: A4			



DESCRIPTION	ØA, WIRE DIA (mm)	NUMBER OF WIRES	L, LENGTH (mm)
DEG-3.66-11.4-1200-L	3.66	07	1200

ITEM NO.	DESCRIPTION	QTY.	1 SET	AL. CLAD STEEL (ASTM B415)	MATERIAL
1	DEAD END GRIP				

FOR NIT NO-12/PR/BSPTCL/2021
2 NIT NO-40/2020

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhyut Bhawan, Patna-800021

07 OCT 2022

TECHNICAL DATA:

1. GENERAL TOLERANCE UPTO MAX $\pm 5\text{mm}$
2. LAY DIRECTION OF RODS: OPPOSITE TO THAT OF OPGW
3. WEIGHT: $0.9\text{kg} \pm 2\%$

Rev NIT NO.12/PR/BSPTCL/2021
& NIT NO. 40/2020

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyt Bhawan, Patna-800021

07 OCT 2022

Submitted by BAJAJ ELECTRICALS LIMITED, MUMBAI

Issued by BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

Project CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.

REFERENCE NO NIT NUMBER 40/PR/BSPTCL/2020

TITLE :

REINFORCING ROD
(INNER RODS)

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)

Plot. No: 61, 62 & 63, Obednaballi Indl. Area,
KIADB Phase-III, 6th Road, Doddaballapura,
Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION :



SCALE :

NOT TO SCALE

SIZE :

A4

AL. CLAD STEEL (ASTM B415)

MATERIAL

RETAINING ROD

DESCRIPTION

QTY.

1 SET

ITEM NO.

1

1

2

3

4

5

6

TECHNICAL DATA:

1. GENERAL TOLERANCE: $\pm 5\%$.
2. GALVANIZATION AS PER IS:2629.
3. UTS:120kN (Min.)
4. WEIGHT:4.65kg $\pm 2\%$

[illegible]

QWERTY

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification.

**Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidvut Bhawan, Patna-800021**

Submitted by
BAJAJ ELECTRICALS LIMITED, MUMBAI

Issued by BIHAR STATE POWER TRANSMISSION COMPANY LIMITED

Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C. MONOPOLE TOWERS.
---------	--

REFERENCE NO NIT NUMBER 40/PR/BSPTCL/2020

TITLE:

YOKE PLATE

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
Plot. No: 61, 62 & 63, Obedanahalli Indl. Area,
KIADE Phase-III, 6th Road, Doddaballapura,
Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION :

SCALE :

二二

SIZE :	
--------	--

SIZE :	
--------	--

PART NO:

MW29393

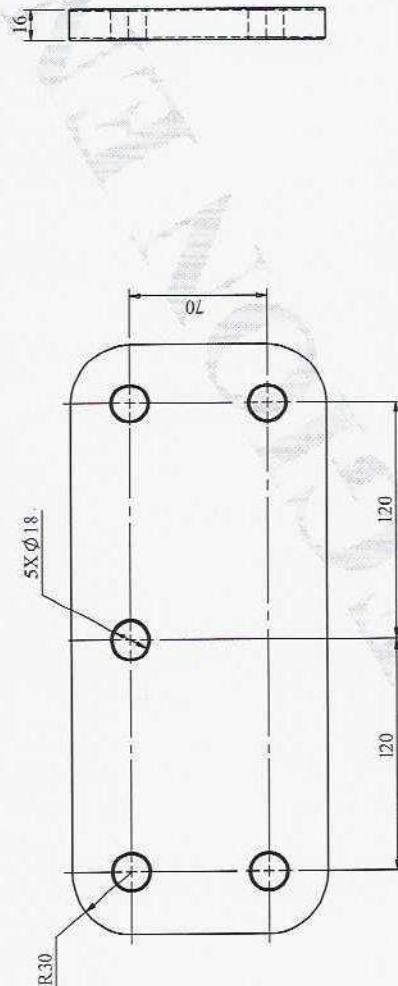
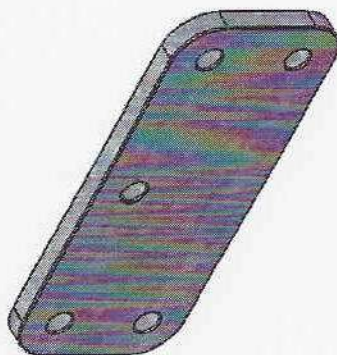
MILD STEEL IS: 2062

OTY.

OTY.

DESCRIPTION

MATERIAL



brist

07 OCT 2022

7000

1841

Submitted by	 BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

LEGION ENERGY		GUARANTEED TECHNICAL PARTICULARS FOR VIBRATION DAMPER OPGW		Doc. No:00/Rev. No: 00
S. NO.		DESCRIPTION	UNIT	PARTICULARS
1	Manufacturer's Name and address			M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area, KIADB Phase -III, Doddaballapura, Bangalore - 561 203
2	Component Description			Vibration Damper for OPGW
3	Part no			MF50053
4	Suitable for OPGW dia	mm		Ø11.4
5	Total weight	kg		1.6 ± 2%
6	Weight of each Damper mass			
	Damper mass Big	kg		0.6 ± 2%
	Damper mass Small	kg		0.4 ± 2%
7	Material of Damper mass			Cast Iron (HDG Iron)
8	Clamp material			High strength Aluminium alloy (LM6)
9	Clamp bolt tightening torque	Nm		40
10	Clamp bolt material			HDG Steel (5.6 Grade)
11	Massenger cable material			High Strenght Galvanised Steel (HDG)
12	No of strands in massenger cable			19
13	Braking strength of massenger cable	kN		≥ 49
14	Resonance frequencis:			
	First frequency	Hz		14±3
	Second Frequency	Hz		23±4
	Third Frequency	Hz		50±10
	Fourth Frequency	Hz		90±18
15	Minimum slip strength of damper clamp			
	a) Before fatigue test	kN		≥ 2.5
	b) After fatigut test	kN		≥ 2
16	Maximum slip strength of damper clamp			
	a) Before fatigue test	kN		5
	b) After fatigut test	kN		5
17	Details of armour rod			
	a) No. Of rods per set			
	b) Direction of lay			Right hand lay
	c) Overall length			

FOR NIT-NO-12/PR/BSPTCL/2021 & NIT-NO-40/2020

APPROVED

Subject to the condition that the responsibility for correctness of the details supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

07 OCT 2022

240

	d) Diameter of each rod	mm	Ø3.71
	e) Tolerances		± 0.1
	(i) Dia of each rod	mm	±5%
	(ii) Length of each rod	mm	
	f) Material of wire		Aluminium alloy
	g) UTS of each rod	kN	35kg/mm2
18	Bolt Size		M10
19	Bolt grade		5.6
20	Nut size		M10
21	Nut grade	mm	5
22	Shear strength of bolt	N/mm2	≥60
 (Authorised Signatory) 			

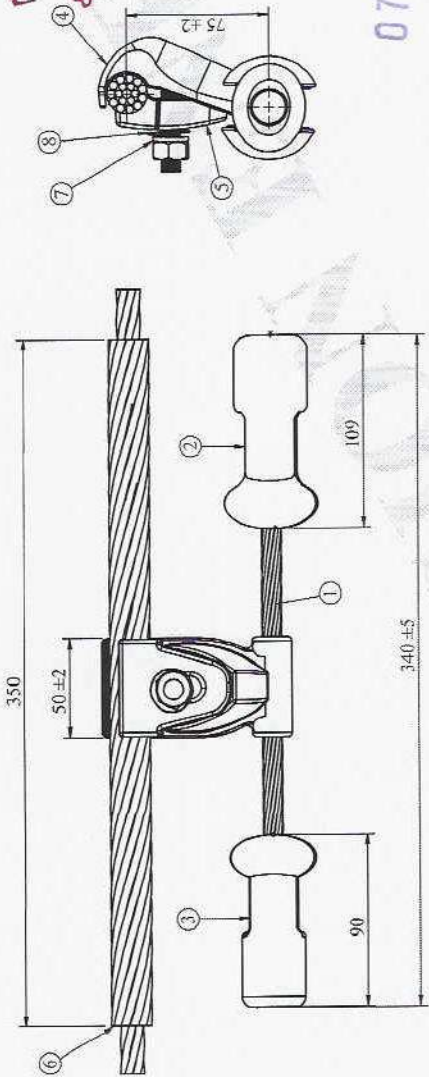
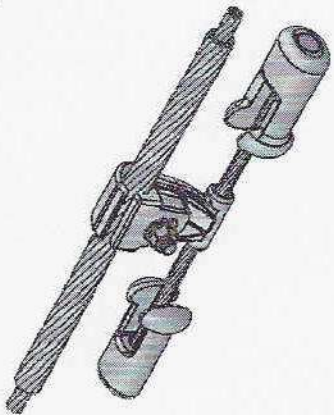
FOR NIT. NO. 12/PRI/BSPTCL/2021 & NIT. NO. 40/2020

APPROVED
 Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification
 Electrical Superintending Engineer
 (Planning and Engineering)
 Bihar Power Transmission Company Limited
 Vigyesh Bhawan, Patna-800021

one

07 OCT 2022

1		2		3		4		5		6											
A		B		C		D		E		F											
ITEM NO. DESCRIPTION QTY. MATERIAL		8 M10 SPRING WASHER 1 NO SPRING STEEL, ELECTRO GALVANISED		7 M10 BNW 1 NO MILD STEEL, HDG (IS:1364)		6 ARMOUR ROD 1 SET AL. ALLOY 6061		5 KEEPER 1 NO AL ALLOY		4 CLAMP BODY 1 NO AL ALLOY		3 DAMPER MASS SMALL 1 NO GALVANISED CAST IRON		2 DAMPER MASS BIG 1 NO GALVANISED CAST IRON		1 MESSANGER CABLE 1 NO HIGH STRENGTH STEEL (IS 733)					
LEGION ENERGY (AN ISO 9001 : 2015 COMPANY) Plot. No: 61,62 & 63, Obodanahalli Indl. Area, KIADB Phase-III 6th Road, Doddaballapura, Bangalore - 561 203 Email: sales@legionenergy.com ALL DIMENSIONS ARE IN mm PROJECTION : SCALE : NOT TO SCALE SIZE : A4		VIBRATION DAMPER FOR OPGW DRAWN BY KRISHNARAJ CHECKED BY SATISH APPROVED BY BRITO ISSUED DATE 19-06-2020 FILE NAME : LE-DT-P-OPGW PART NO: MF50053		REFERENCE NO NIT NUMBER 40/PR/BSPTCL/2020 TITLE : Submitted by BAJAJ ELECTRICALS LIMITED, MUMBAI Issued by Project BIHAR STATE POWER TRANSMISSION COMPANY LIMITED CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.		Electrical Superintending Engineer (Planning and Engineering) Bihar State Power Transmission Company Limited Viduyut Bhawan, Patna		TECHNICAL DATA: 1. GENERAL TOLERANCE $\pm 5\%$. 2. ALL FERROUS PARTS ARE HOT DIP GALVANISED AS PER IS:2629. 4. CLAMP TIGHTENING TORQUE : 4 kgm. 5. NOMINAL WEIGHT OF DAMPER MASSES, BIG : 0.6kg, SMALL: 0.4kg (Approx) 6. VISUAL RESONANCE FREQUENCY IN Hz : <table border="1"> <tr> <td>F1</td> <td>F2</td> <td>F3</td> <td>F4</td> </tr> <tr> <td>14$\pm$3</td> <td>23$\pm$4</td> <td>50$\pm$10</td> <td>90$\pm$18</td> </tr> </table> 7. TOTAL WEIGHT : 1.6 kg $\pm$ 2% 8. REFERENCE IS: IS 9708/ IEC 61897 9. SUITABLE FOR OPGW : ϕ11.4mm 10. MIN. SLIP STRENGTH OF DAMPER CLAMP a) BEFORE FATIGUE TEST: 2.5kN b) AFTER FATIGUE TEST: 2.0 kN		F1	F2	F3	F4	14 $\pm$ 3	23 $\pm$ 4	50 $\pm$ 10	90 $\pm$ 18	APPROVED Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification		07 007 2022	
F1	F2	F3	F4																		
14 $\pm$ 3	23 $\pm$ 4	50 $\pm$ 10	90 $\pm$ 18																		



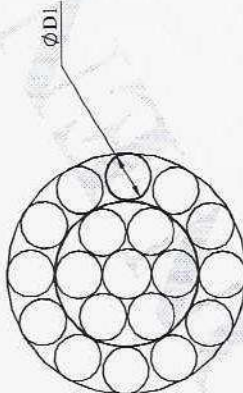
For NIT No -
12/PR/BSPTCL/2021
& NIT No. 40/2020

811

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.
2. UTS OF INDIVIDUAL STRANDS NOT LESS THAN 135kg/mm².
3. GALVANISED AS PER IS: 2629/IS:2633.
4. INTERNAL LAYER LAY DIRECTION: LEFT HAND LAY.
5. EXTERNAL LAYER LAY DIRECTION: RIGHT HAND LAY.
6. THE STRANDS SHALL CONSIST OF A 12 WIRE OUTER LAYER, A 6 WIRE INNER LAYER & 1 AT CORE.

320 ± 5



DETAIL A
SCALE 4 : 1

FOR NIT NO.12/PRI/BSPTCL/2021 & NIT NO. 40/2020

AN *Concepted*
APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidhyut Bhawan, Patna-800021

07 OCT 2022

WIRE SIZE	INDIVIDUAL STRAND DIA (D1)	WIRE DIA (D2)
19/1.71	1.71	8.55

NISHKANTH RAJAKUMAR
AGM-PROJECTS,
APAR INDUSTRIES LTD.

ITEM NO.	DESCRIPTION	QTY	MATERIAL
1	MESSENGER CABLE	1 NO	HIGH STRENGTH GALVANISED STEEL WIRE

Client :	Power Grid Corporation of India Ltd.
Contractor :	APAR Industries Limited
Project Name :	Supply of Goods & Services Contract for Package-I Construction System Package for Reliable Communication Scheme under Central Sector for North Eastern Region
NoA No. :	CC-CS-892-NER-ORCW-4221/3/G4/NoA-ENER-550009 & NoA-ENER-550010 dated 12.11.2021

TITLE :		MESSENGER CABLE
DRAWN BY :		KRISHNARAJ
CHECKED BY :		SATISH
APPROVED BY :		BRITO
ISSUED DATE :		04-01-2022
FILE NAME :		LE-DT-P
PART NO :		MW23150
SCALE :		NOT TO SCALE
SIZE :		A4

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
Plot No: 61,62 & 63, Obedanahalli Indl Area,
KIADB Phase-III, 6th Road, Doddaballapur,
Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION :



SCALE : NOT TO SCALE

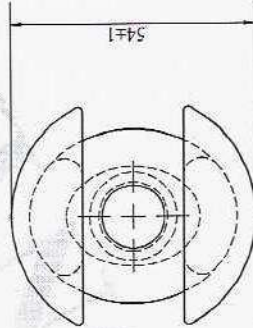
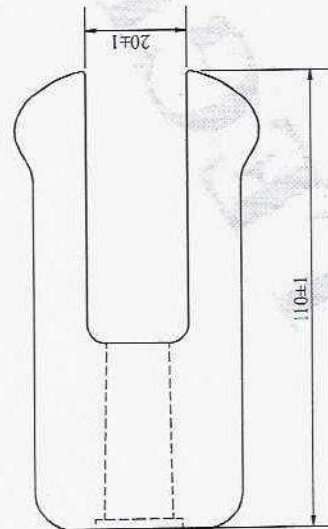
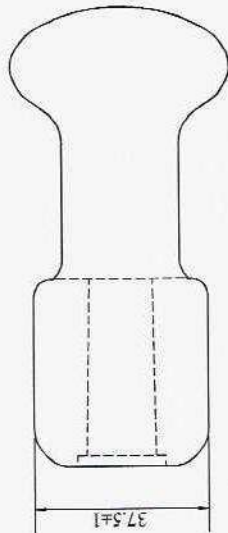
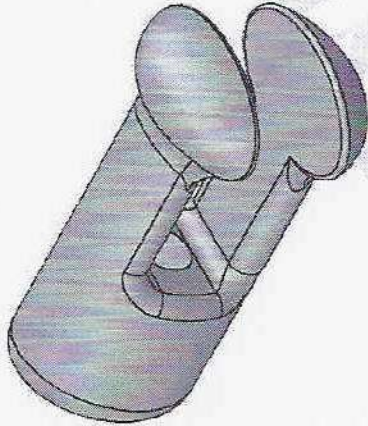
SIZE : A4

THIS DOCUMENT IS PROPERTY OF LEGION ENERGY, BANGALORE. IT MUST NOT BE REPRODUCED, COPIED OR REPRODUCE WITHOUT WRITTEN PERMISSION.

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.
2. GALVANISATION AS PER IS: 2629.
3. WEIGHT: 0.6kg $\pm 2\%$.

For NIT NO.12/PA/BSPTCL/2021 &
NIT NO.40/2020



An accepted
APPROVED
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

RW
Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidya Bhawan, Patna-800021

Shr

Client:	Power Grid Corporation of India Ltd.
Contractor:	APAR Industries Limited
Project Name:	Supply of Goods & Services Contract for Package-I: Communication System Package for Reliable Communication Scheme under Central Sector for North Eastern Region
NoA No.:	CC-CS/092-NER/OPGW-42233/G4/NerA-JNER-350009 & NoA-II/NER-350010 dated 12.11.2021

TITLE:

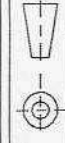
DAMPER MASS BIG**LEGION ENERGY**

(AN ISO 9001 : 2015 COMPANY)
Plot. No. 61.02 & 63, Obodanahalli Indl Area,
KIADB Phase-III, 6th Road/Doddaballapura,
Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION :



SCALE : NOT TO SCALE
SIZE : A4

PART NO: ML23141

1 NO GALV. CAST IRON

DESCRIPTION

ITEM NO.

1

2

3

4

5

6

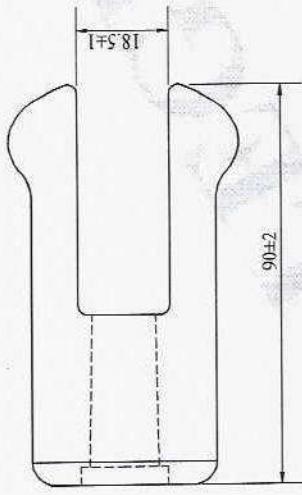
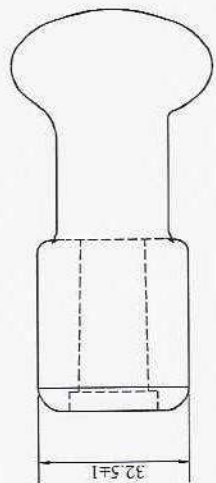
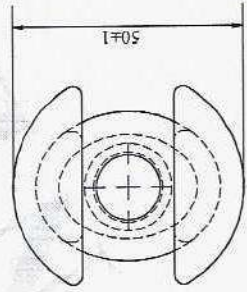
NISHKARSH RAJUMAR
AGM-PROJECTS
APAR INDUSTRIES LTD.

TECHNICAL DATA:
1. GENERAL TOLERANCE $\pm 5\%$.
2. GALVANISATION AS PER IS: 2629.
3. WEIGHT: 0.4kg $\pm 2\%$.

For NIT NO. 12/PR/BSPTCL/2021
NIT NO. 40/2020

AN CONCEPT APPROVED
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyt Bhawan, Patna-800021



NISHKARSH RAJ KUMAR
AGM-PROJECTS
APAR INDUSTRIES LTD.

Client :	Power Grid Corporation of India Ltd.
Contractor :	APAR Industries Limited
Project Name :	Supply of Goods & Services Contract for Package-I Communication System Package for Reliable Communication Scheme under Central Sector for North Eastern Region
NoA No. :	CC/CS/892-NER/OPGW-42213/04 NoA-LNER-550899 & NoA-LNER-550910 dated 12.11.2021

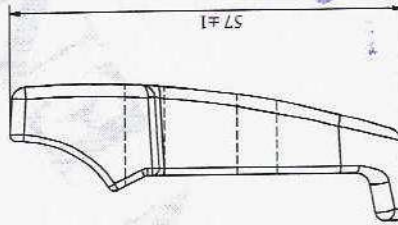
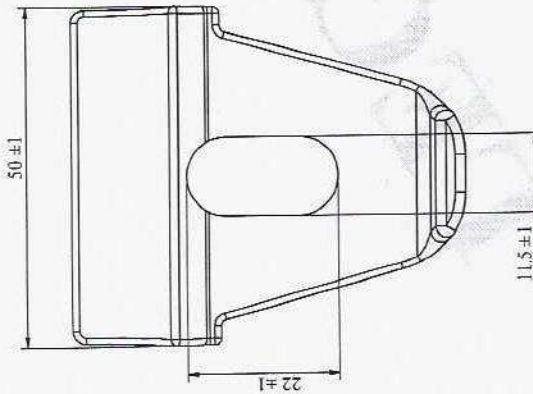
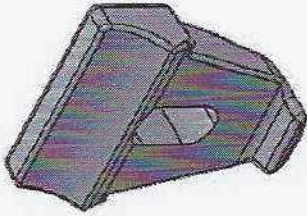
TITLE :		LEGION ENERGY	
DAMPER MASS SMALL		(AN ISO 9001 : 2015 COMPANY) Plot No: 61,62 & 63, Oldenahalli Indl Area, KIADB Phase-III, 6th Road, Doddaballapura, Bangalore - 561 203 Email: sales@legionenergy.com	
DRAWN BY	KRISHNARAJ	ALL DIMENSIONS ARE IN mm	
CHECKED BY	SATISH	PROJECTION :	
APPROVED BY	BRITO	SCALE :	
ISSUED DATE	14-12-2021	NOT TO SCALE	
FILE NAME :	LE-D-OPGW	SIZE :	
PART NO :	ML23131	A4	

ITEM NO.	DESCRIPTION	QTY.	1 NO	GALV. CAST IRON	MATERIAL
1	DAMPER MASS SMALL				

THIS DOCUMENT IS PROPERTY OF LEGION ENERGY, BANGALORE. IT MUST NOT BE REPRODUCED OR REPRODUCED WITHOUT WRITTEN PERMISSION.

TECHNICAL DATA:

1. GENERAL TOLERANCE: $\pm 5\%$
2. WEIGHT: 0.054kg $\pm 2\%$



For NIT NO-12/PR/BSPTCL/2021
NIT NO-40/2020

APPROVED
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyt Bhawan, Patna-800021

07 OCT 2022

Client :	Power Grid Corporation of India Ltd.
Contractor :	APAR Industries Limited
Project Name :	Supply of Goods & Services Contract for Package-I: Communication System Package for Reliable Communication Scheme under Central Sector for North Eastern Region
NoA No. :	CC-CS-892-NER/OPGW-4223-3/GA-NoA-JNER-55/0009 & NoA-JNER-55/0010 dated 12.11.2021

LEGION ENERGY (AN ISO 9001 : 2015 COMPANY) Plot No: 61 & 63, Obedmahalli Indl Area, KIADB Phase-III 6th Road Doddaballapur, Bangalore - 561 203 Email: sales@legionenergy.com	
DRAWN BY	KRISHNARAJ
CHECKED BY	SATISH
APPROVED BY	BRITO
ISSUED DATE	14-12-2021
FILE NAME :	LE-DT-OPGW
PART NO:	MW28279

NISHKARSH RAJUMAR
AGM-PROJECTS
APAR INDUSTRIES LTD.



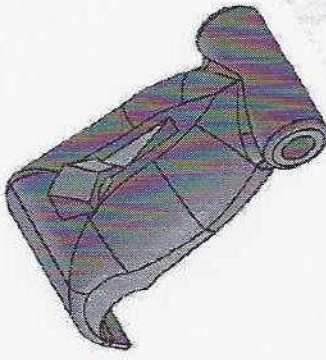
PROJECTION :

SCALE : **NOT TO SCALE**
SIZE : **A4**

ITEM NO.	KEEPER	DESCRIPTION	QTY.	1 NO	ALUMINIUM ALLOY	MATERIAL
1						

2

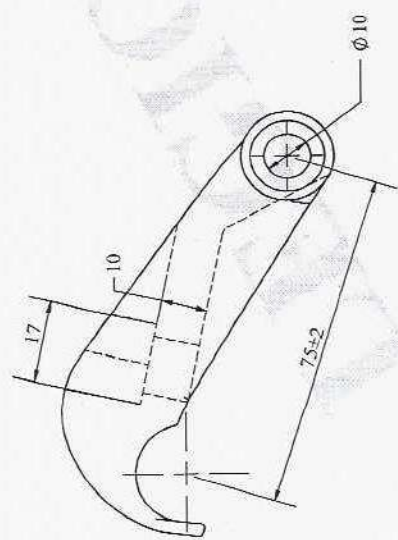
1. GENERAL TOLERANCE $\pm 5\%$.
2. WEIGHT: $0.184\text{kg} \pm 2\%$



Am Corrected
APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

**Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidvut Bhawan, Patna-800021**



TITLE :	CLAMP BODY		LEGION ENERGY (AN ISO 9001 : 2015 COMPANY) Plot. No: 61,62 & 63, Obodanahalli Indl Area, KIADB Phase-III,6th Road Doddaballapur, Bangalore - 561 203			SCALE : NOT TO SCALE SIZE : A4
	DRAWN BY	KRISHNARAJ	Email: sales@legionenergy.com			
	CHECKED BY	SATISH	ALL DIMENSIONS ARE IN mm			
	APPROVED BY	BRITO	PROJECTION :			
	ISSUED DATE	15-10-2021				
	FILE NAME :	LE-D-OPGW				
PART NO:	MW28278					

1	BODY		1 NO	ALUMINIUM ALLOY
ITEM NO.	DESCRIPTION		QTY.	MATERIAL

NISHKAUSH RAKUMAR
AGM-PROJECTS,
APAR INDUSTRIES LTD.

LEGION ENERGY

(ANISO 9001 : 2015 COMPANY)
Plot. No: 61, 62 & 63, Obedanahalli Indl Area,
KIADB Phase-III, 6th Road, Doddaballapura,
Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

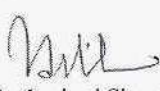
PROJECTION:  

SCALE :	SIZE :
---------	--------

NOT TO SCALE

839

Submitted by	 BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

LEGION ENERGY	GUARANTEED TECHNICAL PARTICULARS FOR DOWN LEAD CLAMP		Doc. No:00/Rev. No: 00
			Prep. By: Krishnaraj
			Ckd by: Satish
			Date: 15-12-2021
S. NO.	DESCRIPTION	UNIT	PARTICULARS
1	Manufacturer's Name and address		M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area, KIADB Phase -III, Doddaballapura, Bangalore - 561 203
2	Component Description		Downlead clamp
3	Part no		TF16110
4	Suitable for OPGW	mm	Ø11.4
5	Tightening torque	Nm	40 (Clamping Tower Part) 10 (Holding Tower part)
6	Material of downlead clamp		Hot Dip Galvanised Steel
7	Groove details:		
	a) Material		Galvanised Steel
	b) Diameter		Ø11.4
8	Tower attachment arrangement		Bolt & nut
9	Weight of assembly	kg	0.8 ± 2%
10	Bolt Size		M12
11	Bolt grade		5.6
12	Nut size		M12
13	Nut grade	mm	5.6
14	Shear strength of Bolt	N/mm ²	≥60
 (Authorised Signatory) 			

For NIT. NO - 12/PR/BSPTCL/2021 & NIT. NO. 40/2020

APPROVED
Subject to the condition that the materials
the responsibility to ensure the quality of the materials
supplied as per specification.

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

Signature

07 OCT 2022

TECHNICAL DATA:

1. GENERAL TOLERANCE $\pm 5\%$.
2. HOT DIP GALVANISED AS PER IS: 2629
3. SUITABLE FOR OPGW: $\phi 11.4\text{mm}$
4. BOLT TIGHTENING TORQUE: 40Nm (Clamping Tower part)
 10Nm (Holding Tower part)

For NIT NO. 12/PR/BSPTCL/2021
8 NIT NO. 40/2020

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidya Bhawan, Patna-800021

8/12

07 OCT 2022

Submitted by
Issued by
Project

BAJAJ ELECTRICALS LIMITED, MUMBAI
BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.

REFERENCE NO NIT NUMBER 40/PR/BSPTCL/2020

TITLE:

DOWN LEAD CLAMP

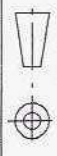
LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
Plot No: 61, 62 & 63, Obaidanahalli Indl Area,
KIA DB Phase-III, 6th Road, Doddaballapura,
Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION:



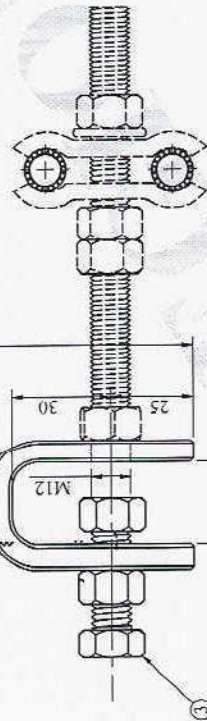
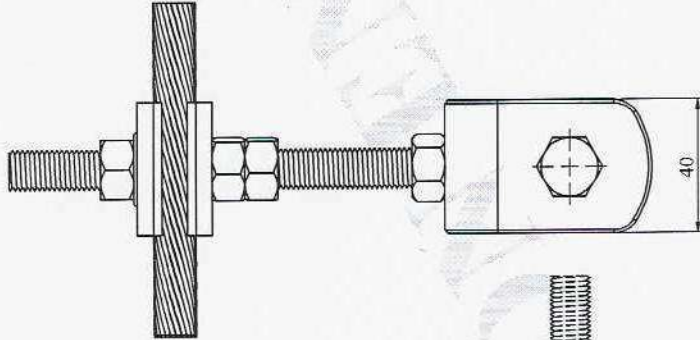
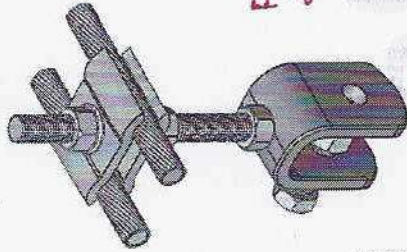
SCALE:

NOT TO SCALE

SIZE:

A4

PART NO: TF16110



ITEM NO.	DESCRIPTION	QTY.	MATERIAL
6	SPRING WASHER	1 NO	SPRING STEEL, ELECTROGALVANISED
5	M12 NUT	6 NO	MILD STEEL, HDG (IS:1364)
4	M12 STUD	1 NO	MILD STEEL, HDG (IS:1364)
3	M12X40 BOLT	1 NO	MILD STEEL, HDG (IS:1364)
2	CLAMP	2 NO	MILD STEEL (IS:2062)
1	BODY	1 NO	MILD STEEL (IS:2062)

Client :	Power Grid Corporation of India Ltd.	BSPCL
Contractor :	APAR Industries Limited	
Project Name :	Supply of Goods & Services Contract for Package-I: Communication System Package for Reliable Communication Scheme under Central Sector for North Eastern Region	
NoA No. :	CC-CS/892-NER/OPGW-4223/3/G4/NoA-I/NER-550009 & NoA-II/NER-550010 dated 12.11.2021	

LEGION ENERGY		GUARANTEED TECHNICAL PARTICULARS FOR LOOP BRACKET		Doc. No:00/Rev. No: 01
				Prep. By: Krishnaraj
				Ckd by: Satish
				Date: 04-01-2022
S. NO.	DESCRIPTION	UNIT	PARTICULARS	
1	Manufacturer's Name and address		M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area,KIADB Phase -III, Doddaballapura, Bangalore - 561 203	
2	Component Description		Loop Bracket	
3	Part no		MF47541	
4	Material		Mild Steel	
5	Weight	kg	11.5 ± 2%	
6	Breaking strength	kN	NA	
7	Bolt Size	mm	M12	
8	Bolt grade		5.6	
9	Nut size	mm	M12	
10	Nut grade		5	
11	Washer size	mm	M12	
12	Tightening Torque	Nm	34	
13	Shear strength of bolt	N/mm2	≥88.2	
14	Loop Capacity for 11.4mm OPGW	m	50	
15	Bending diameter of OPGW cable	mm	1100	
 (Authorised Signatory)  NISHKARSH RAIKUMAR AGM-PRODUCTS, APAR INDUSTRIES LTD 				

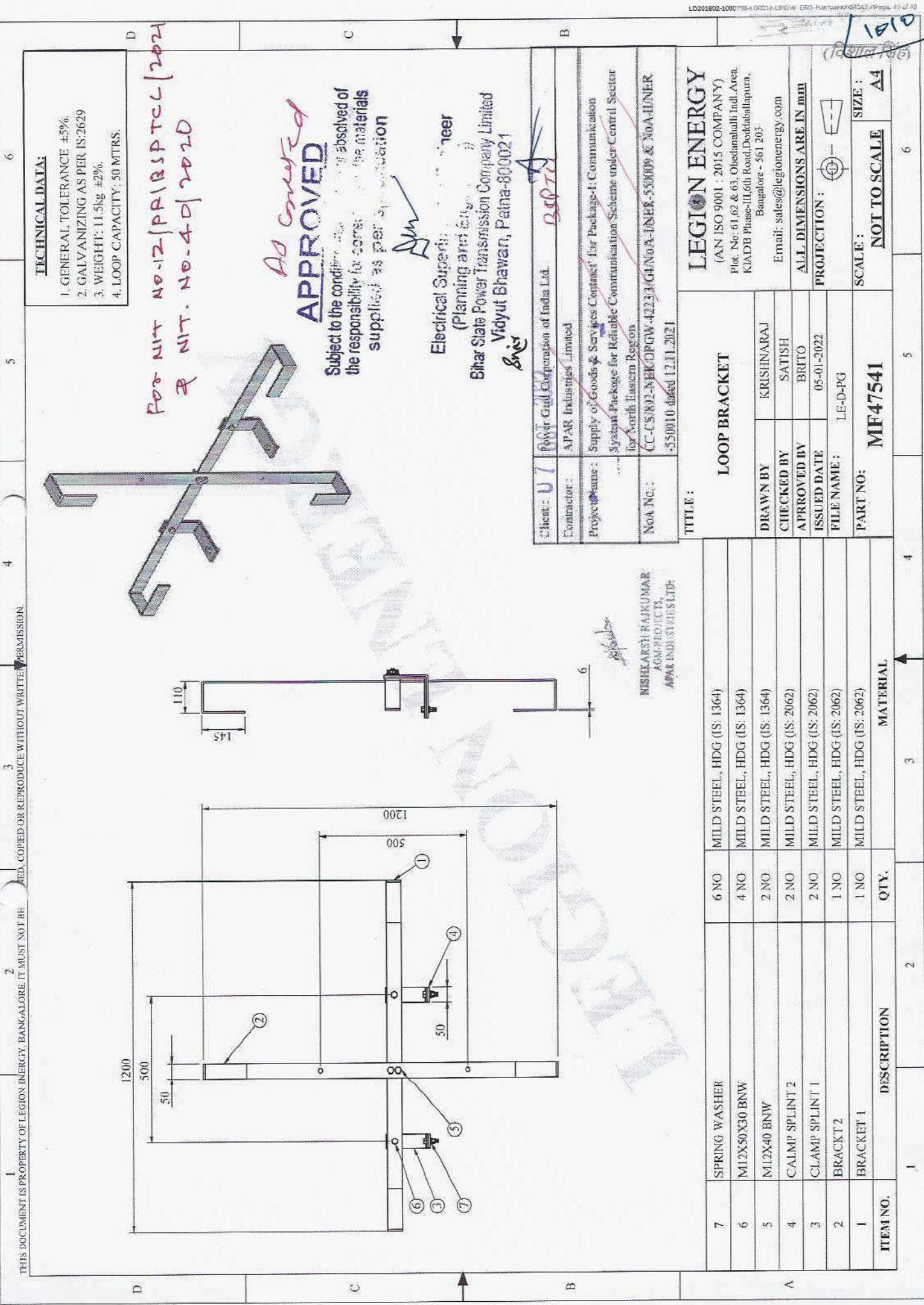
For NIT NO-12/PR/BSPTCL/2021
 & NIT NO-40/2020

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

07 OCT 2022



TECHNICAL DATA:
1. GENERAL TOLERANCE $\pm 5\%$.
2. GALVANIZING AS PER IS:2629
3. WEIGHT: 11.5kg $\pm 2\%$.
4. LOOP CAPACITY: 50 MTRS.

For NIT NO-12/PR/BSPTCL/2021
P NIT- NO-40/2020

As covered
APPROVED
Subject to the condition that the contractor shall be absolved of the responsibility for correct use of the materials supplied as per specification.

Electrical Superintendent
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyut Bhawan, Patna-800021

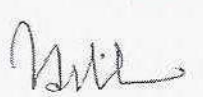
Client:	U T Power Grid Corporation of India Ltd.
Contractor:	APAR Industries Limited
Project Name:	Supply of Goods & Services Contract for Package-I: Communication System Package for Reliable Communication Scheme under Central Sector for North Eastern Region
NOA No.:	CC-CS/892-MH/DPGW-42233/GH/NOA-INER-550009 & NOA-INER-550010 dated 12.11.2021

LEGION ENERGY (AN ISO 9001 : 2015 COMPANY) Plot No. 61/62 & 63, Obedanahalli Indl. Area, KIADB Phase-III, 6th Road, Doddaballapura, Bangalore - 561 203 Email: sales@legionenergy.com	
LOOP BRACKET	
DRAWN BY	KRISHNARAJ
CHECKED BY	SATISH
APPROVED BY	BRITO
ISSUED DATE	05-01-2022
FILE NAME:	LE-D-PG
PART NO:	MF47541

ITEM NO.	DESCRIPTION	QTY.	MATERIAL
7	SPRING WASHER	6 NO	MILD STEEL, HDG (IS: 1364)
6	M12X50X30 BNW	4 NO	MILD STEEL, HDG (IS: 1364)
5	M12X40 BNW	2 NO	MILD STEEL, HDG (IS: 1364)
4	CALMP SPLINT 2	2 NO	MILD STEEL, HDG (IS: 2062)
3	CLAMP SPLINT 1	2 NO	MILD STEEL, HDG (IS: 2062)
2	BRACKET 2	1 NO	MILD STEEL, HDG (IS: 2062)
1	BRACKET 1	1 NO	MILD STEEL, HDG (IS: 2062)

PROJECTION:
ALL DIMENSIONS ARE IN mm
SCALE: NOT TO SCALE
SIZE: A4

Submitted by	 BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

LEGION ENERGY		GUARANTEED TECHNICAL PARTICULARS FOR OPGW JOINT BOX		Doc. No:00/Rev. No: 00
				Prep. By: Krishnaraj
				Ckd by: Satish
				Date: 04-01-2022
S. NO.	DESCRIPTION	UNIT	PARTICULARS	
1	Manufacturer's Name and address		M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area,KIADB Phase -III, Doddaballapura, Bangalore - 561 203	
2	Component Description		Joint Box for OPGW - 2way - 24F	
3	Part no		MF50064	
4	Height (H)	mm	462 ± 5	
5	Diameter (D)	mm	200 ± 5	
6	Weight	Kg	5 ± 2%	
7	Colour & finish		Aluminium	
8	Cable Glanding & fixing		Adjust Plate & screws (Included)	
9	Construction materials & gauge		Aluminium alloy & Steel	
10	Installation clearances			
	Front Access	mm	1000	
	Rear access	mm	1000	
	Top *Bottom* Sides	mm	1000	
11	IP Protection	Class	IP66	
12	Max. No. of optical splicing per tray		6 Nos	
13	No. of splice tray		4	
14	Provision of passthrough splicing	Yes/No	Yes	
15	Method for mounting with the tower		Mounting on tower above anti climb guard levels at 10mtr from top of the tower with bolt & nut	
Optical Fiber Cable Accomodations				
16	Cable Glanding		Aluminium bushing & aluminium hose gasket	
17	Maximum number of cables that can be accomodated	Each	2 No of cables (OPGW/ADSS/Approach Cable)	
18	Diameter of cables that can be accomodated	mm	Ø8.0-18.0	
19	Details of Splice Trays:			
	Dimension (Length x Width x Thickness x Depth)	mm	234 ± 5 x 110 ± 5 x 2 ± 0.1 x 10 ± 0.5	
	Material/Guage		Acrylonitrile Butadiene Styrene (ABS)	
	Weight of each splice tray	kg	0.074 ± 2%	
	Colour & Finish		White/Black	
20	Number of splices per tray	ea	6	
21	Provision of Splice organisers		4 x 6	
22	Excess length of fiber service loops	m	1.5 to 3	
23	Minimum bending diameter for fiber coils inside tray	mm	≥75	
24	Life of Joint Box		25 years	
FOR NIT NO-12/PR/ISSUED-01/2021 & NIT NO-40/2021				
		APPROVE Subject to the condition that we are not absolved the responsibility for correctness of the materials supplied as per specification Electrical Superintending Engineer		
(Authorised Signatory)				

07 OCT 2022

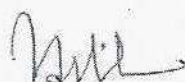
837

Submitted by	 BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

LEGION ENERGY	GUARANTEED TECHNICAL PARTICULARS FOR OPGW JOINT BOX	Doc. No:00/Rev. No: 00
		Prep. By: Krishnaraj
		Ckd by: Satish
		Date: 04-01-2022

S. NO.	DESCRIPTION	UNIT	PARTICULARS
1	Manufacturer's Name and address		M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area, KIADB Phase -III, Doddaballapura, Bangalore - 561 203
2	Component Description		Joint Box for OPGW - 2way - 48F
3	Part no		MF50065
4	Height (H)	mm	462 ± 5
5	Diameter (D)	mm	200 ± 5
6	Weight	Kg	5 ± 2%
7	Colour & finish		Aluminium
8	Cable Glanding & fixing		Adjust Plate & screws (Included)
9	Construction materials & gauge		Aluminium alloy & Steel
10	Installation clearances		
	Front Access	mm	1000
	Rear access	mm	1000
	Top *Bottom* Sides	mm	1000
11	IP Protection	Class	IP66
12	Max. No. of optical splicing per tray		12 Nos
13	No. of splice tray		4
14	Provision of passthrough splicing	Yes/No	Yes
15	Method for mounting with the tower		Mounting on tower above anti climb guard levels at 10mtr from top of the tower with bolt & nut
Optical Fiber Cable Accomodations			
16	Cable Glanding		Aluminium bushing & aluminium hose gasket
17	Maximum number of cables that can be accomodated	Each	2 No of cables (OPGW/ADSS/Approach Cable)
18	Diameter of cables that can be accomodated	mm	Ø8.0-18.0
19	Details of Splice Trays:		
	Dimension (Length x Width x Thickness x Depth)	mm	234 ± 5 x 110 ± 5 x 2 ± 0.1 x 10 ± 0.5
	Material/Guage		Acrylonitrile Butadiene Styrene (ABS)
	Weight of each splice tray	kg	0.074 ± 2%
	Colour & Finish		White/Black
20	Number of splices per tray	ea	12
21	Provision of Splice organisers		4 x 12
22	Excess length of fiber service loops	m	1.5 to 3
23	Minimum bending diameter for fiber coils inside tray	mm	≥75
24	Life of Joint Box		25 years

For NIT NO-12/PR/BSPTCL/2021 & NIT-NO-40/2020



(Authorised Signatory)

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification.

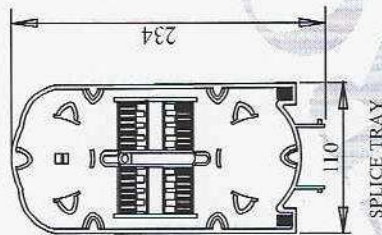
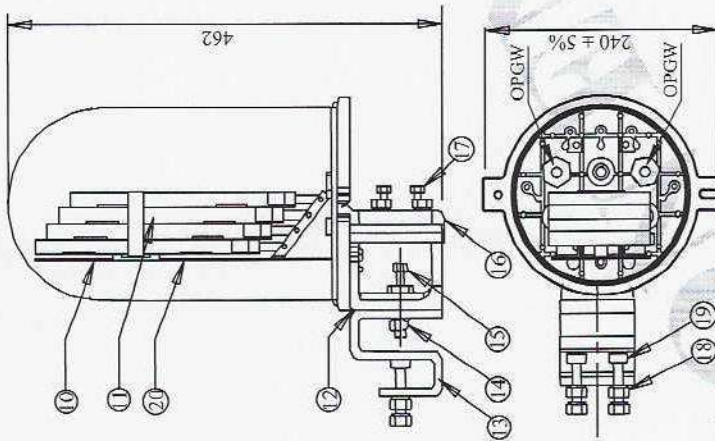
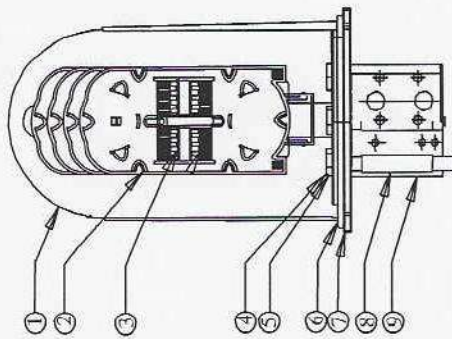


Electrical Superintending Engineer
(Planning and Engineering)

Bihar State Power Transmission Company Limited
Bhawan, Patna-800021

8/12

07 OCT 2022



TECHNICAL DATA:

1. ENVIRONMENT TEMPERATURE: $-40^{\circ}\text{C}^{\text{min}}$ + 85°C ;
2. GENERAL TOLERANCES $\pm 5\%$ UNLESS SPECIFIED.
3. FERROUS PARTS ARE GALVANIZED AS PER IS:2629.
4. FIBER ADDITIONAL ATTENUATION $< 0.0\text{dB}$.
5. FIBER BENDING RADIUS $\geq 30\text{mm}$.
6. USEFUL LIFE: ≥ 25 Year, IP66.
7. RETAINING FIBER LENGTH $\geq 1.6\text{m}$.
8. TENSILE & RESISTANCE $\geq 2000\text{N}/100\text{mm}$.
9. NUMBER OF SPLICE TRAY: 4No.
10. OPTICAL FIBRE CAPACITY: 24F(2 Cable Entry)
11. SUITABLE FOR OFCW $\varnothing 8.0$ TO $\varnothing 18.0\text{mm}$.

NOTE: REFER PART NUMBER MF50060 FOR TYPE TEST

406 NIT 20-12-1021054 DEC 2021

THE
WORLD
OF
THE
FUTURE

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

**Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited
Vidyt Bhawan, Patna-800021**

Submitted by
BAJAJ ELECTRICALS LIMITED, MUMBAI

Issued by **BIHAR STATE POWER TRANSMISSION COMPANY LIMITED**

CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.

REFERENCE NO. NIT NUMBER 40/PR/BSPTCL/2020

TITLE:

**JOINT BOX FOR
OPGW - 2 WAY - 24F**

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
Plot No: 61,62 & 63, Obedanahalli Indl.Area,
KIADB Phase-III,6th Road,Doddaballepura,
Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

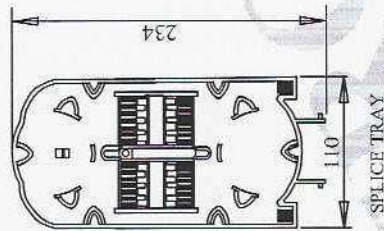
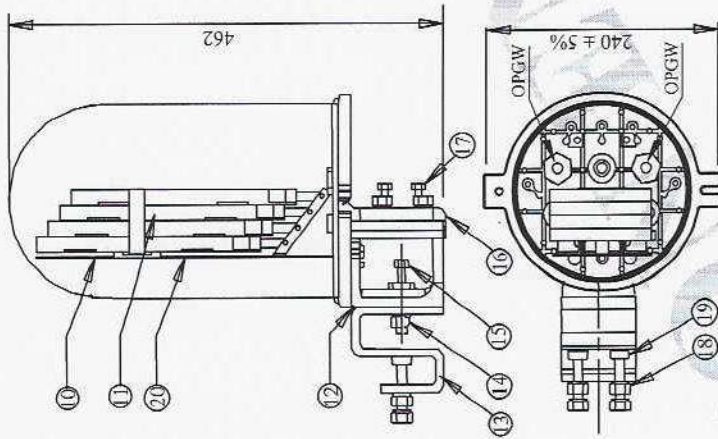
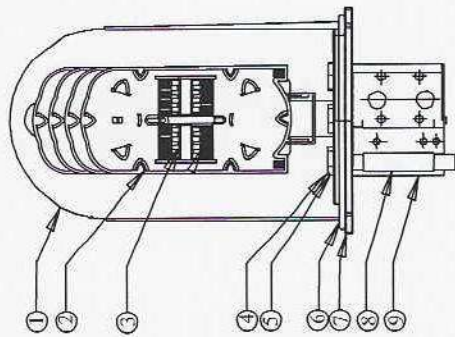
REJECTION:



SCALE :	SIZE :
---------	--------

A4

ITEM NO.	DESCRIPTION	MATERIAL	QTY
20	BELT STRAP	NYLON	1 NO
19	ROLLING STOPPER	MILD STEEL, HDG	2 NO
18	PULLER BOLT	MILD STEEL, HDG	2 NO
17	ADJUSTMENT BOLT	STAINLESS STEEL	4 NO
16	INCOMING PRESSING PLATE	AL. ALLOY	1 NO
15	ROLLING STOPPER BOLT	STAINLESS STEEL	1 NO
14	CENTER BOLT	STAINLESS STEEL	1 NO
13	INSTALLATION SUPPORT	MILD STEEL, HDG	1 NO
12	CONNECTOR SUPPORT	AL. ALLOY	1 NO
11	FIBER COILING COVER	PLASTIC ABS	4 NO
10	FIBER COILING SUPPORT	CRCA	1 NO
9	CLIP BASE	AL. ALLOY	1 NO
8	DIAMETER ADJUSTMENT WASHER	AL. ALLOY	2 NO
7	BASE	AL. ALLOY	1 NO
6	SEAL RING	RUBBER	1 NO
5	SEALANT GLUE	-	1 NO
4	CLAMP NUT	AL. ALLOY	2 NO
3	FIBER IDENTIFICATION BOARD	PLASTIC ABS	8 NO
2	SPLICE TRAY	PLASTIC ABS	4 NO
1	JOINT BOX COVER	AL. ALLOY	1 NO



TECHNICAL DATA:

1. ENVIRONMENT TEMPERATURE: -40°C ~ +85°C;
2. GENERAL TOLERANCES ±5%, UNLESS SPECIFIED.
3. FERRIC PARTS ARE GALVANIZED AS PER IS:2629.
4. FIBER ADDITIONAL ATTENUATION <0.0dB.
5. FIBER BENDING RADIUS=30mm.
6. USEFUL LIFE: ≥25 Year, IP66.
7. RETAINING FIBER LENGTH ≥=1.6m.
8. TENSILE & RESISTANCE ≥=2000N/100mm.
9. NUMBER OF SPLICE TRAY: 2 No
10. OPTICAL FIBRE CAPACITY: 48F(2 CABLE ENTRY).
11. SUITABLE FOR OPGW Ø8.0 TO Ø18.0mm.

NOTE: REFER PART NUMBER MF50060 FOR TYPE TEST

PO# 7115 20-12-PR/BSP TEL 2021
PO# 7115 20-12-PR/BSP TEL 2021

APPROVED

Subjected to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification.

Electrical Superintending Engineer
(Planning and Engineering)

Bihar State Power Transmission Company Ltd.
Vidut Bhawan, Patna-001

07 OCT 2022 Sher

 BAJAJ ELECTRICALS LIMITED, MUMBAI

SHAR STATE POWER TRANSMISSION COMPANY LIMITED

CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR MYS IOCL ON M/C MONOPOLE TOWERS.

REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020
--------------	------------------------------

TITLE:

JOINT BOX FOR
OPGW - 2 WAY - 48F

REGION ENERGY

(AN ISO 9001 : 2015 COMPANY)

Plot. No: 61, 62 & 63, Obedanahalli Indl. Area,
KIADB Phase-III, 6th Road, Doddaballapura,
Bangalore - 561 203

Email: sales@legionenergy.com

ALL DIMENSIONS ARE IN mm

PROJECTION:

LE-DT-P-OPGW

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

SCALE :

SIZE :

20	BELT STRAP	NYLON	1 NO
19	ROLLING STOPPER	MILD STEEL, HDG	2 NO
18	PULLER BOLT	MILD STEEL, HDG	2 NO
17	ADJUSTMENT BOLT	STAINLESS STEEL	4 NO
16	INCOMING PRESSING PLATE	AL. ALLOY	1 NO
15	ROLLING STOPPER BOLT	STAINLESS STEEL	1 NO
14	CENTER BOLT	STAINLESS STEEL	1 NO
13	INSTALLATION SUPPORT	MILD STEEL, HDG	1 NO
12	CONNECTOR SUPPORT	AL. ALLOY	1 NO
11	FIBER COILING COVER	PLASTIC ABS	4 NO
10	FIBER COILING SUPPORT	CRCA	1 NO
9	CLIP BASE	AL. ALLOY	1 NO
8	DIAMETER ADJUSTMENT WASHER	AL. ALLOY	2 NO
7	BASE	AL. ALLOY	1 NO
6	SEAL RING	RUBBER	1 NO
5	SEALANT GLUE	-	1 NO
4	CLAMP NUT	AL. ALLOY	2 NO
3	FIBER IDENTIFICATION BOARD	PLASTIC ABS	8 NO
2	SPLICE TRAY	PLASTIC ABS	4 NO
1	JOINT BOX COVER	AL. ALLOY	1 NO
ITEM NO.	DESCRIPTION	MATERIAL	QTY

236

Submitted by	 BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

LEGION ENERGY	GUARANTEED TECHNICAL PARTICULARS FOR FODP	Doc. No:00/Rev. No: 00
		Prep. By: Krishnaraj
		Ckd by: Satish
		Date: 04-01-2022

S. NO.	DESCRIPTION	UNIT	PARTICULARS	
1	Manufacturer's Name and address		M/s. LEGION ENERGY PRODUCTS PVT. LTD. Plot No. 61,62 & 63, Obadenahalli Ind. Area, KIADB Phase -III, Doddaballapura, Bangalore - 561 203	
2	Component Description		FODP 48F	FODP 96F
3	Part no		MF50341	MF50342
4	Dimensions H * W * D	mm	2200 ± 5 x 600 ± 5 x 600 ± 5	
5	Weight	kg	120 ± 2%	
6	Colour & finish		RAL 7035 Light Grey, Structural Finish	
7	Rack Description/Model		FODP 48F - Fiber Optic Distribution Panel 48Fibers	FODP 96F - Fiber Optic Distribution Panel 96Fibers
8	Construction materials		CRCA	
9	Locking arrangements		3-point lock system	
10	Installation clearances			
11	Front Access	mm	600	
12	Rear access	mm	600	
13	Top *Bottom* Sides	mm	600	
14	IP Protection	Class	IP55	
15	Steel thickness	mm	2	
16	Coating thickness	µm	Minimum 70 microns (as per MQP)	
17	No. of 48F sub rack		1	2

FODP 48 Fibers (Sub Rack)-Sliding type

18	Dimensions H * W * D	mm	88 ± 5 x 486 ± 5 x 234 ± 5	
19	Weight	Kg	4.2 ± 2%	8.4 ± 2%
20	Colour & finish		Light Grey	
21	Cable Glanding and Fixing:		Minimum 4 Cable Glands provided along with the sub rack	
22	Construction materials & Gauge		CRCA Steel, 2mm	
23	Locking arrangements		Two Slots with Nylatch	
24	Total number of optical couplings	ea	48 FC/PC Connections	96 FC/PC Connections (2x48F)
25	Provision of pass through splicing	Yes/No	Yes, 48 Spicing per patch panel	
26	Method(s) for mounting		19inch rack mounting in cabinet	

Optical Fiber Cable Accomodations

27	Cable Glanding and Fixing:		Minimum 4 FC Gland and cable arresters	
----	----------------------------	--	--	--

APPROVED

For NIT NO-12/PR/BSPTCL/2021 &
NIT-NO-40/2020

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Company Limited,
Vidyut Bhawan, Patna-800021

07 OCT 2022

835

28	Maximum number of cables that can be accommodated	Each	1-9 numbers from bottom and provision for 4 hole impression on top which can be modified into entry for 0-4 cables by fixing PG Glands	
29	Diameter of cables that can be accommodated	mm	Ø10-18	
30	Describe cable entries		Suitable for both 24F & 48 fiber approach cables. Allows entry from the top and bottom of the cabinet and the back side of the sub rack	Suitable for all 24F, 48F & 96 fiber approach cables. Allows entry from the top and bottom of the cabinet and the back side of the sub rack
31	Details of Splice Trays:			
	Dimension (Length x Width x Thickness x Depth)	mm	150± 5 x 98± 5 x 2 ± 0.1 x 10±0.5	
	Material/Guage		Acrylonitrile Butadiene Styrene (ABS) 2 ± 0.5 mm thickness	
	Weight	kg	0.085 ± 2%	
	Colour & Finish		Black	
	Method of mounting		Snaps on to the base tray in the sub rack and comes with hinge mechanism for easy access to fibers.	
32	Maximum number of Splice trays	ea	4	8 (4 x 2)
33	Number of splices per tray	ea	12	
34	Provision of Splice organisers		Yes	
35	Excess length of fiber service loops	m	Minimum 3m, Provision of Service loops provided	
36	Connecterised Pigtails spliced to bare fibres at least 1 mtr at service loop installed in FODP fibre organiser and atleast 1 mtr at service loop to the coupling neatly stored behind the FODP coupling panel provided		Yes	
37	All cable and fibre service loops provided meeting the Technical Specification requirement.		Yes	
38	Provision for ground legs	Yes/No	Yes	

Bill
(Authorised Signatory)



For NIT. NO. 12/P12/BSPTCL/2021 & NIT NO. 40/2020

APPROVED
Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification
[Signature]
Electrical Superintending Engineer
(Planning and Engineering)
Bina, Bihar Pradesh Transmission Company Limited
Vidya Bhawan, Patna-800021

07 OCT 2022

1

2

3

4

5

6

THIS DOCUMENT IS PROPERTY OF LEGION ENERGY, BANGALORE. IT MUST NOT BE LOANED, COPIED OR REPRODUCE WITHOUT WRITTEN PERMISSION.

2

3

4

5

6

1

2

3

4

5

6

1

2

3

4

5

6

TECHNICAL DATA:

- 1. GENERAL TOLERANCE $\pm 5\%$, UNLESS SPECIFIED.
- 2. WEIGHT : 120kg $\pm 5\%$.
- 3. IP PROTECTION: IP 55

NOTE: REFER PART NUMBER MFS0342 FOR TYPE TEST

TOP VIEW

19" 42U RACK

GASKET FOR PROPER SEALING

DOCUMENT HOLDER

48F FC/PC SLIDING PATCH PANEL
1 No. for 48F
2 No. for 96F

3 POINT LOCK

IP55 RATED MAIN CABINET

REMOVABLE PEDESTAL

SINGLE POINT LOCK

DOOR STOPPER

SINGLE POINT LOCK

TENTATIVE ARRANGEMENT

FRONT VIEW

BOTTOM VIEW

For NIT NO. 12/PRI/BSPTCL/2021
& NIT NO. 40/2020

APPROVED

Subject to the condition that you are not absolved of the responsibility for correctness of the materials supplied as per specification

Electrical Superintending Engineer
(Planning and Engineering)
Bihar State Power Transmission Corporation Limited
Viduyat Bhawan, Patna-800021

07 OCT 2022

Submitted by	BAJAJ ELECTRICALS LIMITED, MUMBAI
Issued by	BIHAR STATE POWER TRANSMISSION COMPANY LIMITED
Project	CONSTRUCTION OF 220 KV DOUBLE CIRCUIT TRANSMISSIONS LINE FROM GSS BEGUSARAI TO IOCL BARAUNI REFINERY PARTLY ON MONOPOLE TOWER AND SHIFTING OF 4 NOS. OF 220 KV TOWERS OF EXISTING TRANSMISSION LINE REQUIRED FOR M/S IOCL ON M/C MONOPOLE TOWERS.
REFERENCE NO	NIT NUMBER 40/PR/BSPTCL/2020

TITLE :

FODP 48F

LEGION ENERGY

(AN ISO 9001 : 2015 COMPANY)
Plot No: 61.62 & 63, Obedanahalli Indl Area,
KIADB Phase-III, 6th Road, Doddaballapur,
Bangalore - 561 203

Email: sales@legionenergy.com

DRAWN BY	KRISHNARAJ
CHECKED BY	SATISH
APPROVED BY	BRITO
ISSUED DATE	23-12-2020
FILE NAME :	LE-DT-P-AR

ALL DIMENSIONS ARE IN mm

PROJECTION :

SCALE :	NOT TO SCALE	SIZE :	A4
---------	--------------	--------	----

PART NO: MFS0341