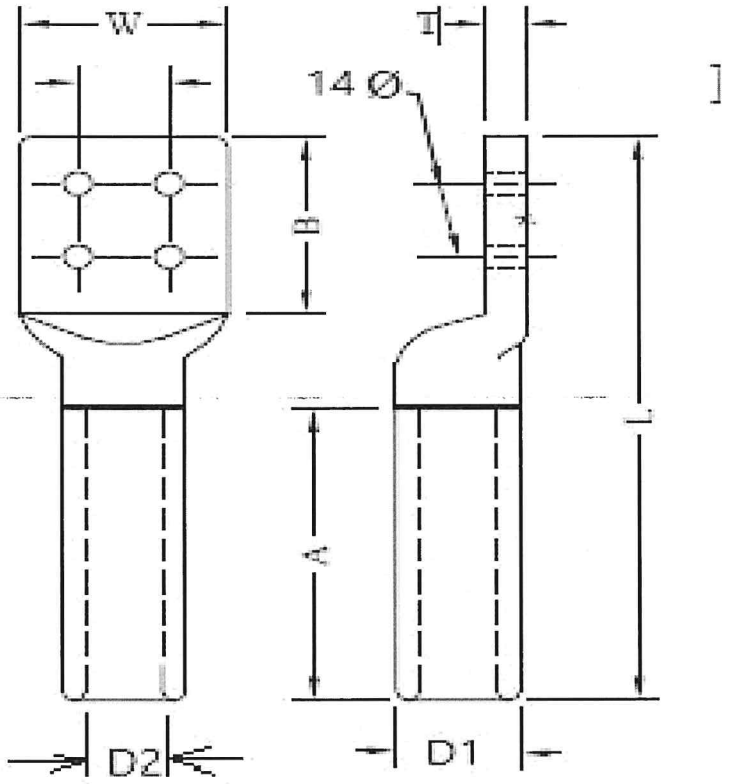
Appendix 1: DRAWINGS FOR ASSORTED CLAMPS & CONNECTORS.

No.	Item code	Description	Drawing No
1.	N/A	Aluminium alloy Compression terminal connector for ACSR 300mm sq flat with 4 bolts	C.16
2.	N/A	Tee connector clamp for 150mm sq ACSR Conductor with 8 bolts	C.15
3.	N/A	Tee connector clamp for 300mm sq ACSR Conductor with 8 bolts	C.15
4.	N/A	Tinned Aluminium alloy Parallel Groove clamp for 120mm sq copper conductor bolted	C.23
5.	N/A	Aluminium alloy tinned Horizontal -Horizontal cable cross joint clamp 120mm sq copper conductor	C.41
6.	N/A	Straight connector for tube 50mm outside diameter and 300mm sq ACSR Conductor	C.17
7.	N/A	Tee connector clamp for tube 25mm Diameter and 150mm sq ACSR Conductor bolted	C.33
8.	N/A	Tee connector clamp for tube 50mm Diameter and 300mm sq ACSR Conductor bolted	C.33
9.	114868	Aluminium Compression Tee clamp for 300 mm sq	C.39
10.	114866	Aluminium Compression Tee clamp 150mm sq	C.39
11.	N/A	Suspension clamp for 300mm sq ACSR Conductor	C.38
12.	114862	Compression dead end clamp for 300mm sq ACSR Conductor	C.40
13.	114832	Electrotinned copper clamp 3" fixed	08605 sht 8
14.	114853	Electrotinned Copper clamp 3" flexible	08605 sht 6

1. Compression terminal connector



1.1. System Settings:

U_m	245 kV	Bidder to specify
I_N	1000 A	Bidder to specify
I_{th}, 1s	31.5kA	Bidder to specify

1.2. Conductor parameters:

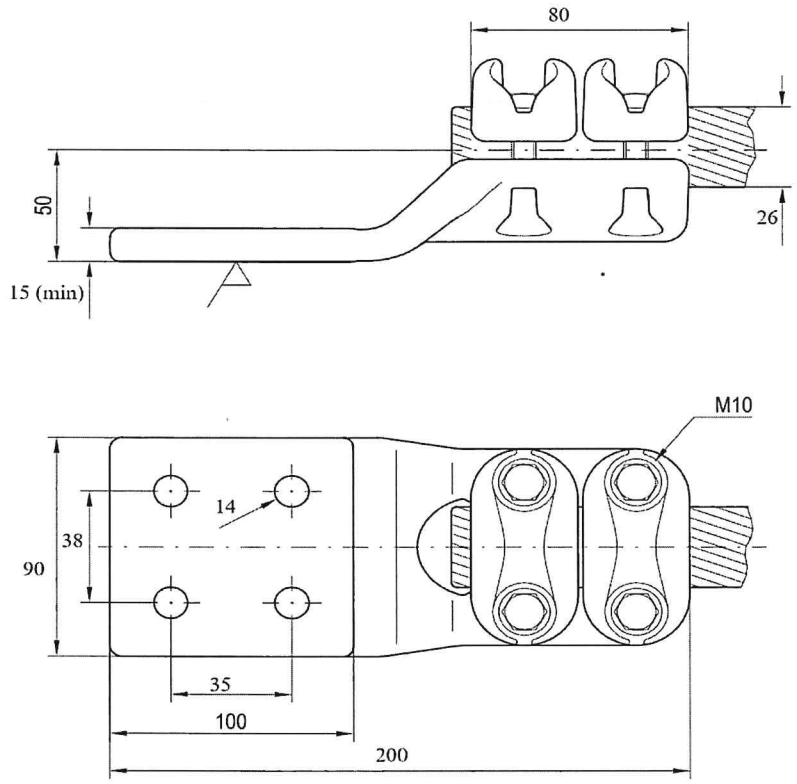
ACSR Conductor Size			Compression connector (Minimum)							
Code Name	**(mm²)**	**Overall Dia mm**	**L mm**	**D1 mm**	**D2 mm**	**A mm**	**T mm**	**W**	**B**	**No of Bolts**
Goat	300	26	200	29	43	100	15	90	100	4
Bidder to state										

1.3. Material of manufacture

1.	Aluminium sleeve and jumper	6082 O, seamless	Bidder to Specify
2.	Steel sleeve	Forged steel, hot dip galvanized as per ISO 1461	Bidder to Specify
3.	Bolts and nuts	Stainless steel, Class 8.8/8, 800N/mm^2	Bidder to Specify

4.	Dead end	Eye type	Bidder to Specify
5.	Conductivity of the dead end	equal to that of the conductor to be used with	Bidder to Specify
6.	Slip strength	Up to 95% of the conductor to be used with	Bidder to Specify
7.	Contact sealant is factory applied to the barrel and the connector is sealed in a clear plastic bag		Bidder to Specify
8.	Pads have contact surface on both sides with NEMA spacing		Bidder to Specify

2. Compression terminal connector for ACSR



For ACSR conductor size 267-335 mm2
Dimensions in mm and are the minimum

2.1. System Settings:

U_m	245 kV	Bidder to specify
I_N	1600 A	Bidder to specify
I_{th}, 1s	31.5kA	Bidder to specify

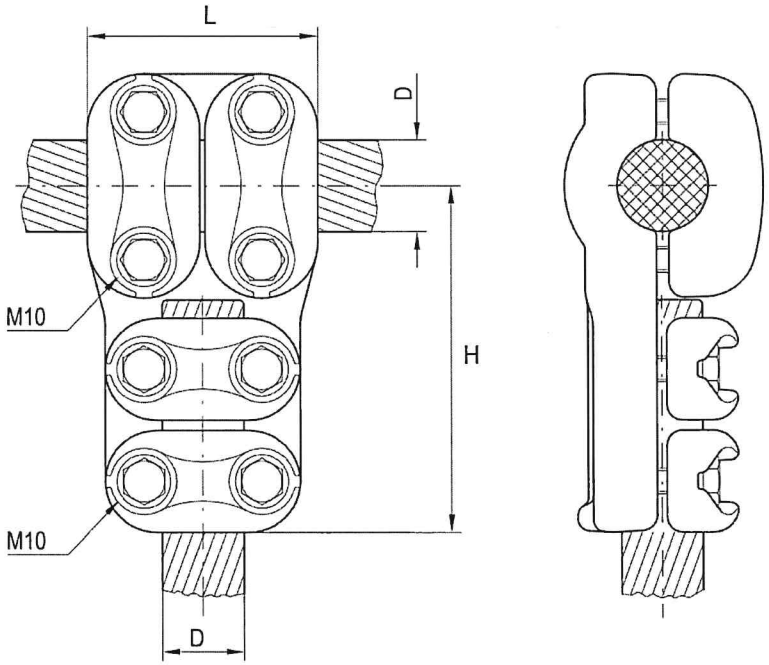
2.2. Conductor parameters:

ACSR Conductor Size			ACSR conductor Range	Bolts
Code Name	**(mm²)**	**Overall Dia mm**	**mm**	**No of**
Goat	300	26	267 -335	4
Bidder to state				

2.3. Material of manufacture

1.	Body	Al 6082 T6	Bidder to Specify
2.	Bolts and nuts	Stainless steel, Class 8.8/8, 800N/mm²	Bidder to Specify
3.	Conductivity of the terminal connector	equal to that of the conductor to be used with	Bidder to Specify
4.	Slip strength	Up to 95% of the conductor to be used with	Bidder to Specify

3. Tee Connector Clamps with Bolts



3.1. System Settings:

U_m	245 kV	Bidder to specify
I_N	1000 A	Bidder to specify
I_{th}, 1s	31.5kA	Bidder to specify

3.2. Conductor/clamp parameters:

ACSR Conductor Size	D Approx Conductor Size	H (Min)	L (Min)

Code Name	Cross Sectional Area (mm^2)	Overall Dia mm	mm	mm	mm
Wolf	150	18.2	18.0 ~ 22.0	100	80
Goat	300	26	23.0 ~ 29.0	130	100
Bidder to state					

3.3. Material of manufacture

1.	Aluminium Body	Al 6082 T6	Bidder to Specify
2.	Bolts and nuts	Stainless steel, Class 8.8/8, $800N/mm^2$	Bidder to Specify

4. Parallel Groove clamp

As given in the Kenya Power specification: *KPLC1-6C 1-13-TSP-06-036-1-Specification for overhead line Fittings-Part 1- fittings for 10-300MM2 conductors* here-attached.

- Fig 10
- Respective GTP Clauses to be filled.

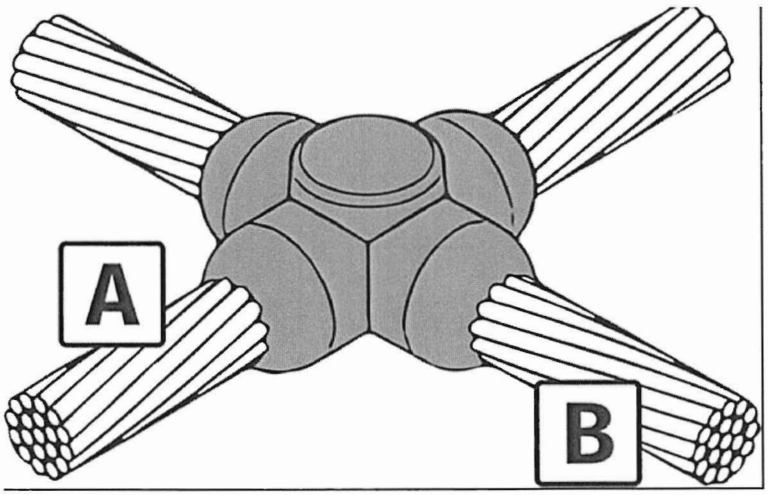
4.1. Material of manufacture

1.	Clamp Body	EN AW-6082 T6	Bidder to Specify
2.	Cover	Al 6082 T6	Bidder to Specify
3.	Bolts and nuts	Steel,ISO 1461 hdg, Class 8.8/8, $800N/mm^2$	Bidder to Specify

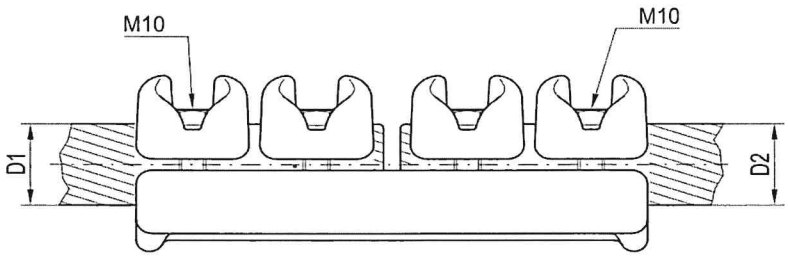
5. Horizontal to horizontal cable cross joint

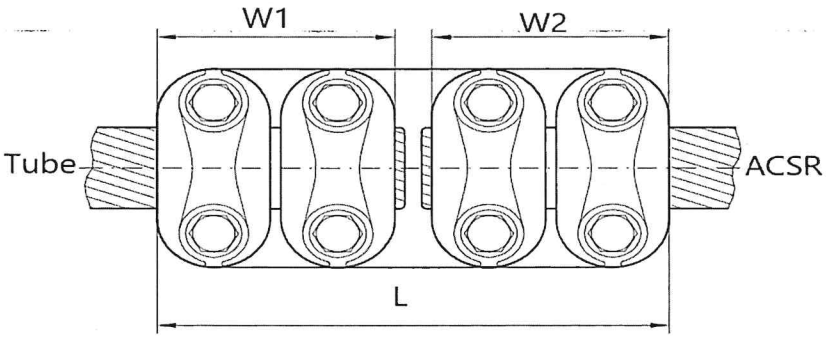
5.1. Shall be manufactured from tinned Aluminium alloy

5.2. Shall be used for for joining 120 mm2 stranded and solid copper conductors



6. Straight connector for tube 50mm outside diameter and 300mm sq ACSR Conductor





6.1. System Settings:

U_m	245 kV	Bidder to specify
I_N	850 A	Bidder to specify
I_{th}, 1s	31.5kA	Bidder to specify

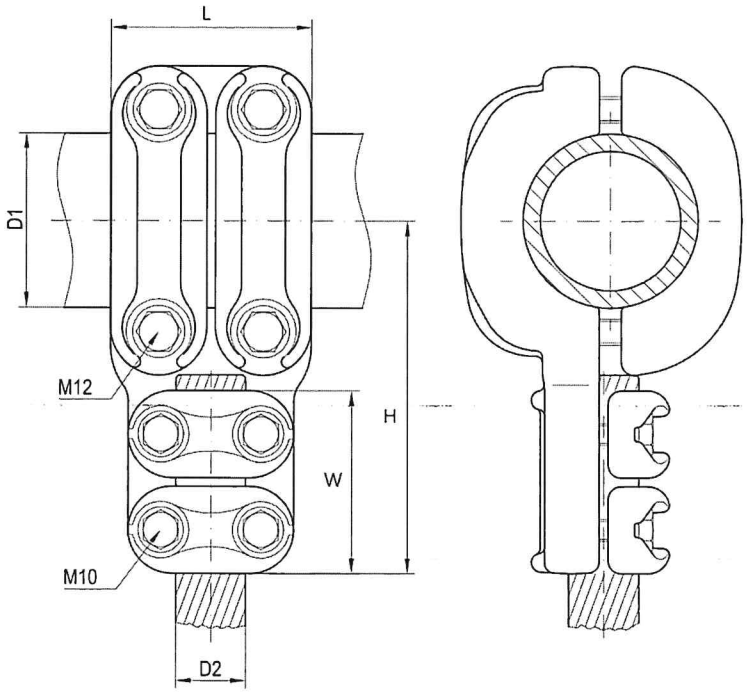
6.2. Conductor/clamp parameters:

ACSR Conductor Size			**Tube Size**			
Code Name	**Cross Sectional Area (mm^2)**	**Overall Dia mm (D_2)**	**D_1 mm**	**L (Min) mm**	**W1 (Min) mm**	**W2 (Min) mm**
Goat	300	26	50	150	80	60
Bidder to state						

6.3. Material of manufacture

1.	Aluminium Body	Al 6082 T6	Bidder to Specify
2.	Bolts and nuts	Stainless steel, Class 8.8/8, $800N/mm^2$	Bidder to Specify

7. Tee connector clamp for tube and ACSR



7.1. System Settings:

U_m	245 kV	Bidder to specify
I_N	850 A	Bidder to specify
I_{th}, 1s	31.5kA	Bidder to specify

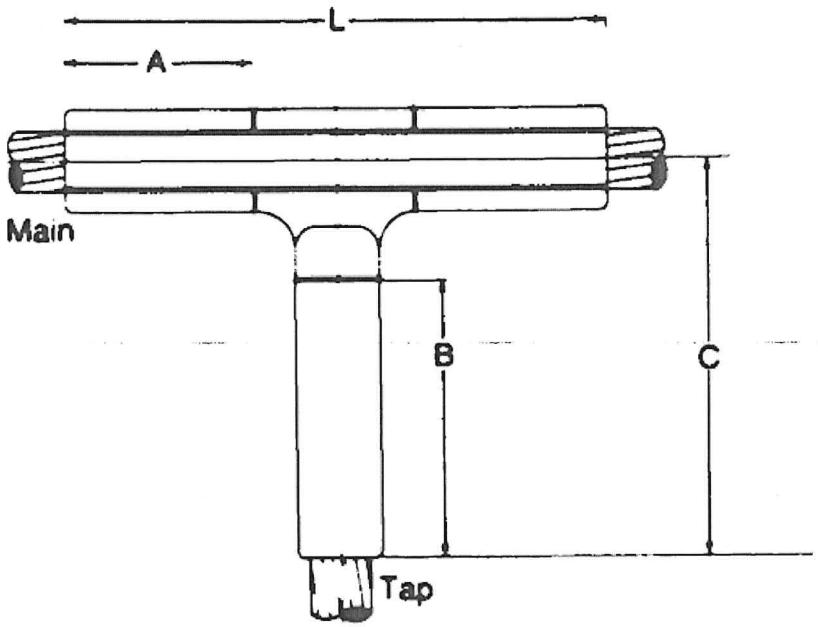
7.2. Conductor/clamp parameters:

ACSR Conductor Size			**Tube Size**			
Code Name	**Cross Sectional Area (mm^2)**	**Overall Dia mm (D_2)**	**D_1 mm**	**H (Min) mm**	**L (Min) mm**	**W (Min) mm**
Wolf	150	18.2	25	100	80	60
Goat	300	26	50	150	90	70
Bidder to state						

7.3. Material of manufacture

1.	Aluminium Body	Al 6082 T6	Bidder to Specify
2.	Bolts and nuts	Stainless steel, Class 8.8/8, 800N/mm^2	Bidder to Specify

8. Aluminium Compression Tee clamp



8.1. System Settings:

U_m	245 kV	Bidder to specify
I_N	1000 A	Bidder to specify
I_{th}, 1s	31.5kA	Bidder to specify

8.2. Conductor parameters:

ACSR Conductor Size			**Tee Clamp**			
Code Name	**(mm²)**	**Overall Dia mm**	**L mm**	**A mm**	**B mm**	**C mm**
Wolf	150	18.2	**250**	**State**	**130**	**State**
Goat	300	26	280	State	160	State
Bidder to state						

8.3. Material of manufacture

1.	Aluminium tubes	Extruded Aluminium Alloy 6082 O, seamless	Bidder to Specify
2.	Conductivity	equal to that of the conductor to be used with	Bidder to Specify
3.	Slip strength	Up to 95% of the conductor to be used with	Bidder to Specify
4.	Tap barrel is prefilled with inhibitor, ends are capped and tapers are coated with protective plastic		Bidder to Specify

9. Suspension clamp for 300 mm^2 ACSR Conductor

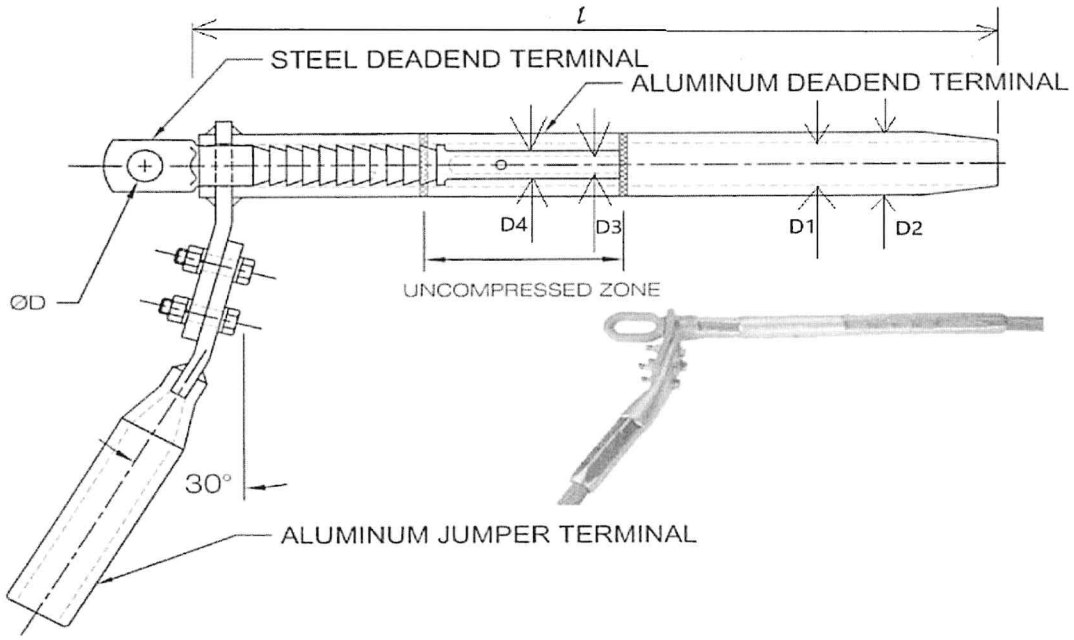
As given in the Kenya Power specification: *KPLC1-6C 1-13-TSP-06-036-1-Specification for overhead line Fittings-Part 1- fittings for 10-300MM2 conductors* here-attached.

- Fig 8
- Respective GTP Clauses to be filled.

9.1. Material of manufacture

4.	Clamp Body	Al 6082 T6	Bidder to Specify
5.	Cover	Al 6082 T6	Bidder to Specify
6.	Straps	S355J2G3C	Bidder to Specify
7.	Locking plate	Stainless steel	Bidder to Specify
8.	Bolts and nuts	Stainless steel, Class 8.8/8, 800N/mm^2	Bidder to Specify

10. Compression dead end clamp



10.1. System Settings:

U_m	245 kV	Bidder to specify
I_N	1000 A	Bidder to specify
I_{th}, 1s	31.5kA	Bidder to specify

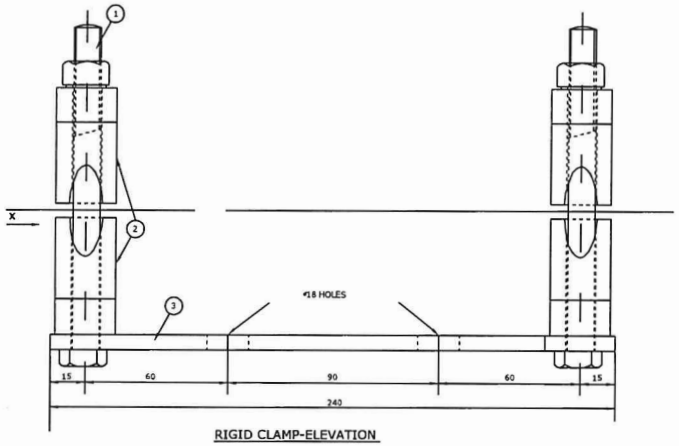
10.2. Conductor parameters:

ACSR Conductor Size			ℓ (min)	Al sleeve		Steel Sleeve		Bolts
Code Name	(mm^2)	Overall Dia mm	mm	D1 mm	D2 mm	D3 mm	D4 mm	No of

Goat	300	26	500	29	43	11.5	19.5	2
Bidder to state								

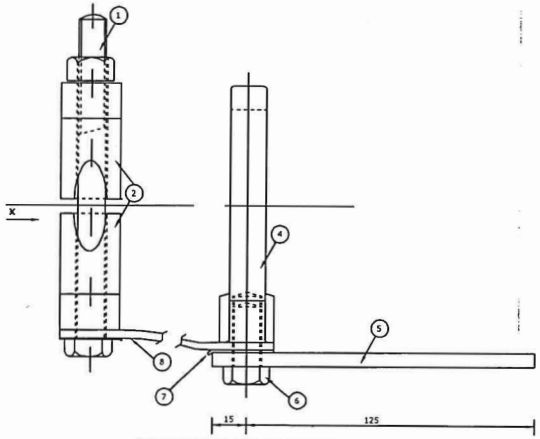
10.3. Material of manufacture

5.	Aluminium sleeve and jumper	6082 O, seamless	Bidder to Specify
6.	Steel sleeve	Forged steel, hot dip galvanized as per ISO 1461	Bidder to Specify
7.	Bolts and nuts	Stainless steel, Class 8.8/8, 800N/mm^2	Bidder to Specify
8.	Dead end	Eye type	Bidder to Specify
9.	Conductivity of the dead end	equal to that of the conductor to be used with	Bidder to Specify
10.	Slip strength	Up to 95% of the conductor to be used with	Bidder to Specify



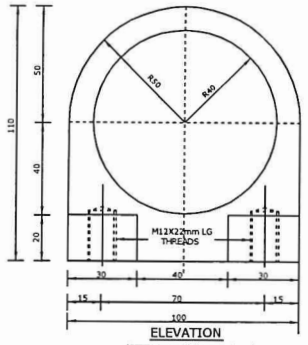
RIGID CLAMP-ELEVATION

CODE 114832



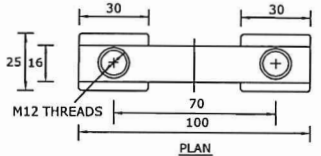
EXPANSION CLAMP-ELEVATION

CODE 114824

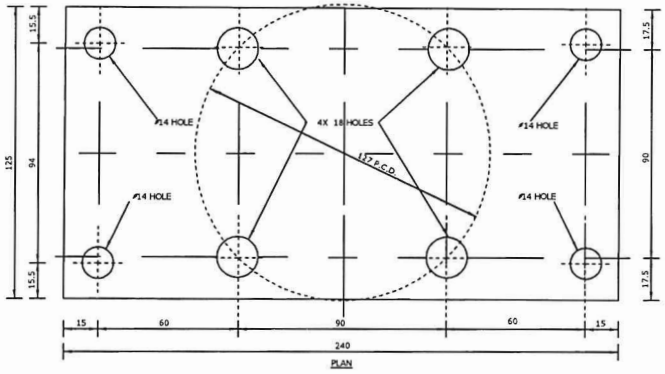


ELEVATION

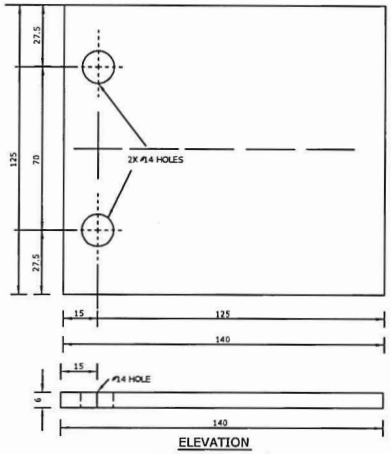
(ITEM 4-8)(1 REQD.)



PLAN

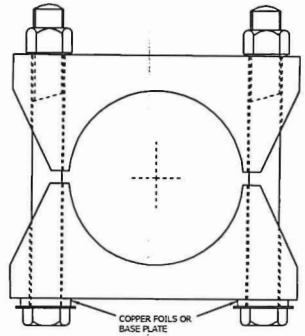


PLAN

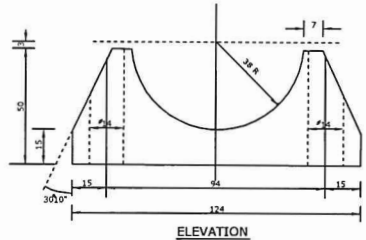


ELEVATION

(ITEM 5-1 REQD.)



ELEVATION X



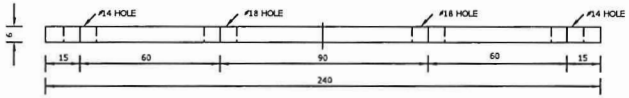
ELEVATION

(ITEM 2- A (4 REQD.)

B (2 REQD.)

ELEVATION

(ITEM 6-B)2 REQD.)

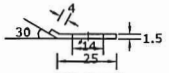


Cu PLATE FOR RIGID CLAMP

CODE 114832

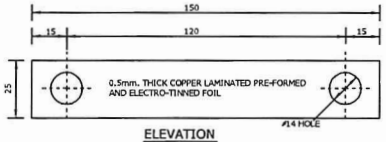
ELEVATION

(ITEM 3-1 REQD.)



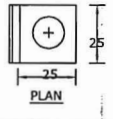
ELEVATION

(ITEM 7-B(2 REQD.)

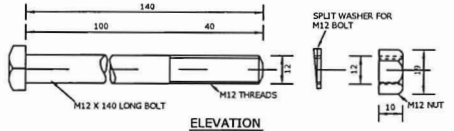


ELEVATION

(ITEM 8-B(16 REQD.)



PLAN



ELEVATION

(BOLT,WASHER AND NUT)

(ITEM 1- A (4 REQD.)

B (2 REQD.)

MATERIAL : GALVANIZED MILD STEEL

NOTE

-MATERIAL : HIGH COPPER CONTENT ALLOY TINNED U.O.S.

-DIMENSIONS IN MM U.O.S

	DATE	SIGN
APPROVED		
CHECKED ENGINEER I/C		
CHECKED HEAD D'MAN		
CHECKED H/SURVEYOR		
DRAWN	MARCH 2011	DENNIS .W
SURVEYED		
TRACED		

REF		DATE	SIGN	CHECKED	SIGN
1					
2					
3					
4					
5					
6					

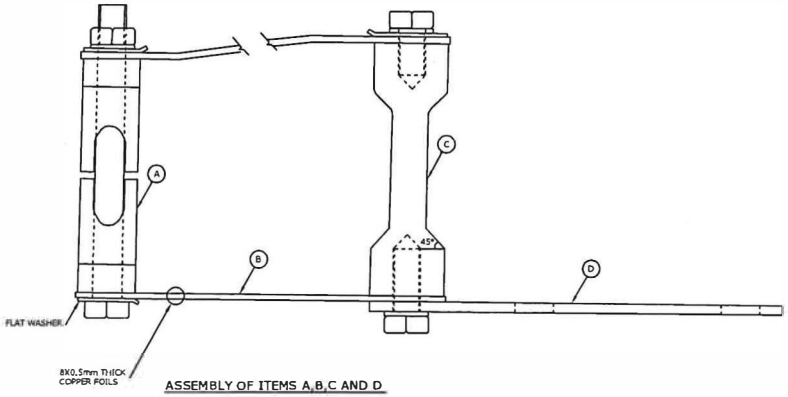
DETAILS OF EXPANSION RIGID CLAMPS FOR 76mm. O.D. Cu TUBES

SCALE : FULL SIZE

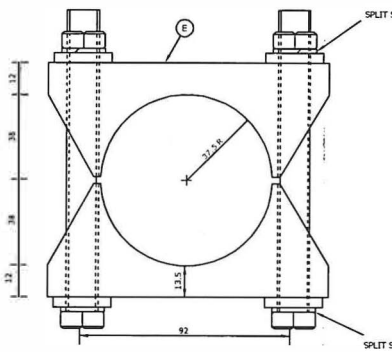
K.P.&.L CO. LTD.

SK.NO.O86O5

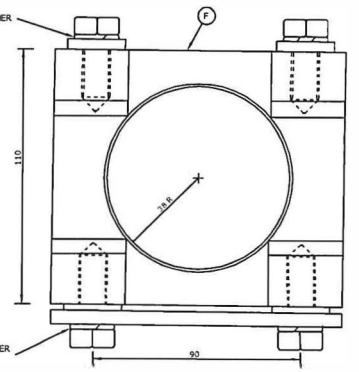
SHEET 8



ASSEMBLY OF ITEMS A,B,C AND D
END ELEVATION

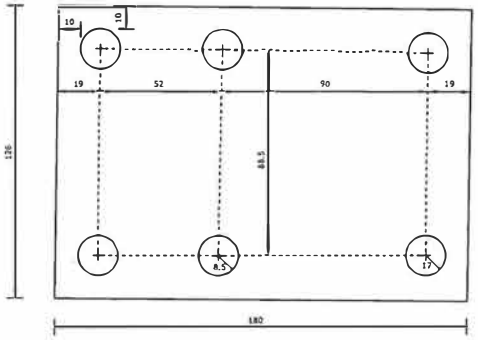


END ELEVATION
MATERIAL : HIGH COPPER CONTENT ALLOY TINNED

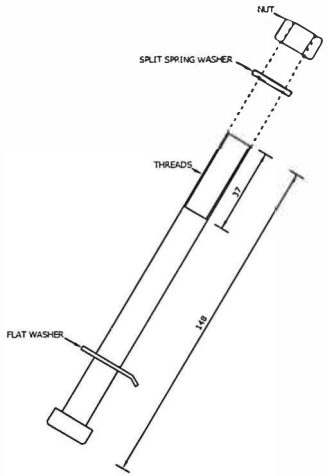


END ELEVATION
MATERIAL : HIGH COPPER CONTENT ALLOY TINNED

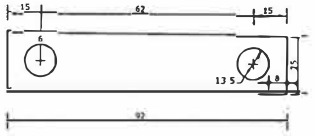
END ELEVATION



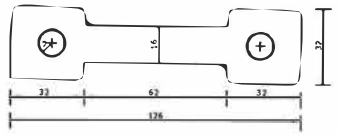
MATERIAL : COPPER SILVER COATED
PLAN OF ITEM D
CODE 114853



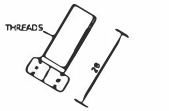
BOLT AND NUT OF ITEM A
MATERIAL : GALVANIZED MILD STEEL

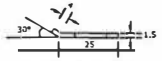


PLAN OF DETAIL E

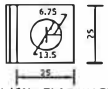


PLAN OF DETAIL F

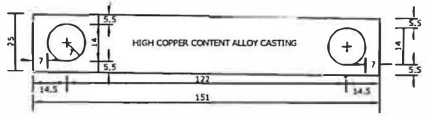




END ELEVATION



PLAN (6No FLAT WASHERS)
MATERIAL : GALVANIZED MILD STEEL



ITEM B
MATERIAL : COPPER TINNED FOIL 0.5mm THICK
No REQUIRED 32 TOTAL

NOTE
-MATERIAL : HIGH COPPER CONTENT ALLOY CASTING
-DIMENSIONS IN MM U.O.S

	DATE	SIGN
APPROVED		
CHECKED ENGINEER I/C		
CHECKED HEAD D'MAN		
CHECKED DRAUGHTSMAN		
DRAWN	MARCH 2016	DENNIS .W
SURVEYED		
TRACED		

REF	REVISION	DATE	SIGN	CHECKED	SIGN
1					
2					
3					
4					
5					
6					

DETAILS OF EXPANSION CLAMPS FOR 3" O.D. Cu TUBES (CODE 114853)

SCALE : FULL SIZE

SHEET 6

K.P.&.L CO. LTD.

SK.NO.08605