

SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS FOR 220KV

S.No	DESCRIPTION		220 KV
1	Type/Installation	:	"DB" Double Break - OUTDOOR
2	Manufacturer's Name and country of manufacture	:	GR POWER SWITCHGEAR LTD., HYDERABAD
3	Standards according to which the isolators are manufactured.	:	IS : 9921 Part I to V.
4	Maximum design voltage at which the isolator can operate (kV).	:	245 KV
5	Frequency (Hz)	:	50 Hz
6	Rated voltage (kV)	:	220KV
7	Maximum current that can be safely interrupted by the Isolator inductive (A & % PF) Capacitive (A & % PF)	:	0.7 Amps at 0.15 p.f.
8	Continuous current rating normal (Amps) under site conditions (Amps).	:	800/1250/1600/2000/2500 Amps
9	Rated short time current		<u>MAIN SWITCH/ EARTH SWITCH</u>
	i) For 3 Seconds (kA rms)	:	40 KA rms
	ii) For 1 Second (kA rms)	:	Not Applicable
	iii) Rated peak short time current (KV P)	:	100 KA rms
10	Current density at the minimum cross section of		
	a) Moving blade (Amps/Sq.mm)	:	2.0 Amps/Sq.mm for HDE Cu. Tube
	b) Terminal pad	:	1.0 Amp/Sq.mm for EC grade Alu. Flat.
	c) Contacts	:	1.6 Amps/Sq.mm for HDE Cu. Flat.
	d) Terminal connector	:	1.0 Amps/Sq.mm for Alu. Alloy.
11	Maximum temperature rise of current carrying parts when carrying rated current continuously (Deg.C).	:	Within the specified limits of IS - 9921 Part II.
12	Derating factor for specified site conditions	:	Unity
13	Insulation levels		
	i) Impulse withstand voltage (kV Peak) Phase to Earth Isolating Distance.	:	1050 KV Peak
	ii) Switching surge withstand voltage (kV Peak) Phase to Earth isolating distance.	:	Not applicable

S.No	DESCRIPTION		220 KV
	iii) Power Frequency withstand voltage (kV rms) Phase to Earth isolating distance.	:	460 KV rms
14	Minimum clearance in air		
	i) Between poles (mm)	:	4000 mm for a phase spacing of 4500 mm
	ii) Between live parts and earth (mm)	:	2100 mm
	iii) Between live parts when switch is open.		
	a) On the same pole (mm)	:	2800 mm
	b) Between adjacent poles (mm)	:	3000 mm
15	Rated mechanical terminal load		
	i) Load along the terminal connector side (Kg).	:	102 Kgs
	ii) Load across the terminal connector side (Kg).	:	33.7 Kgs
16	Torque required to operate the switch in Kg.m.	:	40 Kg m
17	Contact Zone		
	i) Horizontal deflection (mm)		
	ii) Vertical deflection (mm)	:	Not applicable
	iii) Total amplitude of longitudinal movement w.r.t conductor supporting fixed contact		
18	Design and construction		
	i) No. of insulators per pole	:	Three
	ii) No. of breaks per pole	:	Two
	iii) Type of closing / opening mechanism (Horizontal / vertical break straight etc.).	:	Horizontal break for Isolator
	iv. Contacts		
	a) Material and grade	:	Hard Drawn Electrolytic Copper flat, silver plated of 10 to 15 micron thickness.
	b) Cross-sectional area (Sq.mm)	:	520 Sq.mm for 800A 780 Sq.mm for 1250A 1000 Sq.mm for 1600A 1300 Sq.mm for 2000A 1560 Sq.mm for 2500A
	v Moving blades		
	a) Material and grade	:	Hard Drawn Electrolytic Copper tube, silver plated of 10 to 15 micron thickness.

S.No	DESCRIPTION		220 KV
	b) Cross-sectional area (Sq.mm)	:	427 Sq.mm for 800A 650 Sq.mm for 1250A 855 Sq.mm for 1600A 1028 Sq.mm for 2000A 1275 Sq.mm for 2500A
vi)	Contact support		
	a) Material and size of channel / block.	:	6 mm Thick MS HDG
	b) Material and size of plate	:	8 mm thick MS HDG Plate
vii)	Rain hood-material grade and size	:	N.A
viii)	Turn and twist mechanism		
	a) Material and size of clamps	:	40 x 10 MS HDG Flat
	b) Material size of springs	:	14 swg SS wire
	c) Whether springs are encased	:	Not encased
ix)	Nuts and bolts		
	a) Size, material and grade in live parts.	:	Lessthan M8 are of stainless steel
	b) Size, material and grade in other parts.	:	M8 and above are of MS HDG.
x)	Insulator base plate material and size of plate below insulators.	:	10 mm thick M.S. Hot dip galvanised plate
xi)	Bearings		
	a) Material and size of housing	:	MS HDG / LM-6 Alu. Alloy suitable for 50 ID Ball Bearing
	b) No. of bearings, location & size	:	2 Nos. below centre rotating post insulator
xii)	Tandem pipe		
	a) Size, length class and No. of pipes	:	32NB GI pipe for Main Switch/ Earth Switch.
	b) Size of shackle screw	:	Suitable for 32 NB
	c) No. of bearings / bush and its material and size.	:	6 Nos. bush bearings, brass, 16 mm ID Size.
xiii)	Type of interlock	:	(i) Mechanical interlock between Isolator and Earth Switch. (ii) Electrical interlock between Isolator and circuit breaker.
xiv)	Down pipe size, length and class	:	50 mm NB GI Pipe.

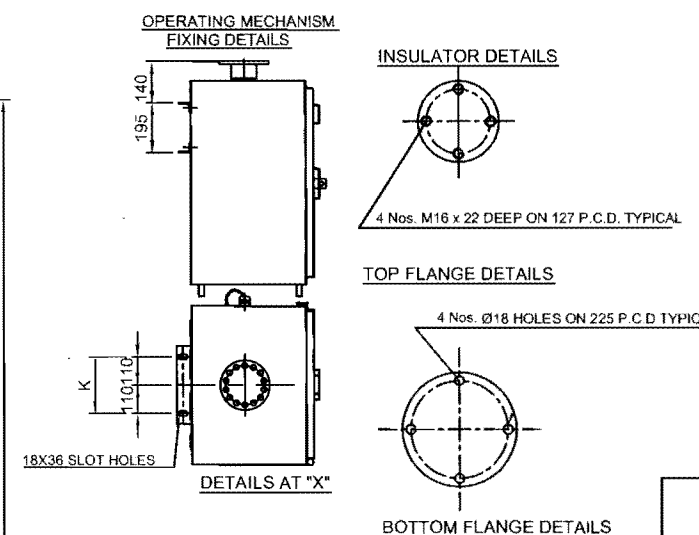
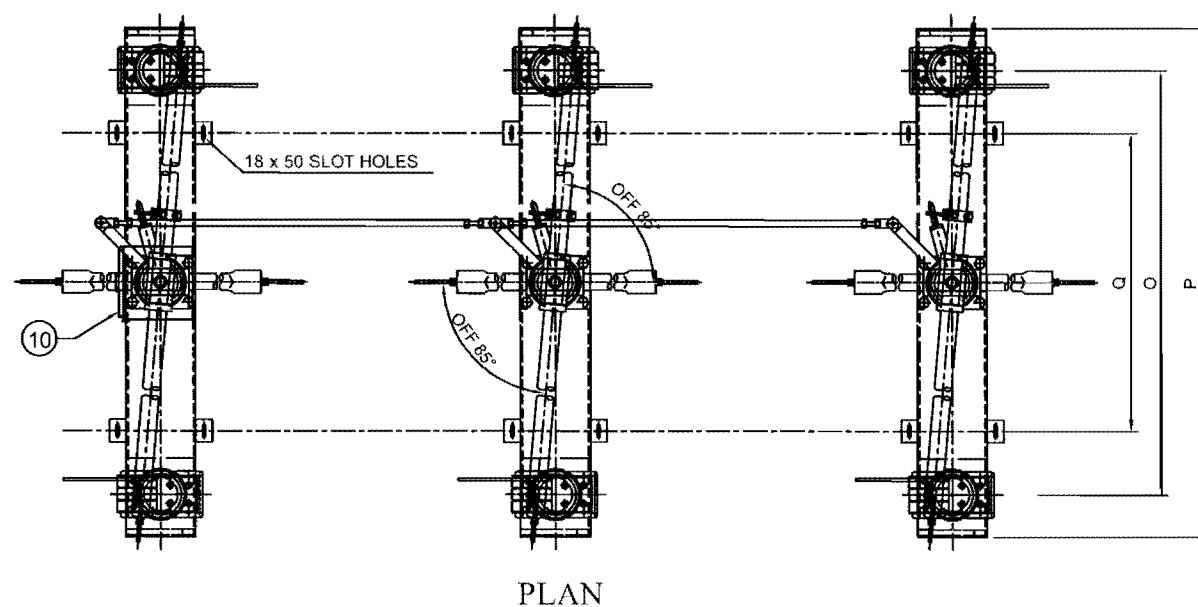
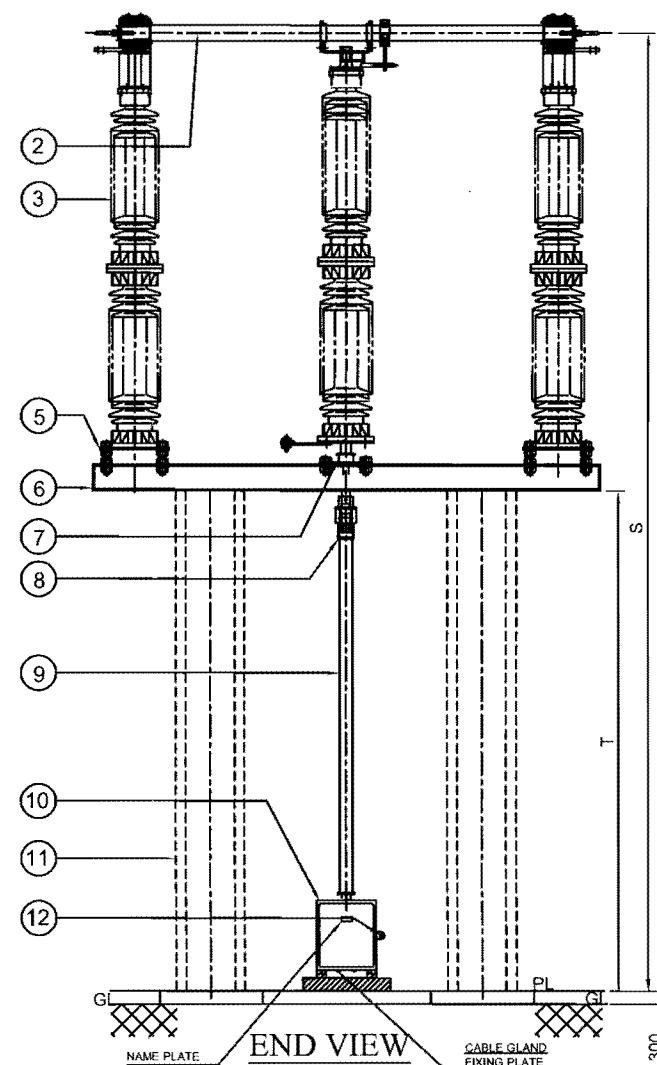
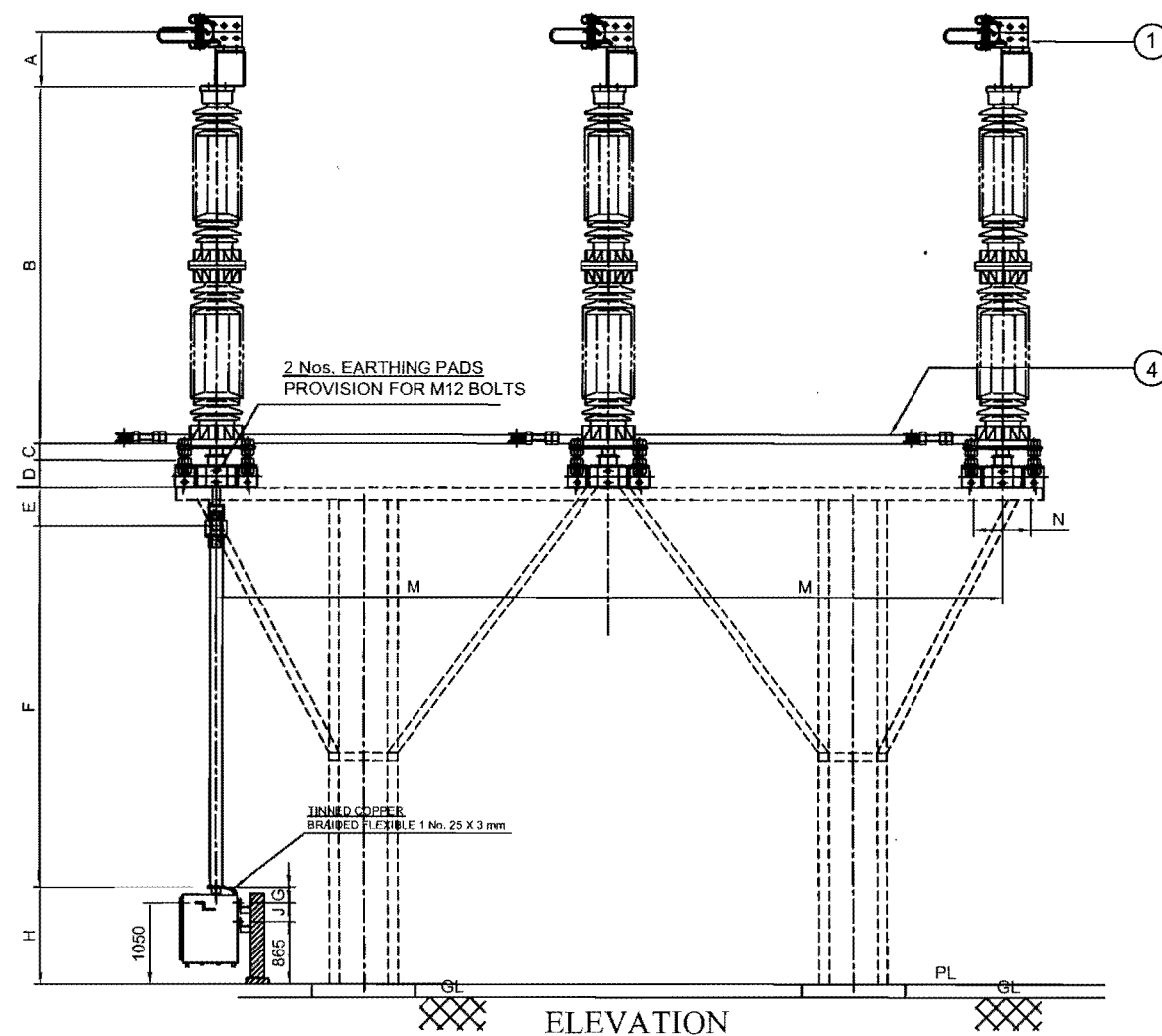
S.No	DESCRIPTION		220 KV
	xv) Type of universal/swivel joint		
	a) Between bearing & down pipe	:	Universal joint
	b) Between down pipe and operating mechanism.	:	Vernier Flange
	xvi) Operating mechanism		Motor operated mechanism for M.S. & Manual operated mechanism for E.S.
	a) Control cabinet		
	Material and thickness	:	2.64 Thick MS Sheet
	Degree of protection	:	IP : 55 as per IS 2147
	Type size and no. of cable glands.	:	Compression type, 2 Nos. 19 mm. (Contractor scope of supply)
	Whether removable gland plate provided.	:	Yes, removable gland plate provided.
	b) Make type, rating and Qty. of Motors	:	Ø3, 415v, 0.5 HP Motor
	Auxiliary blocks	:	12 NO / 12 NC contacts for Main Switch 6 NO / 6 NC contacts for Earth Switch Mini 10 A, 2 A DC breaking with 2A - 1 No.
	Terminal blocks	:	UBT-4
	Insulated Wires	:	660/1100 V grades, 2.5 Sq.mm PVC For Auxiliary Circuit and 2.5 Sq.mm for Power circuit
	HRC Fuse	:	Not Applicable, MCB's
	Space Heater	:	1 No. 230V AC. 80 Watts Kontakt / Ramana Electrical
	Interlocks	:	1 Set PSI / 20 Watts magnetic - 1 No.
	xvii) Base		
	a) Size of steel sections used	:	145 X 80 mm
	b) Overall size	:	3600 x 225 x 80 mm
	c) Total weight	:	52 Kgs approx

for GR POWER SWITCHGEAR LTD.,

AUTHORIZED SIGNATORY

APPROVED

S. B. Ramana
Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082



PART LIST:

1. FIXED CONTACT ASSEMBLY
2. MOVING CONTACT ASSEMBLY
3. INSULATOR STACK (NOT IN OUR SCOPE OF SUPPLY)
4. TANDEM PIPE (32 NB, G.I. PIPE)
5. ELEVATOR PLATE (8 mm THICK WITH 16 mm STUDS)
6. BASE CHANNEL (145 x 80 x 4 mm THICK BOX CHANNEL)
7. ROTATING SHAFT WITH LEVER ARM & CLAMP
(M.S. HOT DIP GALVANIZED)
8. UNIVERSAL JOINT ARRANGEMENT
9. DOWN OPERATING PIPE (50 NB, G.I. PIPE)
10. OPERATING MECHANISM FOR M.S. (MOTOR)
11. SUPPORTING STRUCTURE (NOT IN OUR SCOPE OF SUPPLY)
12. PROVISION FOR PADLOCK

BOQ

6 Nos.
3 Nos.
9 Nos.
1 No.
6 Nos.
3 Nos.
3 Nos.
1 No.
1 No.
1 No.
1 Set.
1 No.

REFERENCE DRAWINGS:

FOR ISOLATOR CONTACT DETAILS (800A)	4. RM TS 04
FOR ISOLATOR CONTACT DETAILS (1250A)	4. RM TS 05
FOR ISOLATOR CONTACT DETAILS (1600A)	4. RM TS 06
FOR ISOLATOR CONTACT DETAILS (2000A)	4. RM TS 07
FOR ISOLATOR CONTACT DETAILS (2500A)	4. RM TS 08
FOR OPERATING MECHANISM DETAILS (M.S.)	4. M TS 10
FOR SCHEMATIC DIAGRAM DETAILS (M.S.)	4. M TS 11
FOR NAME PLATED DETAILS	4. Z TS 13

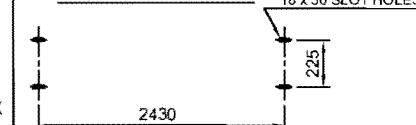
NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED AS PER IS : 2633 & 2629
3. ALL NON-FERROUS CONTACT POINTS ARE SILVER PLATED (10 TO 15 MICRONS)
4. THE INDICATED DIMENSIONS ARE SUBJECT TO THE
MANUFACTURING TOLERANCE:
UP TO 50 mm $\pm 3\%$; 51 TO 100 mm $\pm 2\%$;
101 TO 300 mm $\pm 1\%$; ABOVE 300 mm $\pm 0.5\%$;
5. SHORT TIME CURRENT RATING 40 KA rms. FOR 3 Sec.
6. MIN. CREEPAGE DISTANCE : 6125 mm
7. APPLICABLE STANDARD : IS:9921 PART I TO V
8. ROTATING STOOL BASE HAVING 2 Nos. SEALED BALL BEARINGS OF ADEQUATE SIZE
9. INSULATOR BOTTOM 225 P.C.D. AND TOP 127 P.C.D.
10. SUPPORT STRUCTURE & INSULATORS INCLUDING FIXING HARDWARE NOT IN OUR SCOPE OF SUPPLY

ELECTRICAL PARAMETERS

1. NOMINAL SYSTEM VOLTAGE : 220 kV
2. HIGHEST SYSTEM VOLTAGE : 245 kV
3. P.F. WITHSTAND VOLTAGE : 460 kV rms
4. IMPULSE WITHSTAND VOLTAGE : 1050 kV PEAK

BASE FIXING DETAILS



WEIGHT:

NET WEIGHT OF THE ISOLATOR MATERIALS
EXCLUDING INSULATOR : 800 Kg. (Approx.)

APPROVED

Chief Engineer, Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082

REVISIONS

D C B A

TITLE:

G.A. OF 220 kV, 2500 / 2000 / 1600 / 1250 / 800 AMPS,
TP, HDB, RT, ISOLATOR WITH OUT E.S.

SCALE:N.T.S

DATE 26-05-2016

DRAWN

CHECKED

APPROVED

DRG.NO:

3. GR TS 01



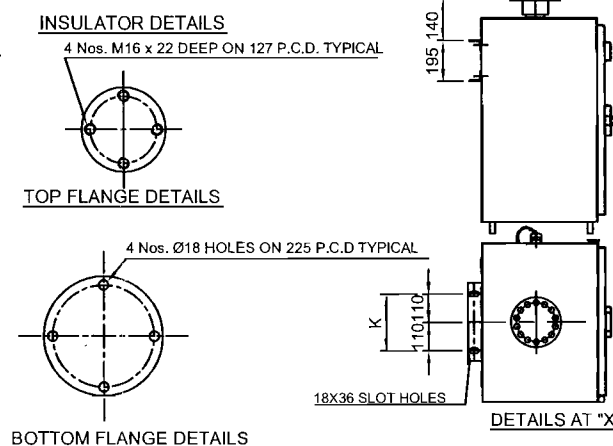
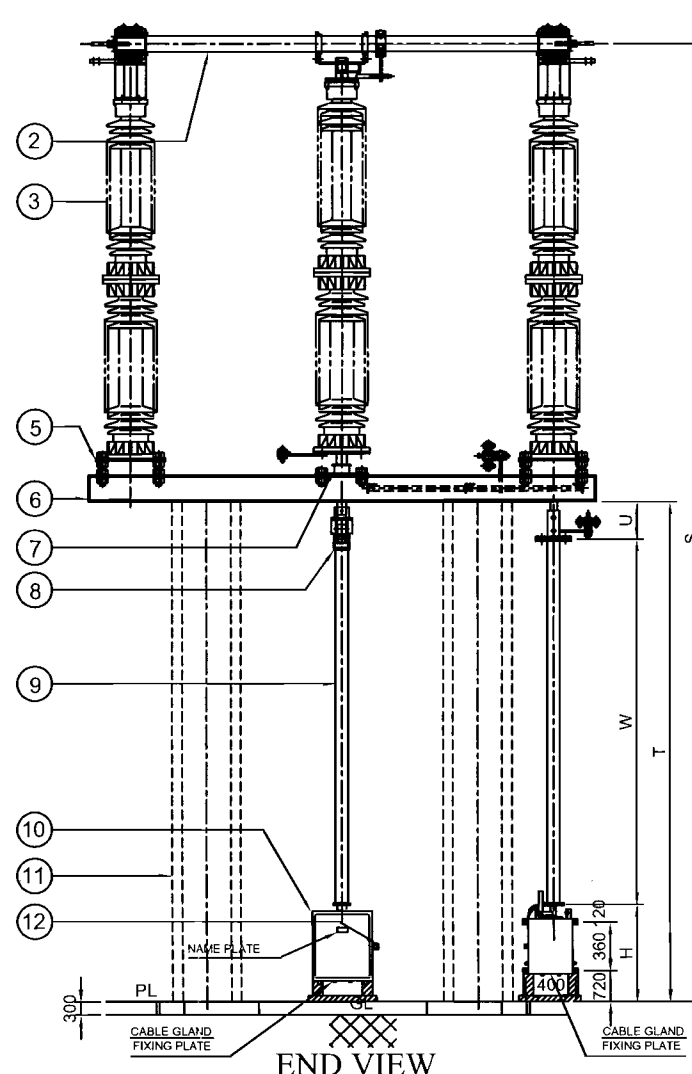
GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA

REV

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DIMENSIONSN

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
175	2300	75	80	205	1465	140	1200	NA	195	220	NA	4500	225	3200	3600	2430	NA	5500	2870	NA	NA	NA	NA

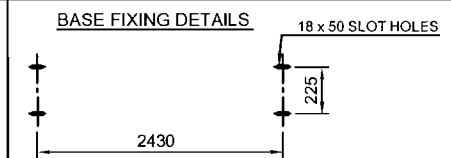


PART LIST:	BOQ
1. FIXED CONTACT ASSEMBLY	6 Nos.
2. MOVING CONTACT ASSEMBLY	3 Nos.
3. INSULATOR STACK (NOT IN OUR SCOPE OF SUPPLY)	9 Nos.
4. TANDEM PIPE (32 NB, G.I. PIPE)	1 No.
5. ELEVATOR PLATE (8 mm THICK WITH 16 mm STUDS)	6 Nos.
6. BASE CHANNEL (145 x 80 x 4 mm THICK BOX CHANNEL)	3 Nos.
7. ROTATING SHAFT WITH LEVER ARM & CLAMP (M.S. HOT DIP GALVANIZED)	3 Nos.
8. UNIVERSAL JOINT ARRANGEMENT	1 No.
9. DOWN OPERATING PIPE (50 NB, G.I. PIPE)	1 No.
10. OPERATING MECHANISM FOR M.S. (MOTOR)	1 No.
11. SUPPORTING STRUCTURE (NOT IN OUR SCOPE OF SUPPLY)	1 Set.
12. PROVISION FOR PADLOCK	2 Nos.
13. E.S. FIXED CONTACT ASSEMBLY	3 Nos.
14. E.S. MOVING CONTACT ASSEMBLY	3 Nos.
15. E.S. TANDEM PIPE (32 NB, G.I. PIPE)	1 No.
16. COUNTER WEIGHT	3 Nos.
17. TOP OPERATING MECHANISM FOR E.S.	3 Nos.
18. E.S. DOWN OPERATING PIPE (50 NB, G.I. PIPE)	1 No.
19. OPERATING MECHANISM FOR E.S. (MANUAL)	1 No.
20. MECHANICAL INTERLOCK BETWEEN M.S. & E.S.	1 No.
21. AUX. TANDEM PIPE (32 NB G.I. PIPE)	1 No.

REFERENCE DRAWINGS:	
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FOR ISOLATOR CONTACT DETAILS (1250A) -----	4. RM TS 05
FOR ISOLATOR CONTACT DETAILS (1600A) -----	4. RM TS 06
FOR ISOLATOR CONTACT DETAILS (2000A) -----	4. RM TS 07
FOR ISOLATOR CONTACT DETAILS (2500A) -----	4. RM TS 08
FOR EARTH SWITCH CONTACT DETAILS -----	4. RE TS 09
FOR OPERATING MECHANISM DETAILS (M.S.) -----	4. M TS 10
FOR SCHEMATIC DIAGRAM DETAILS (M.S.) -----	4. M TS 11
FOR OPERATING MECHANISM DETAILS (E.S) -----	4. N TS 12
FOR NAME PLATED DETAILS -----	4. Z TS 13
FOR MECHANICAL INTERLOCK DETAILS -----	4. Z TS 14

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED AS PER IS : 2633 & 2629
3. ALL NON-FERROUS CONTACT POINTS ARE SILVER PLATED (10 TO 15 MICRONS)
4. THE INDICATED DIMENSIONS ARE SUBJECTED TO THE
MANUFACTURING TOLERANCE:
UP TO 50 mm --- $\pm 3\%$; 51 TO 100 mm --- $\pm 2\%$;
101 TO 300 mm --- $\pm 1\%$; ABOVE 300 mm --- $\pm 0.5\%$;
5. SHORT TIME CURRENT RATING 40 KA rms. FOR 3 Sec.
6. MIN. CREEPAGE DISTANCE : 6125 mm
7. APPLICABLE STANDARD : IS:9921 PART I TO V
8. ROTATING STOOL BASE HAVING 2 Nos. SEALED BALL BEARINGS OF ADEQUATE SIZE
9. INSULATOR BOTTOM 225 P.C.D. AND TOP 127 P.C.D.
10. SUPPORT STRUCTURE & INSULATORS INCLUDING FIXING HARDWARE NOT IN OUR SCOPE OF SUPPLY

1. NOMINAL SYSTEM VOLTAGE	:	220 kV
2. HIGHEST SYSTEM VOLTAGE	:	245 kV
3. P.F. WITHSTAND VOLTAGE	:	460 kV rms
4. IMPULSE WITHSTAND VOLTAGE	:	1050 kV PEAK







NET WEIGHT OF THE ISOLATOR MATERIALS
EXCLUDING INSULATOR : 950 Kg . (Approx.)

APPROVED

S. S. Ramu
Chief Engineer, Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082

REVISIONS			
D	C	B	

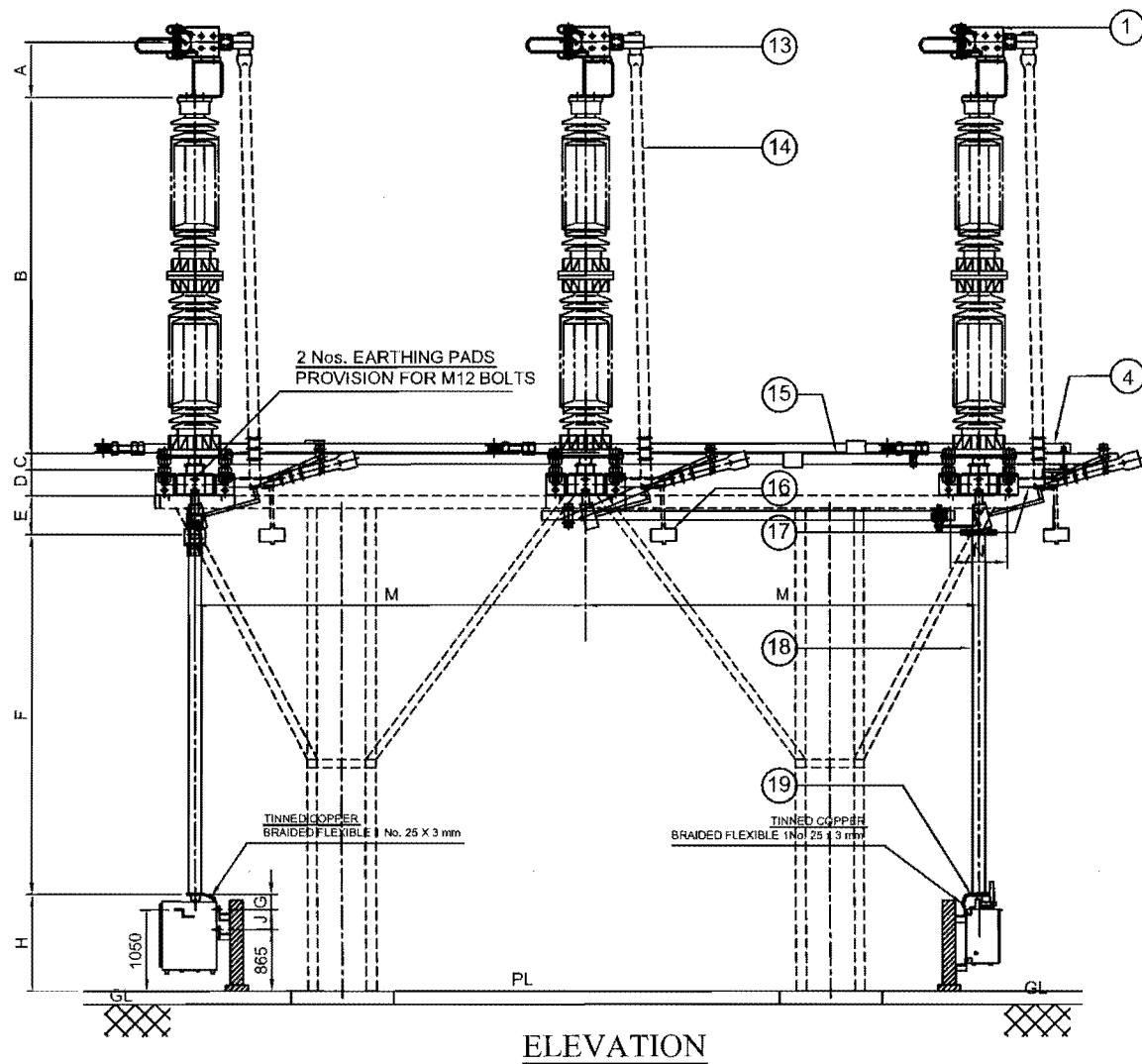
A	G.A. OF 220 kV, 2500 / 2000 / 1600 / 1250 / 800 A, TP, HDB, RT, ISOLATOR WITH ONE E.S.
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SCALE: N.T.S		
DATE	26 - 05 - 2016	
DRAWN		
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DRG.NO:		REV
3. GR TS 02		A

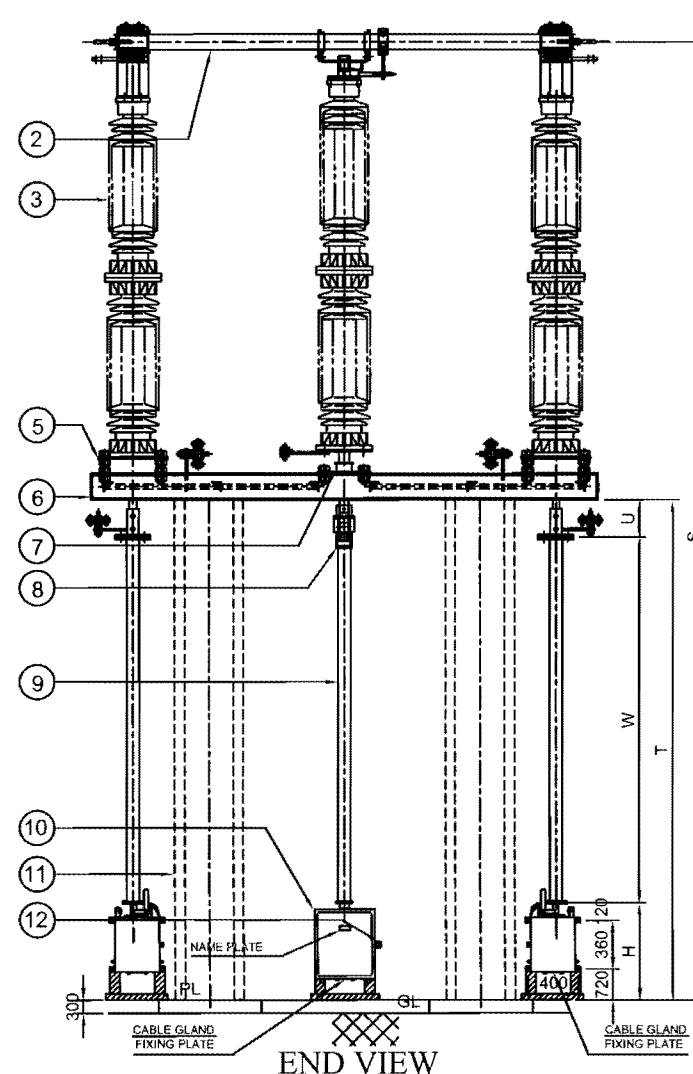


**GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA**

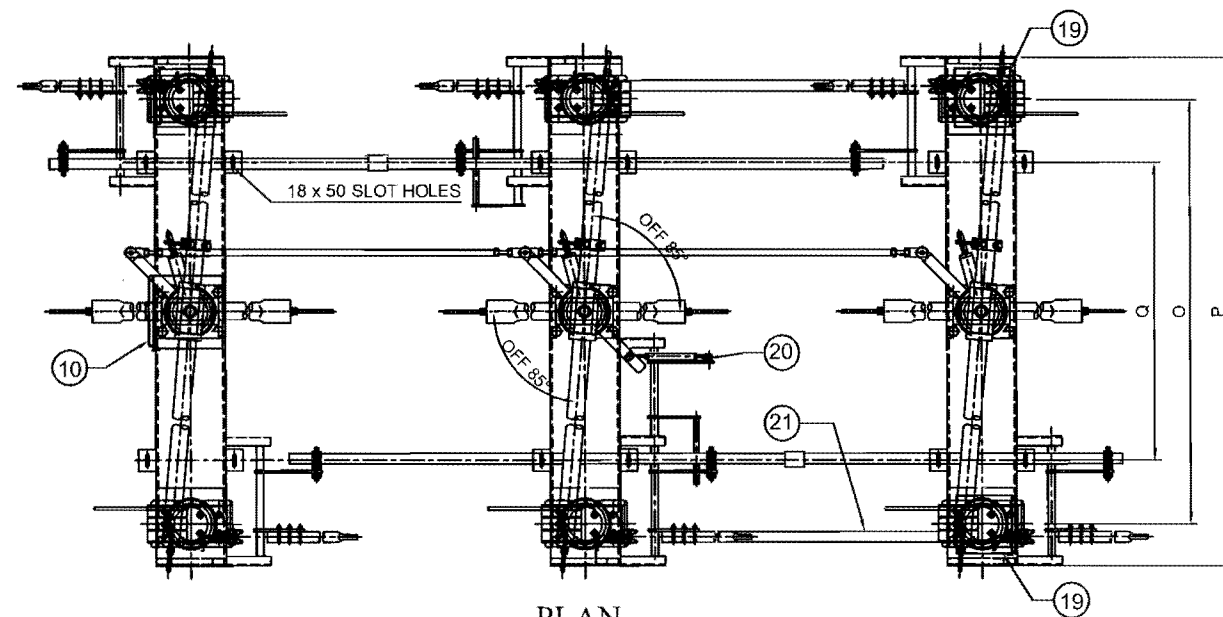
DIMENSIO S N S																							
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
175	2300	75	80	205	1465	140	1200	NA	195	220	NA	4500	225	3200	3600	2430	NA	5500	2870	175	NA	1495	NA



ELEVATION



END VIEW



PLAN

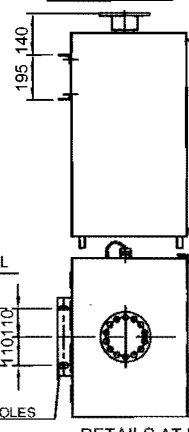
INSULATOR DETAILS
4 Nos. M16 x 22 DEEP ON 127 P.C.D. TYPICAL

TOP FLANGE DETAILS

4 Nos. Ø18 HOLES ON 225 P.C.D. TYPICAL

BOTTOM FLANGE DETAILS

OPERATING MECHANISM
FIXING DETAILS



DETAILS AT "X"

PART LIST:

- FIXED CONTACT ASSEMBLY
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- INSULATOR STACK (NOT IN OUR SCOPE OF SUPPLY)
- TANDEM PIPE (32 NB, G.I. PIPE)
- ELEVATOR PLATE (8 mm THICK WITH 16 mm STUDS)
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- UNIVERSAL JOINT ARRANGEMENT
- DOWN OPERATING PIPE (50 NB, G.I. PIPE)
- OPERATING MECHANISM FOR M.S. (MOTOR)
- SUPPORTING STRUCTURE (NOT IN OUR SCOPE OF SUPPLY)
- PROVISION FOR PADLOCK
- E.S. FIXED CONTACT ASSEMBLY
- E.S. MOVING CONTACT ASSEMBLY
- E.S. TANDEM PIPE (32 NB, G.I. PIPE)
- COUNTER WEIGHT
- TOP OPERATING MECHANISM FOR E.S.
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- OPERATING MECHANISM FOR E.S. (MANUAL)
- MECHANICAL INTERLOCK BETWEEN M.S. & E.S.

BOQ

6 Nos.
3 Nos.
9 Nos.
1 No.
6 Nos.
3 Nos.
3 Nos.
1 No.
1 No.
1 No.
1 Set.
3 Nos.
6 Nos.
6 Nos.
2 Nos.
6 Nos.
2 Nos.
2 Nos.
2 Nos.

REFERENCE DRAWINGS:

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FOR ISOLATOR CONTACT DETAILS (2000A)	4. RM TS 07
FOR ISOLATOR CONTACT DETAILS (2500A)	4. RM TS 08
FOR EARTH SWITCH CONTACT DETAILS	4. RE TS 09
FOR OPERATING MECHANISM DETAILS (M.S.)	4. M TS 10
FOR SCHEMATIC DIAGRAM DETAILS (M.S.)	4. M TS 11
FOR OPERATING MECHANISM DETAILS (E.S.)	4. N TS 12
FOR NAME PLATED DETAILS	4. Z TS 13
FOR MECHANICAL INTERLOCK DETAILS	4. Z TS 14

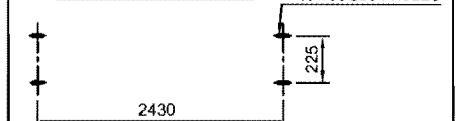
NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS
- ALL FERROUS PARTS ARE HOT DIP GALVANIZED AS PER IS : 2633 & 2629
- ALL NON-FERROUS CONTACT POINTS ARE SILVER PLATED (10 TO 15 MICRONS)
- THE INDICATED DIMENSIONS ARE SUBJECT TO THE MANUFACTURING TOLERANCE:
UP TO 50 mm $\pm 3\%$; 51 TO 100 mm $\pm 2\%$;
101 TO 300 mm $\pm 1\%$; ABOVE 300 mm $\pm 0.5\%$;
- SHORT TIME CURRENT RATING 40 KA ms. FOR 3 Sec.
- MIN. CREEPAGE DISTANCE : 6125 mm
- APPLICABLE STANDARD : IS:9921 PART I TO V
- ROTATING STOOL BASE HAVING 2 Nos. SEALED BALL BEARINGS OF ADEQUATE SIZE
- INSULATOR BOTTOM 225 P.C.D. AND TOP 127 P.C.D.
- SUPPORT STRUCTURE & INSULATORS INCLUDING FIXING HARDWARE NOT IN OUR SCOPE OF SUPPLY

ELECTRICAL PARAMETERS

1. NOMINAL SYSTEM VOLTAGE	: 220 kV
2. HIGHEST SYSTEM VOLTAGE	: 245 kV
3. P.F. WITHSTAND VOLTAGE	: 460 kV rms
4. IMPULSE WITHSTAND VOLTAGE	: 1050 kV PEAK

BASE FIXING DETAILS



WEIGHT:

NET WEIGHT OF THE ISOLATOR MATERIALS
EXCLUDING INSULATOR : 1100 Kg. (Approx.)

APPROVED

Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudha
HYDERABAD - 500 082

REVISIONS
D C B A

TITLE:

G.A. OF 220 kV, 2500 / 2000 / 1600 / 1250 / 800 A,
TP, HDB, RT, ISOLATOR WITH TWO E.S.

SCALE:N.T.S	26-05-2016
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DATE	26-05-2016
DRAWN	
CHECKED	
APPROVED	

DRG.NO:

3. GR TS 03



GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA

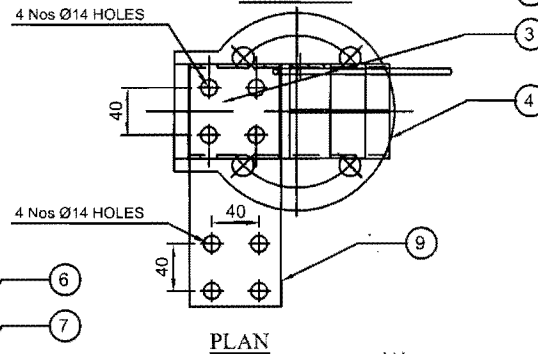
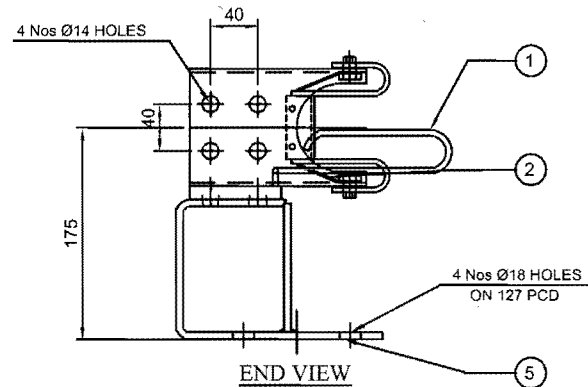
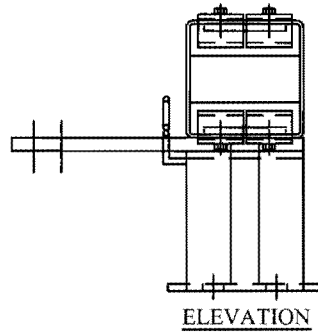
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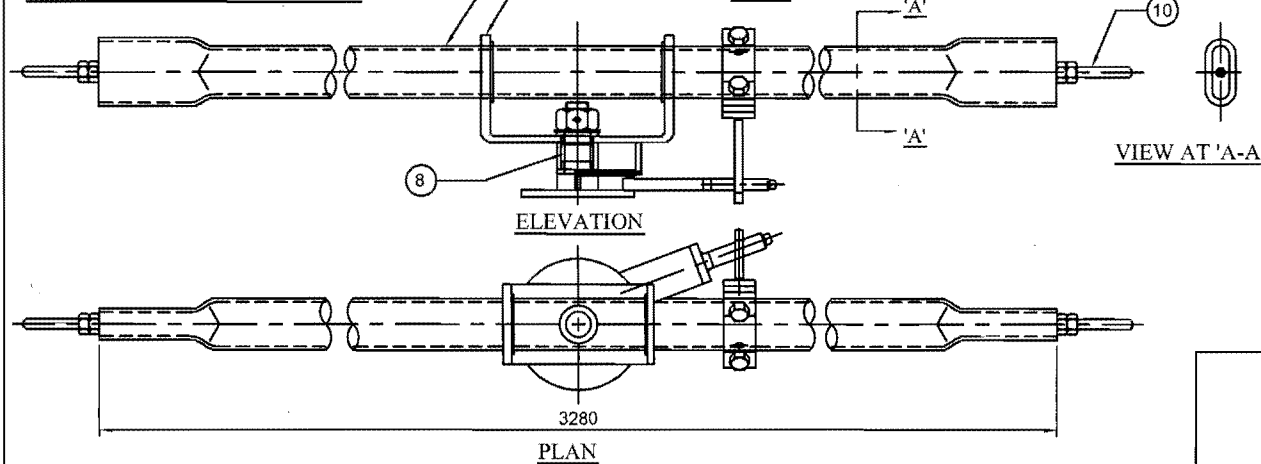
DIMENSIONS

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
175	2300	75	80	205	1465	140	1200	NA	195	220	NA	4500	225	3200	3600	2430	NA	5500	2870	175	NA	1495	NA

FIXED CONTACT ASSEMBLY:



MOVING CONTACT ASSEMBLY



PART LIST

	BOQ
1. ARCING HORN FOR FIXED CONTACT (Ø10 ROD M.S. HDG)	06 Nos
2. SPRINGS (STAINLESS STEEL)	12 Nos
3. CONTACT SUPPORT (Alu.)	06 Nos
4. CONTACT FINGER (65 x 4 HDECu. FLAT 2 Nos. SILVER PLATED)	12 Nos
5. SUPPORTING PLATE (6 mm THICK, M.S. HDG)	06 Nos
6. MOVING CONTACT ARM (38 OD x 30 ID CU. TUBE)	03 Nos
7. BEARING BLOCK	06 Nos
8. CENTER MECHANISM (M.S. HDG, TURN & TWIST MECHANISM)	03 Nos
9. TERMINAL PAD (75 x 12 AL FLAT)	06 Nos
10. ARCING HORN FOR MOVING CONTACT (Ø10 ROD M.S. HDG)	06 Nos

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETER
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED
3. ALL NON-FERROUS CONTACT POINTS ARE SILVER PLATED 10 TO 15 MICRONS REMAINING CONTACT AREA TIN PLATED.
4. THE MOVING CONTACT ASSEMBLY SHOWN FOR TURN & TWIST ASSEMBLY

APPROVED

S. S. Kumar
Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082

REVISIONS			
D	C	B	A

TITLE:

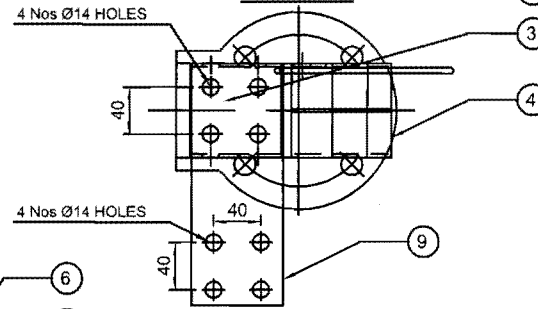
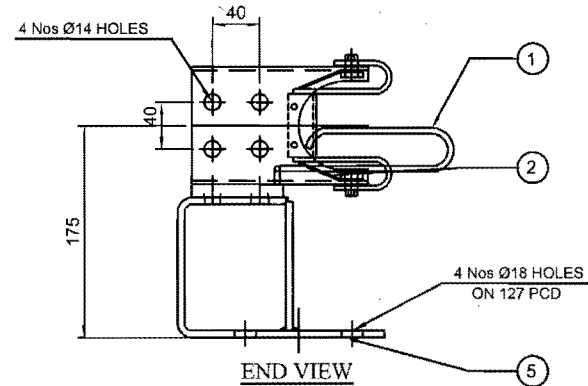
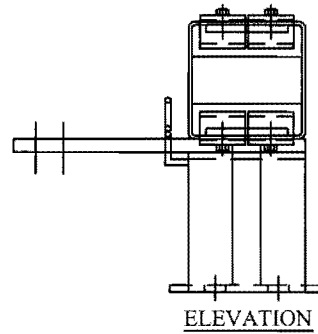
MAIN CONTACT ASSEMBLY
(FOR 220 kV 800 Amps)



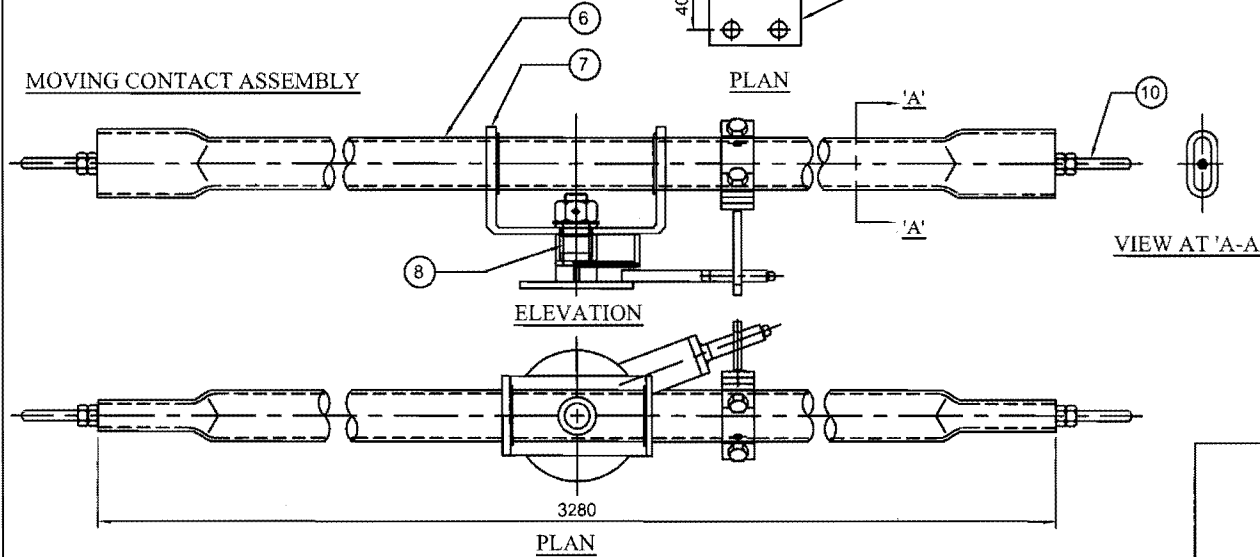
GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA

SCALE: N.T.S.	
DATE	26-05-2016
DRAWN	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>
DRG.NO:	4. GRM TS 04
REV	A

FIXED CONTACT ASSEMBLY:



MOVING CONTACT ASSEMBLY



PART LIST

	BOQ
1. ARCING HORN FOR FIXED CONTACT(Ø10 ROD M.S. HDG)	06 Nos
2. SPRINGS (STAINLESS STEEL)	12 Nos
3. CONTACT SUPPORT (Alu.)	06 Nos
4. CONTACT FINGER (65 x 6 HDECu. FLAT 2 Nos. SILVER PLATED)	12 Nos
5. SUPPORTING PLATE (6 mm THICK, M.S. HDG)	06 Nos
6. MOVING CONTACT ARM (50 OD x 41 ID CU. TUBE)	03 Nos
7. BEARING BLOCK	06 Nos
8. CENTER MECHANISM (M.S. HDG, TURN & TWIST MECHANISM)	03 Nos
9. TERMINAL PAD (100 x 12.5 AL FLAT)	06 Nos
10. ARCING HORN FOR MOVING CONTACT (Ø10 ROD M.S. HDG)	06 Nos

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETER
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED
3. ALL NON-FERROUS CONTACT POINTS ARE SILVER PLATED
10 TO 15 MICRONS REMAINING CONTACT AREA TIN PLATED.
4. THE MOVING CONTACT ASSEMBLY SHOWN FOR TURN & TWIST ASSEMBLY

APPROVED

S. S. Ravindra
Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudra,
HYDERABAD - 500 082

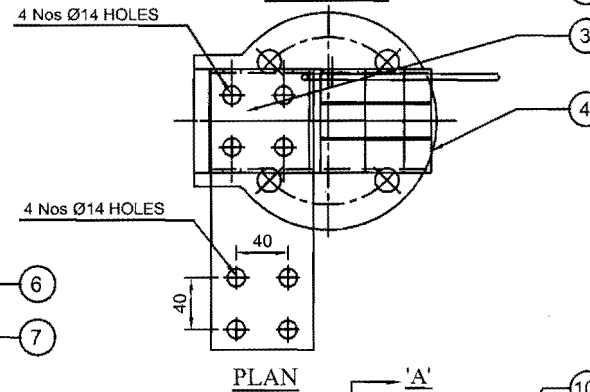
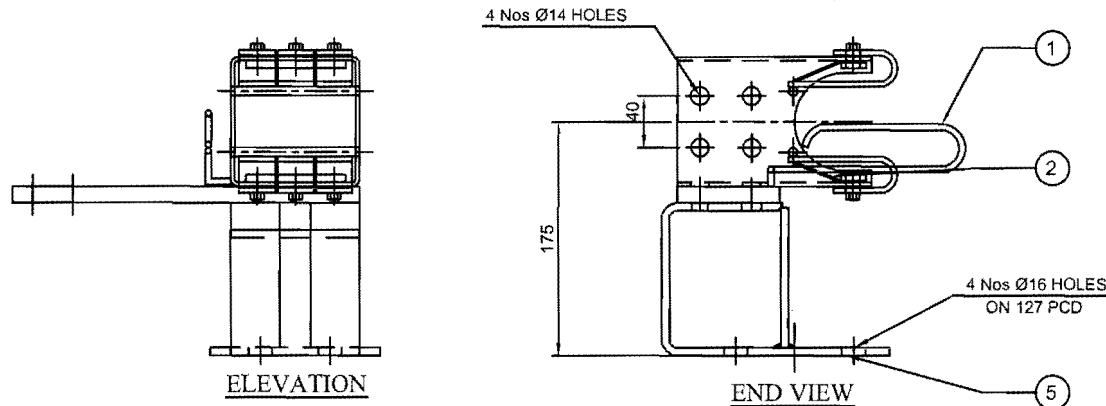
REVISIONS			
D	C	B	A

TITLE:	MAIN CONTACT ASSEMBLY (FOR 220 kV 1250 Amps)
SCALE:N.T.S	
DATE	26-05-2016
DRAWN	
CHECKED	
APPROVED	
DRG.NO:	4. GRM TS 05
REV	A

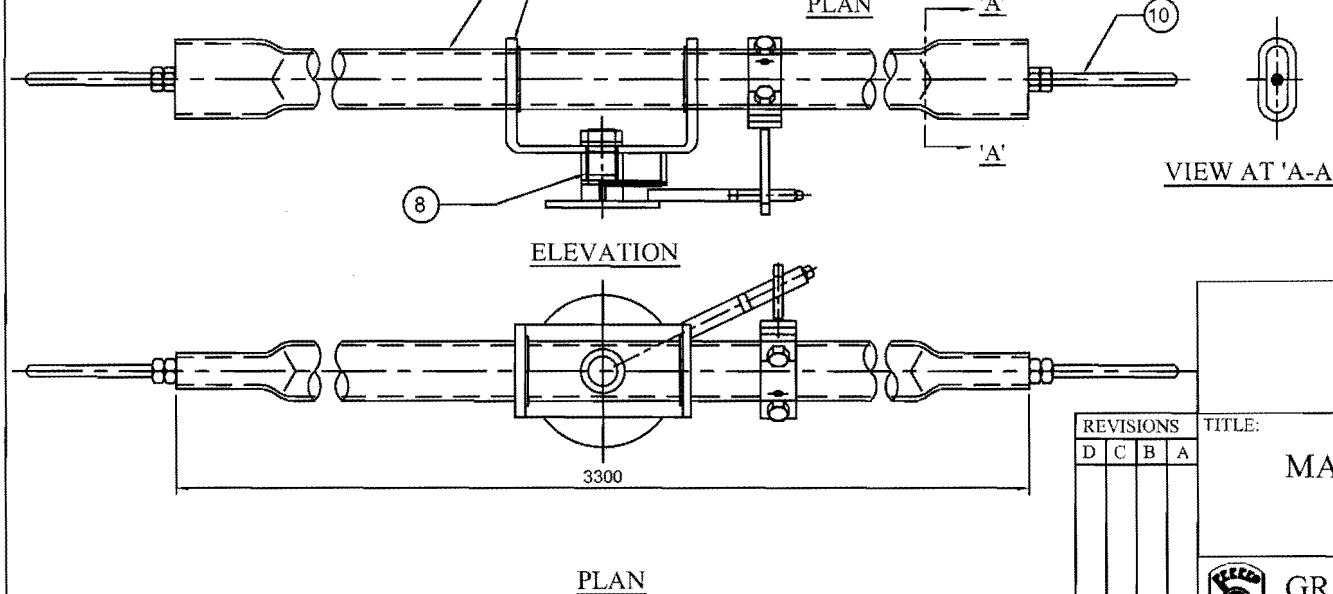


GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA

FIXED CONTACT ASSEMBLY:



MOVING CONTACT ASSEMBLY



PART LIST

	BOQ
1. ARCING HORN FOR FIXED CONTACT (Ø10 ROD M.S. HDG)	06 Nos
2. SPRINGS (STAINLESS STEEL)	12 Nos
3. CONTACT SUPPORT (Alu.)	06 Nos
4. CONTACT FINGER (100 x 5 HDECu. FLAT 2 Nos. SILVER PLATED)	12 Nos
5. SUPPORTING PLATE (6 mm THICK, M.S. HDG)	06 Nos
6. MOVING CONTACT ARM (65 OD x 56 ID CU. TUBE)	03 Nos
7. BEARING BLOCK	06 Nos
8. CENTER MECHANISM (M.S. HDG, TURN & TWIST MECHANISM)	03 Nos
9. TERMINAL PAD (100 x 16 AL FLAT)	06 Nos
10. ARCING HORN FOR MOVING CONTACT (Ø10 ROD M.S. HDG)	06 Nos

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETER
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED
3. ALL NON-FERROUS CONTACT POINTS ARE SILVER PLATED 10 TO 15 MICRONS REMAINING CONTACT AREA TIN PLATED.
4. THE MOVING CONTACT ASSEMBLY SHOWN FOR TURN & TWIST ASSEMBLY

APPROVED

S. K. Ram. Rao
Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082

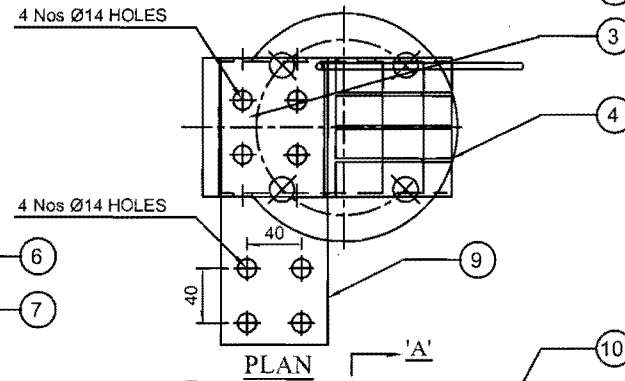
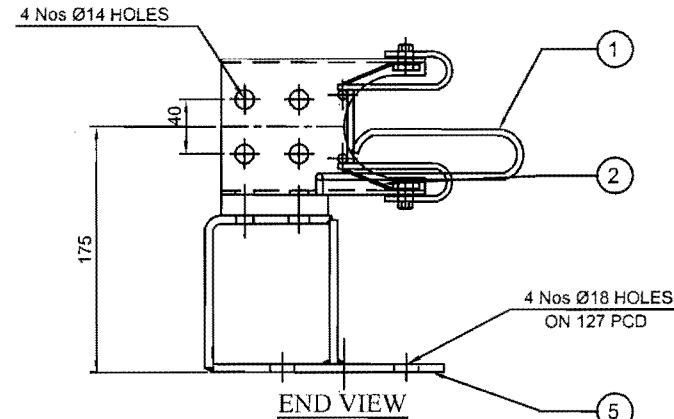
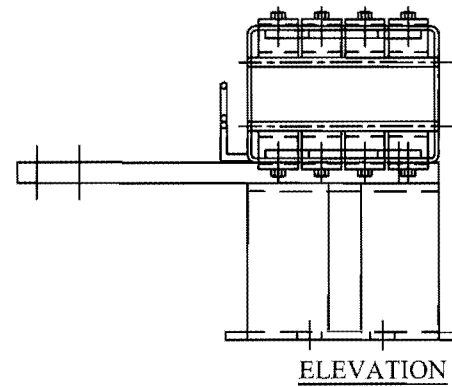
REVISIONS
D C B A

TITLE:	MAIN CONTACT ASSEMBLY (FOR 220 kV 1600 Amps)
SCALE: N.T.S.	DATE: 26-05-2016
DRAWN:	CHECKED:
APPROVED:	DRG.NO: 4. GRM TS 06
REV	A

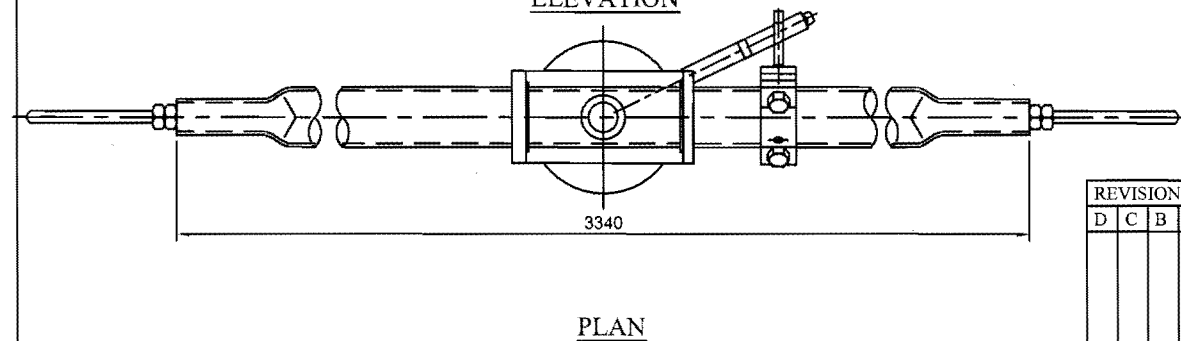
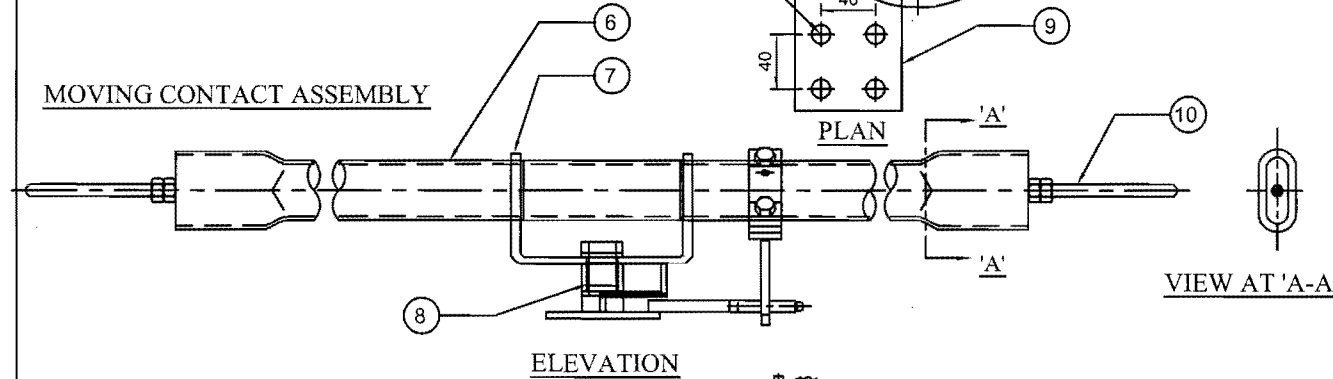


GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA

FIXED CONTACT ASSEMBLY:



MOVING CONTACT ASSEMBLY



PART LIST

	BOQ
1. ARCING HORN FOR FIXED CONTACT (Ø10 ROD M.S. HDG)	06 Nos
2. SPRINGS (STAINLESS STEEL)	24 Nos
3. CONTACT SUPPORT (Alu.)	06 Nos
4. CONTACT FINGER (65 x 5 HDECu. FLAT 4 Nos. SILVER PLATED)	24 Nos
5. SUPPORTING PLATE (6 mm THICK, M.S. HDG)	06 Nos
6. MOVING CONTACT ARM (65 OD x 54 ID CU. TUBE)	03 Nos
7. BEARING BLOCK	06 Nos
8. CENTER MECHANISM (M.S. HDG, TURN & TWIST MECHANISM)	03 Nos
9. TERMINAL PAD (100 x 20 AL FLAT)	06 Nos
10. ARCING HORN FOR MOVING CONTACT (Ø10 ROD M.S. HDG)	06 Nos

NOTE:

- ALL DIMENSIONS ARE IN MILLIMETER
- ALL FERROUS PARTS ARE HOT DIP GALVANIZED
- ALL NON-FERROUS CONTACT POINTS ARE SILVER PLATED 10 TO 15 MICRONS REMAINING CONTACT AREA TIN PLATED.
- THE MOVING CONTACT ASSEMBLY SHOWN FOR TURN & TWIST ASSEMBLY

APPROVED

Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082

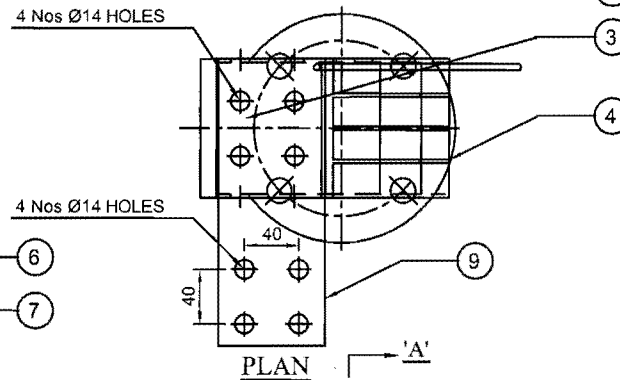
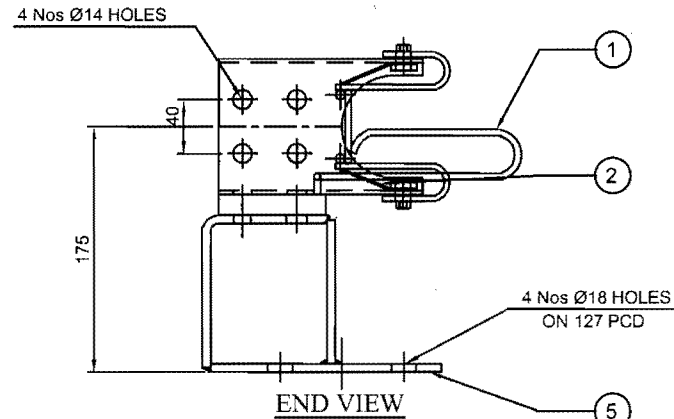
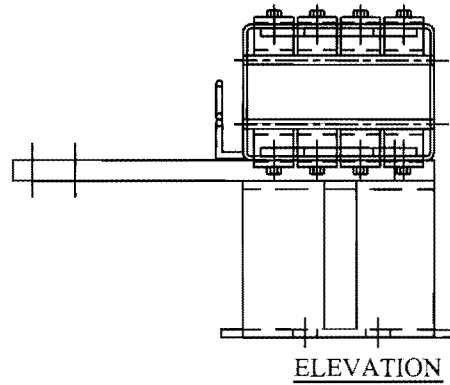
REVISIONS	D	C	B	A

TITLE:	MAIN CONTACT ASSEMBLY (FOR 220 kV 2000 Amps)
SCALE:N.T.S	DATE: 26-05-2016
DRAWN	CHECKED
APPROVED	DRG.NO: 4. GRM TS 07
REV	A

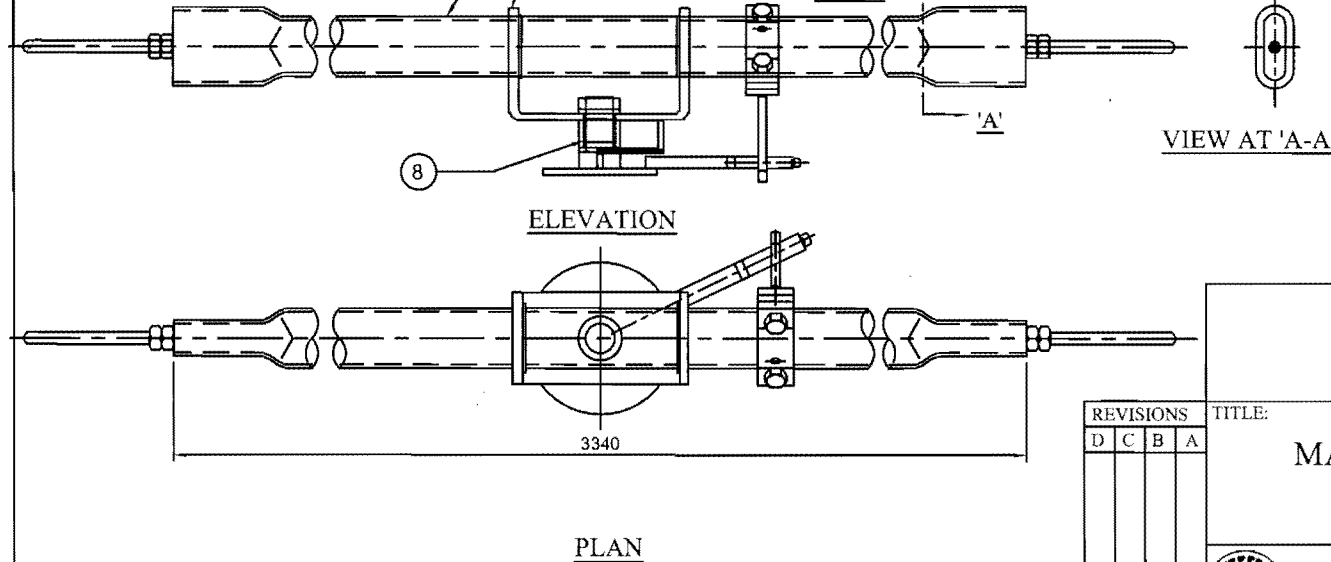


GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA

FIXED CONTACT ASSEMBLY:



MOVING CONTACT ASSEMBLY



PART LIST

1. ARCING HORN FOR FIXED CONTACT(Ø10 ROD M.S. HDG)	06 Nos
2. SPRINGS (STAINLESS STEEL)	24 Nos
3. CONTACT SUPPORT (Alu.)	06 Nos
4. CONTACT FINGER (65 x 6 HDECu. FLAT 4 Nos. SILVER PLATED)	24 Nos
5. SUPPORTING PLATE (6 mm THICK, M.S. HDG)	06 Nos
6. MOVING CONTACT ARM (65 OD x 51 ID CU. TUBE)	03 Nos
7. BEARING BLOCK	06 Nos
8. CENTER MECHANISM (M.S. HDG, TURN & TWIST MECHANISM)	03 Nos
9. TERMINAL PAD (100 x 25 AL FLAT)	06 Nos
10. ARCING HORN FOR MOVING CONTACT(Ø10 ROD M.S. HDG)	06 Nos

BOQ

06 Nos
24 Nos
06 Nos
24 Nos
06 Nos
03 Nos
06 Nos
03 Nos
06 Nos
06 Nos

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETER
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED
3. ALL NON-FERROUS CONTACT POINTS ARE SILVER PLATED
10 TO 15 MICRONS REMAINING CONTACT AREA TIN PLATED.
4. THE MOVING CONTACT ASSEMBLY SHOWN FOR TURN & TWIST ASSEMBLY

APPROVED

S. P. K. Roy
Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082

REVISIONS

D	C	B	A

TITLE:

MAIN CONTACT ASSEMBLY
(FOR 220 kV 2500 Amps)



GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA

SCALE:N.T.S

DATE	26 - 05 - 2016
DRAWN	
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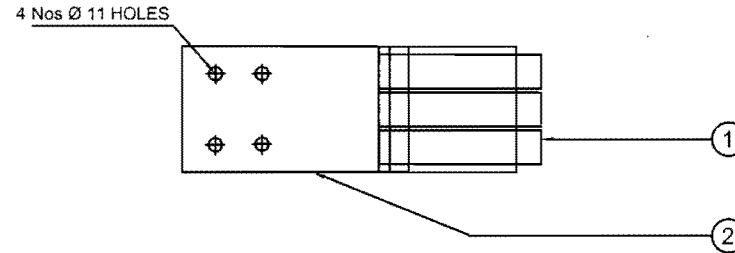
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4. GRM TS 08

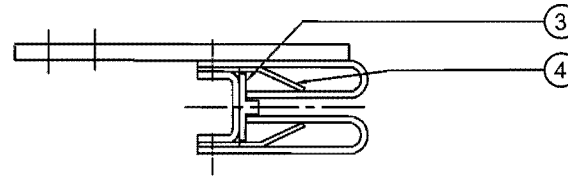
REV

A

FIXED CONTACT ASSEMBLY :

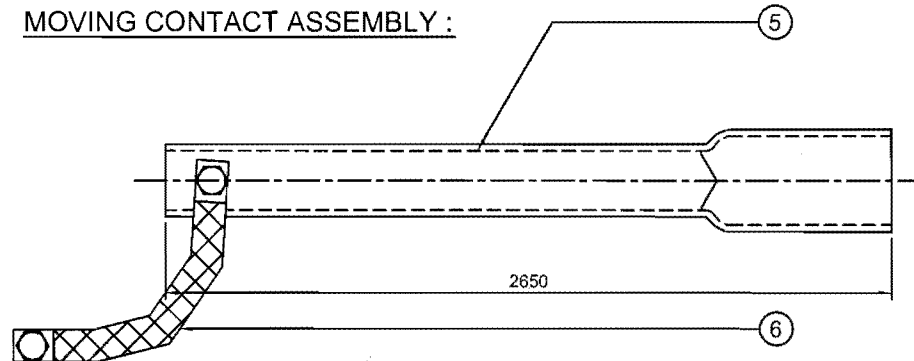


ELEVATION



PLAN

MOVING CONTACT ASSEMBLY :



PART LIST

1. JAWS (25 x 4 mm Cu. FLAT 3 PAIRS, SILVER PLATED)
2. F.C. SUPPORT PLATE (75 x 10 mm THK. Alu. FLAT)
3. SPACER (NYLON)
4. SPRING (STAINLESS STEEL)
5. MOVING CONTACT ARM (38 OD x 30 ID. CU . PIPE)
6. COPPER FLEXIBLE (25 x 3 mm, 350 mm LONG) 2 Nos.

BOQ

- | |
|--------|
| 18 Nos |
| 03 Nos |
| 03 Nos |
| 18 Nos |
| 03 Nos |
| 06 Nos |

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETER
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED
3. ALL NON FERROUS CONTACT POINTS ARE SILVER PLATED
10 TO 15 MICRONS REMAINING CONTACT AREA TIN PLATED

APPROVED

S. P. Rayappa
Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082

REVISIONS

D	C	B	A

TITLE:

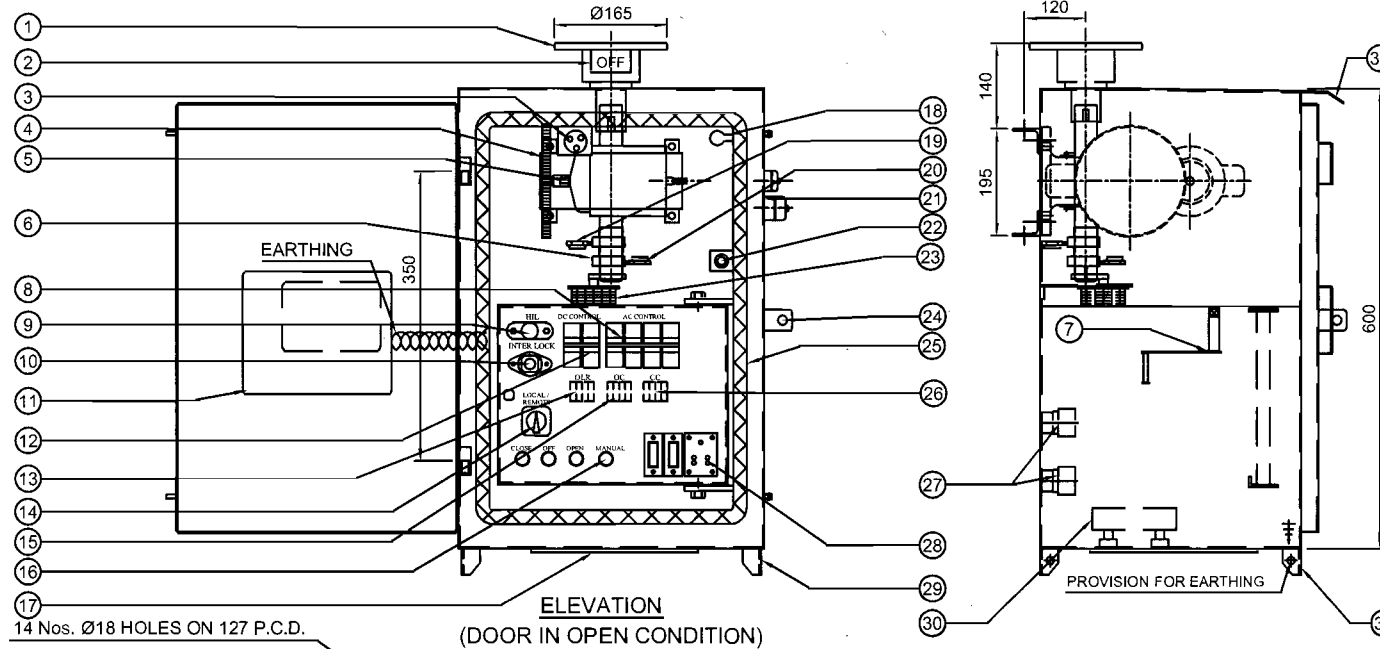
**EARTH SWITCH CONTACT
ASSEMBLY**
(FOR 220 kV EARTH SWITCH)



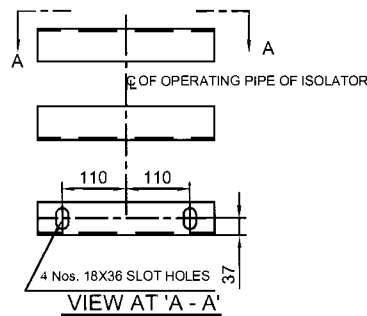
GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA

SCALE:N.T.S

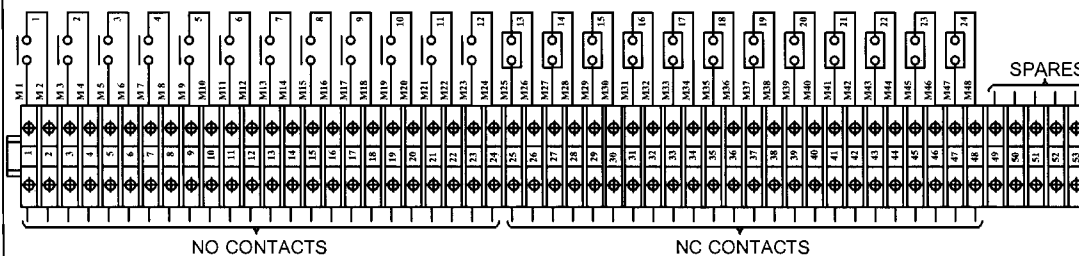
DATE	01 - 08 - 2014
DRAWN	<i>[Signature]</i>
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APPROVED	<i>[Signature]</i>
DRG.NO:	4. RE TS 09
REV	



FIXING DETAILS FOR SUPPORTING STRUCTURE

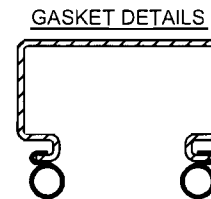


AUX. SWITCH CONTACT DETAILS FOR ISOLATOR (12 NO / 12 NC)



PLAN

LEFT SIDE VIEW (DOOR IN CLOSE CONDITION)



PART LIST:

- OUTPUT FLANGE (8 mm THICK, 14 HOLES)
- ON/OFF INDICATOR
- THERMOSTAT (30 TO 85°C RECOMMENDED SETTING 40°)
- GEAR BOX (SPUR / WORM & WORM SHAFT, RATIO 1 : 630)
(MATERIAL : EN8 / FORGED STEEL)
- MOTOR (Ø3, 415 Volts, 0.5 HP MOTOR)
- LIMIT SWITCH OPERATING CAM
- OPERATING HANDLE FIXED TO DOOR
- AC CONTROL SWITCH (4 POLE MCB) S1
- PUSH CAP (FOR HIL)
- HANDLE INTERLOCK (HIL)
- SCHEMATIC DIAGRAM PLATE
- DC CONTROL SWITCH (2 POLE MCB) S2
- OVER LOAD RELAY CUM SINGLE PHASE PREVENTOR (OLR)
- LOCAL/REMOTE SWITCH (S3)
- OPENING CONTACTOR (OC)
- OPEN / CLOSE / MANUAL / OFF PUSH BUTTON (PBO / PBC / PBH / EPB)
- DETACHABLE CABLE GLANDS FIXING PLATE (WITH OUT GLANDS)
- CUBICLE LAMP HOLDER
- LIMIT SWITCH (LSO)
- LIMIT SWITCH (LSC)
- CUBICLE WITH DOOR (2.64 mm THICK M.S SHEET)
- DOOR OPERATED LIGHT SWITCH (LS)
- AUX. SWITCH (12 NO + 12 NC)
- PROVISION FOR PAD LOCK
- RUBBER GASKET (EPDM)
- CLOSING CONTACTOR (CC)
- TERMINAL BLOCK (UBT - 4 TYPE OF ELMEX OR ITS EQUIVALENT)
- HEATER / POWER SOCKET SWITCHES (HS,PSS)
- BOX SUPPORT
- HEATER, 80 WATTS, 240 V
- MANUAL OPERATING CAP / COVER
- RAIN SHADE
- PROVISION FOR EARTHING TERMINALS

NOTE :

- ALL DIMENSIONS ARE IN MILLIMETERS
- CUBICLE WILL BE POWDER COATED WITH LIGHT GRAY SHADE NO : 631 OF IS : 5 FOR INSIDE AND OUTSIDE.
- DEGREE OF PROTECTION IP : 55 AS PER IS : 13947
- 20% SPARE TERMINALS WILL BE PROVIDED
- WIRING WILL BE DONE WITH 1100 V. GRADE
 - FOR POWER CIRCUIT (AC SUPPLY) : 2.5 Sq.MM Cu. STRANDED
 - FOR AUXILIARY CIRCUIT (DC SUPPLY) : 2.5 Sq.MM Cu. STRANDED P.V.C. INSULATED CONDUCTOR
- WEIGHT OF THE BOX : 80 Kg (Approx.)
- LUBRICATION OF GEARS : NON HARDENED GREASE FILLED GEAR BOX

APPROVED

S. A. K. R. V.
Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082

REVISIONS			
D	C	B	A

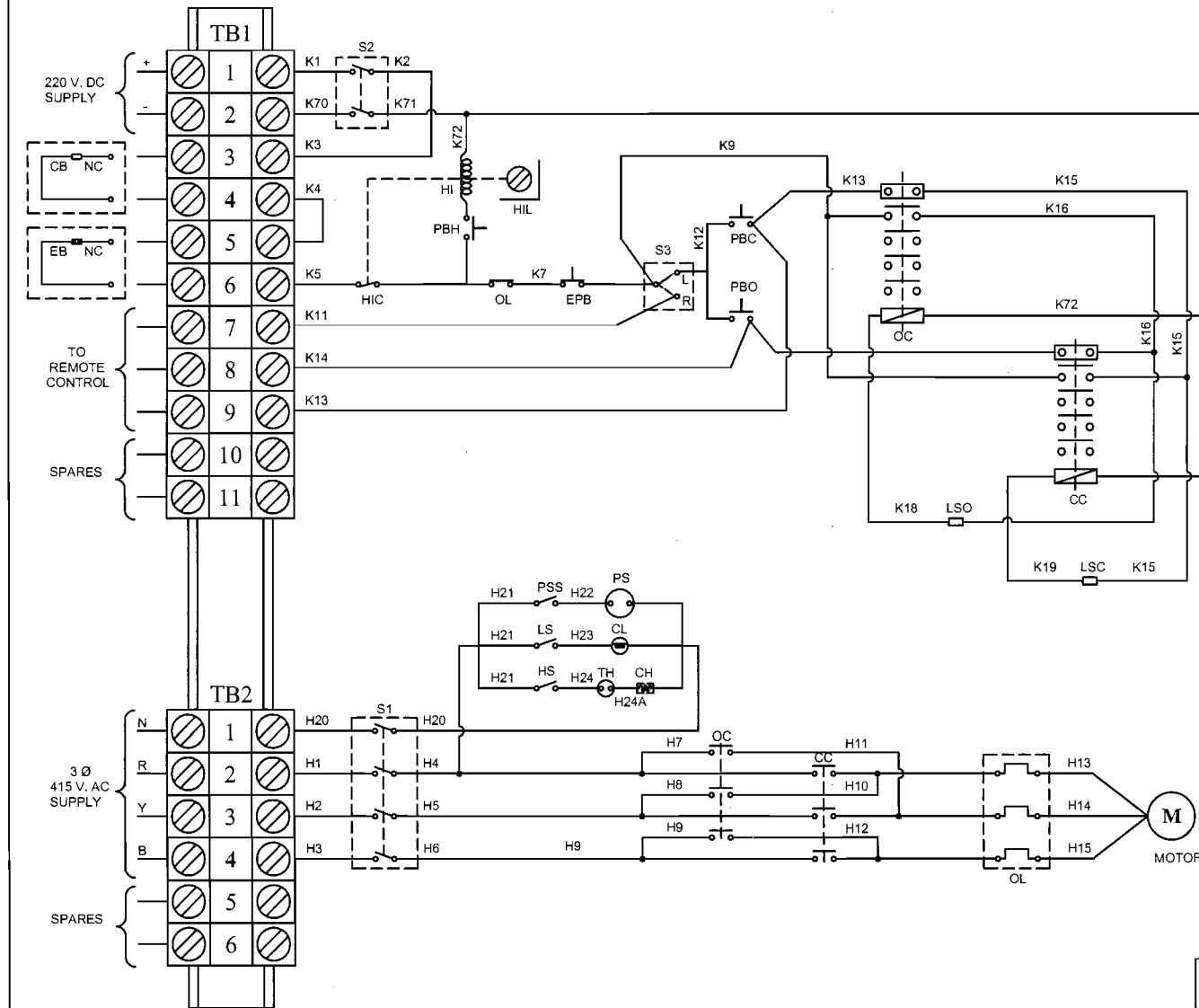
TITLE:

**GENERAL ARRANGEMENT OF MOTOR
OPERATING MECHANISM FOR 220 KV M/S.**



**GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA**

SCALE:N.T.S.	
DATE	01 - 08 - 2014
DRAWN	<i>[Signature]</i>
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APPROVED	<i>[Signature]</i>
DRG.NO:	4. M TS 10
REV	



LEGEND	DESCRIPTION	MAKE
HIC	HANDLE INTERLOCK CONTACT	SWITRON/RECOM
M	MOTOR 3Ø 415 V, 0.5 HP	REMI/ELECON/HEMAL/HINDUSTAN
CH	CUBICLE HEATER 80 WATTS	KONTACT/RAMANA ELECT.
S1	A.C. SUPPLY CONTROL SWITCH, 16 A MCB	SCHNEIDER/C&S/SIEMENS/CHINT
S2	D.C. SUPPLY CONTROL SWITCH, 10 A MCB	SCHNEIDER/C&S/SIEMENS/CHINT
S3	LOCAL/REMOTE SELECTOR SWITCH 16 A	SWITRON/RECOM
OC,CC	OPEN/CLOSE CONTACTORS, 7 A	SCHNEIDER/C&S/SIEMENS/CHINT
OL	OVER LOAD RELAY WITH SPP 1.0 TO 1.6 A	SCHNEIDER/C&S/SIEMENS/CHINT
PBO,PBC	OPEN/CLOSE PUSH BUTTONS, 4 A	C&S/JAIBALAJI/VAISHNO/SIEMENS/TECHN
LSO,LSC	OPEN/CLOSE LIMIT SWITCHES, 10 A	JAI BALAJI/MANI
PBH	MANUAL HANDLE PUSH BUTTONS, 4 A	C&S/JAIBALAJI/VAISHNO/SIEMENS/TECHN
EPB	EMERGENCY PUSH BUTTON, 4 A	C&S/JAIBALAJI/VAISHNO/SIEMENS/TECHN
HI	HANDLE INTERLOCK COIL, 20 WATTS	SELMECH/GRPS
HIL	MANUAL HANDLE KEY INTERLOCK	PS/EE
LS,PSS,HS	LIGHT, SOCKET, HEATER SWITCHES, 5A	MARU OR ITS EQUIVALENT
CL	CUBICLE LAMP HOLDER	MARU OR ITS EQUIVALENT
PS	POWER SOCKET, 5A	MARU OR ITS EQUIVALENT
TB	TERMINAL BLOCKS (UBT-4)	ELMEX / CONNECTWELL / VIN MECH
TH	THERMOSTAT	BEPL

OPERATING INSTRUCTIONS:

- DON'T OPERATE THE ISOLATOR WHEN THE 'CIRCUIT BREAKER' IS IN 'ON'
- ISOLATOR OPERATION IS POSSIBLE ONLY WHEN THE INTERLOCK CONDITIONS ARE SATISFIED.
- FOR MANUAL OPERATION FOLLOW THE FOLLOWING INSTRUCTIONS:-
 - BY PRESSING THE PUSH BUTTON (PBH) REMOVE THE CASTLE KEY AND KEEP THE KEY IN HANDLE LOCK AND ROTATE FOR GETTING WAY TO INSERT THE OPERATING HANDLE.
 - INSERT THE OPERATING HANDLE AND ROTATE IN CLOCK / ANTI CLOCK WISE DIRECTIONS FOR TO OPEN / CLOSE THE ISOLATOR.
 - IF MANUAL OPERATION IS NOT NEEDED RESTORE THE CASTLE KEY IN THE HANDLE INTERLOCK AND ROTATE.

APPROVED

S. A. Ravi
 Chief Engineer / Transmission
 TSTRANSCO, Vidyut Soudha,
 HYDERABAD - 500 082

REVISIONS				
D	C	B	A	

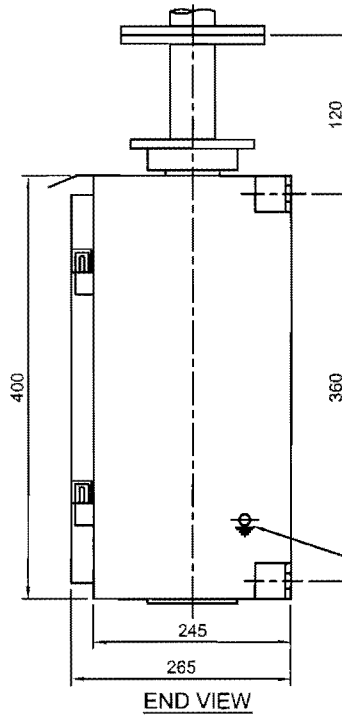
TITLE:

**SCHEMATIC DIAGRAM FOR
MOTOR CONTROL PANEL FOR 220 KV**



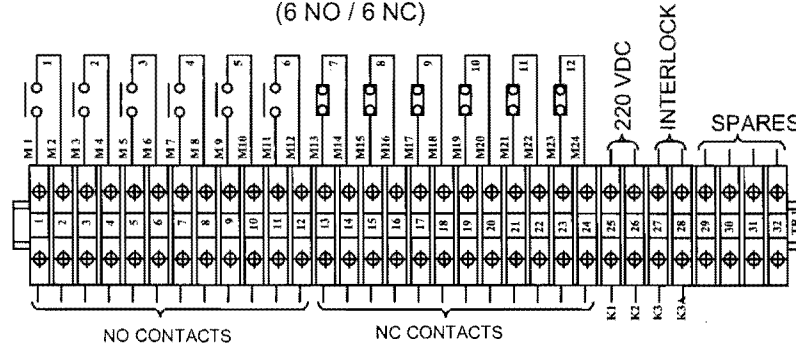
**GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA**

SCALE: N.T.S.	
DATE	01-08-2014
DRAWN	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>
DRG.NO:	REV
4. M TS 11	

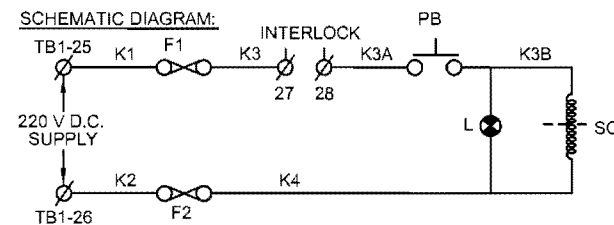


END VIEW

AUX. SWITCH CONTACT DETAILS FOR ISOLATOR (6 NO / 6 NC)

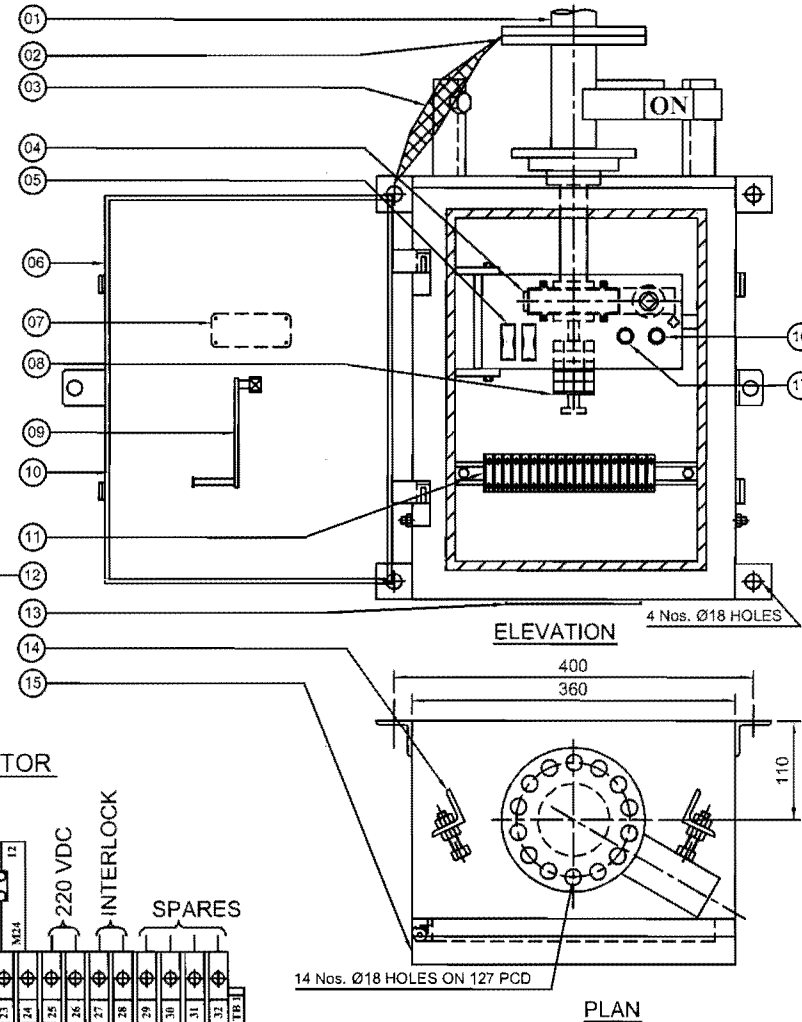


SCHEMATIC DIAGRAM:



LEGEND:

- F1, F2 ----- FUSES (2 Amp Rating)
- PB ----- PUSH BUTTON
- L ----- INDICATION LAMP
- SC ----- SOLENOID COIL



PART LIST

01. DOWN OPERATING PIPE
02. OUTPUT FLANGE (8 MM THICK M.S. PLATE)
03. COPPER FLEXIBLE (25 x 3 mm TINNED Cu. FLEXIBLE)
04. REDUCTION GEAR BOX (MATERIAL : EN8 / FORGED STEEL)
05. FUSES (2 A)
06. CUBICLE WITH DOOR (2.64 mm THICK, M.S. SHEET)
07. NAME PLATE
08. AUXILIARY SWITCH (6 NO + 6 NC)
09. OPERATING HANDLE
10. GASKET (EPDM)
11. TERMINAL BLOCKS (UBT-4 OF ELMEX / VIN MECH OR ITS EQUIVALENT)
12. PROVISION FOR EARTHING TERMINALS
13. DETACHABLE CABLE GLAND FIXING PLATE (WITHOUT GLANDS)
14. ON - OFF STOPPERS (M.S. ANGLE, HDG)
15. RAIN SHADE
16. INDICATION LAMP
17. PUSH BUTTON (4 A)

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETER
2. CUBICLE WILL BE POWDER COATED WITH LIGHT GRAY SHADE NO : 631 OF IS : 5 FOR INSIDE AND OUTSIDE.
3. DEGREE OF PROTECTION IP:55 AS PER IS:2147
4. WEIGHT OF THE BOX :28 Kg (Approx.)
5. WIRING WILL BE DONE WITH 1100 V GRADE 2.5 Sq. mm Cu. STANDED P.V.C. INSULATED CONDUCTOR
6. 20% SPARE TERMINALS PROVIDED
7. REDUCTION GEAR RATIO 20 : 1 MAKE GRPS MATERIAL OF GEAR EN8 / STEEL
8. LUBRICATION OF GEARS : NON HARDENED GREASE FILLED GEAR BOX

APPROVED

S. A. Kumar
Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082

REVISIONS			
D	C	B	A

TITLE:


OPERATING MECHANISM FOR EARTH SWITCH (FOR 220 KV)



GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA


SCALE: N.T.S.	
DATE	01-08-2014
DRAWN	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>
DRG.NO:	4. N TS 12
REV	

NAME PLATE DETAILS FOR ISOLATOR

		MANUFACTURED & SUPPLIED BY GR POWER SWITCHGEAR LTD., JEEDIMETLA, HYDERABAD - 500 055	
CUSTOMER :	M/s. TRANSMISSION CORPORATION OF TS LIMITED		
PROJECT :			
CONTRACTOR :			
P.O. NO :		Dt. :	
TYPE :	HDB	SL. NO :	AS APPLICABLE
		YEAR OF Mfg. :	
RATING : Un	220	KV ; In :	2500/2000 A ;
WEIGHT IN KG :			
IMPLUSE(UI) :	1050	KV Peak ; SWITCHING(Us) :	
		KV Peak ;	
P.F. :	460	KV rms ; STC(lth) :	40
		KA rms ; DURATION :	3
		Sec ;	
OPERATING MECHANISM :	MOTOR, 3 Ph., 415 V, 0.5 HP		
CONTROL VOLTAGE :	220/110 V DC		


150

NAME PLATE DETAILS FOR EARTH SWITCH

		MANUFACTURED & SUPPLIED BY GR POWER SWITCHGEAR LTD., JEEDIMETLA, HYDERABAD - 500 055	
CUSTOMER :	M/s. TRANSMISSION CORPORATION OF TS LIMITED		
PROJECT :			
CONTRACTOR :			
P.O. NO :		Dt. :	
TYPE :	VB	SL. NO :	AS APPLICABLE
		YEAR OF Mfg. :	
RATING : Un	220	KV ; In :	
WEIGHT IN KG :			
IMPLUSE(UI) :	1050	KV Peak ; SWITCHING(Us) :	
		KV Peak ;	
P.F. :	460	KV rms ; STC(lth) :	40
		KA rms ; DURATION :	3
		Sec ;	
OPERATING MECHANISM :	MANUAL(RG)		
CONTROL VOLTAGE :	220/110 V DC		

150

NAME PLATE DETAILS FOR ISOLATOR


		MANUFACTURED & SUPPLIED BY GR POWER SWITCHGEAR LTD., JEEDIMETLA, HYDERABAD - 500 055	
CUSTOMER :	M/s. TRANSMISSION CORPORATION OF TS LIMITED		
PROJECT :			
CONTRACTOR :			
P.O. NO :		Dt. :	
TYPE :	HDB	SL. NO :	AS APPLICABLE
		YEAR OF Mfg. :	
RATING : Un	220	KV ; In :	1600/1250/800 A ;
WEIGHT IN KG :			
IMPLUSE(UI) :	1050	KV Peak ; SWITCHING(Us) :	
		KV Peak ;	
P.F. :	460	KV rms ; STC(lth) :	40
		KA rms ; DURATION :	3
		Sec ;	
OPERATING MECHANISM :	MOTOR, 3 Ph., 415 V, 0.5 HP		
CONTROL VOLTAGE :	220/110 V DC		





150

APPROVED

NOTES :

1. ENGRAVED LETTER SIZE : 3 mm
2. LETTER ETCHED WHITE ON BLACK BACKGROUND
3. MATERIAL : ALUMINUM
4. THICKNESS : 1 mm


 Chief Engineer / Transmission
 TSTransco, Vidyut Soudha,
 HYDERABAD - 500 082

REVISIONS D C B A				TITLE: NAME PLATE DETAILS (FOR 220 kV ISOLATOR)	SCALE: N.T.S DATE: 01.08.2014 DRAWN:  CHECKED:  APPROVED:  DRG.NO: 4. Z TS 13
				GR POWER SWITCHGEAR LTD., JEEDIMETLA HYDERABAD-500 055 INDIA	REV

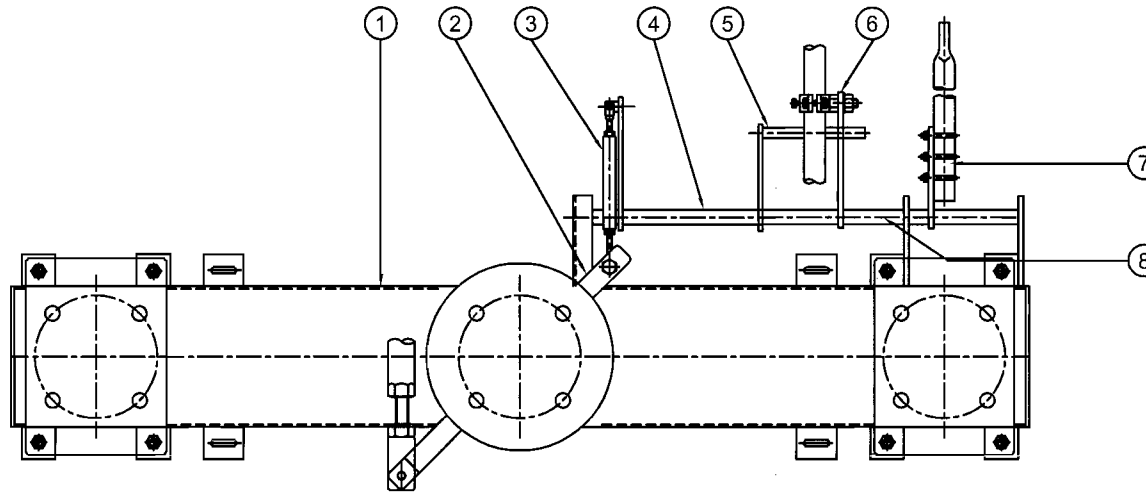


FIG - 1 : ISOLATOR IN "CLOSE" POSITION
EARTH SWITCH IN "OPEN" POSITION

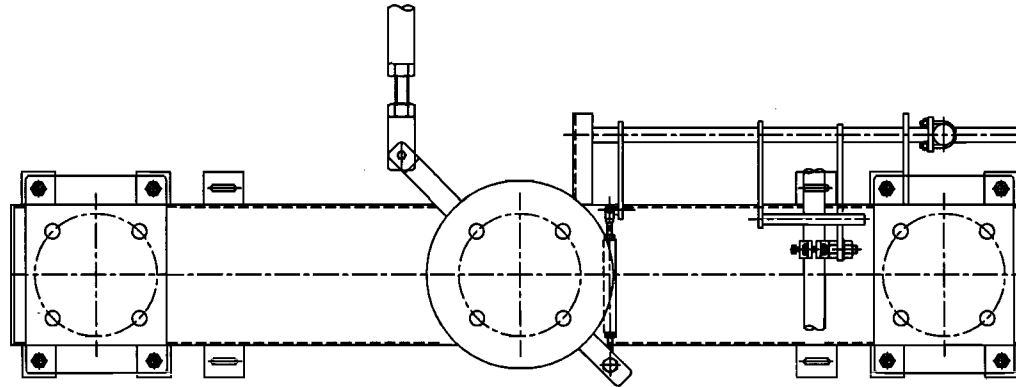


FIG - 2 : ISOLATOR IN "OPEN" POSITION
EARTH SWITCH IN "CLOSE" POSITION

CONSTRUCTION :

ISOLATOR OPERATING LEVER (2) IS CONNECTED TO THE ROTATION PIPE - 1 (4) THROUGH THE LINK ROD (3), THE STOPPER ROD (5) ALSO MOVES ALONG WITH THE ROTATING PIPE (4) EARTH SWITCH OPERATING LEVER (6) MOVES THE ROTATING PIPE - 2 (8) WITH EARTH SWITCH MOVING CONTACT (7) INDIVIDUALLY

FUNCTION :

IN FIG - 1 : THE ISOLATOR OPERATING LEVER (2) IS CONNECTED TO THE ROTATING PIPE - 1 (4) AND STOPPER ROD (5) THE STOPPER ROD (5) ABOVE THE EARTH SWITCH OPERATING LEVER (6) WHICH WILL NOT PERMIT TO MOVE EARTH SWITCH OPERATING LEVER (6) AND THE E.S. MOVING CONTACT (7) TO CLOSE POSITION

IN FIG - 2 : THE ROTATING PIPE - (4) AND STOPPER ROD (5) ARE BELOW THE EARTH SWITCH OPERATING LEVER (6) AND THE EARTH SWITCH MOVING CONTACT (7) IN CLOSED CONDITION. EARTH SWITCH OPERATING LEVER (6) WILL NOT PERMIT TO MOVE THE STOPPER ROD (5) AND ISOLATOR OPERATING LEVER (2) TO CLOSE POSITION

NOTES :

1. BASE CHANNEL 145 x 80 x 4 BOX CHANNEL (HDG)
2. ISOLATOR OPERATING LEVER
3. LINK ROD
4. ROTATING PIPE - 1
5. STOPPER ROD
6. E.S. OPERATING LEVER
7. E.S. MOVING CONTACT
8. ROTATING PIPE - 2

APPROVED

S. S. Ravi
Chief Engineer / Transmission
TSTRANSCO, Vidyut Soudha,
HYDERABAD - 500 082

REVISIONS				
D	C	B	A	

TITLE: **MECHANICAL INTERLOCK
BETWEEN MAIN SWITCH
AND EARTH SWITCH
(FOR 220 kV ISOLATOR)**



**GR POWER SWITCHGEAR LTD.,
JEEDIMETLA HYDERABAD-500 055 INDIA**

SCALE: N.T.S.	
DATE	01-08-2014
DRAWN	<i>[Signature]</i>
CHECKED	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>
DRG.NO:	4. Z TS 14
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