



Head Office : Plot No. 7, Block J, Khare Town (Buty Layout), Dharampeth, Near Indian Coffee House, Nagpur - 440 010

Branches

- 1. AMRAVATI :** INSIDE AMBA GATE, NEAR MURGENDHRA MATH, AMRAVATI-444601 MOB : 9422313854
- 2. AURANGABAD :** FLAT NO B 2 LAXMINARAYAN APARTMENT, RANA NAGAR OPP. HOTEL ATITHI, SEVEN HILLS, AURANGABAD-431005 MOB: 8550980099/09423102426/ 8554947000/07507726000
- 3. AKOLA :** FLAT NO. 2, SUYASH APARTMENT, SHASTRI NAGAR, NEAR AXIS BANK, DIST: AKOLA-444001- MOB: 9423102424
- 4. BHILAI :** CHAUHAN ESTATE, 280, 1ST FLOOR, G.E. ROAD, SUPELA, BHILAI – 490 006. MOB. – 09425293146 / 09425293148
- 5. CHANDRAPUR :** GROUND FLOOR, OPP. HOTEL SITARA, NAGPUR ROAD, CHANDRAPUR- 442401 MOB: 9423102425 /09423069891 / 08550982299 /09422811208
- 6. NANDED :** MOB NO. -098234 44203
- 7. RAIPUR :** BESIDES RALAS MOTOR, NEAR MAHINDRA SHOW ROOM, ALANKAR ROLLONG MILL COMPLX, G.E. ROAD, TATIBANDH, RAIPUR – 492 001 MOB NO. -09425293149/ 09425293145
- 8. JABALPUR :** 199/G, EKTA VIHAR, RATAN NAGAR, OPP ST. XAVIER HIGH SCHOOL, JABALPUR (M.P.) - 482001 MOB : 09826191024
- 9. YEOTMAL :** 65, ADARSH NAGAR, JAM ROAD, WADGAON, YEOTMAL-445001 MOB– 9423100943

Ptd. By Rao Calendars, Nagpur. M. 9373101808



EHV - TRANSMISSION LINE, SWITCHYARD, EARTHINGS, EHV CABLES, CABEL JOINT & EHV RELATED MATERIALS



Opp. Electrical Centre, Shop No. 18-19, Raj Kamal Complex, Opp. Patrakar Bhavan, Panchsheel Square, Dhantoli, Nagpur - 440 012
Tel. : 0712-2440263, 2420817, 2420791, Telefax : 0712 - 2427553 Mobile : 8275044482, 9422506346,
email : ehv@integratedgroup.asia / ec@integratedgroup.asia

All Material is approved by PGCIL, NTPC, CSEB, MSETCL, MPPT CO. LTD.
www.integratedgroup.asia

Introduction



EHV Centre is a new feather in the crown of Integrated Group.

Well known as Central India's largest supplier, INTEGRATED GROUP is appreciated for its 3 divisions, providing one basket solution up to 33 kV electrical transmission and distribution equipments & accessories since 1988.

The world over, there have been dramatic shifts and improvements in power system in all its facets - design, installation, operation and maintenance. Practices in maintenance of EHV transmission lines have been undergoing refinements in techniques and broadening of scope, consistent with rapidly changing requirements and compulsions. India has a massive transmission network expansion programme and several EHV transmission lines are planned in the years ahead, which would form an integral part of the National Grid.

EHV Centre is now set to establish as largest supplier in Vidarbha, Western Maharashtra , Chhattisgarh & Madhya Pradesh. We are maintaining stock & supply facilities for 66kV onwards up to 400 kV Electric Power Transmission & Distribution equipments & accessories. The range is described as below

- | | |
|---|--------------------------------------|
| 1. EHV Cable | 10. Isolator |
| 2. EHV Cable Joints | 11. Circuit Brakers |
| 3. Link Box | 12. Lightning Arresters |
| 4. ACSR Conductor | 13. Coupling Capacitor & Wave trap |
| 5. Conductor Accessories | 14. C T & P T, CVT |
| 6. Insulators (Porcelain & Polymer) | 15. Transformers |
| 7. Insulator Hardware Fittings | 16. Sub station Hardware's |
| 8. Control Panels | 17. Earthing |
| 9. Guantry & Switchyard Equipments Structures | 18. Hybried/Gas insulator switchgear |

TESTING FACILITIES

- | | |
|---|---|
| 1. PE-17 RA Dual Winding Resistance Meter | 7. PE-MCDF-6 (C & Tan δ Tester) |
| 2. PE-20 R Contact Resistance Tester | 8. Primary Injection Test |
| 3. OBDV M100 (Oil Voltage) Breakdown Tester | 9. Secondary Injection Test |
| 4. TIM-10 (Time Interval Meter) | 10. D.C. Miliammeter |
| 5. 3125-Insulation Meter | 11. 9Sat – 1 Portable L-A Arrester Tester |
| 6. MRU 120-Earth Tester | 12. HI Pot Testing & Cable Fault testing |

Ware House facilities

We have ware house at D44 M.I.D.C. Hingna Road, Nagpur & at Tatibandh , Raipur

Branches at your service : H.Q. is operating from Nagpur with wide network of branches in Maharashtra at Aurangabad, Amaravati, Akola, Chandrapur, Nanded, Yavatmal In Chhattisgarh at Bhilai & Raipur In Madhyapradesh at Jabalpur

We welcome your enquiries for EHV products.

We assure you best of our attention & services to supply you best quality products at most compatible rates

INTEGRATED GROUP
www.integratedgroup.asia

Complete Range of LT/HT/EHV Power Transmission and Distribution Equipments & Accessories
■ INTEGRATED MARKETING INC. ■ INTEGRATED POWER EQUIPMENTS ■ ELECTRICAL CENTRE ■ EHV Centre

TESTING SERVICES



PE-17 RA Dual Winding Resistance Meter



1. Measuring the primary & Secondary winding resistance of power transformers
2. Measuring resistance of H.T./L.T. Motors,
3. Widely used for Preventive maintenance.

PE-20 R Contact Resistance Tester



1. Measuring contact resistance of isolators, CB. of H.V & E.H.V. switchyards, Bus-bar, bus-duct etc.
2. Power Projects Testing & Commissioning upto 400 kv Equipments

OBDV M100 (Oil Voltage) Breakdown Tester



1. BDV is most widely used for detection of transformer health by virtue of which further degradation can be avoided.
2. This test also helps in improving the efficiency of the system.

TIM-10 (Time Interval Meter)



1. Designing the efficiency of the system by accurately selecting the Tripping timings of the circuit breakers.
2. Most widely applicable in all Testing & Commissioning activities.

3125 - Insulation Tester



1. Mostly applicable in Preventive Maintenance, Shutdown Maintenance, Breakdown Maintenance.
2. Verification of I.R. of electrical equipment prior to testing & Commissioning of Power projects.

MRU 120- Earth Tester



1. It is most widely used to detect & confirm the resistance of Earth Pit installed in switchyards [11kv to 400kv]
2. Now a days, it's a regular practice to measure the earth resistance by clipping on G.I. strip in the Earth Pit.

PE-MCDF-6 (C & Tan δ Tester)



1. It detects & confirms the dielectric strength as well as dissipation factor of electrical installations like Transformer H.T. Bushings which undergoes periodic degradation due to continuous full load.

Primary Injection Test



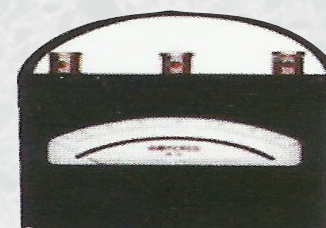
1. It is highly applicable in detecting & confirming the healthiness of Current Transformer, (Numerical) Protection Relay, Master Trip Relay & Circuit breaker protection circuit in sequence/

Secondary Injection Test



1. It is highly applicable in Testing & Commissioning activities of Protection Relays.
2. It is mostly useful in Identifying & rectifying the unusual Tripping in Power system.

D.C. Miliammeter



1. It is much helpful in confirming the polarity of instrument Transformers.
2. It is most widely used in Erection activities for instrument Transformers.

9 SAT-1 Portable L-A Arrester Tester



1. The Instrument is fit for testing that of lightning arrester with different voltage classes which arrester is working and without work and then find the dangerous faults inside it timely, such as moisture, valve ageing and so on.

HI Pot Testing & Cable Fault Testing



1. HVT are used for detecting the dielectric strength of cable insulation before commissioning & after jointing by application of high voltage test.

COUPLING CAPACITOR & WAVE TRAP



Power system communication, Tele protection wise and data communication, single carrying medium, transmitter / receiver, and associated components and coupling, blocking equipments. Coupling capacitor, line tuners with high impedance carrier frequency band. Covering Ansi standard C-93.3 and IEC standard 353

ISOLATORS



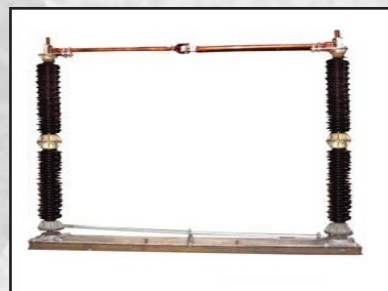
DOUBLE BREAK ISOLATOR

Isolators/Disconnecter:-

Disconnecter is no load switching device which physically isolates the line, we are providing from 66Kv to 400 KV, With Earth Switch & Without Earth Switch Isolators.

Motorized & Manually operated. Double break manually operated with double break and single break version.

On request we provide Auxiliary switch + Electrical Interlock + Gear Mechanism + Motor operated mechanism.



CENTRE BREAK ISOLATOR

THE ONLINE MOLECULAR SIEVE TO DRY OUT POWER TRANSFORMER

Benefits:

Reduces the effects of ageing on Transformers. Increases reliability and service life of transformers by continuously removing moisture and fibres. Enables transformers to be run on higher load cycles with greatly reduced risk of failure. Increases plant utilization and will allow capital expenditure to be deferred.

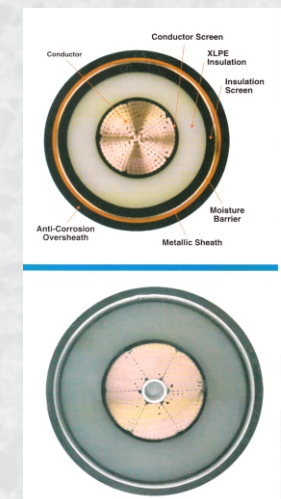
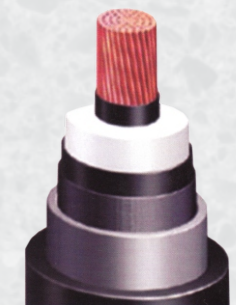
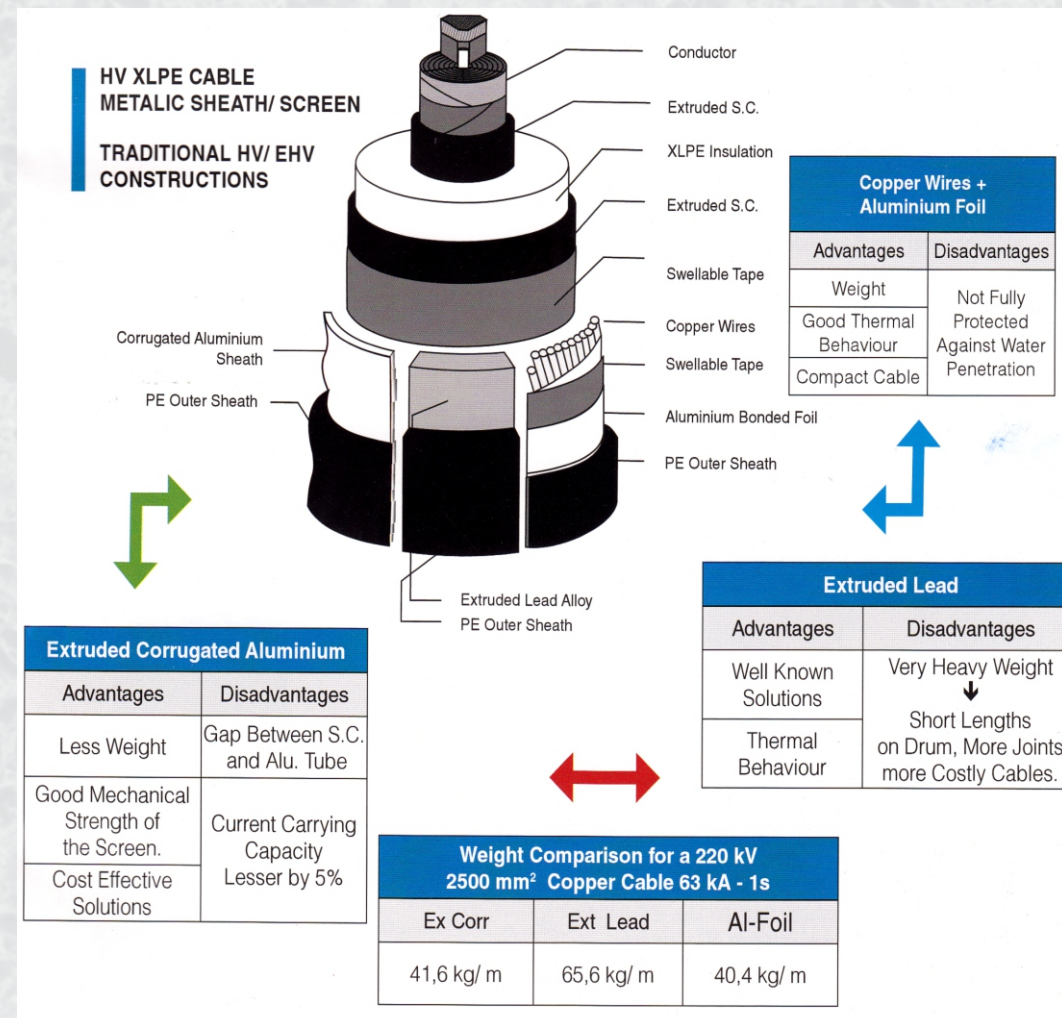


EHV SWITCHYARD GANTRY



Gantry like FB, FH, FP, FA (132KV), AF,AG,AH,AK,AL,AM,AN (220KV) Beam –AA,AB,AC, Peak- AP (220KV) approved by all state and Central Electricity Boards

EHV CABLE



A 400 kV cable with a Milliken Conductor

We supply EHV Cables from 66KV to 400 KV. XLPE insulated extruded lead sheath, copper wire, screened black, HDPE, outer sheath power cable, IEC code 60228 - IEC Code 60840

Rated Voltage of Cables (Uo/U)	Highest Voltage for equipment between Conductors(Um)	30 Min Voltage test (2.5Uo)	Partial Discharge test (1.5Uo)	Tan delta Measurement (Uo)	Heating Cycle test (2Uo)	Impulse Withstand test	15 min Power Frequency voltage test after impulse test (2.5Uo)
kV	kV	kV	kV	kV	kV	kV	kV
38/66	72.5	90	90	57	76	325	90
64/110	123	160	160	96	128	550	160
76/132	145	190	190	114	152	650	190
127/220	245	315	315	190	254	1050	315

Voltage Grade (kV)	Smallest Nominal Conductor cross-section	Nominal Thickness of Insulation
	(Sq. mm.)	(mm)
38/66	95	11.0
64/110	150	16.0
76/132	185	18.0
127/220	400	27.0

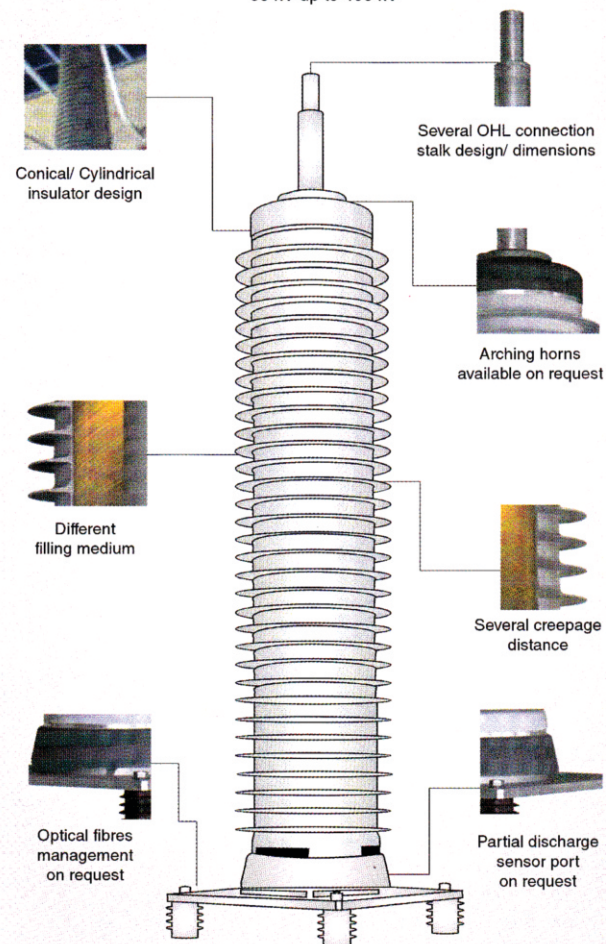
CABLE JOINTING KITS

From 66KV to 400 KV GIS Termination/Transformer Termination /Outdoor Termination / Straight Through Joints/ Normal Insulated Straight through joints

ACCESSORIES FOR HIGH VOLTAGE POLYMERIC CABLES

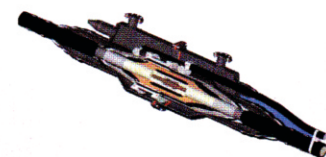
OUTDOOR POLYMERIC TERMINATIONS

66 kV up to 400 kV

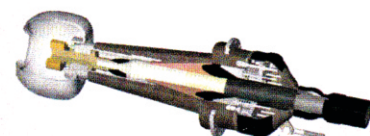


R&D EXPERTISE ACCESSORIES FOR HIGH VOLTAGE POLYMERIC CABLES

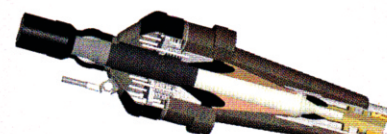
Silicone/ EPR one-piece pre-moulded joints available
66 kV up to 400 kV



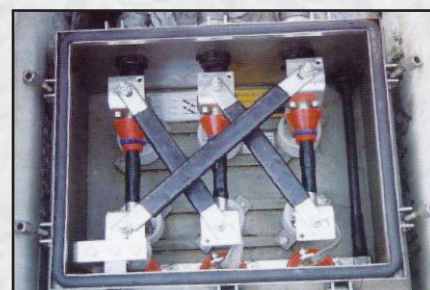
Transformer Terminations
66kV up to 400 kV



GIS Terminations
66kV up to 400 kV



EHV CABLE LINK BOX



Earthing type Link Box/ Single Phase Link Box with Sheath Voltage Limiter (SVL) & without SVL/Three Phases Cross Boding Link Box without & with SVL / Earth Bonding Cable/ Co-axial Cable/ Cable Clamps / Terminal Connector / Termination Structure / Lightning Arrester & Structure / Surge Counter / Earth Electrodes / G I Flat / RCC Protection Cover / PVC warning tape.



Substation Materials

POWER TRANSFORMERS



We supply of large Power Transformer with Extra High Voltage (EHV) that is system voltage 66 KV to 800 KV.

- We offer** i) Distribution transformer / 25KVA to 3.1 MVA -11/ 0.433KV and 33/ 0.433 KV
ii) SPT (Special Power Transformer) – 33/11/6.6 KV-5MVA to 60 MVA
iii) Furnace Transformer

SWITCHGEARS



Gas Insulated Switchgear
132KV,220KV,400KV



Hybrid Switch Gear
Available module 66KV,132KV,220KV

CAPACITOR :- We offer all range of Capacitor from 415 V to 33 KV STATCON, APFC, loss capacitor (Square & Cylindrical), Dynamic Compensation, Harmonic Study & Analysis.) **Application**:- Sect ionizer, Line Bay, Transformer Bay, LILO (66KV / 132KV / 220 KV). Relays Like O/c, E/F, Motor protection, other auxiliary and numerical relays. (Hybrid =AIS +GIS)



CIRCUIT BREAKER

EHV Circuit Brakers/ S F - 6 Module available with us from 66KV to 400KV, with spring operating Mechanism. IEC Standard 62271-100

CURRENT & POTENTIAL TRANSFORMER & CVT



Outdoor Oil cooled Current Transformer upto 400 KV in deadtank version & 400 KV in live tank & dead Tank. Best quality oil paper insulation to control vacuum and temperature treatment. Inside arrangement is sealed from atmosphere.

Outdoor oil cooled Current Transformer	Outdoor oil cooled Voltage transformer & CVT
Upto 400 KV	Upto 400 KV
Construction live or dead tank	Burden upto 500 VA
Ip upto 3600 A for live tank design & upto 1200 A for dead tank design	Accuracy and protection class as per IS, IEC, ANSI.
In grace protection of secondary terminal box IP 55.	Ingrace protection of secondary terminal box IP 55
Ith upto 40 KA	
Burden & accuracy class as per IS ,IEC, ANSI	



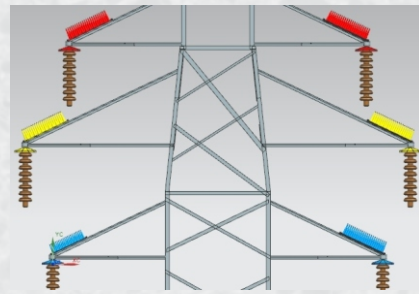
LIGHTNING ARRESTER

Metal Oxide , Surge arrester

1. Explosion and shutter proof
2. Free from moisture and inccress
3. Higher mechanical strength
4. Insensitive to ultraviolet radiations

5. High resistance to ozone and Corona
Light Weight and smaller size.
Nominal discharge current 10 KA. Energy class- D1, D2 & D3. IEC standard 60099-4

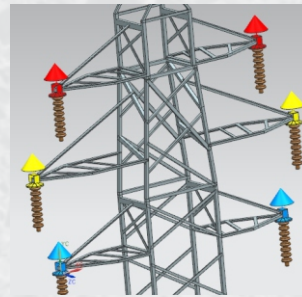
Rain Guard



Danger Board

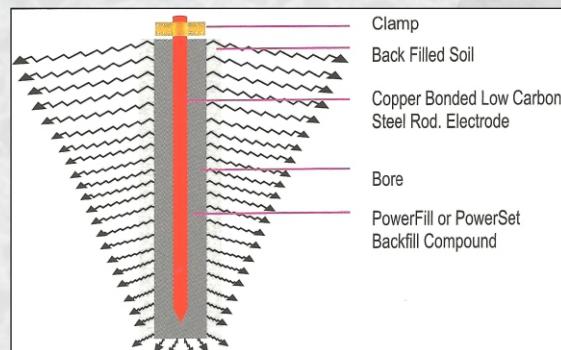


Bird Guard



1. We are supplying powder coated Danger Board 66 KV to 400 KV. as per your required size as well as Phase Indicators and Number plates also as per requirement
2. Fibre Bird Guard to Protect Transmission line from Bird disturbance and fibre water guard to protect insulators from rain as well as both product very useful to indicate phase as RYB.

EARTHING



Jet Techno Solutions P. Ltd. India, we provide end to end solutions in Grounding and Lightning protection.

- Design of Grounding Systems.
- Audit and revamping of existing Grounding Systems.
- Supply installation and testing of grounding system compliant to BS, IEEE and IEC standards.
- Design Supply and installation of LPS as per NFPA 780, IEC 62305



Earthing / Grounding arrangement for EHV Switchyard / Control room and EHV Line. Form 66Kv to 400 KV, I point E point i.e Earthing of transformers, structures, equipments, like L A, BPI, WT, CC, Circuit Braker, Guantries, CT PT etc., Control Panel's. Compared to charcoal dust earthing it is cost effective on excavation, earth resistant, and

useful for substation earth matting which is long life with no maintainance so it can be used in any soil conditions.

TOOL & TACKLES



We also provide tool & tackles like – Hydraulic conductor cutter, clamps & connectors, hydraulic heavy press machine (crimping tool), Conductor decoiling device, conductor stringing rollers etc.

EQUIPMENT STRUCTURE



We provide equipment structures for BPI, CC, LA, WT, CB, Isolator (with & without EB), CT & PT with hot dip G I Nut Bolts, Foundation Bolts. Hot dip G I, Structures approved by all states and central electricity board

EHV CONTROL ROOM PANEL



1. Control & relay panels- upto 400KV with latest numerical relays and digital metering
 - A. Bus bar protection,
 - B. line protection,
 - C transformer protection,
 - D. Feeder protection.
2. Battery set & Battery charger
3. PLCC & Scada
4. Annunciation systems
5. Minic diagram

Overhead Materials

CONDUCTORS



We deal in all varieties of HT distribution and transmission line aluminum conductors. ACSR of various sizes are also available. These are fabricated using quality raw material that is procured from reliable vendors. Owing to its quality ACSR conductors are supplied to various electricity boards all across the country.

Conductor	Size Al/St/Dia.	Weight (Kg.)	Span (m)	SAG at 75 C, NoWind (m)	DC Resistance at 20 C (Ohms/Km)	Current Carrying Capacity at 45 C (Amp)
ACSR Panther	30/7/3.00	974	320	7.06	0.13620	560
ACSR Zebra	54/7/3.18	1622	350	9.24	0.06740	860
ACSR Moose	54/7/3.53	1998	380	10.7	0.05470	980



DISC INSULATORS



PORCELEAIN

POLYMER (T & C TYPE)

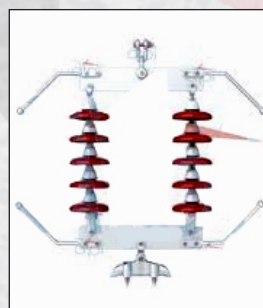
POLYMER (B & S TYPE)

We deal in all varieties of Disc Insulators such as Porcelain Disc Insulators (B & S Type / T & C Type) and Polymer Disc Insulators (B & S Type / T & C Type) from 70KN to 210KN.

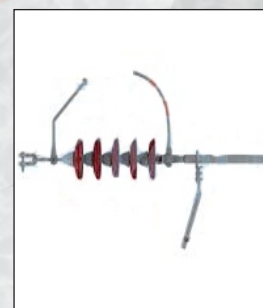
INSULATOR HARDWARES



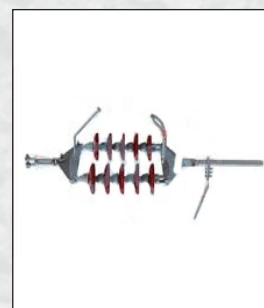
Single Suspension



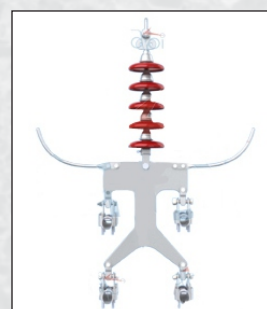
Double Suspension



Single Tension



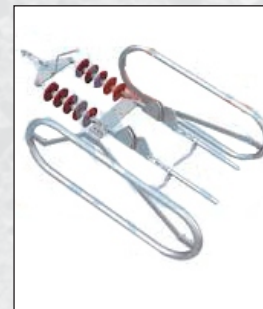
Double Tension



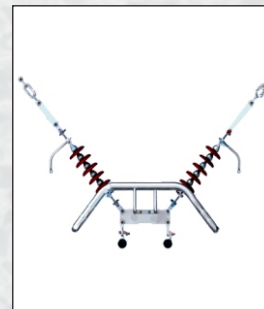
220KV Single Suspension



400KV Double Pilot Suspension



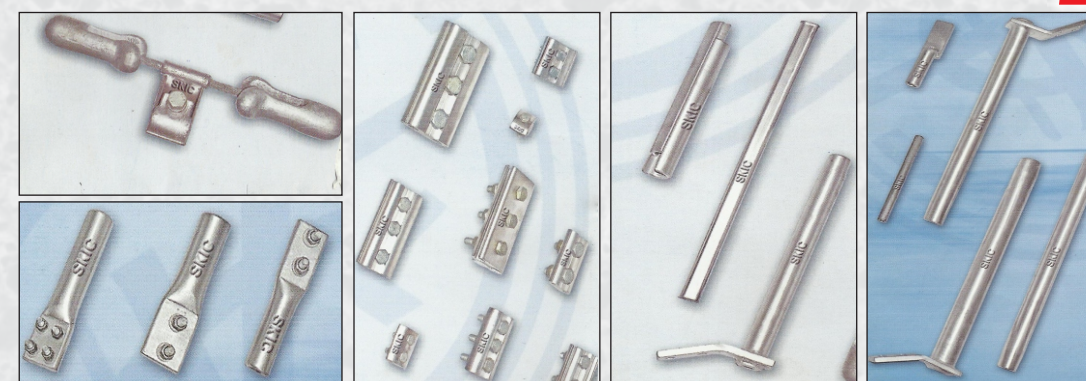
400KV Double Tension



Double Tension

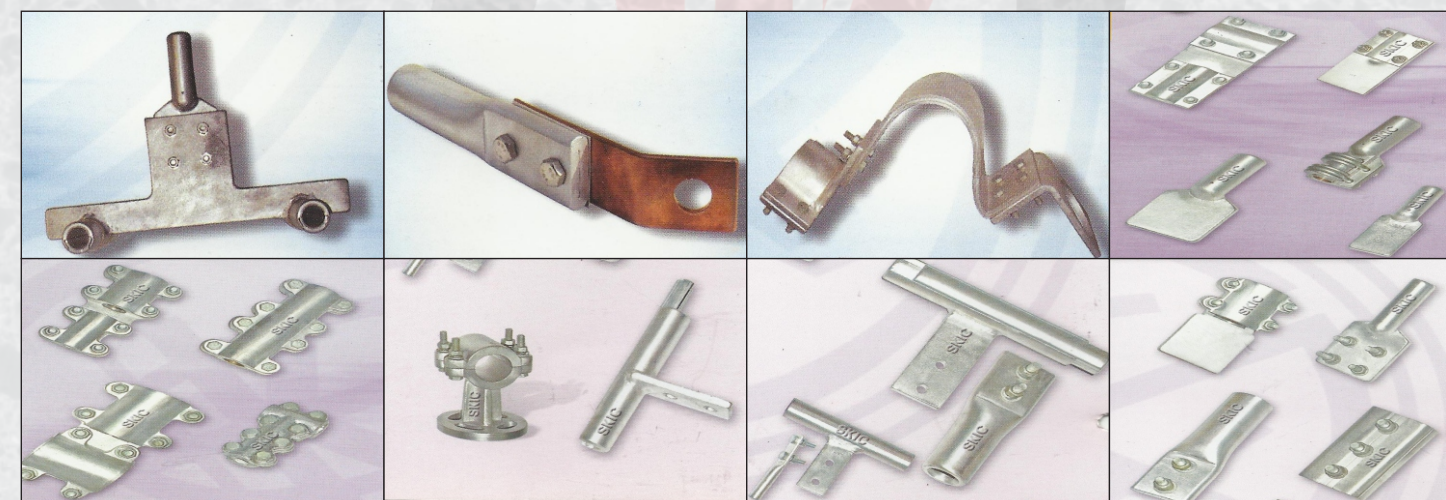
All ferrous parts are hot dip galvanized as per IS 2629, ball & socket size 20 mm, as per IS 2486 (Part II) , general tolerance $\pm 3\%$, Slip strength of clamps not less than 85.2KN, tolerance on total length of hardware fittings $\pm 3\%$, Spring washers are electro galvanized, All forged components are made by drop forging method, M S Nut bolt & plain washers shall be as per state and central government specification, SS nut bolts & plain washers shall be as per state and central government specification, Spring Washers shall be as per state and central government specification.

CONDUCTOR ACCESSORIES



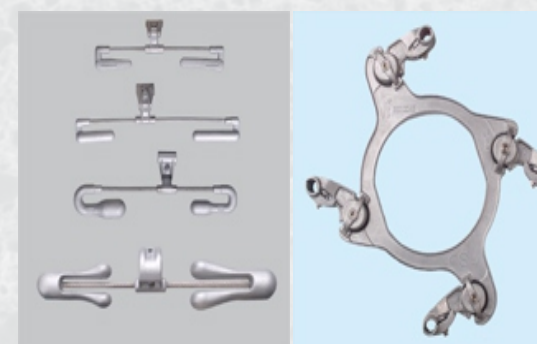
Conductor accessories include Vibration damper, Jointing Sleeve, Mid Span Joint, Clamps, Compression dead end clamp etc. Having electrical resistance less than 75% of the resistance of the equivalent length of conductor. All ferrous parts are hot dip galvanized as per IS 2629. Damper weights are fixed upon the messenger cable using aluminium alloy tapered sleeves by high pressure compression. Damper Mass – Cast iron, Messenger Cable HT steel. Clamp & Keeper – Aluminium Alloy

SUB STATION HARDWARES

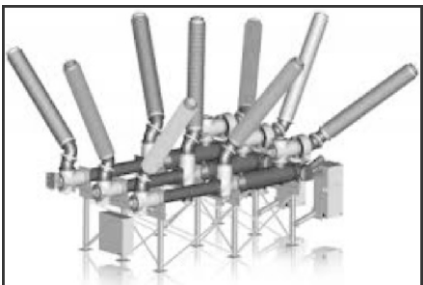


Substation hardware's include flexible connector for Pipe, BMT Transformer connector Compression type, 220KV T Clamp for Twin to single Conductor, Wedge / UDC Connector, T Connector etc. These are used for 66KV to 400 KV sub stations installation uses, available in Standard clamps to 5561-1970, visible Corona free type and Bolted type, used for connection to Conductors. Material Clamp body – Aluminium-A6 of IS 617-1959, Bolt and Nuts- M S Hot Dip Galvanized, Spring Washers – Galvanized Spring Steel.

SPACER - DAMPER



Spacer damper type-single hinge design, bundle-2,3,4, diamond and 6 bundle configuration, conducting spacing, 400,450,457,500 &600mm special spacing on request. Conductor type- clamps groove designed to accommodate all conductors in the range from 20 up to 36mm, vibration behavior- analytically determined (dampin study)spacing system-non uniform, based on computer analysis and experience, damping mechanism- elastomeric, type of conductor clamp- cantilever bolted type clamp hinge type, bolts-G.I, S.S.,Break away, Control plan- ND Tests, Corrosion protection test, Clamps Slip test, Stimulated short circuit test characterization of elastic & damping properties, flexibility test, fatigue test, elastomers characterization,corona & RIV Test, field test-achievable with our own devices.



Integrated
Group

To,



Head Office : Plot No. 7, Block J, Khare Town (Buty Layout), Dharampeth, Near Indian Coffee House, Nagpur - 440 010

Opp. Electrical Centre, Shop No. 18-19, Raj Kamal Complex, Opp. Patrakar Bhavan, Panchsheel Square, Dhantoli, Nagpur - 440 012 .
Tel. : 0712-2440263, 2420817, 2420791, Telefax : 0712 - 2427553 Mobile : 8275044482, 9422506346,
email : ehv@integratedgroup.asia / ec@integratedgroup.asia