



# GD POWER

LIGHTING THE FUTURE



**LEADERS IN MANUFACTURING TRANSMISSION LINE / SUB STATION  
HARDWARE FITTINGS, ACCESSORIES AND CLAMP & CONNECTORS**

**G D POWER** is a manufacturer which specialises in supplying the global market with Over Head Transmission Line Hardware, Fittings, Conductor Accessories and Bus Bar Clamps and Connectors ranging from 11kV to 33 kV lines as well as substations.

Our manufacturing base is located in Chatterjee Industrial Estate, Bankra (Dotalla), Jhilpara, Howrah in India. We anticipate G.D Power will become the largest manufacturers of our product type within a year, bringing together the knowledge and skills of a diverse team of directors and utilizing them to manufacture the final product with efficiency, quality, skill and expertise.

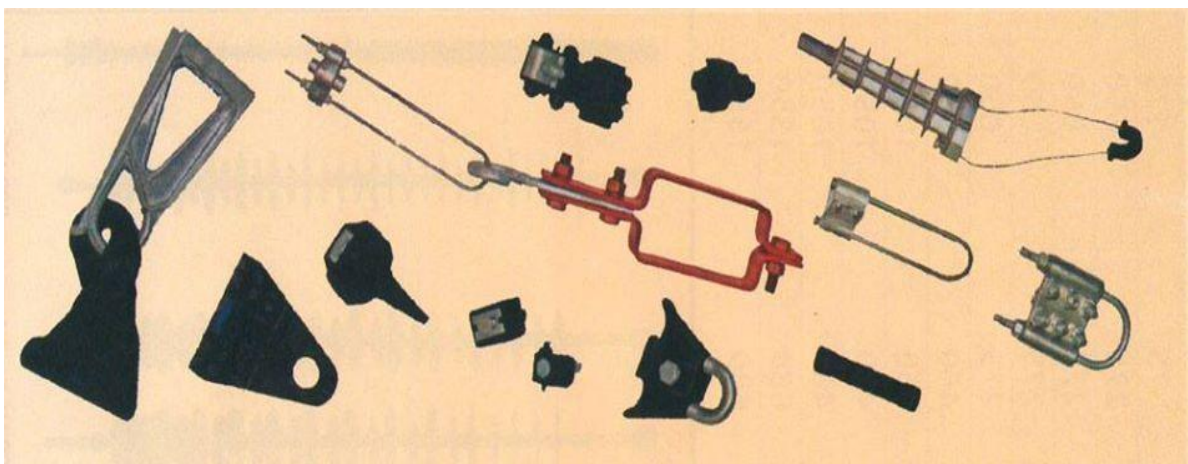
## OUR PRODUCTS

Transmission & Distribution	Full set with Sackles, Ball Eye, Ball Hooks, Socket Eye, Arcing Horn, Suspension Clamps, Tension Clamps etc.
Conductor & Earthwire Accessories	Compression Joint, Repair Sleeves, P.A Rods, Vibration Damper, P.G Clamps, Spacer etc.
Performed Products	Distribution Grip Dead End, Spool Tie, Die Grip Dead End, Armour Rod etc.
Clamps & Connectors	T.Clamps, Bus Post Clamps, P.G Clamps, Bimetallic Clamps Spacer, Flexiable & Rigid Connector etc.
Pole Line Hardware	Anchor Rod, Eye Nut, Thimble, H-Connector, C Connector etc.
OPGW Fittings, ABC Fittings	Suspension Assembly, Tension Assembly, Service Dead End Clamp etc.

## TRANSMISSION AND DISTRIBUTION LINE INSULATOR HARDWARES







**STANDARD HARDWARE ASSEMBLIES**

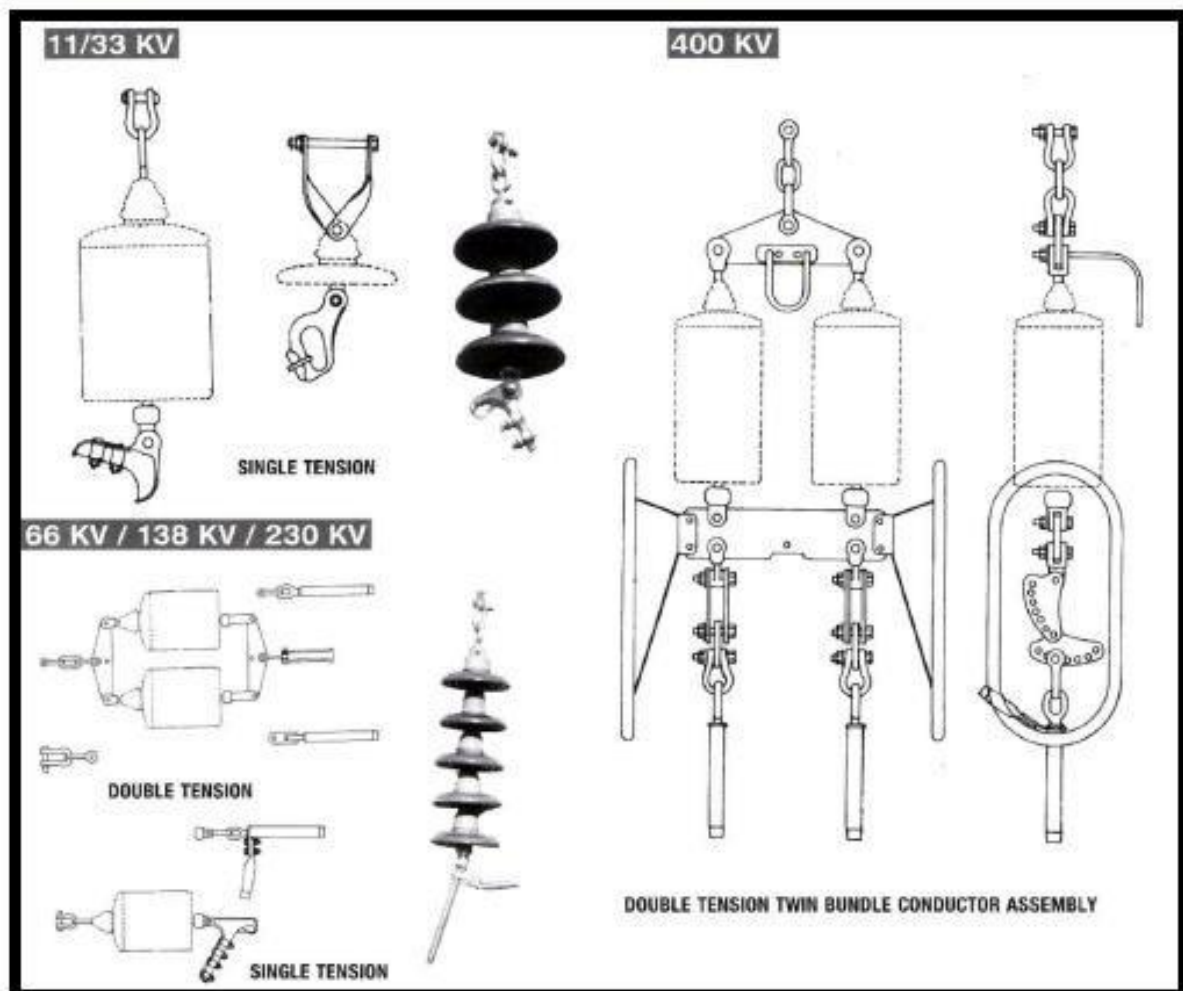


To achieve a coordinated electrical and mechanical performance to suit system requirement standard insulators hardware assemblies have been designed. Some of these standard designs illustrated in this page have been incorporated with years of technical research and participations. The designs incorporate following three principal features:

- High Mechanical Reliability & Flexibility of Movement
- Adequate High Voltage Electrical Characteristics.
- Fatigue free performance under wind induced vibration condition.

Since conductor assemblies are principally used upto 220KV. Twin Bundle Systems are popular for upto 400KV systems. Triple Conductor configuration has been used extensively with respect to 500KV system. Quadruple conductor bundle system has mainly been implemented for 750KV lines. However, for lower system voltage use of bundle conductor is necessary where higher capacity is required. For example for both 132KV and 220KV, twin bundle system has been used extensively. Similarly in 400KV Quad system has been used in many countries.

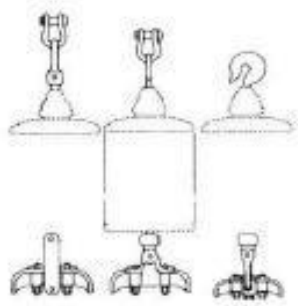
## TENSION ASSEMBLIES



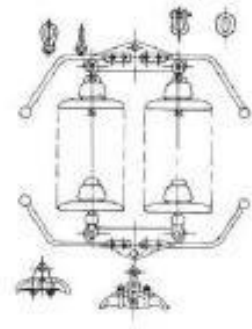
## SUSPENSION ASSEMBLIES

11/33 KV / 66 KV / 138 KV

230 KV



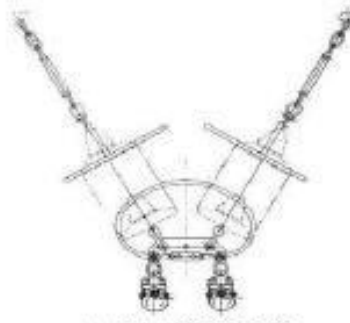
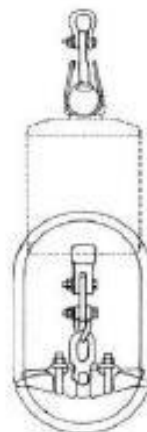
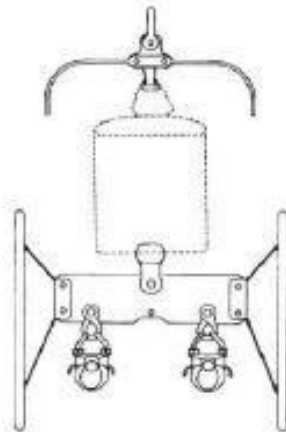
SINGLE SUSPENSION



DOUBLE SUSPENSION

400 KV

SINGLE SUSPENSION  
FOR TWIN BUNDLE  
CONDUCTOR



V - STRING ASSEMBLY



### HARDWARE & FORGINGS – STEEL FORGING

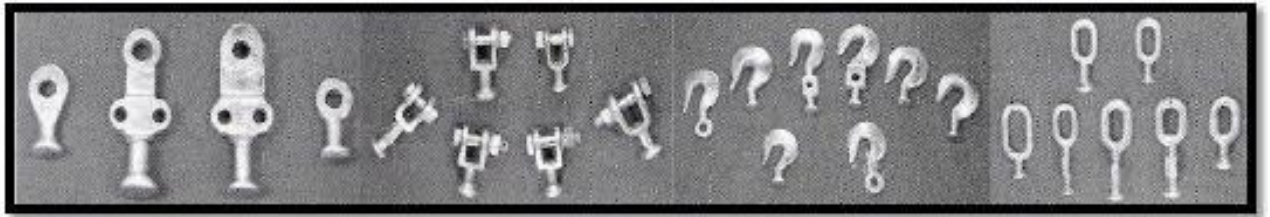
Steel forged component constitutes major portion of transmission and distribution line hardware and supplies are made of wide range of line and tower side fittings by close die forging out C-45, materials. Sockets profile components are also produced by close die forging and subsequent socket milling for high rating U.H.V application. In general the forgings are normalised, but for special application they are heat treated by hardening and tempered.



### BALL ENDED FITTINGS

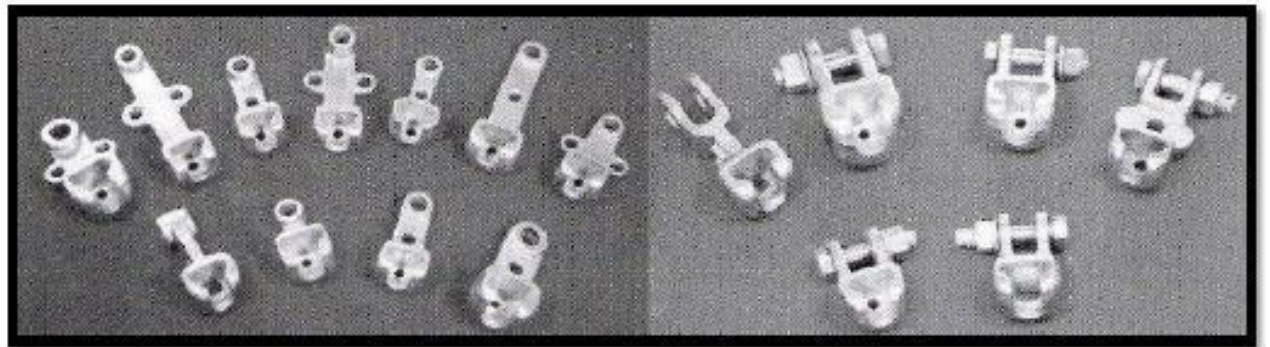


Ball Hook, Ball Links, Ball Eyes, Ball Clevis in galvanised forged steel as per British Standard specification for ball size 11mm, 16mm, 20mm, 24mm. fittings are available both normal and horn holder type. Mechanical ratings to suit insulator units. Other national standard fittings on request.



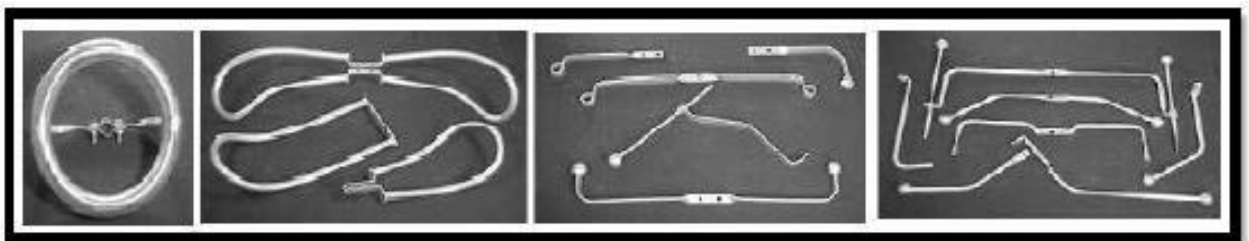
## **SOCKET ENDED FITTINGS**

Socket Eye & Socket Clevis in galvanised malleable cast iron to British Standard for socket sizes 11mm, 16mm, 20mm, 24mm specifications. Socket Eyes & Socket Clevis for normal, horn holder and ring holder, type are available. Socket Clevises supplied for Yoke Fittings and Dead End Eye Fittings in various ranges.



## **ARCHING HORNS & CORONA CONTROL RINGS**

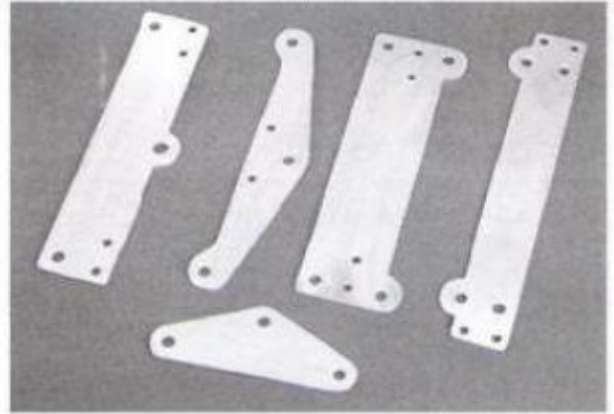
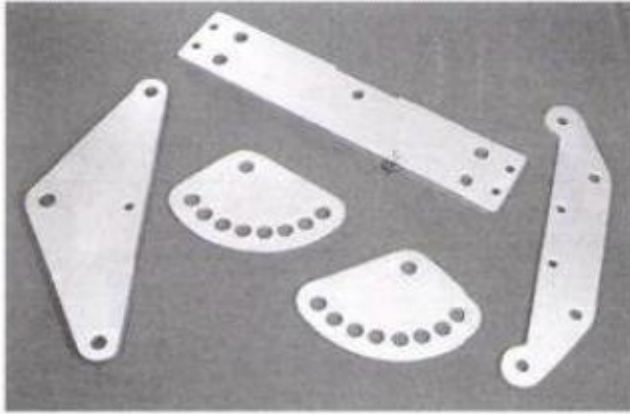
Power Transmission lines should be provided with maximum possible damages to insulators and conductors. Flashover is often the cause of outages due to high arc temperature which may damage the conductor and destroy the insulator. Arcing protection an important feature of equipment design. The consists of horns, Grading rings, the shapes and sizes of which are in accordance with system voltage and standardize by high electric tests.



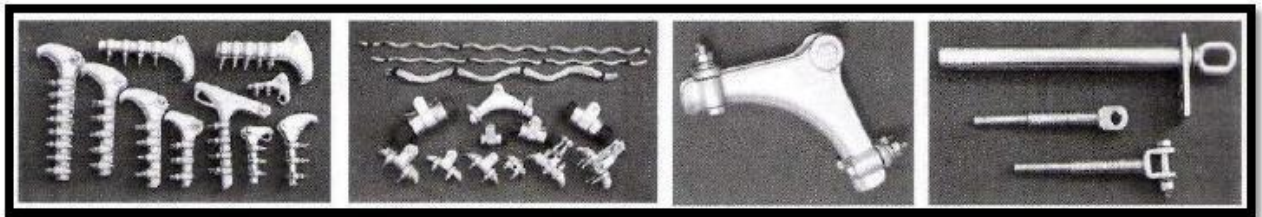
## **YOKE PLATE, TURN BUCKLES & SAG ADJUSTERS**



Yoke plates & Sag Adjuster play a very important role in design of suitable insulator strings. Yoke Plates are used for strain equilising insulator string as well as spacing of conductor upto 220 KV. Single conductor system for important location like highway crossing, railway track crossing. Dual string tension and suspension arrangements and total load is equilised by suitable yoke design. Normally upto 220 KV spacing is 330mm whereas for UHV line where there is necessity of crossing required sub-conductor spacing the applicable gap are 400mm to 500mm. for special application of open profile insulator having large diameter it may be necessary to increase the sub-conductor spacing upto 600mm. Various types of yokes and Sag adjuster are illustrative in the following figures. Provisions are made in the Yoke devices to facilitate hot line maintenance.

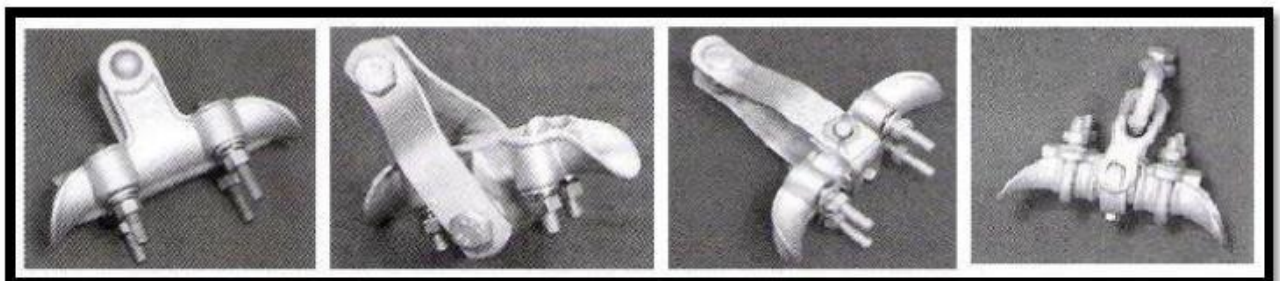


## TENSION AND SUSPENSION CLAMPS



## SUSPENSION CLAMPS

G D Power offers complete range of envelop design clamps from 6mm diameter to 55mm diameter conductor. Clamp bodies and keeper pieces are cast in high strength copper free Al + Si Alloy and are also made in other alloys, heat treatment depending upon strength requirement. The U-Bolt and Clevis pins are of galvanised steel while split pins are of stainless steel. These clamps offer minimum power loss and heat due to hysteresis effect at higher current.

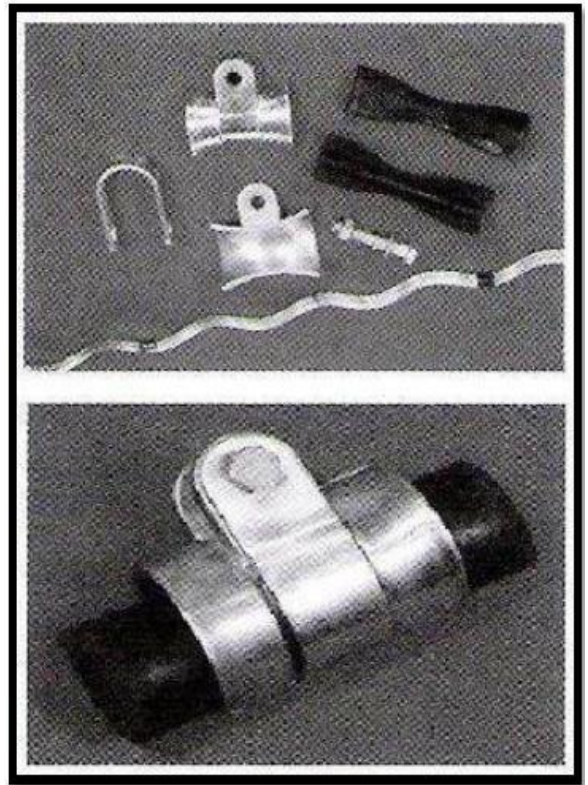


## A.G SUSPENSION

*ARMOUR GRIP DESIGN*



It has been recognised that design of suspension clamp has strong bearing on fatigue damage due to wind induces vibrations. Armour Grip Suspension Clamp offers the best solution for conductor protection against fatigue damage. Two Neoprene halves are first applied on the conductor and a set of helical rods wrapped over it. The two Aluminum half casting have an inner profile matching with the profile of the armour rod cage and is joined by a support strap made of aluminum alloy as illustrated in the photograph. For higher mechanical reliability the aluminum housing are also produced by aluminum alloy forging. The design is superior for Corona and Radio Interference Voltage Characteristics and also ensures minimum power loss at high operating currents.

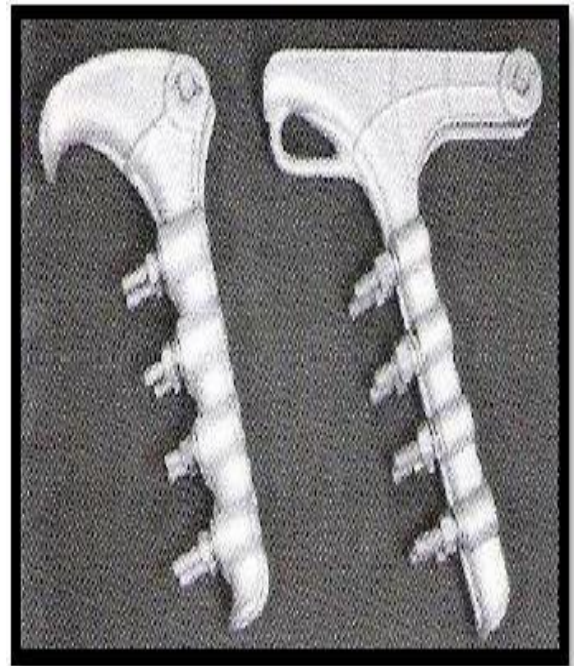


## TENSION CLAMPS

### PISTOL TYPE BOLTED STRAIN CLAMP

They are used where it is not desired to cut the conductor at tension points in alternative to the compression type dead-end. They can be used for practically all system voltages with reasonably high mechanical and slip strength. Properly designed clamps can offer 80 to 95% slip strength for 46 mm diameter ACSR and consistent mechanical strength up to 11500 kgs.

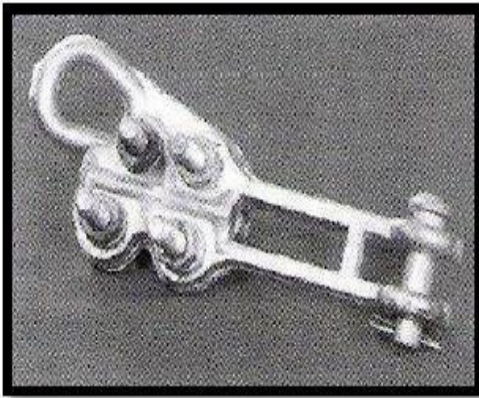
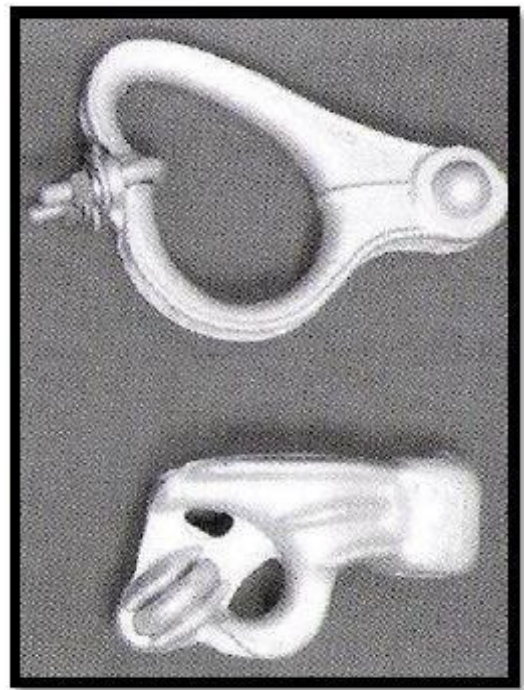
They are made of cast aluminum alloy and have, following their size a variable number of galvanized steel U-bolts fitted with nut, spring washer and plain washer.



## SNUBBING TYPE CLAMP

This design has wide acceptance for distribution line applications up to conductor diameter of 14 mm. The design exploits the principle of snubbing to gain high holding power. The conductor forms almost or complete circle in following, the clamping seat and emerges from the Clamp ready to make up loop with extra snapping.

They ideally suit AAC & AAAC. For ACSR with higher bending rigidity the straight line design or pistol design strain clamp offers easier installation depending upon diameter and composition of conductor this design offers minimum slipping strength between 80% to 95% of the conductor rated breaking strength Clamp bodies and keeper are made of high strength Aluminum alloy. U-bolts and associated components are of galvanized steel.



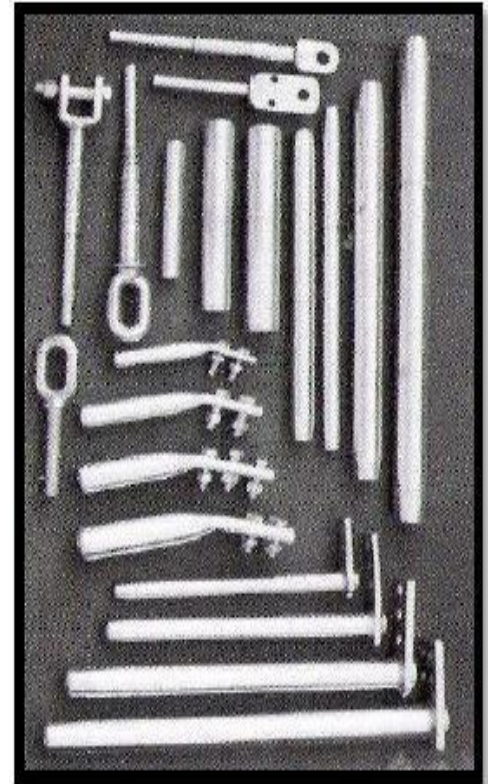
## STRAIGHT LINE CLAMPS

Holding Power of straight line designs meet requirement of heavy primary distribution service and offers slip strength between 60% to 80% of rated breaking strength of conductor. The design offers easiest and fastest application of protection cover in hotline work.

Keeper piece is provided with lifting eye. Clevis pin, U-bolt and associated components are steel Hot-Dip galvanised. Clamp bodies, keeper pieces are also cast aluminum alloy.

## COMPRESSION TYPE DEAD-END CLAMP

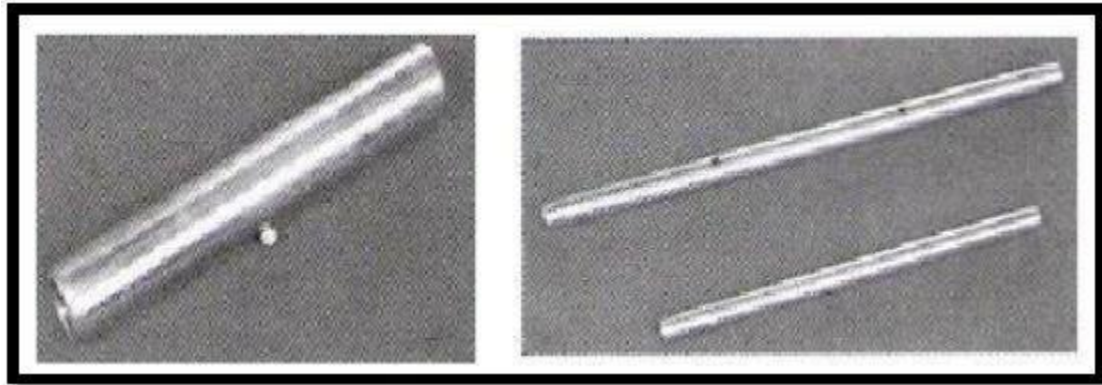
Compression type dead ending is widely accepted practice on EHV lines because of its high mechanical reliability and Electrical continuity. For distribution line bolted types clamps are popular because of easier installation, without any special tool, maintenance advantage and continuity of jumper. However because of vibration and loosening problems quite often localized heating affects performance and cause outage. Compression type dead end for small diameter conductor is popular mainly because of its superiority in Electrical Conductivity. These are suitable for AAC, AAAC & ACSR conductor of small diameter. This installation can be done by mechanical crimper having provision for changing dies suitable for hexagonal crimping. While for AAC and AAAC hand mechanical crimper can be used up to conductor diameter of 16mm, for ACSR it is not recommended above 14mm.



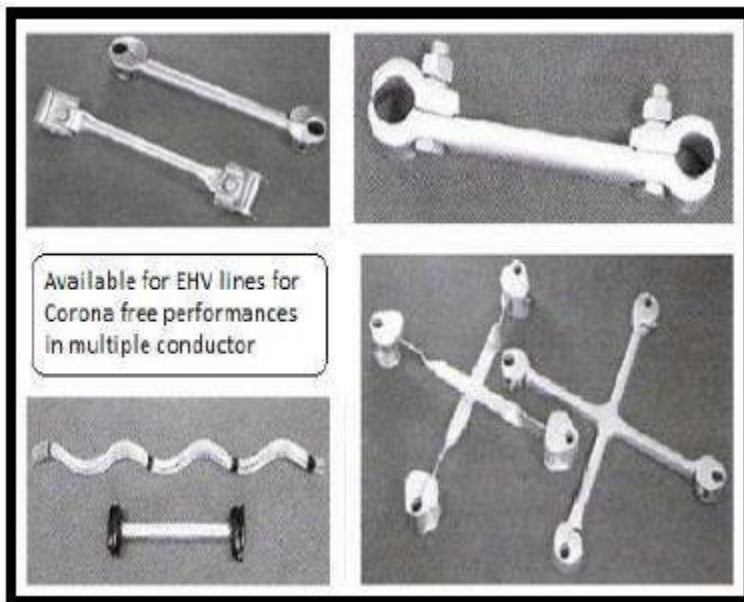


## MID SPAN JOINT & REPAIR SLEEVES

These can be supplied for all conductors and earthwire sizes. Aluminium joints are extruded type and steel joints supplied for earthwire. Mid span joints and dead end fittings will develop minimum 95% of ultimate strength of the conductor and earthwire. Dead ends and mid span joints have conductivity not less than conductor. Compression is done from round to hexagonal shape. Universal jointing compound for electrical connections is available on request

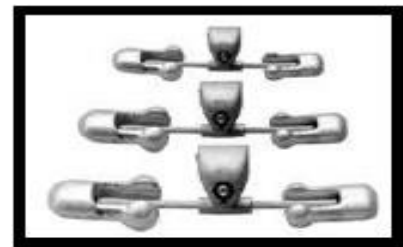


## VIBRATION DAMPER, SPACERS & SPACER DAMPER



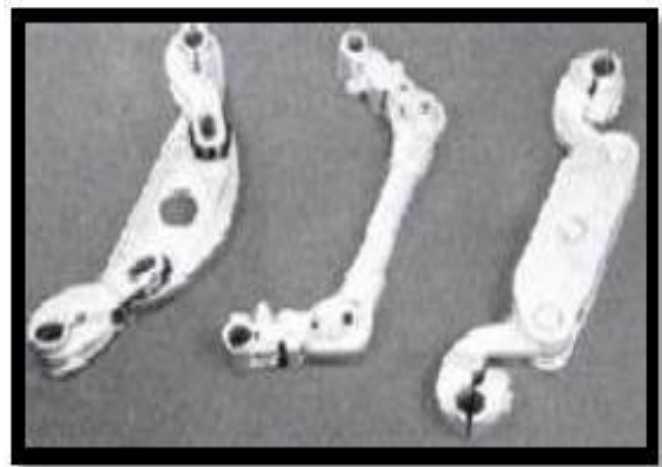
Stockbridge type with efficient one bolt grip and ease of application even on live line.

Weights are of galvanised iron, clamp of aluminum alloy & steel cable of high tensile galvanised stranded wires protected with flexible sheathing.



### SPACER DAMPERS

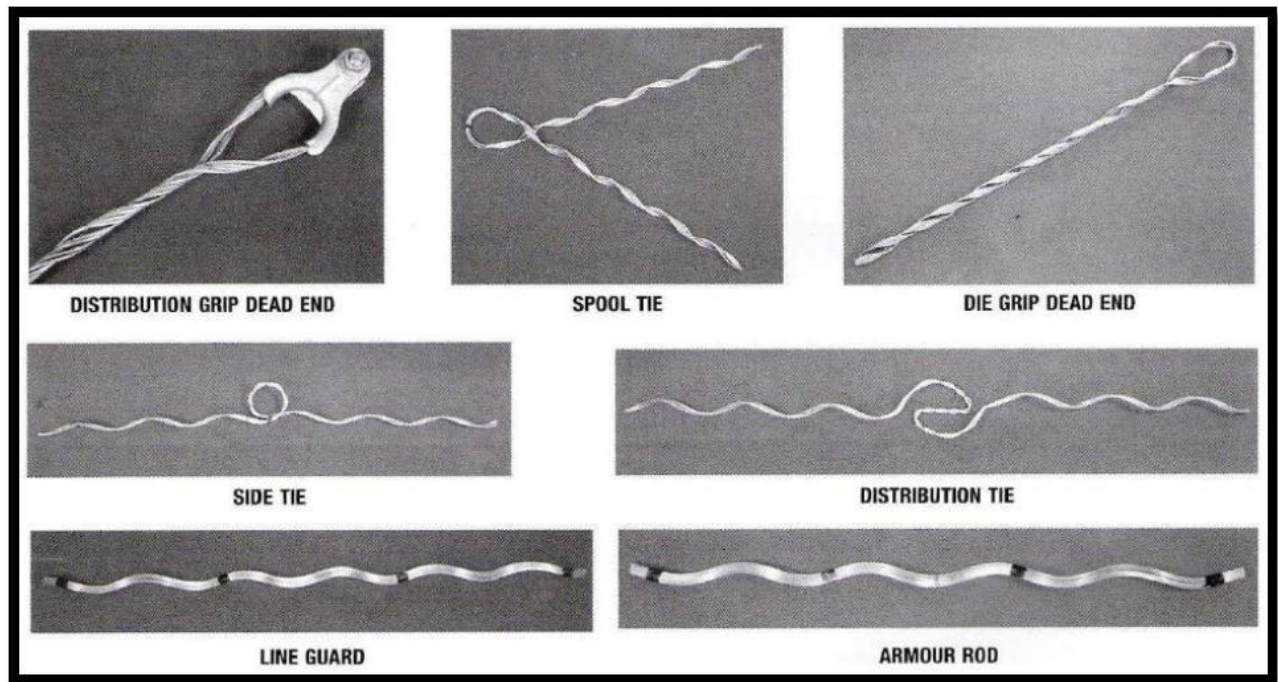
Spacer Dampers are available in various configurations of bundle conductors in several types and design including normal and armour grip type. Use of Spacer Dampers effectively serve dual purpose of Spacers and Dampers and are designed to with stand mechanical, vibration and short circuit requirements of applications.



## PERFORMED PRODUCTS

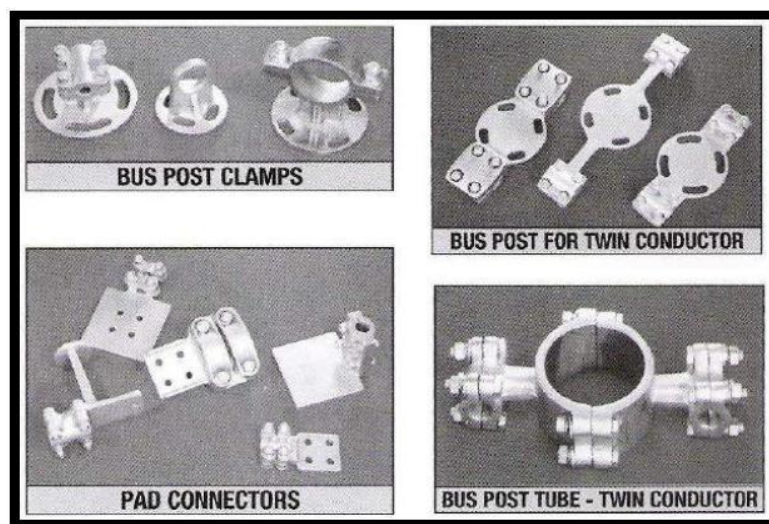
Available in high strength, high conductivity alloy for both tapered and performed type items, aluminum clad steel & high strength steel suitable for various applications in a comprehensive

range of fittings. The product are designed for optimum application, securing all types of bear, homogenous conductors and will hold the required breaking strength with even distribution on holding pressure. Products are quicker and easier to install than other clamps or fittings.



## CLAMPS & CONNECTORS

G D Power supplies quality connectors made of high strength aluminum alloy, with versatile design can also be tailor made for any application. Bi metallic application and copper, other alloy connectors for specific application, requirement is also available.



The items shown over here are not exhaustive and wide range of connectors are available to suit every requirement in sub-station or requirement line.

While enquiring please specify the application, Conductor/tube size, approach, type of termination, terminal or stud size, Current rating or corona & RIV rating required.





CONNECTORS FOR BUS CONNECTIONS



COMPRESSION TYPE T - CLAMP



COMPRESSION LUG



PARALLEL GROOVE CLAMPS



T - CLAMP BUS POST -STUD/CONDUCTOR



T - CLAMP TUBE - TWIN



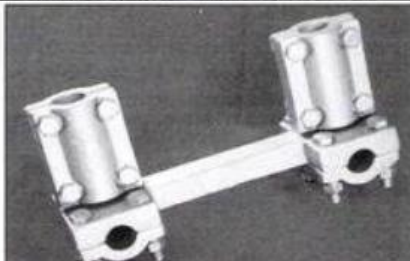
T - CLAMP SINGLE - TWIN CONDUCTOR



T - CLAMP



BUS POST CLAMP



T - CLAMP TWIN - TWIN CONDUCTOR



TUBE - SINGLE CONNECTOR



SPACERS



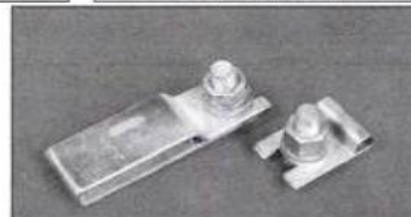
BULL - DOG CLAMP



FLEXIBLE EXPANSION CONNECTOR



PG CLAMP FOR TWIN CONDUCTOR



CLEAT CLAMP FOR EARTH WIRE & FLAT



T - CLAMP TUBE - TWIN CONDUCTOR

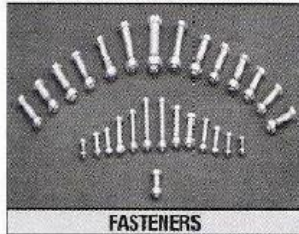


# POLE LINE HARDWARE

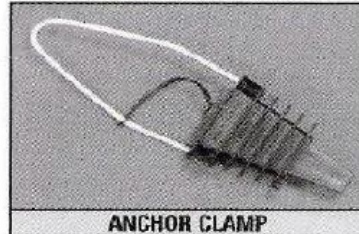
G D Power supplies a comprehensive range of pole line hardware fittings which provides varying degrees of conductor production, repair, jointing, tension ensuring superior protection, uniformity and complete compatibility in perfect configurations to meet all requirements of electrical bodies and utilities throughout the world.



ANCHOR ROD



FASTENERS



ANCHOR CLAMP



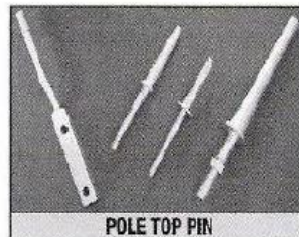
STAY ASSEMBLY



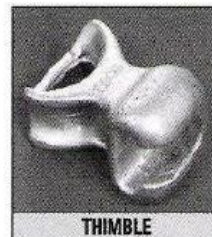
PREFORMED GUY GRIP DEAD END



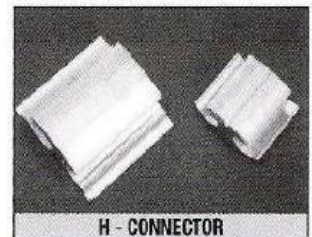
EYE NUT



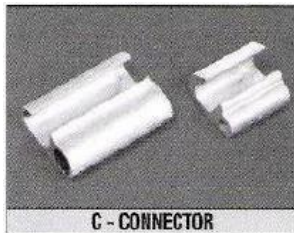
POLE TOP PIN



THIMBLE



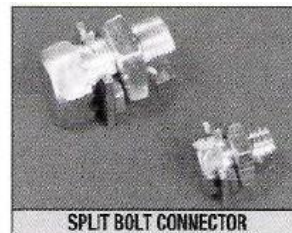
H - CONNECTOR



C - CONNECTOR



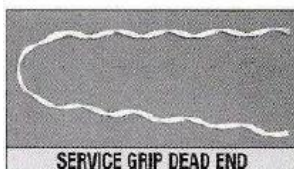
STRAIGHT LINE CLAMP



SPLIT BOLT CONNECTOR



SERVICE LOOP CLAMP



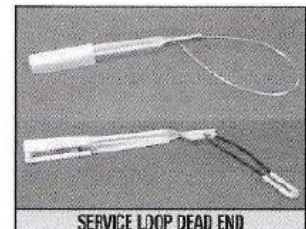
SERVICE GRIP DEAD END



PG CLAMPS



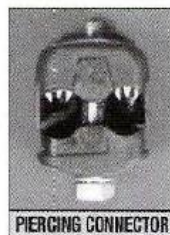
GROUNDING CLAMP



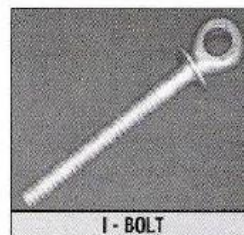
SERVICE LOOP DEAD END



ANGLE CLAMP



PIERCING CONNECTOR



I - BOLT



SUSPENSION CLAMP

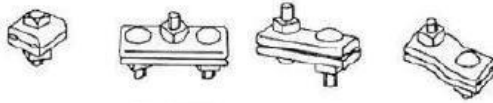




NUTS



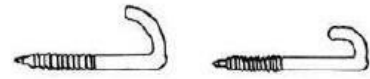
WASHERS



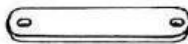
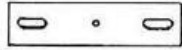
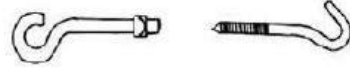
GAY-CLAMPS



GROUND ROD CLAMP



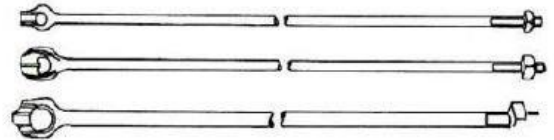
HOOKS



EXTENSION UNITS



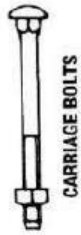
SERVICE WEDGE CLAMP



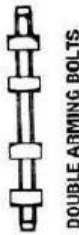
ANCHOR RODS



MACHINE BOLTS



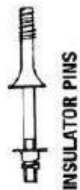
CARRIAGE BOLTS



DOUBLE ARMING BOLTS



POLE TOP PINS



INSULATOR PINS



STAPLES



THIMBLE EYENUTS



OVAL EYENUT



STRAIGHT THIMBLE EYELETS



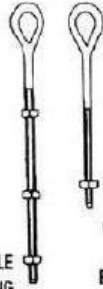
TWIN EYE NUTS



ANGLE THIMBLE EYELETS



GROUND RODS



DOUBLE ARMING EYE BOLTS



OVAL EYE BOLTS



GUY ATTACHMENT



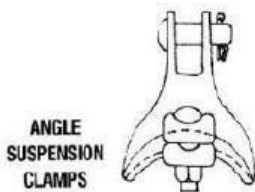
GUY HOOKS



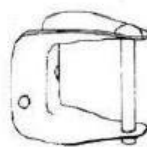
STAY ROD TUBULAR TYPE



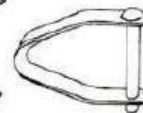
STAY RODS & PLATE



ANGLE SUSPENSION CLAMPS



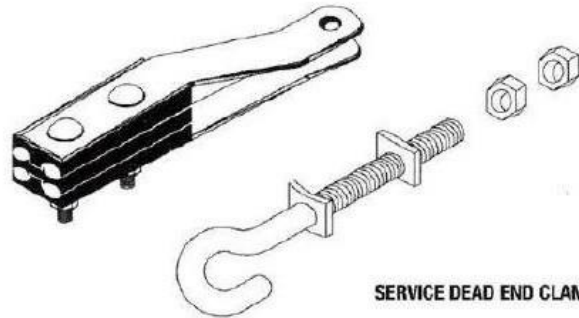
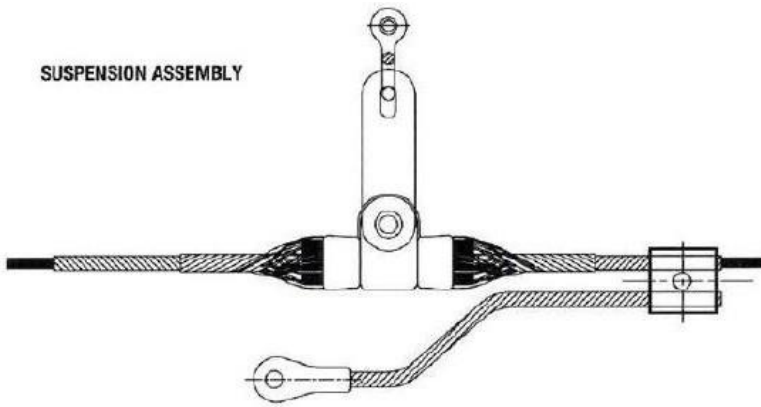
INSULATED SECONDARY CLEVISES



INSULATED SWINGING CLEVISES

# OPGW FITTINGS/ ABC FITTINGS

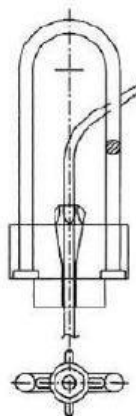
SUSPENSION ASSEMBLY



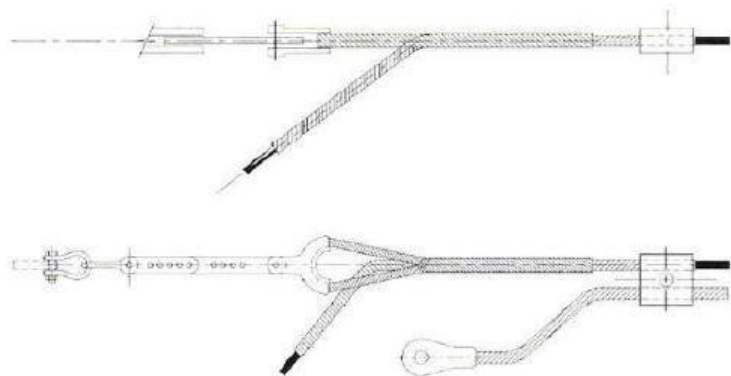
SERVICE DEAD END CLAMP



DAMPER



AUTOMATIC DEAD END CLAMP



TENSION ASSEMBLY



# WHAT SHOULD YOUR ENQUIRY

In order to understand your requirements better and response quickly, we would appreciate your enquiries to be accompanied with all technical data incl. KV, Conductor Size, Type of Configuration, Mechanical Strength, Electric Parameters requirement and quantity, Other Project specific requirement and Deadline. Once we receive your enquiry our Executives will respond with details shortly.

G D Power  
Chatterjee Industrial Estate,  
Bankra (Dotalla), Jhilpara,  
Howrah - 711403.  
Website :- [www.gdpower.in](http://www.gdpower.in)  
Email: [g.d.power2013@gmail.com](mailto:g.d.power2013@gmail.com)  
Mobile: +91-8100135559  
+91-9883507649

