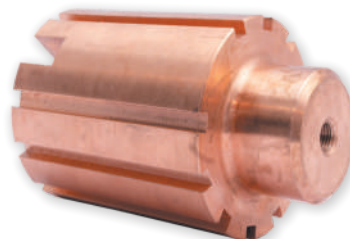
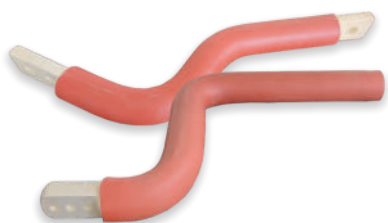


Celebrating 25th year...

# EN EFFICIENT METHODS



# About Us:

We are delighted to introduce ourselves as a Dynamic Small-Scale Industry, located in the Industrious MIDC Area of Ambad, Nashik, operating under the esteemed banner of M/S Efficient Methods. Established in 1996 as a registered partnership firm, we have emerged as a reliable supplier for the switchgear industry.

At Efficient Methods, our core expertise lies in the precision crafting of copper and aluminium bus bars, electrical contact assemblies, sheet metal components, as well as offering meticulous Quality Control. Our dedication to excellence has earned us the privilege of serving esteemed organizations such as:

- M/S Bharat Heavy Electricals
- M/S Siemens Ltd.
- M/S Schneider Electric
- M/S Crompton Greaves Ltd.
- M/S ABB Ltd.
- M/S Lucy Electric (India) Pvt. Ltd.

And Suppling for wide range switch gear products, like: LV, MV, HV, & EHV Current Distribution Panels, Transformers, RMUs, Circuit Breakers (AIS), GIS – 145KV to 800 KV, OLTC, Isolators, and many more.

As a partnership firm with an annual turnover of approximately Rs. 40 Cr. for FY 22-23, we have built our operations on a foundation of a well-equipped unit spanning over 10000 sq. feet. Our comprehensive infrastructure enables us to deliver on our commitments with precision and efficiency.

Dedicated to continuous improvement, we have bolstered our capabilities to accommodate additional workloads as part of our expansion endeavours. At Efficient Methods, our core values revolve around:

- Impeccable adherence to stringent quality standards.
  - Minimization of wastages, rejections, and reworks.
  - Swift response times to meet every requirement.
  - Unwavering commitment to complete customer satisfaction.
- Optimum utilization of Green Energy produced In-House to reduce our Carbon Footprint.

Recognized as a CTQ (Critical to Quality) vendor, we are proud to have achieved the ISO 9000:2015 certification. This dedication to quality has culminated in our achievement of the coveted THREE STAR (highest) rating in quality assessments for the past consecutive years.

Confident in our abilities, we assure customers that we can cater to their requirements with utmost satisfaction, irrespective of the volumes involved. Should the need arise, we are prepared to augment our infrastructure to meet the evolving needs.

At Efficient Methods, we don't just deliver products; we forge enduring partnerships built on trust, quality, and unwavering commitment to excellence.





## Mission

To Sail new sky's as well as standout as a trust worthy organization for exceeding stake holders expectations.



## Vision

To aspire for providing varied critical solution that meet with end point applications for our customers.



## Values

Integrity, Ethics, Reliability, Fairness, Teamwork & Courage.

## Scope of Supply

### Switchgear Industry

- Fabricated Bus bars.
- Precision Machined Components.
- Electrical Contact Assemblies.
- 3D Round Busbars.
- Flexible Lamination / Connections
- Ferrous & non - Ferrous Sheetmetal parts.

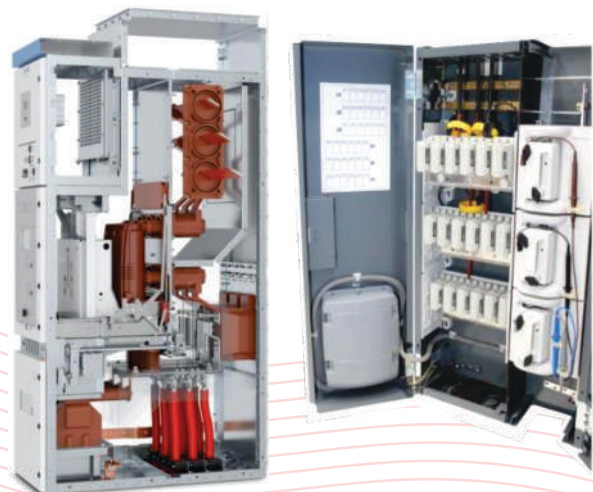


### Electro Surface Treatments

- NF - Deep Bright.
- Silver (up to 150um)
- Tin ( up to 150um )
- Hard Silver Plating (up to 150um )
- Alkali Cleaning

### Battery Industry

- Rigid inter cell connectors.
- Brass Insert.
- Flexible Inter - cell connectors.
- Static battery Components





# Fabricated Bus - Bars

## Scope of Supply

We manufacture busbars with cutting, punching, notching, horizontal bending, edge radius & twist bending, with corner radius & edge radius, as per customer requirement / design.

## Material

ETP Grade Copper, Copper Alloys, Aluminium, Aluminum alloys & Brass radius.

## Sleeves

Bus bars can be supplied with heat Shrinkable Sleeves of appropriate voltage rating as per customer requirement. Sleeves used are PVC, Raychem, & Polyolefin Heat Shrinkable Sleeves.

## Capacity

**WIDTH :** up to 250mm  
**THICKNESS :** up to 20mm.  
**LENGTH :** up to 6 meters.

## Sizes

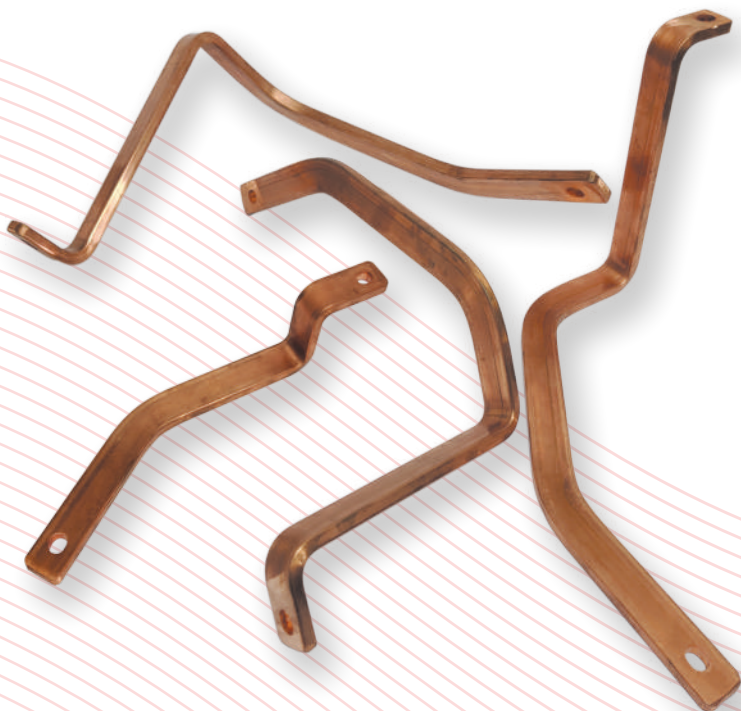
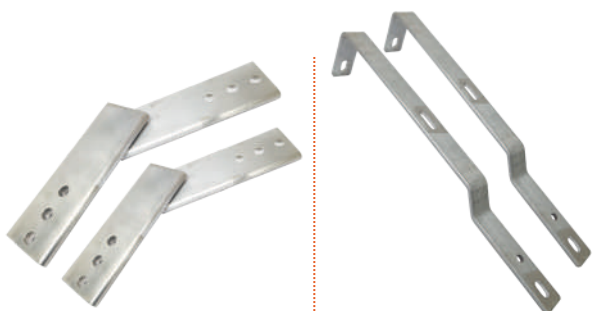
Exactly as per Customer Specification & drawing.

## Tolerance

**$\pm 0.2\text{mm}$  dimensional accuracy &  
- 0.5 degree bending accuracy.**

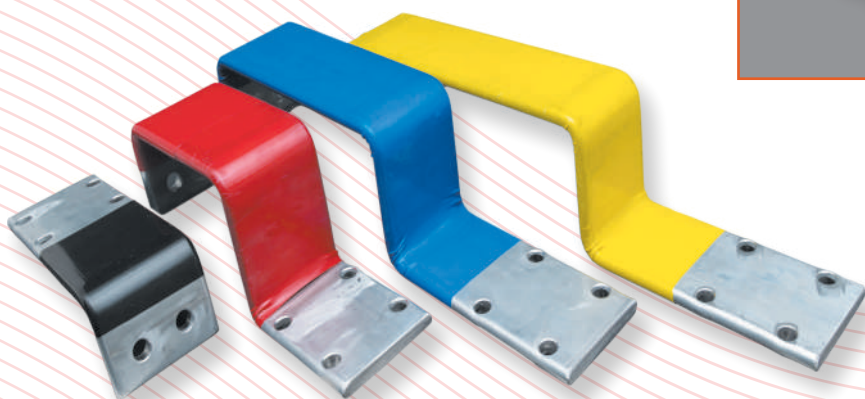
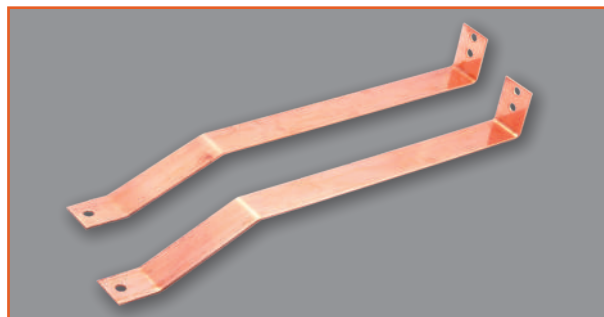
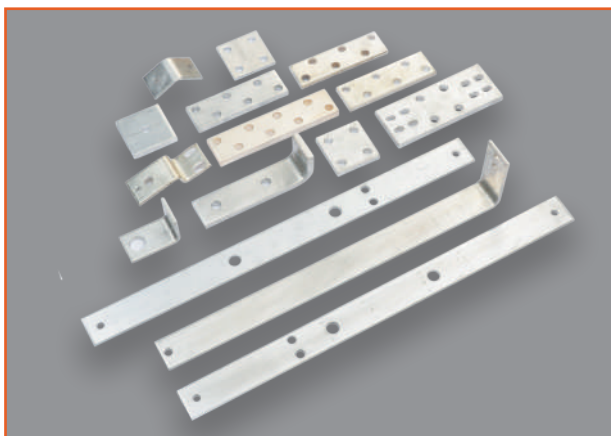
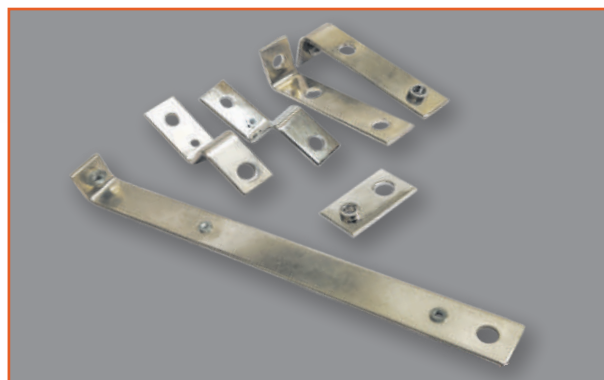
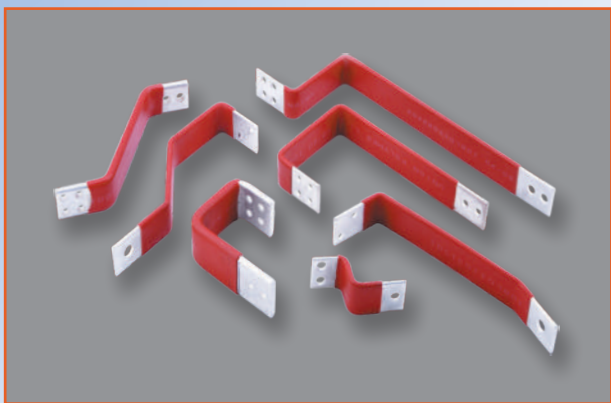
## Electro Surface Treatments

Deep Bright, Nickel - Silver - Tin Electroplating, Partial & full plating





# Fabricated Bus - Bars



# Machined Components

## Scope of Supply

Highly complex and accurate machined parts on conventional as well as CNC Lathe, VMC & DRO machines.

## Material

ETP Grade Copper, Copper Alloys, Copper Forgings, Copper Castings, Aluminium, Aluminum Alloys, Aluminum castings, Brass, Stainless, Mild steel.

## Others

We have required infrastructure for fitting of helicoil thread insert of up to M30 to machined components as required by the Customers.

## Capacity

**Approx. 30 tons per month of material can be processed**

## Sizes

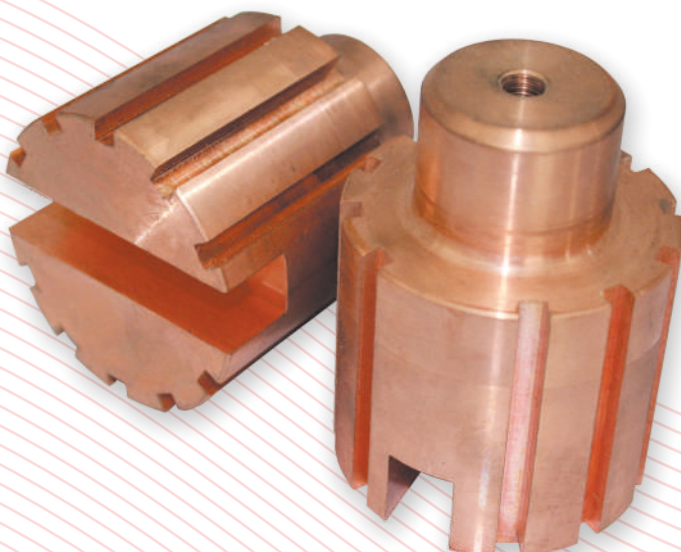
Exactly as per Customer Specification & drawings.

## Tolerance

**$\pm 0.1\text{mm}$  for any dimension**

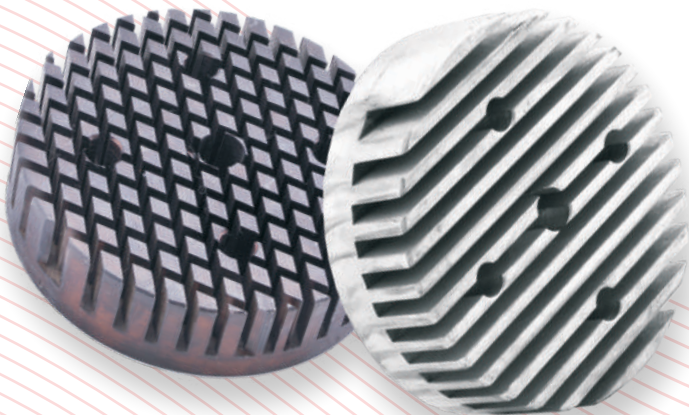
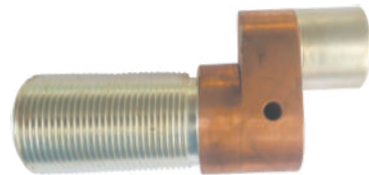
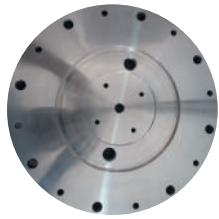
## Electro Surface Treatments

Deep Bright, Nickel (Ni), Silver (Ag), Tin (Sn) Electroplating, Partial & full plating.





# Machined Components





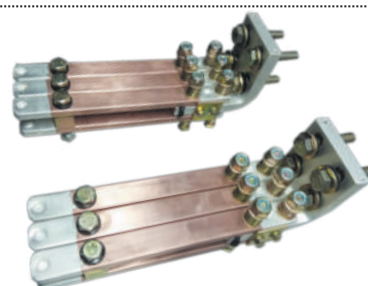
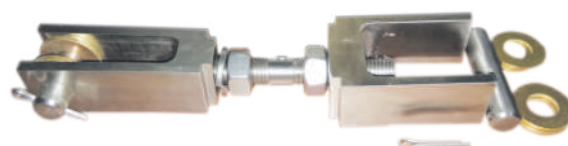
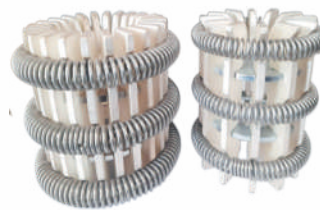
# Assemblies

## Scope of Supply

We are specialized in manufacture and supply of Critical Contacts & Sub - Critical Contacts. We have capacity to manufacture all child parts in house. We can supply them exactly as per customer specifications and drawings. These Sub - assemblies incorporate several child parts which include copper, steel, stainless steel, Brass, Aluminium, Plastic, hardware and springs

## Material

ETP Grade Copper and Copper Alloys, Aluminium, Brass



# 3D Bus - Bars

## Scope of Supply

We can produce highly complex and accurate 3D Busbars in solid or pipe cross-section, these can be made with machined palms or cold forged palms, as per the customer requirement. The busbar ends can also be brazed with mounting terminals as per requirement or drawings. These are produced on highly sophisticated and programmed automatic machines.

## Material

ETP Grade Copper, Copper Alloys, Aluminium, Aliminum Alloys, Brass, Stainless steel & Mild steel.

## Capacity

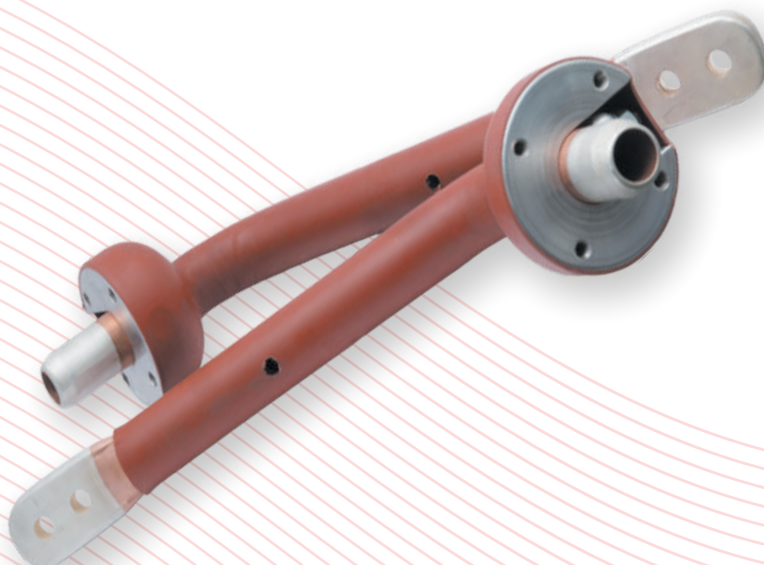
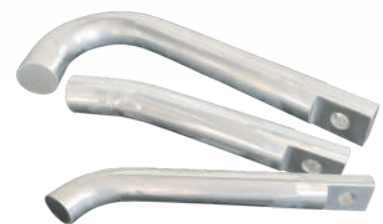
10mm  $\varnothing$  to 80mm  $\varnothing$  pipe section.  
10mm  $\varnothing$  to 50mm  $\varnothing$  solid section.

## Tolerance

With  $\pm 0.5$  deg.

## Electro Surface Treatments

Deep Bright, Nickel (Ni), Silver( Ag), Tin(Sn)  
Electroplating, Partial & full plating.



# 3D Bus - Bars





# Flexible Connection / Pressure Welding

## Scope of Supply

We can produce highly critical shapes & flexible connections / laminations and braided flexible laminations exactly as per customer specifications. These can be supplied with or without electroplating.

## Material

Copper Foil, Copper Braid, Aluminium foil.

## Capacity

**Foil Thickness : 0.5mm up to 1.00mm**

**Thickness : upto 50mm**

**Width : 125mm**

## Tolerance

**± 0.3mm for all dimensions.**

## Electro Surface Treatments

With or without any treatments.



# Sheet Metal

## Scope of Supply

We manufacture Critical contact fingers, critical shaped sheet metal components, child parts various contact assemblies.

## Material

Copper , Copper Alloys, Bi-metals, Aluminum, CRCA, HRCA, Brass, Stainless Steel sheets.

## Capacity

**Width : upto 300mm**

**Thickness : upto 7mm.**

**Length : upto 300mm**

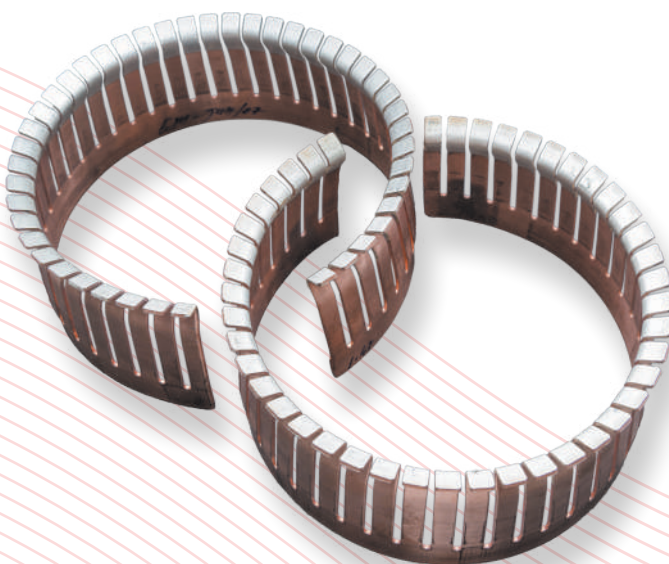
**upto 25 - 30 Tons Material per month.**

## Tolerance

**± 0.2mm for any dimensions.**

## Electro Surface Treatments

Deep Bright, Nickel (Ni), Silver( Ag), Tin(Sn)  
Electroplating, Partial & full plating.



# Brazed Components

## Scope of Supply

We have required infrastructure and highly equipped vendor base or highly precision brazing operations. We manufacture complex Shaped components as per the exact requirement of customer. We have complete resource to test and verify the brazing quality.

## Material

Following metals are being brazed with induction brazing Process & Resistance Brazing Process.

- copper to silver
- copper to Tungsten
- copper to Copper
- copper to Brass
- copper to Aluminum
- Aluminum to Aluminum
- Aluminum to Brass

## Capacity

**Width : upto 300mm**

**Thickness : upto 7mm.**

**Length : upto 300mm**

**upto 25 - 30 Tons Material per month.**

## Sizes

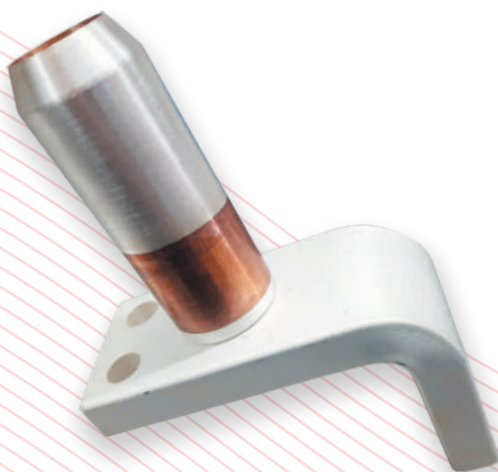
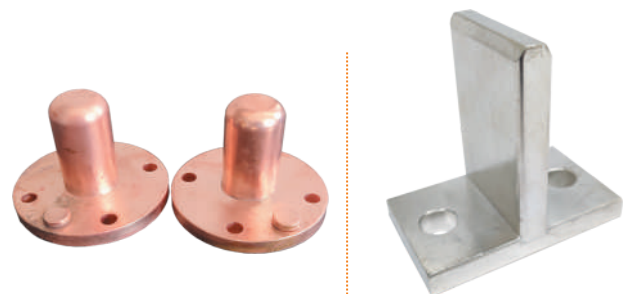
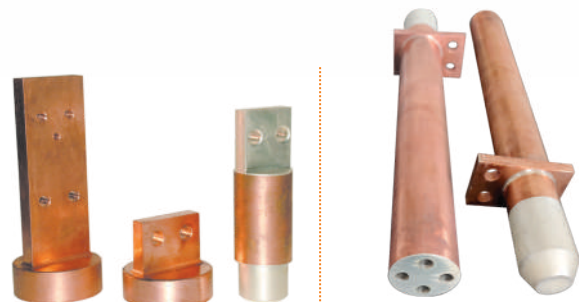
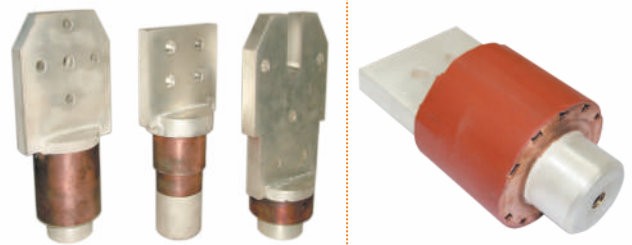
Any size as per the requirement.

## Tolerance

**± 0.1mm for all dimensions.**

## Electro Surface Treatments

Deep Bright, Nickel (Ni), Silver( Ag), Tin(Sn)  
Electroplating, Partial & full plating.





# Plating Components

## Scope of Supply

We have state-of-art setup for electro surface plating. The plant is equipped with advanced technology equipments. With the advanced technique ETP, ZLD & scrubber equipments, all the required norms for pollution control are maintained well within the given control norms.

## Material

Copper, Copper alloys, Aluminum, Aluminum Alloys, Brass, Brass alloys, Mild steel.

## Sizes

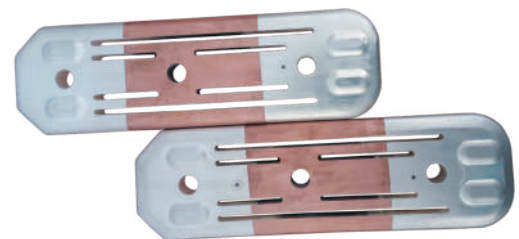
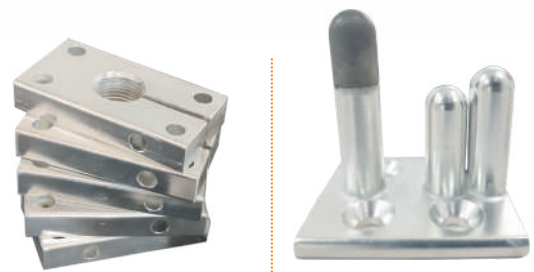
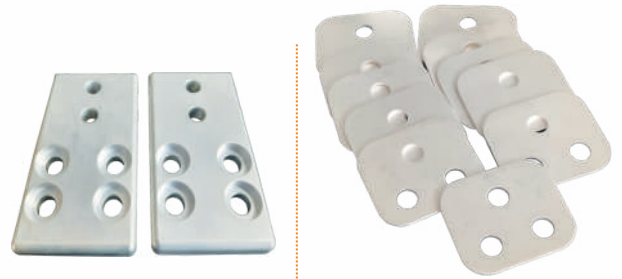
Length : upto 1500mm or 400mm  $\phi$   
Thickness : upto any thickness.

## Capacity

Up to 375 Lac dm<sup>2</sup>/ month  
Up to 150 U

## Tolerance

$\pm 5\%$  within the component.



# Accessories

## Scope of Supply

We have state-of- art setup for electro surface plating. The plant is equipped with advanced technology equipments. With the advanced technique ETP, ZLD & scrubber equipments, all the required norms for pollution control are maintained well within the given control norms.

## Material

Copper, Copper alloys, Aluminum, Aluminum Alloys, Brass, Brass alloys, Mild steel.

## Sizes

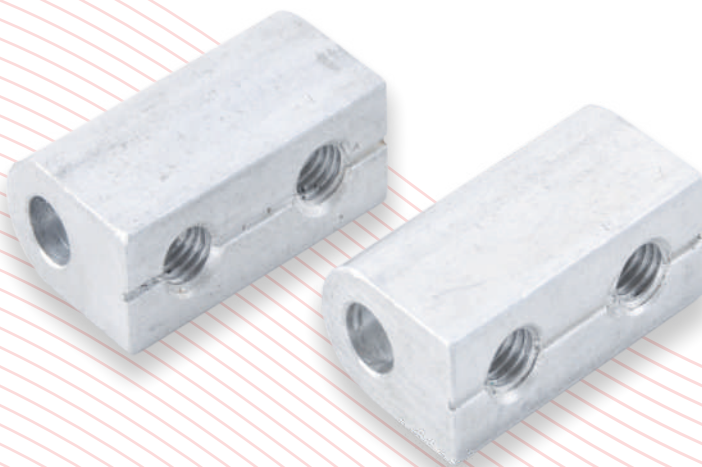
Length : upto 1500mm or 400mm  $\varnothing$   
Thickness : upto any thickness.

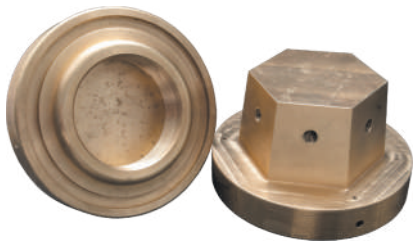
## Capacity

Up to 375 Lac dm<sup>2</sup>/ month  
Up to 150 U

## Tolerance

$\pm 5\%$  within the component.







# Available Infrastructure

Efficient Methods takes pride in its cutting-edge infrastructure, meticulously designed to deliver precision-engineered components of the highest quality. Our facilities span over 10000 square feet, housing state-of-the-art machinery and equipments tailored to diverse manufacturing needs. Here is an overview of our available infrastructure:

## 1. Bus Bar Setup:

- Our facility boasts a State-of-the-Art Bus Bar Setup capable of manufacturing both Fabricated Busbars and 3D Busbars.
- We can make flat busbars upto 250mm width and 20mm thickness. For 3D busbars, we can make upto 80mm Dia pipe and upto 50mm Dia Solid Rode. We have Hot and Cold Forging, Machining Facility for making Palms.

## 2. Highly Precise Machining Setup:

- Equipped with advanced machinery including CNCs (Computer Numerical Control) and VMCs (Vertical Machining Centres) with 4th Axis enabled, we ensure unmatched precision in every component.
- We are equipped with traditional cutting, Milling, Turning, Drilling and Tapping Facilities.

## 3. Flexible Connections/Laminations Setup:

- Dedicated machines are employed for the manufacturing of Flexible Connections/Laminations manufacturing with Solidification or without. (Wrapped Laminations), ensuring flexibility and reliability in our products.
- We are equipped and experienced for solidification of 2 different metals.
- We are well equipped with Electroplating of Flexible Connections and Laminations

## 4. Electro Surface Treatment Setup:

- Featuring a State of the Art and Advanced ElectroSurfaceTreatment Setup, we offer electroplating services with a variety of finishes including Copper, Nickel, Tin, and Silver.
- We offer Silver and Tin, Copper Plating, Deep Bright, Alkaline Cleaning treatments (Ag-Cu, Ag-Al, Ag-Br, Etc) (Sn-Cu, Sn-Al, Sn-Br, Etc) (Cu-Al)
- Our Setup is NPCB and environmental Laws Compliant. Ensuring that all the statutory requirements are met regularly.
- Our Plant is Audited and Certified by all the Major Switch Gear Industry Giants.



# Available Infrastructure

## 5. Assembly Setup:

- Our state-of-the-art assembly setup is equipped to assemble various contact assemblies as per the specific requirements of our customers, ensuring seamless integration and functionality.
- All the critical components required as per the design are manufactured in-house.
- We are equipped with sleeving of all types of Heat Shrinkable sleeves to Flat Busbars, Round Busbars and Busbar Assemblies with PVC, HBT, Raychem, BBTI, and BBTM type sleeves. We have oven for upto 3 Meter Components.
- We have advanced Machines for Tapping, Helicoil Fitting, Clinch nut, and Clinch Stud Fitting operations.

We have advanced laser engraving machines for marking/identification.

## 6. Quality Assurance Setup:

- Our skilled workforce ensures on-job training, in-process inspection, and final quality acceptance. Equipped with the latest tools, our Quality team conducts rigorous testing of material properties like hardness, conductivity, and mechanical aspects before manufacturing. We also perform RA value testing, plating thickness checks, pressure tests, and final dimension inspections for all components before acceptance.
- Recently, we have incorporated the highly precise "Rapid I" quality machine, enhancing our ability to generate comprehensive reports for all required dimensions.

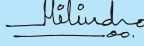
At Efficient Methods, our infrastructure is not just a testament to our capabilities, but a reflection of our dedication to craftsmanship, precision, timely deliveries and unwavering quality standards.





**Quality Policy**

We at **EFFICIENT METHODS** are committed to Manufacture & Supply defect free products as per the customer requirement. And achieve total customer satisfaction through continual improvement in all areas of the Operations and Quality Management Systems.



Milind Pagar  
Chief Executive Officer  
1st October 2012

**इफीशिएन्ट मेथडस्  
गुणवत्ता धोरण**

आम्ही, इफीशिएन्ट मेथडस् परिवारातील सर्व, निश्चय करतो की, आम्ही बनविलेले उत्पादन व पुरवठा, दोषविरहीत तसेच ग्राहकांच्या गरजांनुसार व मानकांनुसार करू. उत्पादनाच्या सर्व टप्प्यांमध्ये सातत्याने सुधारणा करून, आमच्या ग्राहकांचे समाधान करू. तसेच गुणवत्ता व्यवस्थापन प्रणालीच्या परिणामांमध्ये सुधारणा करू.



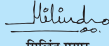
मिलिंद पगार  
मुख्य कार्यकारी अधिकारी  
१ ऑक्टोबर २०१२

**पर्यावरण, स्वास्थ्य व सुरक्षा धोरण**

आम्ही, इफीशिएन्ट मेथडस् अंबड, परिवारातील सर्व, निश्चय करतो की, आम्ही प्रदुषणरहित तसेच आरोग्यदायी व सुरक्षीत कार्यशाळा उभारण्यास वचनबद्ध आहोत, हा उद्देश खालील प्रकारे करू.

- पर्यावरण, आरोग्य व सुरक्षा या संबंधित कायदे व इतर गरजांचे काटेकोर पालन करणे.
- उद्दिष्टे व लक्ष वेळोवेळी परिक्षण व आढावा घेऊन पर्यावरण, आरोग्य व सुरक्षे संबंधित सतत सुधारणा करणे.
- कार्य, सेवा, उत्पादन पद्धती, यावर नियंत्रण ठेवून टाकावू माल कमी करणे.
- सर्व कर्मचारी व कंपनीच्यावतीने काम करणाऱ्यांशी संवाद राखणे.
- जागरूकता व प्रशिक्षण

ह्या धोरणाचे वेळोवेळी परिक्षण करून ते कंपनीच्या उद्दिष्टांशी सुसंगत आहे हे पहाणे व ते हितसंबंधितांना मागणीनुसार उपलब्ध करून देणे.



दिनांक. २५/०८/२०१३

मिलिंद पगार  
मुख्य कार्यकारी अधिकारी

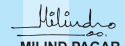
**Environmental, Health & Safety Policy**

We at **EFFICIENT METHODS** are committed to manufacture & supply of precision machined& fabricated components, sheet metal components and assemblies to Prevention pollution and create a healthy and safe workplace.

This will be achieved through

- Complying with applicable legislative, regulatory and other requirements related to Environmental, Health & Safety.
- Monitoring of Environmental Health and Safety performance and continual improvement through objective and targets periodic audits and reviews.
- Waste reduction by controlling and improving activities services products / process characteristics.
- Communication to all employees and persons working on behalf of factory.
- Awareness and Training.

This policy shall be reviewed periodically for its relevance and appropriateness to the organization & made available to the interested parties.



MILIND PAGAR  
Chief Executive Officer

DATE: 25.08.2013

# Certificates

**CERTIFICATE**

Management system as per  
**ISO 9001 : 2015**

The Certification Body TÜV INDIA hereby confirms as a result of the audit, assessment and certification decision according to ISO/IEC 17021-1:2015, that the organization

**EFFICIENT METHODS**

Unit I: F-101,102, MIDC, Ambad,  
Near KOSO,  
Nashik - 422 010,  
Maharashtra,  
India

and other location as per annexure and sub-certificate

operates a management system in accordance with the requirements of ISO 9001:2015 and will be assessed for conformity within the 3 year term of validity of the certificate.

**Scope :**

**Manufacture and Supply of Precision Machined & Fabricated Components, Sheet Metal Components and Assemblies**

Certificate Registration No: **QM 01 00825**  
Audit Report No: **Q 8968/2018**

Valid from 30.09.2021  
Valid until 29.09.2024  
Initial certification 30.09.2018



Certification Body  
at TÜV INDIA PVT. LTD.

Mumbai, 03.09.2021

TÜV India Pvt. Ltd., 801, Raheja Plaza - 1, L.B.S. Marg, Ghatkopar (W), Mumbai - 400 086, India [cert.helpdesk@tuvindia.co.in](mailto:cert.helpdesk@tuvindia.co.in)





## Our Most Valued Customers



Baroda Moulds & Dies  
(Heavy Epoxy Cast Components)

**TOSHIBA**



**SIEMENS**



**HYOSUNG**



**AMARA RAJA**

Gotta be a better way



**CG Power and  
Industrial Solutions Ltd.**



Your Ideas, Our Innovations.



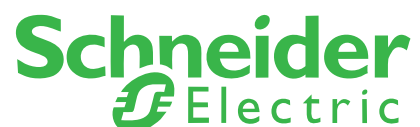
Powering Business Worldwide



IEPC : Industrial Electrical Projects Co.  
إيبك : الشركة الصناعية للمشاريع الكهربائية



CTR MANUFACTURING  
INDUSTRIES PRIVATE LTD



**HYOSUNG** HEAVY  
INDUSTRIES



**ECI**

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