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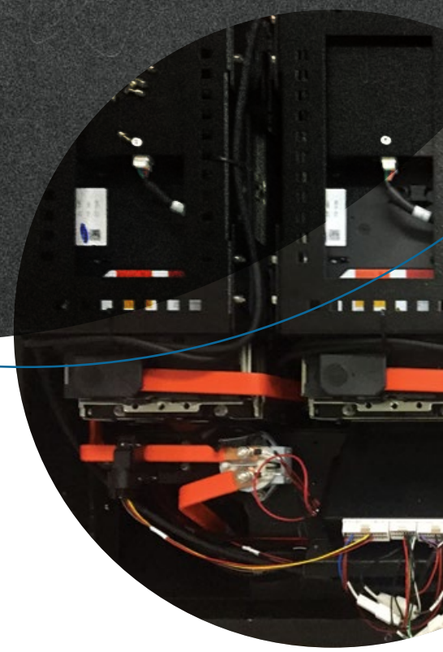
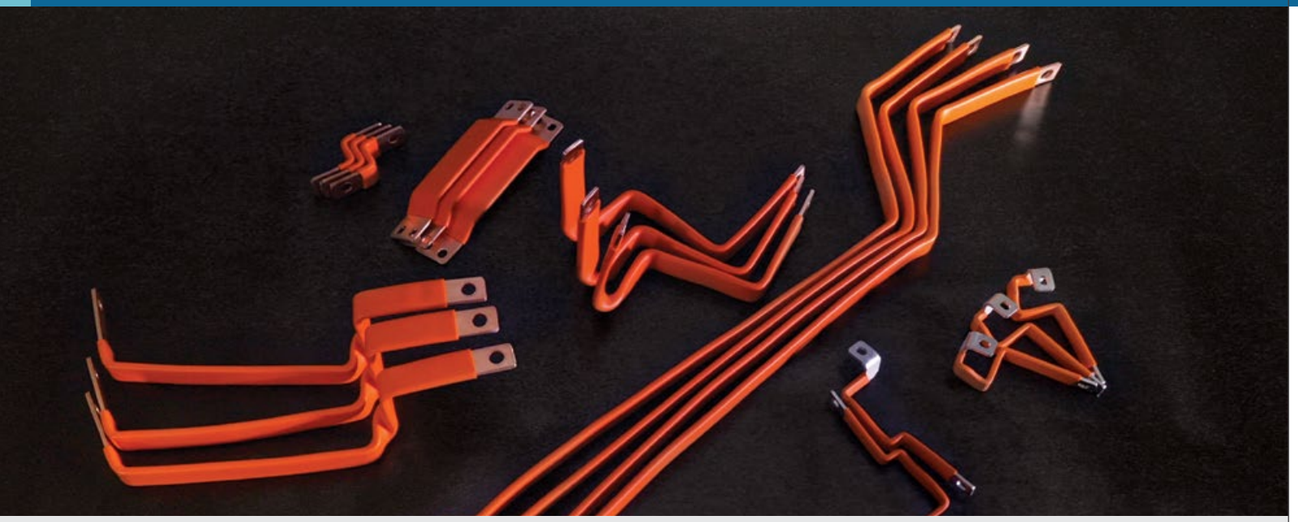


SEILHITECH

EASIBAR

Copper Plate Laminating Flexible Busbar

I n n o v a t i o n F o r F u t u r e



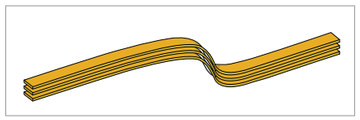
EASIBAR Copper Plate Laminating Flexible Busbar

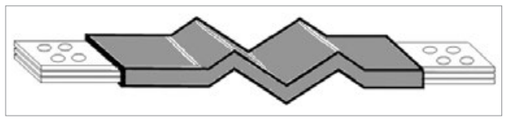
EASIBAR is the brand name of copper plate-laminated flexible bus-bar
as a new concept of flexible insulated bus-bar.

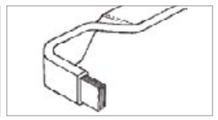
EASIBAR is a conductor made from band-shaped thin laminated copper plate with a thickness of 1mm or less.

- It has the features of high current efficiency per cross-sectional area due to the reduction of skin effect and inductance resistance components, which can reduce heating value and finally can lower the temperature in the panel.
- It can be easily shaped in desired styles with hands or simple tools.
- It can be installed more easily and faster at low costs than the existing cable or bus-bar.
- It can be manufactured in various custom sizes (capacity) that customers want.
- Because it is flexible enough to be bent or twisted freely at a desired angle, it can be applied to various shapes of design.
- It helps the space of the panel be optimized and the power supply line of the product made simple and compact, making the product more sophisticated.

*** This product is ideal for producing switchgear, MCC, etc. and for connecting power supply lines with various devices such as inverters and circuit breakers.**







EASIBAR **FEATURES**

With a structure of improved flexibility, exothermicity, and safety, it can dramatically reduce man-hours because it makes it easy to process and wire. In addition, it is expected that it can reduce costs of purchasing accessories, constructing, and managing and it can reduce the existing design space sharply, thus contributing to the cost reduction of the product because the space utilization is increased.

01. Excellent safety

Unlike conventional single bus-bar, it is a new type conductor which can freely change shapes by bending or twisting, being laminated with several layers of 1 mm thick band-shaped pure copper plates. It is a copper plate-laminated flexible bus-bar excellent in safety such as insulation and flame retarding by being coated with insulators made of special materials on the outer surface.

02. Convenient working process

This eliminates the trouble of having to process the insulation tubes separately and the hassle of managing the tube separately as the existing bus-bar does. In the case of insulated wires used for passing high current, it is necessary to connect a compression terminal to a terminal of a conductor, but EASIBAR is connectible just by hole work at the terminal like the existing bus-bar. Accordingly, it helps shorten the work process as well as costs of purchasing and managing related materials.

03. Application of various design shapes

Since fewer layers increase flexibility enough to bend even with hands and cause smaller bending radius, it is possible to be freely shaped more easily than conventional bus-bars or insulated wires. It allows various design shapes that have been impossible so far and may shorten the wiring route by making it easy to process and wire.

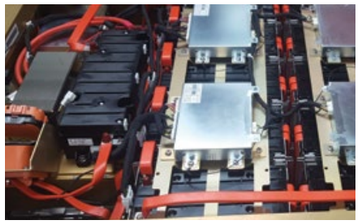
04. Low heating value

With high current efficiency, it can be effectively applied in large-capacity devices because it can increase rate through-current capacity at the same cross-sectional area and it generates less heat than ordinary bus-bars of the same size.

EASIBAR **USAGE**

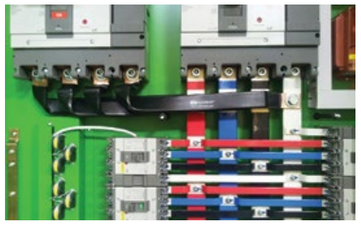
01. Transportation field

Battery systems for electric vehicles, buses, trucks, golf cars, etc. /
Battery packs for ships and power lines and power conversion systems for large vessels



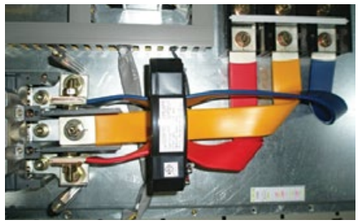
02. Electrical field

- Expansion joints of bus-bars: Switchgear, UPS, etc.
- Flexible jump wires and alternatives to cables
- Cables for connection with various power facilities: Current transformers (CTs), capacitors, etc.
- Power supply lines for starter module: MCC, switchgear, etc



03. Architecture field

Major power lines, building automation systems, power conversion systems



EASIBAR **STRENGTH**

01. Technology

- Possible to process in various shapes by using the self-developed air shrink tube.
- Wrinkle-free on bending parts, excellent in insulation and surface appearance.
- Eco-friendly tubes with heavy metals and phthalates below the recommended levels applied.

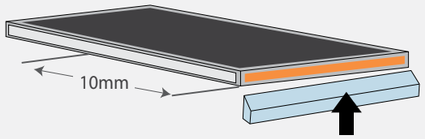
02. Quality

- Temperature rise test by main specifications passed (test agency : KERI)
- RoHS I and II (six heavy metals, four phthalates) passed (test agency : SGS KOREA)

03. Price

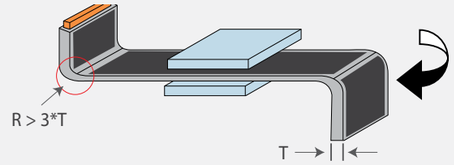
- Cost competitive by self-developed air shrink tubes
- Increased cost competitiveness by establishing automated and localized production systems

EASIBAR **WORK PROCESS**



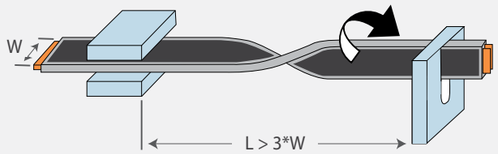
STEP 01.

Cut it by using a cutting instrument. Upon the cutting work, it is recommended to cut with a margin of roughly 10 mm considering that multiple layers are dislocated in the cutting process.



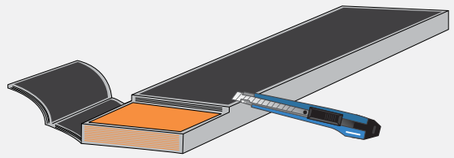
STEP 02.

A small width of EASIBAR possible to be bent manually. However, if the cross-sectional area increases, it is better to use a proper instrument. At the time, perform bending work after taking protective measures to prevent damage to the sheath.



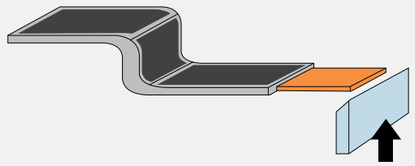
STEP 03.

If the torsion angle is 90 degrees, fix both ends at a distance of three times greater than the width of the EASIBAR and then twist it.



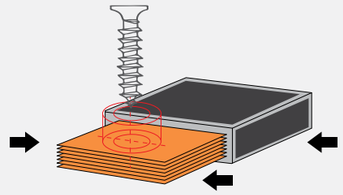
STEP 04.

Use a blade or a cable sheath stripper to cut only the sheath of the part required for connection. At this time, be careful not to scratch the surface of the copper.



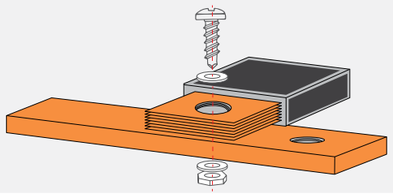
STEP 05.

Upon the bending work of EASIBAR, the copper plates laminated might be dislocated. Cut the edges properly and finish.



STEP 06.

After bending and finishing, punch or drill the holes for bolted joints. To use a drill, it is recommended to use the drill guide and the EASIBAR guide in order to prevent distortion during the operation. At this time, make sure that the hole size is not larger than 50% of the width of the internal copper band of EASIBAR.



STEP 07.

When connecting to a power unit or a normal bus-bar, apply a proper torque to each specification of them to fasten.

EASIBAR **STANDARD SPECIFICATION**

Copper specification				Standard current	Other
CODE No.	Sheet	Width (mm)	Thickness (mm)	Ampere	Cross-sectional area (㎟)
EB 0302010	3	20	1	280	60
EB 0402010	4	20	1	320	80
EB 0502010	5	20	1	330	100
EB 0602010	6	20	1	360	120
EB 1002010	10	20	1	500	200
EB 0302410	3	24	1	320	72
EB 0402410	4	24	1	360	96
EB 0502410	5	24	1	400	120
EB 0602410	6	24	1	400	120
EB 0802410	8	24	1	530	192
EB 1002410	10	24	1	600	240
EB 0303210	3	32	1	380	96
EB 0403210	4	32	1	430	128
EB 0503210	5	32	1	500	160
EB 0603210	6	32	1	560	192
EB 0803210	8	32	1	670	256
EB 1003210	10	32	1	810	320
EB 0304010	3	40	1	410	120
EB 0404010	4	40	1	480	460
EB 0504010	5	40	1	590	200
EB 0604010	6	40	1	670	240
EB 0804010	8	40	1	810	320
EB 1004010	10	40	1	920	400
EB 0305010	3	50	1	460	150
EB 0405010	4	50	1	570	200
EB 0505010	5	50	1	720	250
EB 0605010	6	50	1	810	300
EB 0805010	8	50	1	920	400
EB 1005010	10	50	1	1,080	500
EB 0406010	4	60	1	670	240
EB 0506010	5	60	1	800	300
EB 0606010	6	60	1	950	360
EB 0806010	8	60	1	1,080	480
EB 1006010	10	60	1	1,240	600
EB 0308010	3	80	1	640	240
EB 0408010	4	80	1	790	320
EB 0508010	5	80	1	910	400
EB 0608010	6	80	1	1,070	480
EB 0808010	8	80	1	1,240	640
EB 1008010	10	80	1	1,380	800
EB 0510010	5	100	1	1,070	500
EB 0610010	6	100	1	1,210	600
EB 0810010	8	100	1	1,410	800
EB 1010010	10	100	1	1,540	1,000
EB 1210010	12	100	1	1,640	1,200

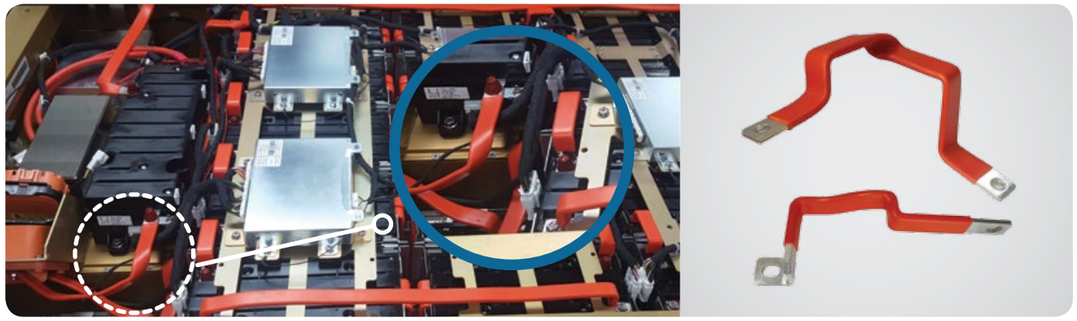
EASIBAR APPLICATIONS

01. Transportation field
Battery systems for electric vehicles, buses, trucks, golf cars, etc. /
Battery packs for ships and power lines and power conversion systems for large vessels

02. Electrical field
- Expansion joints of bus-bars : Switchgear, UPS, etc.
- Flexible jump wires and alternatives to cables
- Cables for connection with various power facilities : Current transformers (CTs), capacitors, etc.
- Power supply lines for starter module : MCC, switchgear, etc

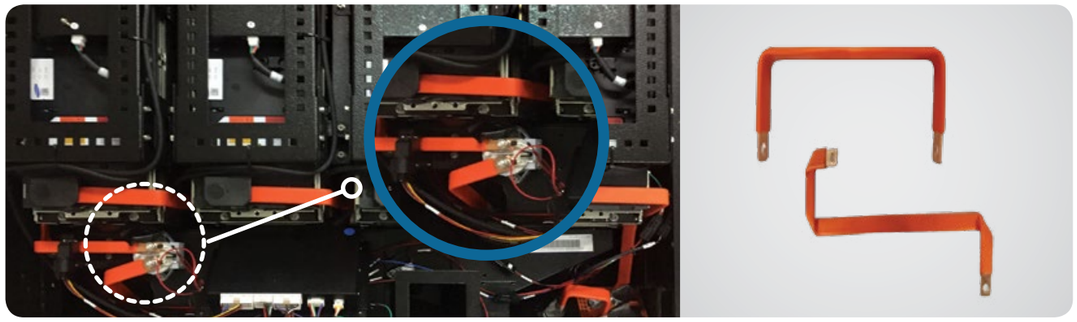
03. Architecture field : Major power lines, building automation systems, power conversion systems

› H-Company Electric Bus Battery Pack

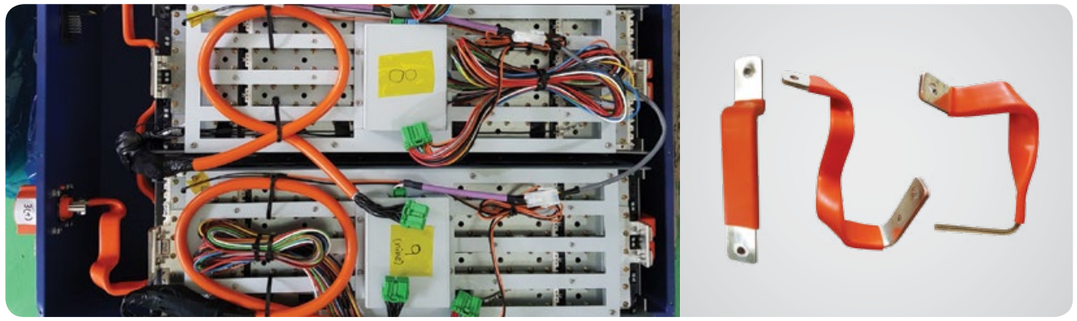


› E-Company EV Battery Pack

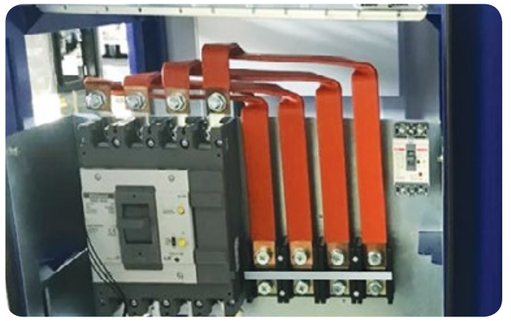
› P-Company Electric Bus Batterty Pack



› M-Company 2.5T Truck Battery Pack

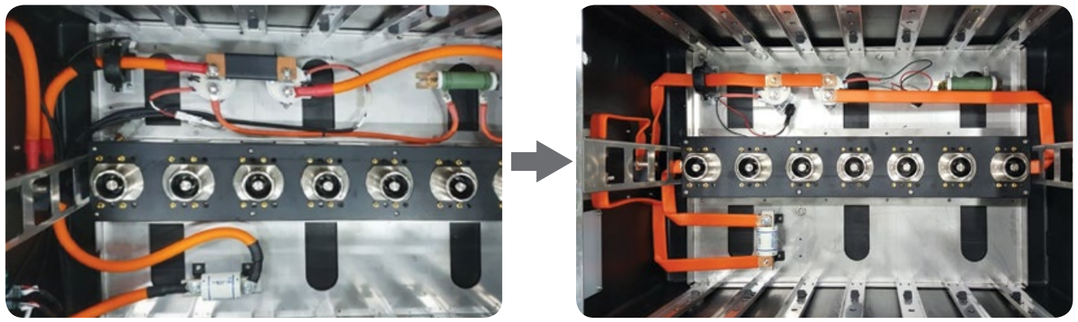


› P-Company Battery Charger

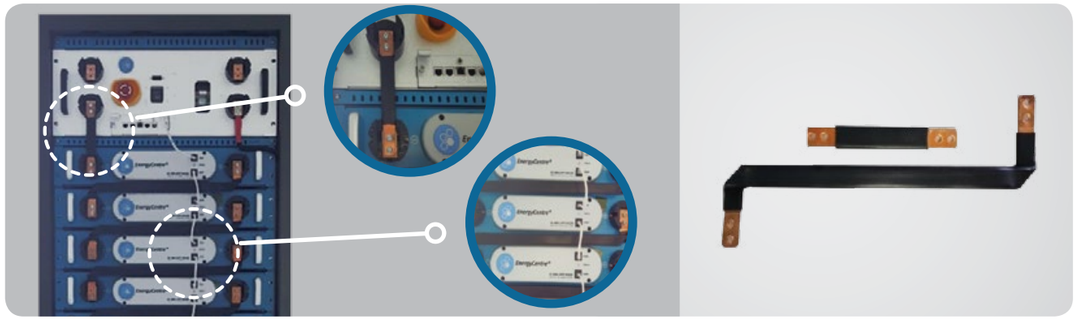


› S-Company EV Battery Pack

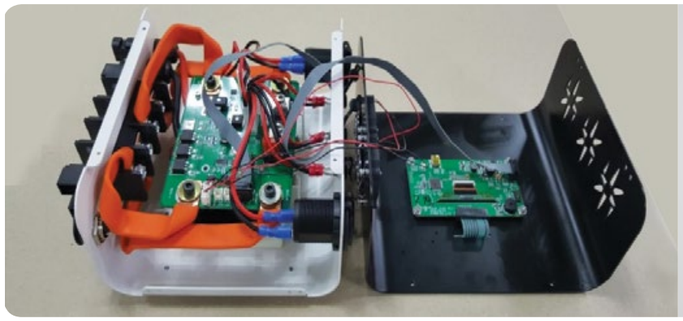
› L-Company Boat Battery Pack



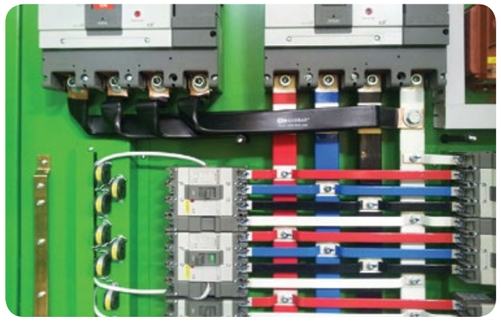
› ESS Equipment



› Inverter

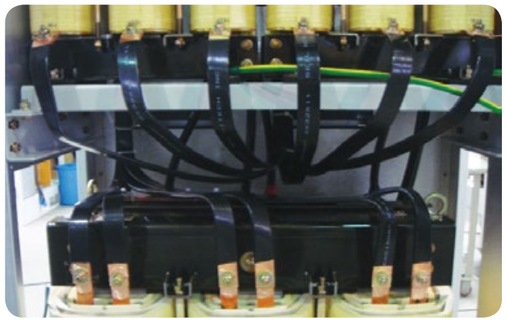


› Switchgear



› MCC

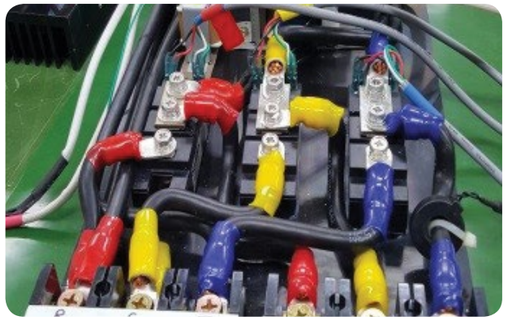
› Inverter



› Current transformer

› Solar inverter

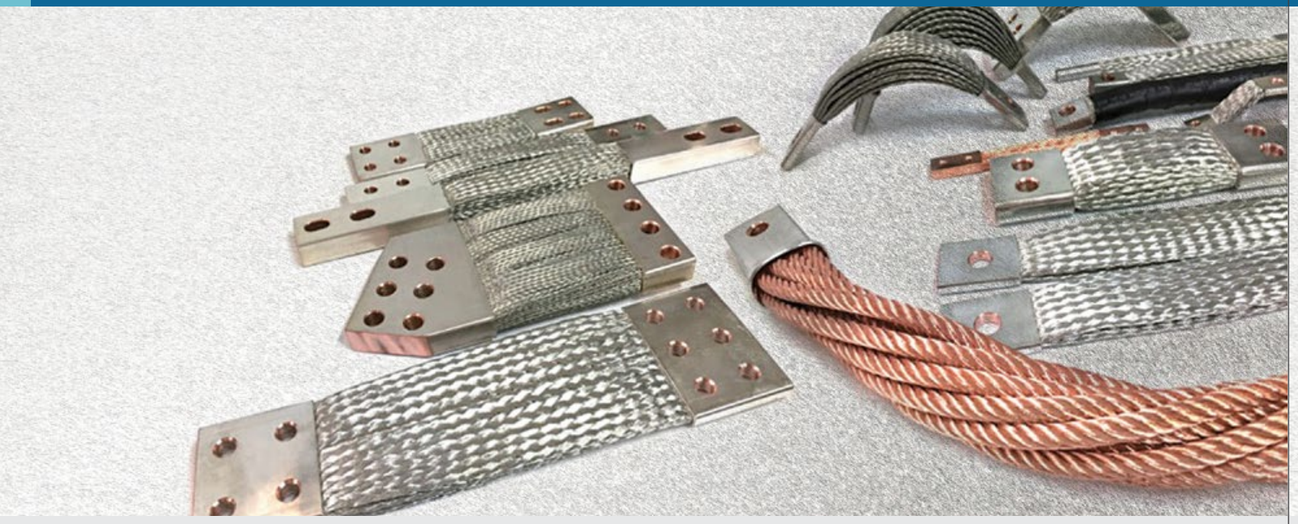
› Motor controller



EASIBAR **TEST**

- Patent : Patent Registration No. 1034418 (plate conductor)
- Test result : Temperature rise test [KERI]

Current amount	Specification		Measurement time (Hr)	Temperature rise (△T)	Ambient temperature (℃)
	Width (mm)	Thickness (Sheet)			
320A	20	3	4.5	41.2	14.6
500A	32	5	4.0	39.6	20.0
800A	50	6	2.3	20.9	23.3
1000A	80	4	2.5	27.7	24.0
1250A	100	5	5.3	31.6	27.0
1600A	100	8	4.3	35.1	26.7
2000A	120	10	3.3	36.5	26.8



EASIBAR Braided Flexible Insulated Bus-bar

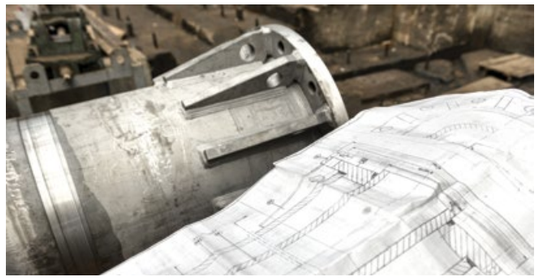
Made by assembling several copper strands and adjusting the width suitable for each capacity, it is a product processed and manufactured fit for the size of the terminal section by cutting and using the copper pipe on both ends at the request of the user.

Made by assembling several copper strands and adjusting the width suitable for each capacity, it is a product processed and manufactured by cutting the copper pipe fit for thickness, width, and length at the request of the user and compressing the copper pipe on both ends fit for the size of the terminal section.

- If it is installed at a place where heat is generated, it can be air-cooled because it is a product made of fine copper wires.
- If it is used at a place where dimensions are uncertain and it is difficult to install, it is easy to adjust the left, right, top and bottom length.
- If it is installed at a place where there is serious vibration, it can absorb vibration between terminals.
- It can be freely manufactured to meet the specifications or usage of the product.

EASIBAR USAGE

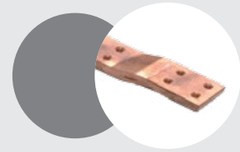
01. Transformer, Switchgear, Welding machine, Power generation equipment



02. Electrolytic furnace, Electric furnace, IPB, Other electric connection goods

EASIBAR Shunt Flexible Insulated Bus-bar

It is a product processed and fabricated by stacking thin copper sheets suitable for thickness, width, and length and compressing or welding as large as the size of the terminal of an object.



It is a product processed and fabricated by stacking thin copper sheets suitable for thickness, width, and length and compressing or welding as large as the size of the terminal of an object.

- Because it is a product made by stacking several sheets, it can be easily installed while moving.
- This product can operate smoothly even with large amount of current.
- If it is installed at a place where there is serious vibration, it can absorb vibration between terminals and prevent bolt tightening or loosening.

EASIBAR USAGE

01. Transforme, Rectifier, Welding machine, Power generation equipment

02. GIS, IPB, ACB, VCB, Other electric connection goods