GT CONNECTOR

- High Current Connectors
- Heat- Resistant Connectors
- Vacuum Connectors
- Connectors for Special Purpose

GLOBETECH

GLOBETECH CONNECTOR

Contents

GLOBETECH Inc.

We are a company that designs and manufactures custom-made electrical connectors not handled by existing products. Using our core technology, electrical contacts for stabilizing energization, we manufacture high current connectors, heat-resistant connectors, vacuum connectors, and special connectors. Orders are accepted from a single unit. The connectors are basically manufactured by cutting work. To meet special specifications, we have no internal manufacturing equipment. Instead, we request cutting work and surface treatment from reliable external factories specializing in the work. Assembly is performed under internal control for shipment.

Please feel free to consult us if you have any issues about industrial electrical connectors.

Introduction

What are connectors used for electrical connection?

The connector is an electrical component used to connect and disconnect components in electrical circuits. While there are other ways to connect electrical circuits, like fasteners (bolts and nuts) and soldering, if you want to connect and disconnect circuits quickly at short intervals, connectors are the most efficient.

Globetech's Connectors

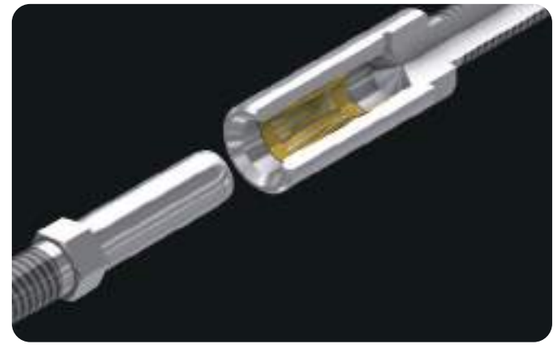
To reduce the resistance of electrical conductors and connections and to enhance reliability, it is necessary to press the conductors together with appropriate contact pressure.

While, in general, a slit is inserted into the conductor to create range of motion or a spring with a simple structure is used to generate contact pressure for easy insertion and extraction, Globetech's connector employs a spring material for the electrical contact.

We manufacture connectors for many applications by choosing the electrical contact from a variety of items. We offer even a single connector specially made to meet a customer's specifications.

Features of Connectors Using Electrical Contact

- Reduces loss of electricity when high current is applied thanks to low-contact resistance
- Longer life for repeated insertion and extraction
- Capable of reducing insertion and extraction force and suitable for multi-polarity
- The multipoint contact structure moves independently for tracking when an irregular
- Applicable in high temperature environments
- Resistant to oxide film because of the self-cleaning function
- Compact size in the direction of diameter and axis
- Compensates for mating misalignment
- Stabilizes signal voltage



Contact Band and Coil Spring Contact

Two types of electrical contacts—The Contact Band and Coil Spring Contact—are used in Globetech connectors. The contact band is manufactured by pressing a sheet of high-performance spring material. The coil spring contact is manufactured by winding wire materials to create a spring consisting of canted coils and then welding them to form a circular shape.

We choose the optimum type for each contact depending on the specifications, application, and cost, and then we design a connector best suited to the needs of the customer.

Contact Band

Coil Spring Contact

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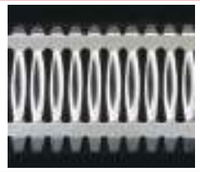
Features and Type of Contact Band

- Silver plating or gold plating on beryllium copper alloy
- Louver structure suited for energization of high current
- Low cost and mass production using a progressive die
- Made-in-Japan products ensure high quality and short delivery time
- Contacts in different diameters and contact band types are available in the inventory
- Superior capability to remove oxide film thanks to the wiping function of the heat cycle

GCB1a

Installation width	Louver pitch	Current / louver
18mm / 0.7in.	2.54mm / .1in.	25A

GCB1b

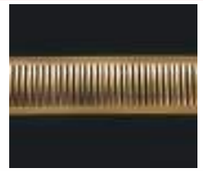


Installation width	Louver pitch	Current / louver
18mm / .7in.	2.54mm / .1in.	25A

GCB3

Installation width	Louver pitch	Current / louver
12.5mm / .49in.	1mm / .04in.	7A

GCB4

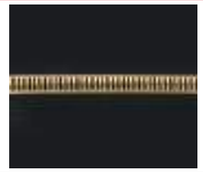


Installation width	Louver pitch	Current / louver
8.5mm / .33in.	0.8mm / .03in.	5A

GCB5

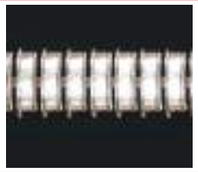
Installation width	Louver pitch	Current / louver
5.5mm / .22in.	0.7mm / .03in.	3A

GCB6



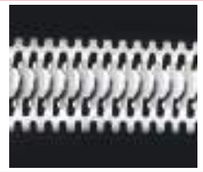
Installation width	Louver pitch	Current / louver
3mm / .12in.	0.7mm / .03in.	1.4A

GCB8



Installation width	Louver pitch	Current / louver
10mm / .39in.	3.3mm / .13in.	45A

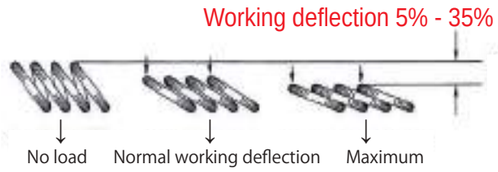
GCB12



Installation width	Louver pitch	Current / louver
13.1mm / .51in.	2mm / .08in.	25A

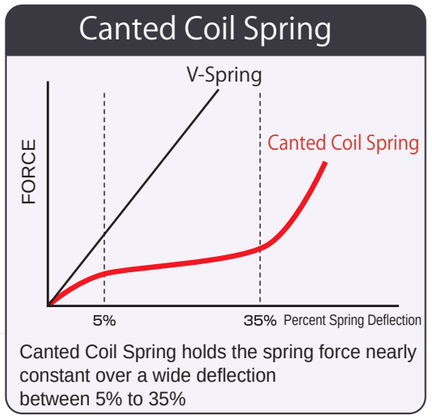
Features and Type of Coil Spring Contact

- The canted coil spring contact incorporated into our connectors is supplied by Bal Seal Engineering Inc. of the United States, the holder of its manufacturing technology
- Offers a wide range working deflection and the repelling property is stable
- Compensates for dimensional error and misalignment
- Various materials having superior heat resistance, corrosion resistance, and resistance to environment, including stainless steels and nickel alloy are offered in addition to beryllium copper alloy
- Applicable to different sizes with a wide range of pin diameters and lengths
- Longer life and lower insertion and extraction force from multipoint contacts and low contact pressure



General Coil Spring

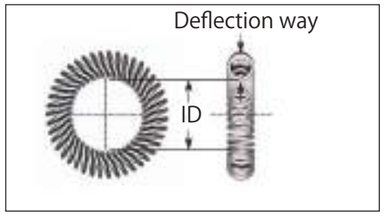
Canted Coil Spring



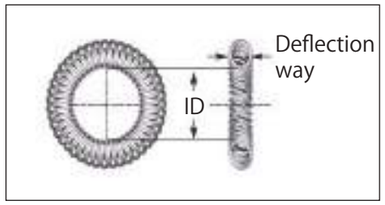
Canted Coil Spring holds the spring force nearly constant over a wide deflection between 5% to 35%

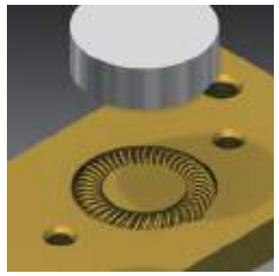
The winding direction (welding direction) of the canted coil spring contact is radial or axial depending on whether it is attached to a pin and socket or a surface connection.

Radial ***For plag and Socket***



Axial ***For Butt Contact***





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Installation Style of Contact Elements

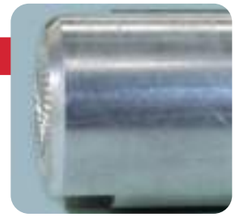
Install to Socket

The standard shape of the electrical contact is installed in the inner diameter of the socket. The mating pair connected to the socket has the shape of a round bar.

Install to Plug

The shape with the electrical contact is installed in the outer diameter of the plug. The plug is connected to the inner diameter of the round hole.

Butt Contact



The shape with the electrical contact is installed using grooves on an energization block. The mating pair connected to the block is a flat surface that can be energized. This type is suitable for applications where the contacts are repeatedly pressed such as on an automation equipment.

Fork Socket

This socket is used for applications where a flat board subject to energization is laterally pinched to make the connection. The electrical contact is linearly installed.

Flat Contact

The electrical contact is mounted on an energized surface secured by screws. Effective energization is enabled by the electrical contact even when the contact area or contact pressure is reduced because of loosened screws or warpage of the flat surface.

Rotating parts

The electrical contacts can be used for electrical connections on rotating parts if they rotate at a relatively slow speed.

Application Case of Our Connectors

Power

Switch Gear / Circuit Breaker / Disconnecting Switch / Transformer / Current Transformer / GIS / C-GIS
Uninterruptible Method Equipment / Cable Head / Underground Distribution Equipment / Fuel Cell
Solar Battery / Wind-Power Generation/Inverter

Semiconductor Manufacturing Equipment

Single Crystal Pulling Apparatus / Exposure Device / Sputtering Equipment / CVD Equipment
Vacuum Coating Equipment / Etching Equipment / Ion Implantation Equipment / Prober
Electrostatic Chuck / Heater / Transfer Robot

Manufacturing Equipment and Inspection of Automotive

Inverter / IGBT / Battery / Capacitor / Motor / ECU / Electric Power Steering / Electric compressor
Magnetizing Equipment / Robot Welding Machine / Tool Changer / Quick Charger / AGV

Industrial Machinery

Laser Beam Machine / Electrical Discharge Machine / Electromagnetic Mixer / Welding Machine
Underwater Pump / Plating Equipment / Electroforming Equipment / Ultraviolet Curing Equipment
Injection Molding Machine

Railroad

Jumper Power Connector / Jumper for Communication Connector
Connetor for Vehicle Underfloor Equipment / Connector for Vehicle Equipment

Medical and Study

MRI / CT Scaner / PET / Heavy Ion Radiotherapy Device / Shadowless Light / Electronic Microscope
Anechoic Chamber / Ultrasonic Probe

Electrical Testing Equipment

Inspection for Smart Meter / CT / LED Lighting Device / Electron Tube

Other

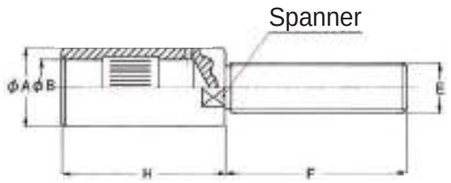
Ground Power for Vessel / Ground Power for Aircraft / Studio Lighting / Mountain Construction Equipment
Accelerator / Nuclear Fusion Experimental Device

Standard Connectors

For customers who wish to use our products immediately, Globetech offers standard connectors like the non-insulated plug and socket and the plug with insulation case and receptacle. The simple design allows for use in a variety of applications. We can also create products from customized designs by changing the materials, plating, dimensions, or other features of the standard items. We hope this helps you consider the design for your product.

Sockets with thread termination

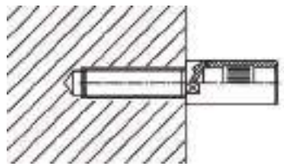
- Material of Connector Body : C3604 + Ag plating
- Material of Contact Band : Beryllium Copper + Au plating from MS2 to MS6.
  Beryllium Copper + Ag plating from MS8 to MS40.
- Maximum Temperature : +145℃ (293℉)



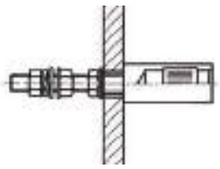
* From MS2 to MS10 is incomplete thread.

Model	ϕB dia. mm / inches	Rated current (A)	ϕA dia. mm / inches	E mm	F mm / inches	H mm / inches	For Spanner mm / inches	Withdrawal Force (Kg / N)	Insertion Force (Kg / N)	Contact resistance (μΩ)	Weight (g / OZ)
MS2	2 / .08	25	5.5 / .22	M3	16 / .63	20 / .79	4 / .16	0.6 / 5.9	0.8 / 7.9	300	4 / 0.14
MS3	3 / .12	35	6 / .24	M4	20 / .79	20 / .79	5 / .20	0.8 / 7.9	1 / 9.8	200	5 / 0.18
MS4	4 / .16	50	7 / .28	M5	25 / .98	25 / .98	6 / .24	1.5 / 14.7	2.2 / 21.6	180	9 / 0.32
MS5	5 / .20	70	8.5 / .33	M5	25 / .98	25 / .98	7 / .28	1.6 / 15.7	2.2 / 21.6	150	11 / 0.39
MS6	6 / .24	90	10 / .39	M6	28 / 1.10	25 / .98	8 / .31	2 / 19.6	2.5 / 24.5	100	15 / 0.53
MS8	8 / .31	125	14 / .55	M8	36 / 1.42	42 / 1.65	11 / .43	2 / 19.6	2.5 / 24.5	60	47 / 1.66
MS10	10 / .39	180	16 / .63	M10	42 / 1.65	42 / 1.65	13 / .51	3 / 29.4	3.5 / 34.3	50	67 / 2.36
MS12	12 / .47	230	18 / .71	M12	48 / 1.89	42 / 1.65	13 / .51	3 / 29.4	3.6 / 35.3	40	88 / 3.1
MS14	14 / .55	280	20 / .79	M14	50 / 1.97	48 / 1.89	17/ .67	4.6 / 45.1	5.1 / 50	35	123 / 4.34
MS16	16 / .63	340	22 / .87	M16	58 / 2.28	48 / 1.89	19 / .75	6.6 / 64.7	7.1 / 69.6	25	163 / 5.75
MS18	18 / .71	400	25 / .98	M16	58 / 2.28	52 / 2.05	22 / .87	7.6 / 74.5	10.2 / 100	20	196 / 6.91
MS20	20 / .79	460	28 / 1.10	M18	70 / 2.76	52 / 2.05	24 / .94	8.1 / 79.4	12.2 / 119.6	15	270 / 9.52
MS25	25 / .98	620	38 / 1.50	M20	74 / 2.91	75 / 2.95	32 / 1.26	8.1 / 79.4	12.2 / 119.6	10	600 / 21.16
MS30	30 / 1.18	800	42 / 1.65	M24x2	82 / 3.23	75 / 2.95	36 / 1.42	10.2 / 100	12.2 / 119.6	9	740 / 26.10
MS35	35 / 1.38	1000	48 / 1.89	M30x2	90 / 3.54	75 / 2.95	41 / 1.61	12.2 / 119.6	15.3 / 150	8	1080 / 38.10
MS40	40 / 1.57	1200	52 / 2.05	M36x3	105 / 4.13	75 / 2.95	46 / 1.81	12.2 / 119.6	15.3 / 150	7	1430 / 50.44

Install Example



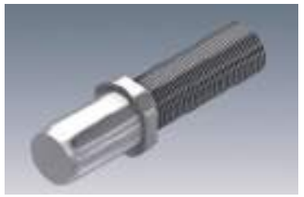
Contact Block

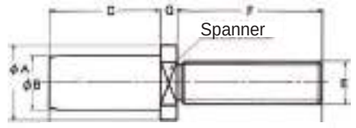


Insulated plate

Plugs with thread termination

- Material of Connector Body : C3604 + Ag plating

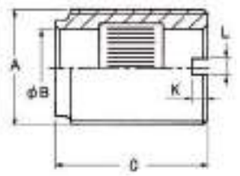


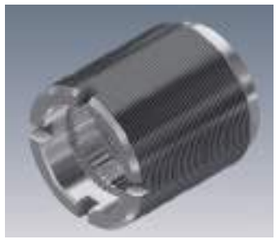


Model	ϕB dia. mm / inches	Rated current (A)	ϕA dia. mm / inches	Width across flat mm / inches	C mm / inches	E mm	F mm / inches	G mm / inches	Weight (g / OZ)
MP2N	2 / .08	25	4.7 / .19	4 / .16 (hex)	16.5 / .65	M3	16 / .63	3 / .12	2 / 0.07
MP3N	3 / .12	35	5.8 / .23	5 / .20 (hex)	16.5 / .65	M4	20 / .79	3.5 / .14	3 / 0.11
MP4N	4 / .16	50	7 / .28	6 / .24 (hex)	19.5 / .77	M5	25 / .98	4 / .16	6 / 0.21
MP5N	5 / .20	70	8.1 / .32	7 / .28 (hex)	19.5 / .77	M5	25 / .98	4 / .16	8 / 0.28
MP6N	6 / .24	90	9.3 / .37	8 / .31 (hex)	19.5 / .77	M6	28 / 1.10	4 / .16	12 / 0.42
MP8N	8 / .31	125	12.7 / .50	11 / .43 (hex)	34 / 1.34	M8	36 / 1.42	5 / .20	31 / 1.09
MP10N	10 / .39	180	15 / .59	13 / .51 (hex)	34 / 1.34	M10	42 / 1.65	5 / .20	51 / 1.80
MP12N	12 / .47	230	18 / .71	13 / .51 (D-Cut)	34 / 1.34	M12	48 / 1.89	5 / .20	79 / 2.79
MP14N	14 / .55	280	20 / .79	17 / .67 (D-Cut)	38 / 1.50	M14	50 / 1.97	7 / .28	121 / 4.27
MP16N	16 / .63	340	22 / .87	19 / .75 (D-Cut)	38 / 1.50	M16	58 / 2.28	7 / .28	170 / 6.00
MP18N	18 / .71	400	25 / .98	22 / .87 (D-Cut)	42 / 1.65	M16	58 / 2.28	7 / .28	203 / 7.16
MP20N	20 / .79	460	28 / 1.10	24 / .94 (D-Cut)	42 / 1.65	M18	70 / 2.76	7 / .28	271 / 9.56
MP25N	25 / .98	620	38 / 1.50	32 / 1.26 (D-Cut)	62 / 2.44	M20	74 / 2.91	9 / .35	506 / 17.85
MP30N	30 / 1.18	800	42 / 1.65	36 / 1.42 (D-Cut)	62 / 2.44	M24x2	82 / 3.23	9 / .35	745 / 26.28
MP35N	35 / 1.38	1000	48 / 1.89	41 / 1.61 (D-Cut)	62 / 2.44	M30x2	90 / 3.54	10 / .39	1149 / 40.53
MP40N	40 / 1.57	1200	52 / 2.05	46 / 1.81 (D-Cut)	62 / 2.44	M36x3	105 / 4.13	11 / .43	1656 / 58.41

Sockets with external thread termination

- Material of Connector Body : C3604 + Ag plating
- Material of Contact Band : Beryllium Copper + Au plating from MS2N to MS6N.
  Beryllium Copper + Ag plating from MS8N to MS40N.
- Maximum Temperature : +145℃ (293 F)





Model	ϕB dia. mm / inches	Rated current (A)	A mm	C mm / inches	K mm / inches	L mm / inches	Contact band	Withdrawal Force (Kg / N)	Insertion Force (Kg / N)	Screw fastening force (max) (Kg.m / N.m)	Contact resistance (μΩ)	Weight (g / OZ)
MS2N	2 / .08	25	M8x0.75	16.5 / .65	1.5 / .06	1.5 / .06	GCB 5	0.6 / 5.9	0.8 / 7.9	0.3 / 2.94	300	5.1 / 0.18
MS3N	3 / .12	35	M8x0.75	16.5 / .65	1.5 / .06	1.5 / .06	GCB 4	0.8 / 7.9	1 / 9.8	0.3 / 2.94	200	5.2 / 0.18
MS4N	4 / .16	50	M8x0.75	19.5 / .77	1.5 / .06	1.5 / .06	GCB 4	1.5 / 14.7	2.2 / 21.6	0.3 / 2.94	180	6 / 0.21
MS5N	5 / .20	70	M10 x 1	19.5 / .77	2 / .08	1.5 / .06	GCB 3	1.6 / 15.7	2.2 / 21.6	0.5 / 4.9	150	7.2 / 0.25
MS6N	6 / .24	90	M12 x 1	19.5 / .77	2.5 / .10	2 / .08	GCB 3	2 / 19.6	2.5 / 24.5	1 / 9.81	100	11/ 0.39
MS8N	8 / .31	125	M14 x 1	34 / 1.34	2.5 / .10	2.5 / .10	GCB1a	2 / 19.6	2.5 / 24.5	1.3 / 12.75	60	22 / 0.78
MS10N	10 / .39	180	M18 x 1	34 / 1.34	3.5 / .14	3.5 / .14	GCB1a	3 / 29.4	3.5 / 34.3	2.3 / 22.56	50	40 / 1.41
MS12N	12 / .47	230	M20 x 1	34 / 1.34	3.5 / .14	3.5 / .14	GCB1a	3 / 29.4	3.6 / 35.3	3.1 / 30.4	40	44 / 1.55
MS14N	14 / .55	280	M22 x 1	38 / 1.50	4 / .16	4 / .16	GCB1a	4.6 / 45.1	5.1 / 50	3.6 / 35.3	35	58 / 2.05
MS16N	16 / .63	340	M24 x 1	38 / 1.50	4 / .16	4 / .16	GCB1a	6.6 / 64.7	7.1 / 69.6	3.6 / 35.3	25	64 / 2.26
MS18N	18 / .71	400	M28 x 1	42 / 1.65	4 / .16	4 / .16	GCB1a	7.6 / 74.5	10.2 / 100	5.6 / 54.92	20	107 / 3.77
MS20N	20 / .79	460	M30 x 1	42 / 1.65	4 / .16	5 / .16	GCB1a	8.1 / 79.4	12.2 / 119.6	6.6 / 64.72	15	116 / 4.09
MS25N	25 / .98	620	M42 x 1.5	62 / 2.44	5 / .20	5 / .20	GCB1b	8.1 / 79.4	12.2 / 119.6	15.3 / 150	10	402 / 14.18
MS30N	30 / 1.18	1000	M48 x 1.5	62 / 2.44	5 / .20	5 / .20	GCB1b	10.2 / 100	12.2 / 119.6	20.4 / 200	9	496 / 17.50
MS35N	35 / 1.38	1400	M50 x 1.5	62 / 2.44	5 / .20	5 / .20	GCB1b	12.2 / 119.6	15.3 / 150	22.5 / 221	8	436 / 15.38
MS40N	40 / 1.57	1800	M55 x 1.5	62 / 2.44	6 / .24	6 / .24	GCB1b	12.2 / 119.6	15.3 / 150	28.1 / 276	7	482 / 17

Custom-Made Connectors

Features and Overview

Globetech offers connectors that are specially designed to meet different conditions, uses, and environments of individual customers. If you face any of the following issues, please consider ordering Globetech custom-made connectors.

Your Situation

- There is no connector available on the market because the required current capacity is high.
- A connector with highly durable contacts is needed because of frequent insertion and extraction.
- The connectors currently available do not satisfy the capacity requirements because the sizes do not fit in the limited space available.
- Only connectors with special shapes can be used.
- A connector made of a material not used in existing connectors is needed for use in a vacuum.
- A connector with superior heat resistance is needed for use in a high temperature environment.
- Corrosion resistance is required for use in an environment exposed to corrosive gas.

In the conditions above, the specifications of existing products are not appropriate. Even if the components can be used, replacement may be required in a short time, or accidents may occur because of abnormal heat and conduction failure. These cases highlight the disadvantages—the costs for the connector and the labor for replacement work reduce production efficiency from the suspension of the device for maintenance and the increase in the risk of accidents.

Our Suggestions

High Current Connectors
- We have many experiences high current connector over 2000A.

Longer life Connectors
- We can desgin highly durable connector.

Special Shape Connectors
- We can desgin according to your specifications.

Vacuum Connectors
- We can desgin according to your permitted materials.

Heat Resistance Connectors
- We can desgin heat resistance connectors up to 680℃(1256°F)

Corrosion Proof Connectors
- We can desgin choosing from many materials and plating.

Our custom-made connectors reduce operating costs and automate production equipment. We will contribute to the development of new devices and equipment using our innovative mechanisms. Globetech accepts orders for custom-made items from one unit, and we offer a wide range of components for use in research and development to mass production.

GLOBETECH CONNECTOR

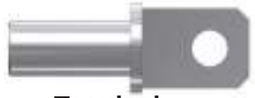
High Current Connectors

The need for high-current connectors is increasing because of the dissemination of renewable energy, electric vehicles, and other advances in technology. However, heat is easily generated from high currents (generation of Joule heat), which often cause inefficiencies and energization failure.
At Globetech, efficient energization is realized without unnecessary heat generation or energization failure by using electrical contacts.
We design and manufacture custom-made items for use not covered in the standard items shown above. We have supplied many high-current connectors to manufacturers of heavy electric machinery and transmission cables. We can confidently propose products that meet the requirements of individual customers.

Features of high our current connector

- Capable of manufacturing high capacity connectors that cannot be handled by existing products. (Theoretically, there is no limitation on the current value.)
- Compact connectors that are usable even under high current conditions.
- A wide range of shapes and specifications are accepted for both single-pole and multi-pole connectors.
- Taking advantage of the flexibility unique to custom-made items, we can design high current connectors in special shapes.

Example Connection Method

Connector side		Connected to
 External thread	+	 Internal thread
 Internal thread	+	 External thread
 Crimping sleeve	+	 Cable
 Terminal	+	 Crimping terminal + cable
 Solder cup	+	 Cable

GLOBETECH CONNECTOR

Samples of high current connector

Connector for electromagnetic mixer

Current : 1000A
Plug diameter : φ30mm / 1.18in.
Electrical contact : Contact band

Silver alloy brazing to angled bar

Socket for Power distribution equipment

Current : 1000A
Plug diameter : φ30mm / 1.18in.
Electrical contact : Contact band

The set screw use for Lock

High current Socket

Current : 2000A
Plug diameter : φ50mm / 1.96in.
Electrical contact : Contact band

The backside of connector is terminal

Cable head

Current : 2000A
Plug diameter : φ60mm / 2.36in.
Electrical contact : Contact band

Contact band installed to Pulg side.

High current socket

Current : 700A
Plug diameter : φ25mm / .98in.
Electrical contact : Coil spring

There are 5 coil springs for touching multi points.

8P Draw out Connector

Current : 400A (per pole)
Plug diameter : φ14mm / .55in.
Electrical contact : Contact band

Automatic attachment and removal

3P Coaxial connector

Current : 120A (per pole)
Plug diameter : φ8mm / .31in.
Electrical contact : Contact band

2 kinds of contact band uses for shield and conductor

mating

2P connector for AGV battery connection

Current : 46A (per pole)
Voltage : 125VAC
Plug diameter : φ3.6mm / .14in.
Electrical contact : Contact band

Wrong insertion prevention structure

Pulg In Connector

Current : 700A
Voltage : 600VAC
Plug diameter : φ20mm / .79in.
Electrical contact : Contact band

GLOBETECH CONNECTOR

Heat Resistant Connectors

Heat-resistant connectors offer superior heat resistance compared to general connectors. The heatproof temperatures of general connectors are about 85ºC(185˚F) to 125°C(257˚F), making it hard to use in high temperature locations, such as near a furnace in an iron mill, or as the cable connection of a heater. Globetech proposes heat-resistant connectors that can withstand up to 680°C(1256˚F) by leveraging abundant experience in connector manufacturing.

Comparison of the material

	General connector	Our Heat Resitant Connector
Electrical Element	Copper alloy (Phosphor bronze / brass)	**Nickel alloy / Stainless Steel / Inconel**
Insulator	Plastic (PA / PBT / PPS etc)	**PTFE / PEEK / Ceramic**
Features	-General connector use only up to 125℃(257℉). - Insurator will get damage and contact element reducing spring characteristics.	**Inconel can use up to 680℃ (1256℉) as electrical contact without reducing spring characteristics.**

Caution) Above data is not heatproof temperature of our connectors but materials

Component parts

1. Electrical Element

We have electrical element with Copper alloy, Nicle alloy, Stainless Steel and Inconel.

Material	Copper alloy	Nicle alloy	Stainless Steel	Inconel
Maximum temperature	**180℃ / 356℉**	**220℃ / 428℉**	**370℃ / 698℉**	**680℃ / 1256℉**

Caution) Above temperature is total temperature of atmosphere temperature + temperature rise of connector.

2. Conductor body

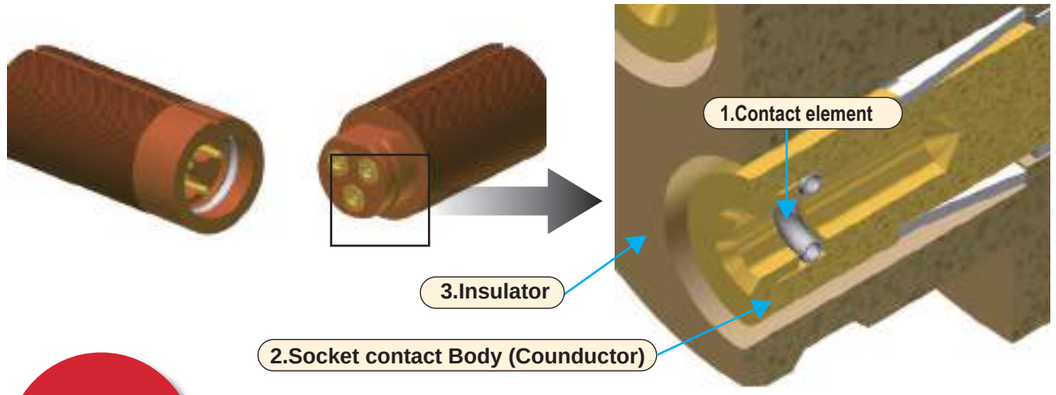
We choose low resistance value change rate metal from Copper, Copper alloy, Stainless Steel and Nickle.

3.Insulator

We choose high and stable insulation performance at high temperature from PTFE, PEEK and ceramic.

4.Casing (Housing)

We calculate coefficient of thermal expansion and choose from Aluminum, Aluminum alloy and Stainless Steel.



Samples of Heat Resistant Connectors

Bulkhead Connector

Current : 10A (per pole)
Poles : 5 poles
Heatproof temperature : 150℃ / 302˚F

Using existing connector casing.
We changed Insulator and conductor.

Inline Connector

Current : 5A (per pole)
Poles : 2 poles
Heatproof temperature : 500℃ / 932˚F

Inline Connector

Current : 5A (per pole)
Poles : 6 poles
Heatproof temperature : 200℃ / 392˚F

Using existing connector casing.
We changed Insulator and conductor.
Casing is Nicle plating.

Inline Connector

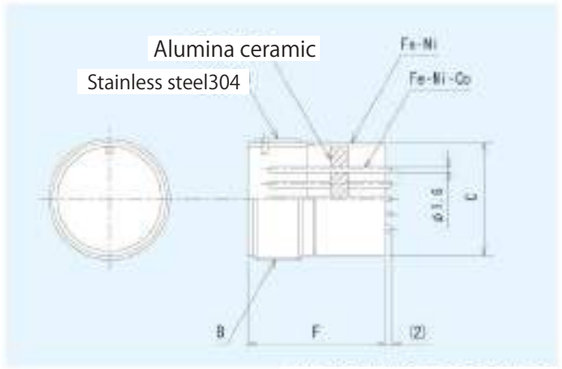
Current : 1A (per pole)
Poles : 3 poles
Heatproof temperature:350℃ / 662˚F

This Connector has lock.

Electrical Feedthroughs

The feedthrough and current input terminal are mounted on airtight containers and used to carry electricity (signal or power supply) in and out while retaining airtightness. The feedthrough is usually multipolar and has an allowable current range for signals to the 46A/pin and withstand voltage of up to 1500 VAC. The key feature is that it can be connected using an MIL-standard MS connector to be compact.

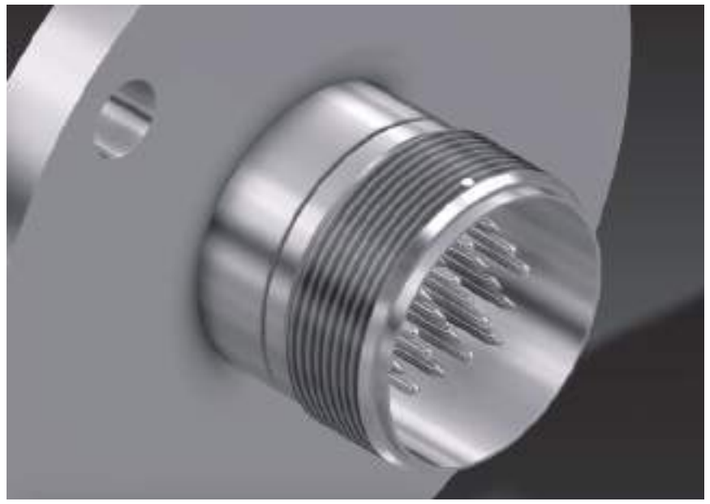
The current input terminal is mainly intended for use with high withstand voltage or high current. Different combinations are available for this item. For example, a basic terminal (single pole) can be directly welded to a chamber for use, or multiple terminals are welded to a flange for use as a multipolar current input terminal. Please contact us for products with specifications not covered in the catalogue.



Pin Diameter : φ1.6 / .06in.
rated Current : 3A (per pin)

Please contact us regarding Flange Type.

Type	Insert arrangement	Poles	B	C	F
Withstand voltage 500VDC (TEST Voltage)	14S-7	3	7/8-20UNEF	φ20.1 (.79in.)	35mm (1.38in.)
	14S-2	4			
	14S-6	6			
	18-1	10	11/8-18UNEF	φ26.1 (1.03in.)	40mm (1.57in.)
	20-27	14	11/4-18UNEF	φ29.6 (1.17in.)	
	22-14	19	13/8-18UNEF	φ32.6 (1.28in.)	
	24-28	24	11/2-18UNEF	φ36.6 (1.44in.)	
	28-21	37	13/4-18UNS	φ41.1 (1.62in.)	
	36-10	48	21/4-16UN	φ53.1 (2.09in.)	
Withstand voltage 1500VAC (TEST Voltage)	14S-7	3	7/8-20UNEF	φ20.1 (.79in.)	35mm (1.38in.)
	14S-2	4			
	18-1	10	11/8-18UNEF	φ26.1 (1.03in.)	40mm (1.57in.)
	20-27	14	11/4-18UNEF	φ29.6 (1.17in.)	
	22-14	19	13/8-18UNEF	φ32.6 (1.28in.)	
	24-28	24	11/2-18UNEF	φ36.6 (1.44in.)	
	28-21	37	13/4-18UNS	φ41.1 (1.62in.)	
	36-10	48	21/4-16UN	φ53.1 (2.09in.)	



Electrical Feedthroughs for High Current and High Voltage

Electrical Feedthroughs for Power

Insulation resistance : over 1000MΩ (at 500VDC)

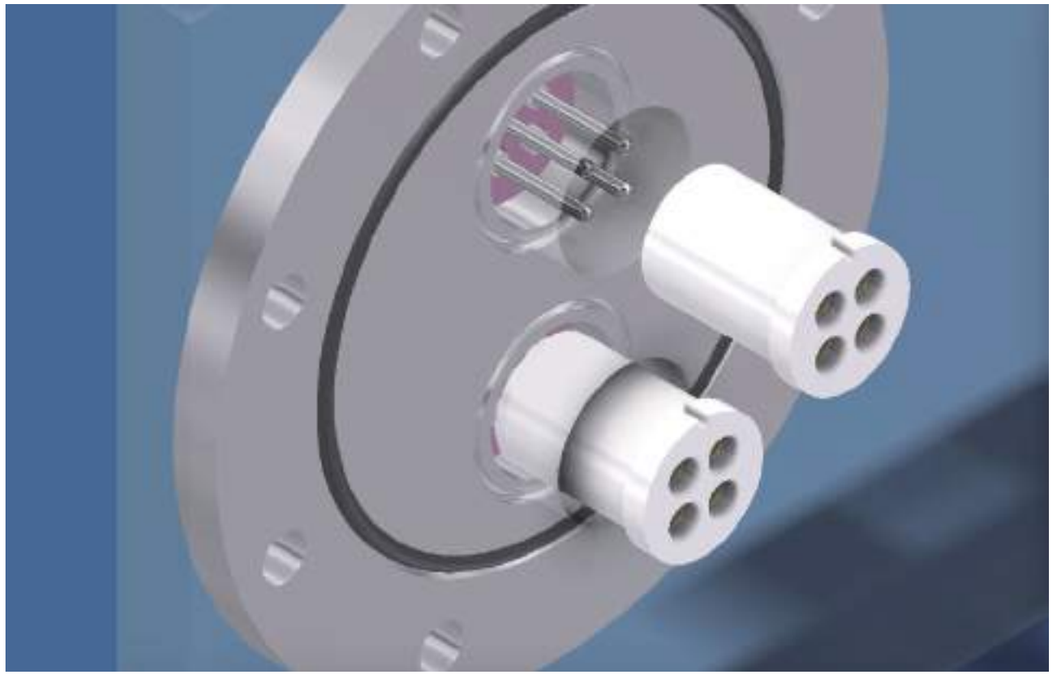
Temperature Range: 200℃ (392℉) Baking process 350℃(662℉)

Air tightness : less 1 x 10^{-10} Pa m^3 /s (Leakage quantity of Helium gas)

		Current							
		～3A	～10A	～15A	～20A	～80A	～100A	～250A	～400A
Withstand Voltage	1kV	○	○	○		○			
	3kV				○		○		
	5kV				○		○	○	○
	12kV				○		○		
	30kV				○		○		

Vacuum Connectors

Vacuum connectors are mounted on airtight containers (vacuum container, pressure container, container for gas and fluid) and include hermetic connectors, which carries electricity in and out while retaining airtightness and connectors that can bring electricity in containers. Depending on the intended use, we offer a wide variety of items for power supplies, signals, and thermocouples.

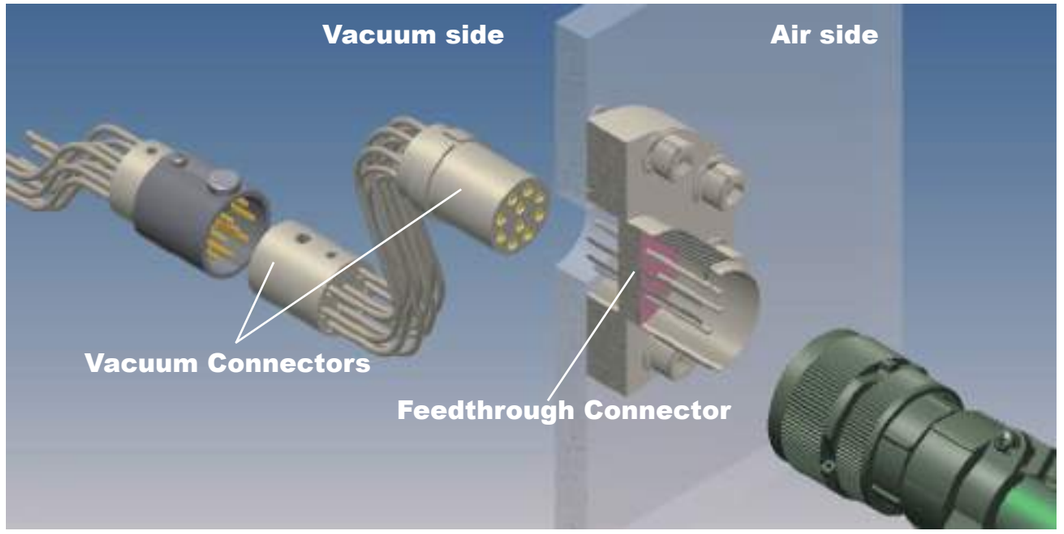


Socket Contact : ***Brass, Oxygen-free copper, Thermocouple Type K, T and E***

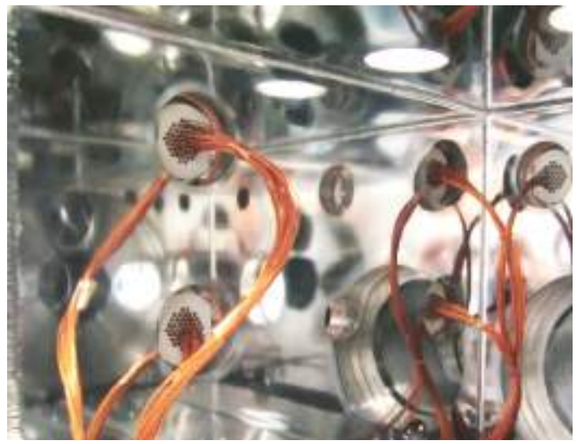
Insulator : ***PTFE, PEEK and Ceramic***

Contact

Contact for thermocouple



Samples of vacuum connectors

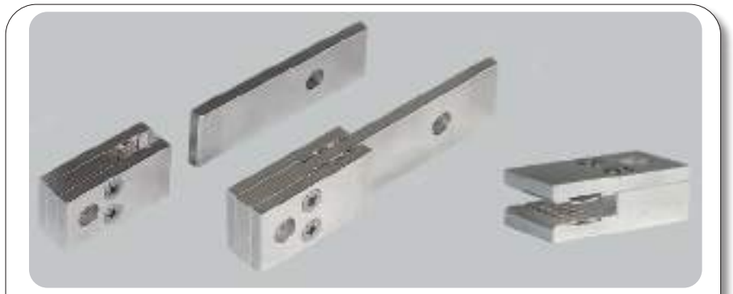


FORK SOCKET

The fork socket is a connector used when the mating component has a flat plate shape. The socket has an opening designed to match the plate thickness of the mating component and the flat electrical contacts on the inner surface. The socket is suitable for connections between a bus bar on the rear part of the unit used in rack and panel products and the power supply on the case, connections between cells in a battery (flat terminal), and bus duct connections, which results in a wide range of applications from mounting on high-current products to simplified pre-shipment inspections.

Features

- Structure suitable for use with high current
- Compensates for misalignment in one direction
- Design flexibility for super-thin to thick plate thickness
- Connections are very simple



FORK SOCKET

Bus bar thickness/width : 5mm(.20in.) / 25mm(.98in.)
Current : 500A
Contact element : GCB8

Condactive boby is copper +Ag plating

Before mating

After mating

FORK SOCKET

Bus bar thickness/width 2.5mm(.10 in.) / 14mm(.55in.)
Current : 100A
Contact element:GCB4

Corrosion proof
Condactive boby and contact element are Au plating

Samples of Fork Socket

Frok socket for Substrate inspection

Bus bar thickness/width : 2mm(.08in.) / 6.4mm(.25in.)
Current : 25A
Contact element : GCB8 and GCB5

This fork socket is inspection for Automotive board.

Frok socket for AGV

Bus bar thickness/width 5mm(.20in.) / 50mm(1.97in.)
Current : 60A
Contact element:GCB8

Large taper and prevent Misalignment

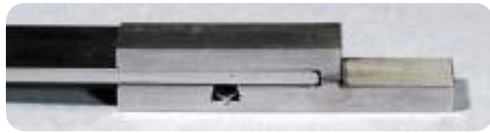
Frok socket for High current

Bus bar thickness/width 20mm(.79in.) / 100mm(3.94in.)
Current : 1500A
Contact element:Coil Spring

Multi fork sockets with insulator

Bus bar thickness/width 4mm(.16in.) / 15mm(.59in.)
Current : 100A
Contact element:GCB8

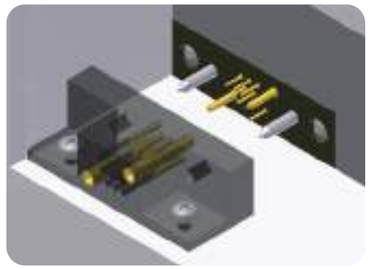
Easy mating to multi bus bars



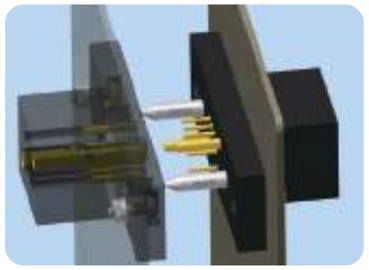
GLOBETECH CONNECTOR

Draw Out Connector (For Automatic Equipment)

The draw out connector is mounted between devices or panels. Unlike other types of connectors inserted and extracted by hand, this one fits together on a rail or is automatically inserted and extracted by the movement of a cylinder. This is also called a rack and panel connector or an automatic connector.



Rack and panel



Panel to Panel

Some representative issues with these applications are that the plug and receptacle are inserted even when misaligned in the event of any looseness in the rail or tolerance deviation when the cylinder is mounted. This can be a serious problem because a long service life is needed since the connector is frequently inserted and extracted.

Examples

Mating using shape of the case

Mating using the guide pin and tapered hole

Fixation using a floating screw

Mating using the pin tip and tapered shape of the socket inlet

For mating a pin and socket, care must be taken of the contact strength. Either the plug or receptacle must have a floating mechanism on a fixed point with the device or panel so that the connector tracks guide movement. For wiring of the connector side with the floating mechanism, a wiring method that does not obstruct guide movement, such as a cable or flexible conductor, is required. Rigid fixation to the bus bar disables guide movement. In such a case, only deflection of the electrical contact works to compensate for any misalignment.

Samples of Draw Out connector

Draw Out with both Power and Signals

Poles : 2P(Power) and 6P(Signal)
Misalignment allowance : ±1mm / ±.039in.

We can customise poles under your specification

Draw Out for High Temperature

Poles : 3P
Current : 20A
Temperature : 250℃(482F)

We can design for higher temperature product

Draw Out for High Current

Poles : 2P
Current : 80A

We can design for higher current product

Draw Out for Coaxial / Thermocouple

Poles : 6P(Coaxial) / 8P(Signal)
Current : 20A

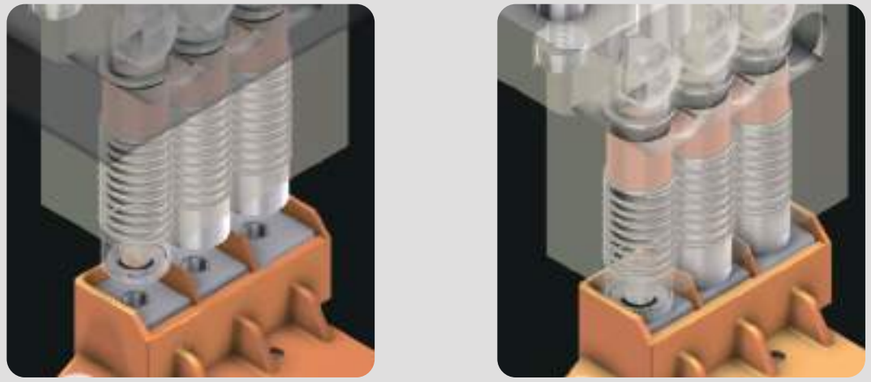
Mixing normal signals and thermocouple type K

GLOBETECH CONNECTOR

BUTT CONTACT

While connectors are generally inserted, Globetech offers connectors that make contact by pressing the surfaces (butt contact) based on the technology of electrical contacts. Using butt contacts for pre-shipment inspections makes the work simpler (shortened time) and automated.

	Contact spring probe	BUTT CONTACT
If the contact surface is rough …	Contact defects may occur depending on the surface roughness.	Each of the coil springs individually tracks the irregular surface to maintain stable energization.
Canted contact	Because there is only one contact, energization issues may arise.	Multipoint contact and deflection of the coil spring ensure stable energization.
Damage	The product may be damaged because of the force applied to a single contact.	Damage to the product can be minimized because the force is distributed to multiple contact



Contacted

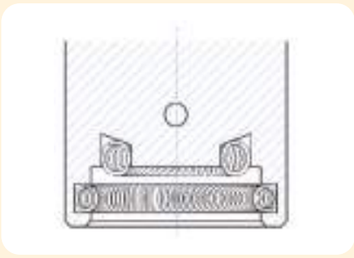
Features

- Small but energizes high current
- Unlikely to damage the target compared to a contact spring probe that has only one contact because the target is touched at multiple points
- The coil spring flexibly tracks the irregular surface of the target.
- Compensating for misalignment by increasing the target surface
- Applicable to high temperature environments or vacuums by changing materials
- Longer life compared to connectors using a pin and socket

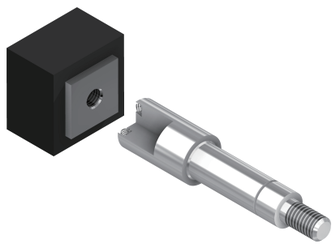
Inspection contact for IGBT and Terminal

While a crimped terminal is connected using a screw in actual use, in a pre-shipment inspection, it is necessary to inspect as many products as possible within a limited time. By using a butt contact, time and labor for screwing the crimped terminal is eliminated, and the manufacturing and shipment lines are automated, which leads to cost reductions.

The butt contact is used in the current and breakdown tests of the pre-shipment inspection of the IGBT. Stable energization is ensured by multipoint contact, and damage to the terminal block of the IGBT can be minimized.
Large deflection, which is one of the key features of a coil spring, compensates for any misalignment in the direction of height when more than one terminal is energized at the same time.



The butt contact is used in the current test of a general-use terminal board. Even more stable energization is ensured by energizing the two directions of the upper and lateral sides using two coil springs for the screw head.
Designing and manufacturing custom-made products are accepted in accordance with the size of the screw head of the terminal board.



Connecters for Inspection Process

GlobeTech proposes a custom-made connectors for your product inspection process. The inspection process time and cost can be greatly reduced.

Inverter inspection for Automotive

Butt Contact

High Current and stable contact

For 0.64mm square pin

0.64mm Socket

Long life

Fork Socket

Four terminal sensing method

Zero Insertion Force Connector

Reducing scratch

Without Contact Force

With Contact Force

Inspection process for Battery

Four terminal sensing method

Four terminal sensing is an electrical impedance measuring technique that uses separate pairs of current-carrying and voltage-sensing electrodes to make more accurate measurements.

Connect to Hex Nuts and Screw threads

Globetech's connectors use electrical contacts that can be directly connected to the lateral surfaces of hex nuts or screw threads. Thus, energization does not require a round terminal or special jigs. This is the best method when the work efficiency of pre-shipment inspections or other work is considered important. Moreover, as electrical contact tracks even sections where tolerance of the mounting hole is large, secure electrical connections are ensured.

Example

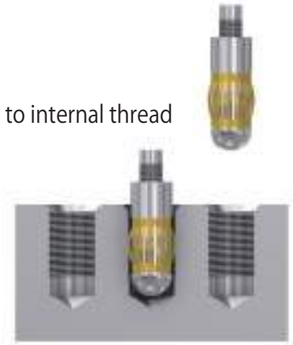
We can design connectors based on your specifications.

Connect to Hex Nuts and Screws

M8 Nuts 5A 24V

Connect to internal thread and external thread

Conducting to internal thread



Conducting to external thread

One connector to 2 different hole size

Connect to
2 different hole size at same time

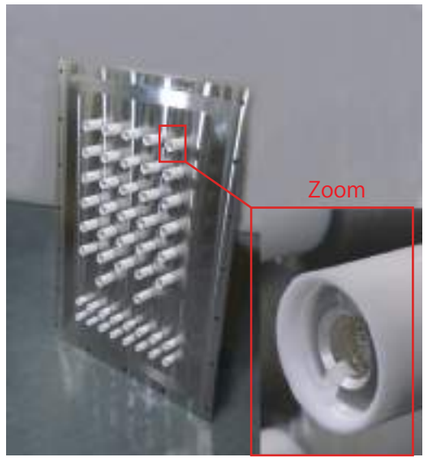
Connect to
each 2 different hole size

GLOBETECH CONNECTOR

Other samples

Square flange with 48 poles sockets

Current : 200A/32P, 40A/16P
Voltage : 40VAC / 100VAC
Plug Diameter : φ12 and 5mm / .47 and .20in.
Electrical contact : Contact band



EV BUS Battery

Current : 300A x 3 poles
Plug diameter : φ16mm / .63in.
Electrical contact : Contact band

Connector for Manipulator

Current : 230A (singular pole)
Voltage : 400VAC
Plug diameter : φ12mm / .47in.
Electrical contact: Contact band

We use PEEK for insulator for Radiation-proof.

Connector with Latch lock (Cable assembly)

Current : 230A (singular pole)
Plug diameter : φ12mm / .47in.
Electrical contact : Contact band

Fork Socket (Cable assembly)

Current : 100A
Bus bar thickness : 5mm / .20in.
Electrical contact : Contact band

Crimp tool

Cross section

4-Indent Hand Crimp Tool

This tool crimp from four directions, which ensures secure pressure bonding and does not cause the bonded portion to spread or bend.

Removal tool

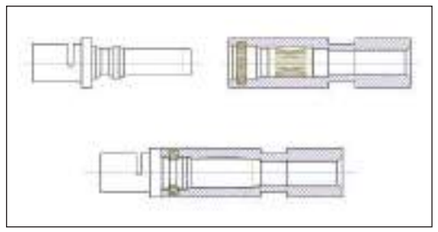
Latch lock using Coil Spring

Latch lock

The latch lock is a mechanical fixation method that uses a coil spring to lock the connector. The connector can be locked when the coil spring mounted on the housing fits into the groove on the plug. The designed insertion and extraction force can be changed individually by changing the material or wire diameter of the coil spring and taper angle of the groove on the plug. We offer a robust lock that cannot be unlocked until the coil spring is broken once locked.

Features

- Easy lock and unlock from a single action
- No need for tools
- Compact design is enabled even in a small space.
- Locked state can be confirmed by the clicking sound and feeling.



Inquiry form

sales@globetech.jp

In order to design customized connector, we nee to know more about your application requirements.

Please complete this form and e-mail to us at sales@globetech.jp

Company：　　Department：

Name：　　E-mail：

TEL：　　FAX：

Specification

What connector do you want for：☐High Current ☐Heat Resistance ☐ Vacuum environment ☐ Shipping inspection

☐Socket(female) and Pulg(male) ☐Only Socket side ☐Only Plug side

Application：

Current problem：

Operating Temperature：　　☐℃ ☐℉ ～　　☐℃ ☐℉

What type of connector do you need ？：☐Only Conductor ☐Conductor and Insulator

Total poles：　　P

①Poles：　P Current：　A Votage：　V ☐AC ☐DC Cable square：　mm^2, AWG

②Poles：　P Current：　A Votage：　V ☐AC ☐DC Cable square：　mm^2, AWG

③Poles：　P Current：　A Votage：　V ☐AC ☐DC Cable square：　mm^2, AWG

Inrush current：　　A ☐Sec ☐ msec

Life time (Number of cycle)：

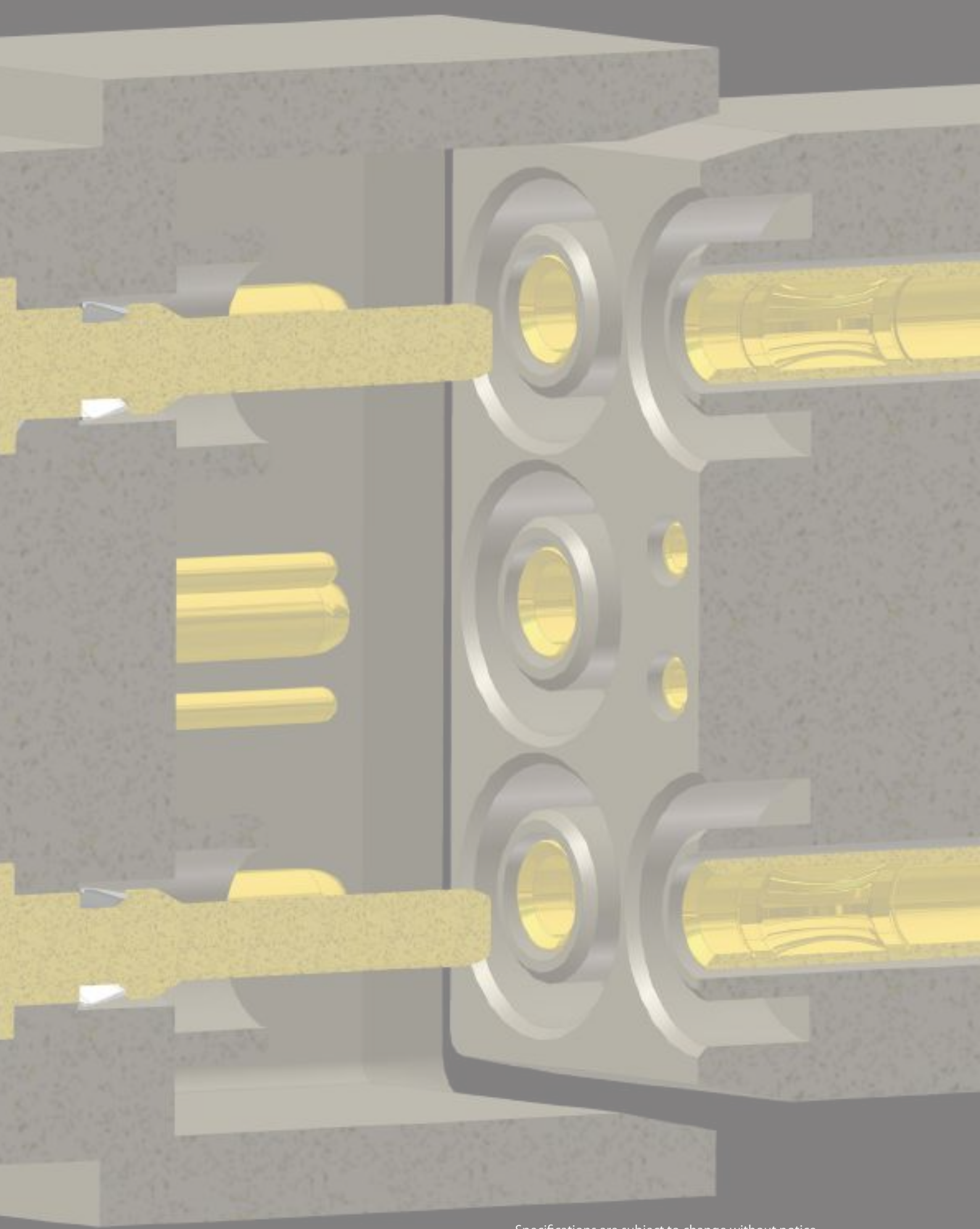
Lock：☐Yes, We need ☐No, We don’ t need it.

Anuual Usage：　　Target price：

Schedule：Prototype：　　Mass Production：

Cable connection：☐Screw ☐ Solder ☐ Crimping

Image and drawing



Specifications are subject to change without notice.

GLOBETECH

GLOBETECH Inc.

1-13-21 Hinodai
Hino-shi, Tokyo, Japan 191-0003

http://www.globetech.jp/

Ver. 201909