

MECHANICAL LUGS & CONNECTORS

Make Cable Connections More Reliable

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ABOUT MELEC

Directed by a group of experienced professionals and certified by ISO 9001:2015 Quality Management Systems, most of our products have met IEC, NFC and EN international standard. By matching up with the highest requirements along with our ever advancing technology, MELEC is gradually gaining reputation in both quality and reliability.

Our in-house laboratory has been established for over a decade, and our rich experience and advanced equipments enable us to bring more value to our customers. We have offered 1000 different products which are sold to over 100 countries across the globe. We will continue our dedicated effort to improve product performance and reliability with our expertise and resources.



ISO9001

ISO14001

ISO45001

ISO17025



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OVERVIEW OF MECHANICAL PRODUCTS

MELEC mechanical products are reliable and efficient ways of connecting conductors in different cross sections or materials up to 35kV.

We started the development of mechanical lugs and connectors in 2006 and launched the earliest generation in 2007.

In 2012, combined with customer feedback and our strategic planning, we started to develop 2nd-generation and obtained product test reports from TICW of China and KERI of Korea respectively in 2014.

In order to meet the market demand better, we started development of the 3rd-generation in 2015 and launched in 2016. At present, MELEC has obtained the qualified test report from TICW of China, KERI of Korea, SIRIM of Malaysia and other authoritative institutions, and has won unanimous praise from customers.



DESIGN

Body

Bodies are made of high strength, tin-plated aluminium alloy. Threaded design of inner surface can pierce the oxide layer on the surface of the conductor under pressure to ensure superior electrical and mechanical performance. The bodies are pre-filled with jointing compound which has anti-oxidation and anti-corrosion effects to extend the service life of the products.



Bolts

Bolts are made of aluminium alloy. These bolts are double shear-off-head bolts with hexagon heads. Torque controlled shear head bolts won't cause any damage to conductor, and make the working performance more stable. These bolts are irremovable once their heads have been sheared off.



Inserts

Lugs and connectors are provided with inserts for smaller conductors. Wide application range can greatly reduce stock requirement. These inserts have lengthwise striations and a positioning guide.



FEATURES

Compared with crimping lugs and connectors, mechanical lugs & connectors have the following advantages:



VS



Heavy crimping tools and die sets are necessary.

Only a socket spanner or a wrench is needed.

For every cross section, a specific crimping connector is need.

Only 5 sizes cover conductor cross-sections from 25 mm² to 1000 mm².

Complex installation.

Easy installation. Torque design provides easy installation of the bolts.

After installation, connector body will be stretched a little.

After installation, the length and outer diameter will not be changed.

APPLICATION



TEST AND LABORATORY

Mechanical lugs and connectors have been tested to IEC 61238-1: 2018. Detailed test reports available on request.



MELEC Laboratory



TOOLS



Package list

- Clamp Holder: AZGJ-1050
- Ratchet: JLBS-380
(with sockets 9mm, 10mm, 13mm, 17mm, 19mm, 22mm and 24mm)

Type	Length(mm)	Package Weight(kg)	Packs(pcs)
AZGJ-1050	420	2	1x4
JLBS-380	380	2	1x4

Dangerous installation problems



High bolt protrusion



Much burr on chamfering



Difficult to shear off

Correct Installation



Low Voltage



MELEC

JTLL | MECHANICAL BIMETAL LUG

Application:

Used for transition connection of aluminium cable or aluminium alloy cable with copper end of electrical equipment in low voltage.

Material:

Body: high strength aluminium alloy, Cu≥99.9%
Bolts: aluminum alloy

Feature:

Friction welded



Type	AL in mm ²				Outer Diameter (mm)	Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	sector solid					
JTLL10-35-8/1L	10-35	10-25	10-35	10-25	16	1	8	9	125x4
JTLL10-35-10/1L	10-35	10-25	10-35	10-25	16	1	8	9	125x4
JTLL25-50-8/1L	25-50	25-35	25-50	25-35	18	1	10	10	100x4
JTLL25-50-10/1L	25-50	25-35	25-50	25-35	18	1	10	10	100x4
JTLL50-95-8/1L	50-95	50-70	50-95	50-70	22	1	22	13	70x4
JTLL50-95-10/1L	50-95	50-70	50-95	50-70	22	1	22	13	70x4
JTLL120-185-10/1L	120-185	120-150	120-185	120-150	30	1	40	17	35x4
JTLL120-185-12/1L	120-185	120-150	120-185	120-150	30	1	40	17	35x4
JTLL240-300-10/2L	240-300	240	240-300	240	36	2	55	22	16x4
JTLL240-300-12/2L	240-300	240	240-300	240	36	2	55	22	16x4
JTLL300-400-12/3L	300-400	300	300-400	300	40	3	45	22	8x4
JTLL300-400-16/3L	300-400	300	300-400	300	40	3	45	22	8x4

Note: Shear-off torque is only a reference during installation.

CLL | MECHANICAL CONNECTOR

Application:

Used for intermediate connection of copper cable, aluminium cable and aluminium alloy cable in low voltage.

Material:

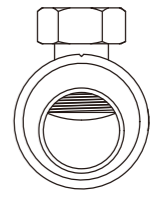
Body: high strength aluminium alloy
Bolts: aluminium alloy

Surface:

Tin plated

Feature:

Oil blocking structure



Type	AL in mm ²				CU in mm ²			Outer Diameter (mm)	Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	sector solid	round stranded	sector stranded	round solid					
CLL10-35/2L	10-35	10-25	10-35	10-25	10-16	10-16	10-16	16	2	8	9	150x4
CLL25-50/2L	25-50	25-35	25-50	25-35	25-35	25-35	25-35	18	2	12	10	100x4
CLL50-95/2L	50-95	50-70	50-95	50-70	50	50	50	22	2	22	13	60x4
CLL120-185/2L	120-185	120-150	120-185	120-150	120	120	120	30	2	40	17	30x4
CLL240-300/4L	240-300	240	240-300	240	240	240	240	36	4	55	22	15x4

Note: Shear-off torque is only a reference during installation.

SCLL | MECHANICAL CONNECTOR

Application:

Used for intermediate connection of copper cable, aluminium cable and aluminium alloy cable in low voltage.

Material:

Body: high strength aluminium alloy
Bolts: aluminium alloy

Surface:

Tin plated

Feature:

- Oil blocking structure
- Suitable for various conductor types.



Type	AL in mm ²				CU in mm ²			Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	sector solid	round stranded	sector stranded	round solid				
SCLL1.5-16/2L	10-16	-	10-16	-	1.0-16	-	1.0-16	2	3	8	200x4
SCLL6-25/2L	10-35	16-25	6-35	16-35	10-25	16-25	4-25	2	5	8	150x4
SCLL6-50/2L	10-50	35-50	10-50	35-50	6-50	35-50	6-35	2	11	10	100x4
SCLL16-95/2L	16-95	35-95	16-95	35-95	16-95	35-95	16-35	2	20	13	75x4
SCLL25-150/2L	25-150	35-150	25-150	35-150	25-150	35-150	16-35	2	34	17	40x4
SCLL50-240/4L	50-240	50-240	50-240	50-240	50-240	50-240	-	4	35	19	16x4
SCLL120-300/4L	120-300	120-300	120-300	120-300	120-300	120-300	-	4	40	22	10x4
SCLL185-400/6L	185-400	185-400	185-400	185-400	185-400	185-400	-	6	43	22	7x4

Note: 1) Shear-off torque is only a reference during installation.

2) Depending on different conductor materials and designs, deviations of the test values are possible.

SJLL | MECHANICAL LUG

Application:

Used for transition connection of copper cable, aluminium cable, or aluminium alloy cable with aluminium end of electrical equipment in low voltage.

Material:

Body: high strength aluminium alloy
Bolts: aluminium alloy

Surface:

Tin plated

Feature:

Suitable for more conductor types.



Type	AL in mm ²				CU in mm ²			Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	sector solid	round stranded	sector stranded	round solid				
SJLL6-25-12/1L	10-25	10-25	10-25	10-25	6-25	6-25	6-25	1	5	8	150x4
SJLL6-50-10/1L	10-50	35-50	10-50	35-50	6-50	35-50	6-35	1	11	10	100x4
SJLL6-50-12/1L	10-50	35-50	10-50	35-50	6-50	35-50	6-35	1	11	10	100x4
SJLL16-95-10/1L	16-95	35-95	16-95	35-95	16-95	35-95	16-35	1	20	13	75x4
SJLL16-95-12/1L	16-95	35-95	16-95	35-95	16-95	35-95	16-35	1	20	13	75x4
SJLL50-150-12/1L	50-150	50-150	50-150	50-150	50-150	50-150	-	1	32	17	35x4
SJLL50-150-16/1L	50-150	50-150	50-150	50-150	50-150	50-150	-	1	32	17	35x4
SJLL50-240-12/2L	50-240	50-240	50-240	50-240	50-240	50-240	-	2	35	19	20x4
SJLL50-240-16/2L	50-240	50-240	50-240	50-240	50-240	50-240	-	2	35	19	20x4
SJLL120-300-12/2L	120-300	120-300	120-300	120-300	120-300	120-300	-	2	39	22	15x4
SJLL120-300-16/2L	120-300	120-300	120-300	120-300	120-300	120-300	-	2	39	22	15x4
SJLL185-400-12/3L	185-400	185-400	185-400	185-400	185-400	185-400	-	3	42	22	10x4
SJLL185-400-16/3L	185-400	185-400	185-400	185-400	185-400	185-400	-	3	42	22	10x4

Note: 1) Shear-off torque is only a reference during installation.

2) Depending on different conductor materials and designs, deviations of the test values are possible.

Medium Voltage



AUL | MECHANICAL LUG

Application:

Used for connection of copper cable, aluminium cable or aluminium alloy cable with aluminium end of electrical equipment in medium voltage.

Material:

Body: high strength aluminium alloy
Bolts: brass or aluminium alloy

Surface:

Tin plated



Type	AL in mm ²			CU in mm ²		Outer Diameter (mm)	Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	round stranded	sector stranded					
AUL25-95-12/1L	25-95	25-70	25-95	25-95	25-70	24	1	17	13	40x4
AUL25-95-16/1L	25-95	25-70	25-95	25-95	25-70	24	1	17	13	40x4
AUL35-150-12/1L	35-150	35-120	35-150	35-150	35-120	28	1	31	17	30x4
AUL35-150-16/1L	35-150	35-120	35-150	35-150	35-120	28	1	31	17	30x4
AUL35-150-12/2L	35-150	35-120	35-150	35-150	35-120	28	2	31	17	20x4
AUL35-150-16/2L	35-150	35-120	35-150	35-150	35-120	28	2	31	17	20x4
AUL70-240-12/2L	70-240	70-185	70-240	70-240	70-185	33	2	36	19	12x4
AUL70-240-16/2L	70-240	70-185	70-240	70-240	70-185	33	2	36	19	12x4
AUL120-300-12/2L	120-300	120-240	120-300	120-300	120-240	38	2	40	22	9x4
AUL120-300-16/2L	120-300	120-240	120-300	120-300	120-240	38	2	40	22	9x4
AUL185-400-12/3L	185-400	185-300	185-400	185-400	185-300	42	3	43	22	7x4
AUL185-400-16/3L	185-400	185-300	185-400	185-400	185-300	42	3	43	22	7x4
AUL300-630-12/3L	300-630	300-500	300-630	300-630	300-500	52	3	56	24	4x4
AUL300-630-16/3L	300-630	300-500	300-630	300-630	300-500	52	3	56	24	4x4
AUL300-630-20/3L	300-630	300-500	300-630	300-630	300-500	52	3	56	24	4x4
AUL800-1000-20/4L	800-1000	800	800-1000	800-1000	800	65	4	58	22	3x4

Note: 1) Shear-off torque is only a reference during installation.
2) Lugs with brass bolts are also available. Please consult MELEC sales for more details.

AULZ | MECHANICAL LUG

Application:

Used for connection of copper cable, aluminium cable or aluminium alloy cable with aluminium end of electrical equipment in medium voltage.

Material:

Body: high strength aluminium alloy
Bolts: aluminium alloy

Surface:

Tin plated

Feature:

Central palm



Type	AL in mm ²			CU in mm ²		Outer Diameter (mm)	Width of Palm (mm)	Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	round stranded	sector stranded						
AULZ25-95-16/29/1L	25-95	25-70	25-95	25-95	25-70	24	29	1	17	13	40x4
AULZ35-150-16/29/1L	35-150	35-120	35-150	35-150	35-120	29	29	1	31	17	30x4
AULZ70-240-16/29/2L	70-240	70-185	70-240	70-240	70-185	33	29	2	36	19	20x4
AULZ120-300-16/29/2L	120-300	120-240	120-300	120-240	120-240	38	29	2	40	22	16x4
AULZ25-95-16/30/1L	25-95	25-70	25-95	25-95	25-70	24	30	1	17	13	40x4
AULZ70-240-16/30/2L	70-240	70-185	70-240	70-240	70-185	33	30	2	36	19	20x4
AULZ185-400-16/30/3L	185-400	185-300	185-400	185-400	185-300	42	30	3	43	19	10x4
AULZ25-95-16/35/1L	25-95	25-70	25-95	25-95	25-70	24	35	1	17	13	40x4
AULZ35-150-16/35/1L	35-150	35-120	35-150	35-150	35-120	29	35	1	31	17	30x4
AULZ70-240-16/35/2L	70-240	70-185	70-240	70-240	70-185	33	35	2	36	19	20x4
AULZ120-300-16/35/2L	120-300	120-240	120-300	120-300	120-240	38	35	2	40	22	16x4
AULZ185-400-16/35/3L	185-400	185-300	185-400	185-400	185-300	42	35	3	43	22	10x4
AULZ300-630-16/35/3L	300-630	300-500	300-630	300-630	300-500	52	35	3	56	24	5x4
AULZ500-800-16/35/4L	500-800	500-630	500-800	500-800	500-630	59	35	4	50	24	4x4

Note: Shear-off torque is only a reference during installation.

AUL-LP | MECHANICAL LUG

Application:

Used for connection of copper cable, aluminium cable or aluminium alloy cable with aluminium end of electrical equipment in medium voltage.

Material:

Body: high strength aluminium alloy
Bolts: aluminium alloy

Surface:

Tin plated

Feature:

Palm with two holes which provides flexible installation range.



Type	AL in mm ²			CU in mm ²		Outer Diameter (mm)	Hole Spacing	Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	round stranded	sector stranded						
AUL25-95LP-12/2L	25-95	25-70	25-95	25-95	25-70	24	32-45	2	17	13	30x4
AUL35-150LP-12/2L	35-150	35-120	35-150	35-150	35-120	29	32-45	2	31	17	25x4
AUL70-240LP-12/2L	70-240	70-185	70-240	70-240	70-185	35	32-45	2	36	19	14x4
AUL185-400LP-12/3L	185-400	185-300	185-400	185-400	185-300	42	32-45	3	43	22	6x4
AUL185-400LP-16/3L	185-400	185-300	185-400	185-400	185-300	42	32-45	3	43	22	6x4
AUL300-630LP-12/3L	300-630	300-500	300-630	300-630	300-500	52	32-45	3	56	24	6x4
AUL300-630LP-16/3L	300-630	300-500	300-630	300-630	300-500	52	32-45	3	56	24	6x4
AUL800-1000LP-12/4L	800-1000	800	800-1000	800-1000	800	65	32-45	4	58	22	3x4

Note: Shear-off torque is only a reference during installation.

DTLL | MECHANICAL BIMETAL LUG

Application:

Used for transition connection of aluminium cable or aluminium alloy cable with copper end of electrical equipment in medium voltage.

Material:

Body: high strength aluminium alloy, Cu≥99.9%
Bolts: brass or aluminium alloy

Feature:

Friction welded



Type	AL in mm ²			Outer Diameter (mm)	Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid					
DTLL25-95-12/1L	25-95	25-70	25-95	24	1	17	13	40x4
DTLL35-150-12/1L	35-150	35-120	35-150	28	1	31	17	30x4
DTLL35-150-16/1L	35-150	35-120	35-150	28	1	31	17	30x4
DTLL35-150-12/2L	35-150	35-120	35-150	28	2	31	17	20x4
DTLL35-150-16/2L	35-150	35-120	35-150	28	2	31	17	20x4
DTLL70-240-12/2L	70-240	70-185	70-240	33	2	36	19	12x4
DTLL70-240-16/2L	70-240	70-185	70-240	33	2	36	19	12x4
DTLL120-300-12/2L	120-300	120-240	120-300	38	2	40	22	9x4
DTLL120-300-16/2L	120-300	120-240	120-300	38	2	40	22	9x4
DTLL185-400-12/3L	185-400	185-300	185-400	42	3	43	22	7x4
DTLL185-400-16/3L	185-400	185-300	185-400	42	3	43	22	7x4
DTLL300-630-12/3L	300-630	300-500	300-630	52	3	56	24	4x4
DTLL300-630-16/3L	300-630	300-500	300-630	52	3	56	24	4x4
DTLL300-630-20/3L	300-630	300-500	300-630	52	3	56	24	4x4

Note: 1) Shear-off torque is only a reference during installation.
2) Lugs with brass bolts are also available. Please consult MELEC sales for more details.

GLL | MECHANICAL CONNECTOR

Application:

Used for intermediate connection of copper cable, aluminium cable and aluminium alloy cable in medium voltage.

Material:

Body: high strength aluminium alloy
Bolts: brass or aluminium alloy

Surface:

Tin plated



Type	AL in mm ²			CU in mm ²		Outer Diameter (mm)	Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	round stranded	sector stranded					
GLL10-35/2L	10-35	10-25	10-35	10-35	10-25	19	2	8	9	60x4
GLL25-95/2L	25-95	25-70	25-95	25-95	25-70	24	2	17	13	40x4
GLL35-150/2L	35-150	35-120	35-150	35-150	35-120	28	2	31	17	35x4
GLL35-150/4L	35-150	35-120	35-150	35-150	35-120	28	4	31	17	20x4
GLL70-240/4L	70-240	70-185	70-240	70-240	70-185	33	4	36	19	15x4
GLL120-300/4L	120-300	120-240	120-300	120-300	120-240	38	4	40	22	10x4
GLL185-400/6L	185-400	185-300	185-400	185-400	185-300	42	6	43	22	7x4
GLL300-630/6L	300-630	300-500	300-630	300-630	300-500	52	6	56	24	4x4
GLL800-1000/8L	800-1000	800	800-1000	800-1000	800	65	8	58	22	2x4

Note: 1) Shear-off torque is only a reference during installation.
2) Connectors with brass bolts are also available. Please consult MELEC sales for more details.

GLLT | MECHANICAL TRANSITION CONNECTOR

Application:

Used for intermediate connection of copper cable, aluminium cable and aluminium alloy cable in medium voltage.

Material:

Body: high strength aluminium alloy
Bolts: aluminium alloy

Surface:

Tin plated

Feature:

- Centre with block
- Different sizes design on two sides, especially suitable for connections between two conductors which have big size difference.



Type	AL in mm ²			CU in mm ²		Outer Diameter (mm)	Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	round stranded	sector stranded					
GLLT70-240/25-95/3L	70-240/25-95	70-185/25-70	70-240/25-95	70-240/25-95	70-185/25-70	35/25.5	3	36/17	19/13	20x4
GLLT70-240/35-150/3L	70-240/35-150	70-185/35-120	70-240/35-150	70-240/35-150	70-185/35-120	35/29	3	36/31	19/17	20x4
GLLT70-240/25-95/4L	70-240/25-95	70-185/25-70	70-240/25-95	70-240/25-95	70-185/25-70	35	4	36/17	19/13	15x4
GLLT70-240/35-150/4L	70-240/35-150	70-185/35-120	70-240/35-150	70-240/35-150	70-185/35-120	35	4	36/31	19/17	15x4

Note: Shear-off torque is only a reference during installation.

GLLB | MECHANICAL BRANCH CONNECTOR

Application:

Used for intermediate branch connection of copper cable, aluminium cable and aluminium alloy cable in medium voltage.

Material:

Body: high strength aluminium alloy
Bolts: aluminium alloy

Surface:

Tin plated

Feature:

Oil blocking structure



Type	AL in mm ²			CU in mm ²		Shear-off Torque (N.m)	Number Of Bolts	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	round stranded	sector stranded				
GLLB70-240/70-240-2/6L	70-240	70-185	70-240	70-240	70-185	36	6	19	4x4

Note: Shear-off torque is only a reference during installation.

JHL | SCREEN WIRE LUG

Application:

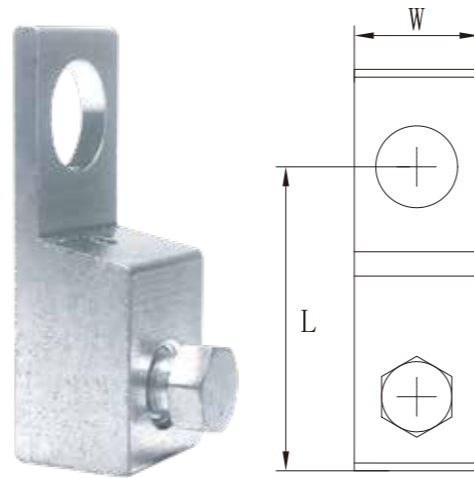
Used for earthing of cable screen and armour in medium voltage.

Material:

Body and bolt: brass

Surface:

Tin plated



Type	CU in mm ²	Dimensions		Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
		L(mm)	W(mm)				
JHL10-50-10/1	10-50	39	16	1	10	10	75x4
JHL10-50-12/1	10-50	41	19	1	10	10	75x4

Note: Shear-off torque is only a reference during installation.

AULS, AULE | MECHANICAL PIN LUG

Application:

Used for connection of copper cable, aluminium cable or aluminium alloy cable with copper end of transformer, switchgear and terminal box in medium voltage.

Material:

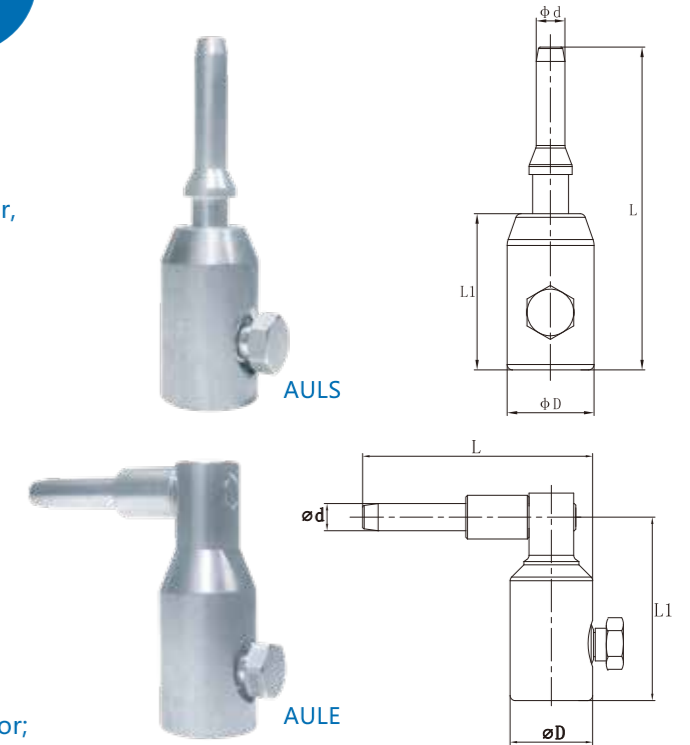
Body: high strength aluminum alloy
Bolts: aluminum alloy
Pin: Cu≥99.9%

Surface:

Tin plated

Feature:

- Cylinder copper pin
- AULS is suitable for straight-through separable connector;
- AULE is suitable for elbow separable connector.



Type	AL in mm ²			CU in mm ²		Dimensions				Number Of Bolts	Shear-off Torque (N.m)	Wrench Size	Pack (pcs)
	round stranded	sector stranded	round solid	round stranded	sector stranded	L(mm)	L1(mm)	D(mm)	d(mm)				
AULS25-95/1L	25-95	25-70	25-95	25-95	25-70	90	43.5	24	8	1	17	13	40x4
AULE25-95/1L	25-95	25-70	25-95	25-95	25-70	67	59	24	8	1	17	13	40x4

Note: Shear-off torque is only a reference during installation.