

CONNECTING TECHNOLOGY FOR FLEXIBLE ALUMINUM CABLES



In partnership with





Connecting Solutions

A young dynamic company

Founded in 1981, MECATRACTION quickly grew both in the domestic and export markets. We are based in Pompadour, France, in premises of more than 9000 m². MECATRACTION designs, develops and produces a complete range of components for industrial electrical connections. Our subsidiary CEGERS TOOLS adds an extensive range of tools and accessories.

MECATRACTION is a subsidiary of the SICAME Group

The SICAME Group is specialized in accessories for the transport and the transmission of electrical power.



Your best partner in the high-tech sector

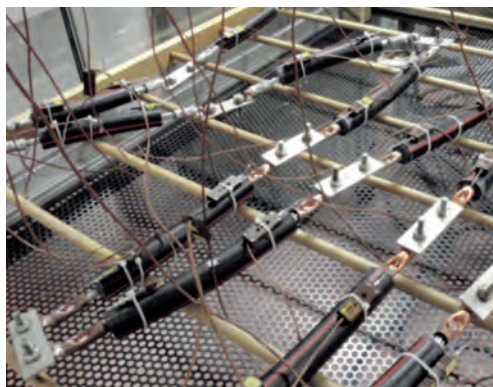
MECATRACTION has forged a position for itself in many sectors of industry that demand know-how, precision and efficiency through the quality of our products and our capacity for innovation. These sectors include the rail, automotive, aeronautic, space, nuclear, renewable energies, shipbuilding and defence industries.

High means of production

The manufacturing of components for electrical connections requires a production apparatus both modern and extremely flexible.

Research & Development

Our Research & Development department is composed of multi-disciplinary teams who combine creativity and reactivity. Our knowledge of the requirements of various fields of activity such as railway, aeronautics, automotive or renewable energies enables us to offer original and strong solutions allowing to anticipate. Our research teams can rely on the capacity of our laboratory to investigate new technical solutions helping us in anticipating the needs of our customers. Thus, our connections meet the permanent evolutions of the conductors in the most severe applications.



A crimping specialist

MECATRACTION has acquired a great experience in crimping techniques in order to obtain connections of high characteristics thanks to different associations.



APPROVED CERTIFICATES

MECATRACTION has obtained the certificate of authorization for a connecting system using DBI lugs established on 2018-04-24.

DNV GL

TYPE APPROVAL CERTIFICATE

Certificate No: **TAE00002GJ**
Revision No: **1**

This is to certify:
That the Termination and Joint for Cable

with type designation(s)
DBI 95 - Studhole M8/M10/M12/M14 and M16 Termination for aluminum power cable,
DBI 120 - Studhole M8/M10/M12/M14 and M16 Termination for aluminum power cable,
DBI 150 - Studhole M10/M12/M14 and M16 Termination for aluminum power cable

Issued to
amo specialkabel AB
ALSTERMO, Sweden

is found to comply with
DNV GL rules for classification - Ships, offshore units, and high speed and light craft

Application :
Special terminations for Aluminum power cables.

Products approved by this certificate are accepted for installation on all vessels DNV GL.

Issued at **Høvik** on **2018-05-30**

This Certificate is valid until **2023-05-29**.
DNV GL local station: **Malmö**

Approval Engineer: **Ivar Bull**

for **DNV GL**
Digitally Signed By: **Andreas Kristoffe**
Location: **DNV GL Høvik, Norway**

Andreas Kristoffe
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render the validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Form code: TA 251 Revision: 2016-12 www.dnvgl.com
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IEC 61238- 1 class A tested

Job Id: **262.1-027056-1**
Certificate No: **TAE00002GJ**
Revision No: **1**

Name and place of manufacturer
DNVGL Id: 10604393

Product description
Cable lugs made of tinned copper specially designed for use with aluminium conductors. Lugs contain a grid and are supplied with contact grease.
Approval covers cross sections 95mm², 120mm² and 150mm².

Application/Limitation
Cable lugs approved for cables AMOKABEL TEXIIline Power ALUFLEX or Power EMC ALUFLEX or Power EMC VFD ALUFLEX with aluminium conductors, ref. DNV GL TA certificates TAE00002V2 and TAE00002GK.
Terminations to be installed according to manufacturers instructions.
Press to be performed with approved press tool and correct die size.
Heat shrink tubing with melt glue shall cover cable sheath and pressed termination to prevent ingress of moisture.

Type Approval documentation
Data sheet.
Test reports: Mecatraction report RQ 1437752 Rev B. dated September 25 - 2015
Mecatraction report RQ 1537850 Rev A. dated September 13 - 2017

Tests carried out

	Release	General description	Limitation
DNVGL-CP-0409	2017-10	Terminal lugs for LV power cables with aluminum conductors	
IEC 61238-1	2003-05	Compression and mechanical connectors for power cables for rated voltages up to 30kV (Um=36kV). Part 1: Test methods and requirements	Short circuit test Class A
DNVGL-CG-0339	2016-11	Environmental test specification for electrical, electronic and programmable equipment and systems	Relevant part as per CP-0409 table 1

Marking of product
Type designation and cross sectional area.
Die size to be embossed on lug during press.

Periodical assessment
The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.
The main elements of the assessment are:
• Inspection on factory samples, selected at random from the production line (where practicable)
• Results from Routine Tests (RT) checked (if not available tests according to RT shall be carried out)
• Review of type approval documentation
• Review of possible change in design, materials and performance
• Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.
Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate. END OF CERTIFICATE

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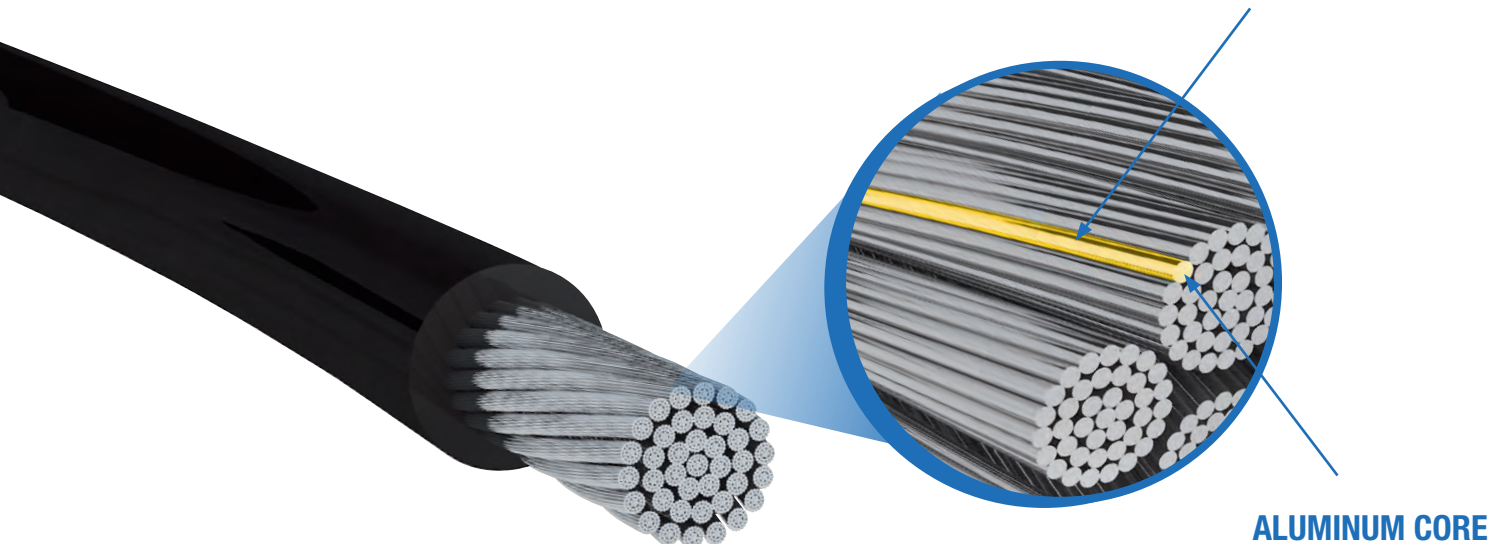
DNV GL is a global quality assurance and risk management company. DNV GL provides classification, technical assurance, software and independent expert advisory services to the maritime, oil & gas, power and renewables industries. DNV GL also provide certification.

THE SPECIFICITY OF FLEXIBLE CABLES IN ALUMINUM

The crimping of aluminum cables is made difficult by the very rapid formation of an insulating oxide layer around each strand of the cable that does not allow good conductivity.

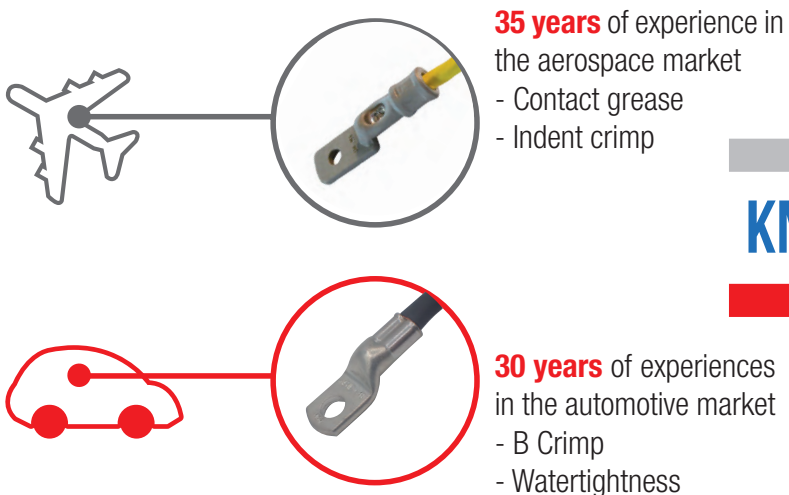
Oxide thickness: 1-10 μm
Oxide formation time: <1s

NATURAL ALUMINUM
OXIDE LAYER



It is therefore necessary to break this layer of oxide to allow reliable electrical contact.

CRIMPING KNOW-HOW



KNOW-HOW

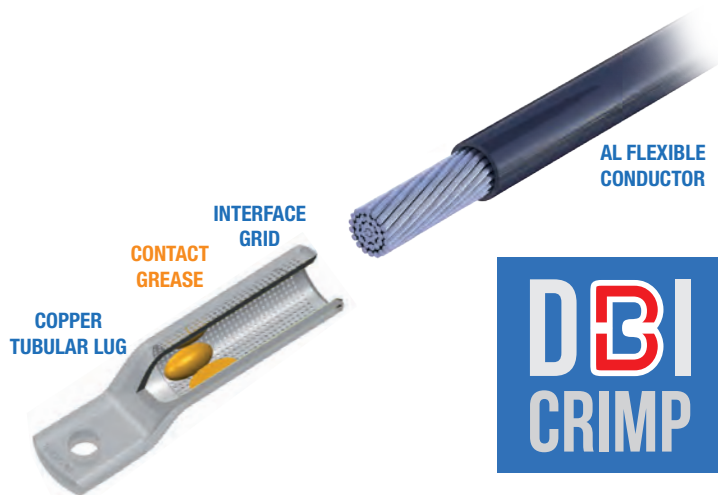


A PATENTED SOLUTION

The DBI solution combines a special « DBI terminal » associated to an innovative « DBI crimp »:

« DBI Terminal »: a copper tubular lug equipped with an interface grid and contact grease.

« DBI crimp »: includes a deep indent shape and two B shapes (one on each side), acting in single crimping step.



« DBI crimp » creates elongation of the conductor inducing a high deformation of the strands.

« DBI crimp » breaks alumina layer and creates a reliable electrical contact with durability ensured by the grease.



CONVENTIONAL CRIMPING PROCESS

1



Stripping

2



Single crimp operation

3

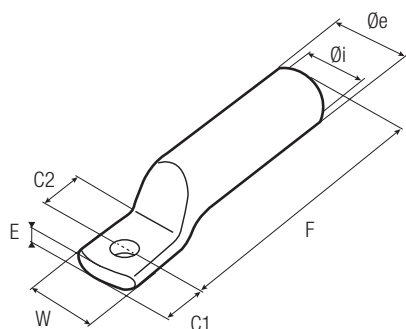





Heatshrink protection



Scan to see the video presentation of DBI

DBI TERMINAL RANGE



 mm ²	Item code	Part No.		 Ø mm	E	W	Øi	Øe	C1	C2	F
95	7350840	DBI95-8	15	8	4.3	24.5	15.9	20.8	13.0	18.0	84.0
	7350850	DBI95-10	15	10	4.3	24.5	15.9	20.8	13.0	18.0	84.0
	7350860	DBI95-12	15	12	4.3	24.5	15.9	20.8	13.0	18.0	84.0
120	7350890	DBI120-8	15	8	5.2	24.5	17.6	22.8	13.0	18.0	86.0
	7350900	DBI120-10	15	10	5.2	24.5	17.6	22.8	13.0	18.0	86.0
	7350910	DBI120-12	15	12	5.2	24.5	17.6	22.8	13.0	18.0	86.0
150	7350940	DBI150-8	10	8	5.8	29.0	21.3	27.2	13.0	18.0	102.0
	7350950	DBI150-10	10	10	5.8	29.0	21.3	27.2	13.0	18.0	102.0
	7350960	DBI150-12	10	12	5.8	29.0	21.3	27.2	13.0	18.0	102.0
	7350970	DBI150-14	10	14	5.8	29.0	21.3	27.2	15.5	20.5	104.5
	7350980	DBI150-16	10	16	5.8	29.0	21.3	27.2	15.5	20.5	104.5

HEAT SHRINK TUBING


Suitable for DBI 95, 120 and 150 terminals.

Item code	Part No.		L	Øi
7469350	GTMA40-12BKL130	10	130	40



CRIMPING DIES SET

Compatible with SH450J hydraulic compression head.

Item code	Part No.		TERMINAL TYPE
7510629	H45DBI95-520	1	DBI95
7510630	H45DBI120-585	1	DBI120
7510631	H45DBI150-715	1	DBI150



Nominal cross section
in Aluminum core nominal
cross section



Stud hole diameter



Packaging

Unless otherwise stated, all dimensions are in millimeters

CRIMPING TOOLING

Hydraulic compression head

Single action.

- Output force: 540 kN under 850 bar
- Size: 260 x 135 x 115 mm
- Weight: 9.8 kg



Item
code

7515045

Part
No.

SH450J

Metallic carry case

For 1 crimping head
and up to 4 diesets



Item
code

7515047

Part
No.

CMSH450

SH450 connectable hydraulic compression head kit

Kit composition:

- Hydraulic compression head PN : SH450J
- Metallic carry case PN : CMSH450

Item
code

7515046

Part
No.

SH450JCM



Electro-hydraulic pump

Single action. Wire remote control. Operating energy : Li-Ion battery
or 110-230 VAC adapter EU plug (included).

- Nominal output pressure : 850 bar
- Size: h285 x 255 x 185 mm
- Flow rate : 0.7-1 L/minute
- Weight: 6.5 kg
- Oil tank: 0.65 L



Item
code

7515120

Part
No.

SVEPT20-520J

Metallic carry case



Item
code

7515026

Part
No.

CMSPT20

Hydraulic hose with push-pull couplers CEJN115



Item
code

7510210

Part
No.

SF30J

SVEPT20-520 portable and compact electro-hydraulic pump kit

Kit composition:

- Electro-hydraulic pump PN : SVEPT20-520J
- Metallic carry case PN : CMSPT20
- Hydraulic hose PN : SF30J

Item
code

7515121

Part
No.

SVEPT20-520JCM



Nominal cross section
in Aluminum core nominal
cross section



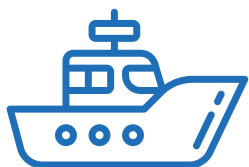
Stud hole diameter



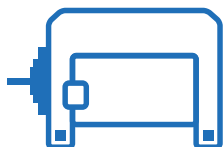
Packaging

Unless otherwise stated, all dimensions are in millimeters

APPLICATIONS



OFFSHORE VESSEL SUPPORT



PROPULSION SYSTEM

DBI TECHNOLOGY IS PRESENT ON ENERGY OBSERVER

www.energy-observer.org



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