EJOT® Insulated Screw

For high voltage applications in electric vehicles

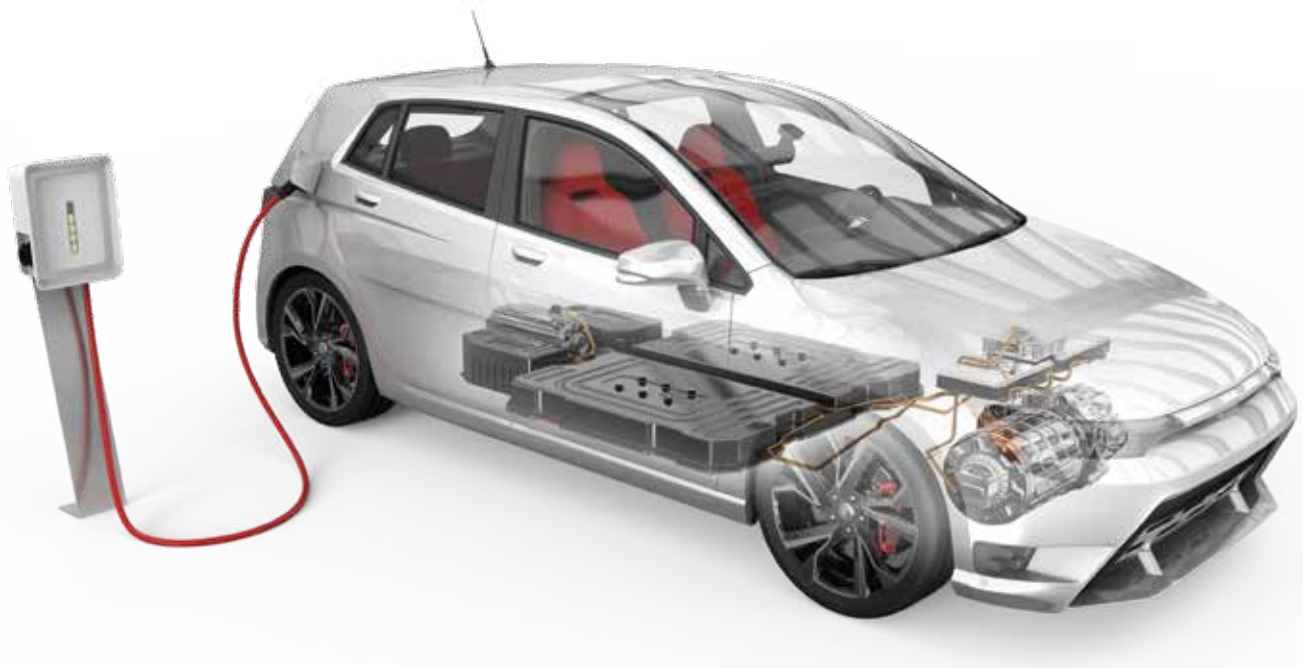
The drive battery of an electric vehicle is made up of several battery modules. These modules in turn consist of numerous battery cells.

The battery modules are fastened with special screws to a high voltage network in the vehicle. Solid copper flat contacts (Cu bus bars) are also used. Particularly high requirements apply to these connections, which can only be met by a highly functional, low-impedance screw contact system.

The EJOT® Insulated Screw realises the required high contact normal force with the specified tightening torque of an M5 screw in order to permanently ensure the necessary electrical connection even under the influence of vibration. The mechanical tension and the electrical interface are functionally separated from each other and completely safe to touch.

Applications

> Connection of the battery modules in the vehicle battery
> High voltage connections in electric vehicles



EJOT. Bringing it together.

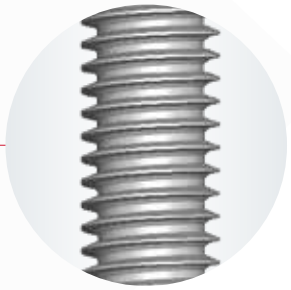
Features

Head geometry / screw drive

> External TORX® E12 made of plastic
> For transmission of the tightening torque M_A
> For electrical insulation

Metal bearing surface

> "Hard fastening case" ensures relaxation-free connection

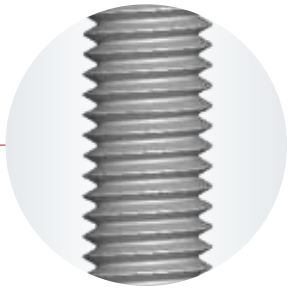


ALtracs® Plus Thread

> Direct fastening in light metal

Shaft end with protective cap (plastic)

> For electrical insulation



Metric thread according to ISO 965-1

> Alternative to self-tapping screw connections

Head styles

External TORX® E12 (plastic)
with flange

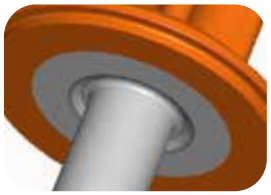
External TORX® E12 (plastic)
with collar

> Other head styles are possible, but require a separate feasibility check.

Under-head styles

Flat

Raised



Undercut

> Other under-head styles are possible, but require a separate feasibility check.

Thread types

ALtracs® Plus thread
ALtracs® Plus 50 + 60

Metric thread according to ISO 965-1
M5 + M6

Shaft ends

Touch protection

Type "PC" according to EN ISO 4753

Type "TC" according to EN ISO 4753

Type "CH" according to EN ISO 4753

Type "RL" according to EN ISO 4753

> Other shaft end styles are possible, but require a separate feasibility check.

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Technical Information

Materials

Screw:

> Steel according to DIN EN ISO 898/T1
> Copper
> Aluminium

Plastic insert moulding:

> Specific selection according to requirement (suitable for the application)

Mechanical properties

> Transmittable torque at the external TORX® E12 (plastic): min. 10 Nm

Technical cleanliness

> According to VDA 19/ISO 16232 (EJOCLEAN®)

Surface coatings

> Chromium VI-free surface coating
> ISO 19598 – Fe//ZnNi8//Cn/T2
> Other surface coatings on request

Packaging

> EJOT Tray packaging
> EJOT ESD-Tray packaging

EJOCLEAN® centre

EJOT Services

> Support of your design engineering department (CAD, FEM and Moldex)
> Individual support in the APPLITEC fastening lab

Further available alternatives for:

> Head styles
> Under-head geometries
> Threads
> Shaft ends
> Material selection
> Surface coatings

APPLITEC test laboratory

Further information at: www.ejot.com/industry or contact
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