Shear Bolt Terminal Lugs Series 3M™ L-SB

From 35 mm² up to 630 mm²

1. Product Description

The 3M Shear Bolt terminal lugs Series 3M™ L-SB are mechanical aluminum alloy terminal lugs designed for low and medium voltage cables termination in a wide cross section range of IEC 60228 conductors up to 36kV with four sizes of mechanical lugs cover conductors ranging from 35 mm² to 630 mm².

Torque design provides easy installation of shear bolts with only a socket spanner or a wrench. It provides an easy conductor insertion and lug positioning without hammering and after installation length and outer diameter don't change.

2. Application

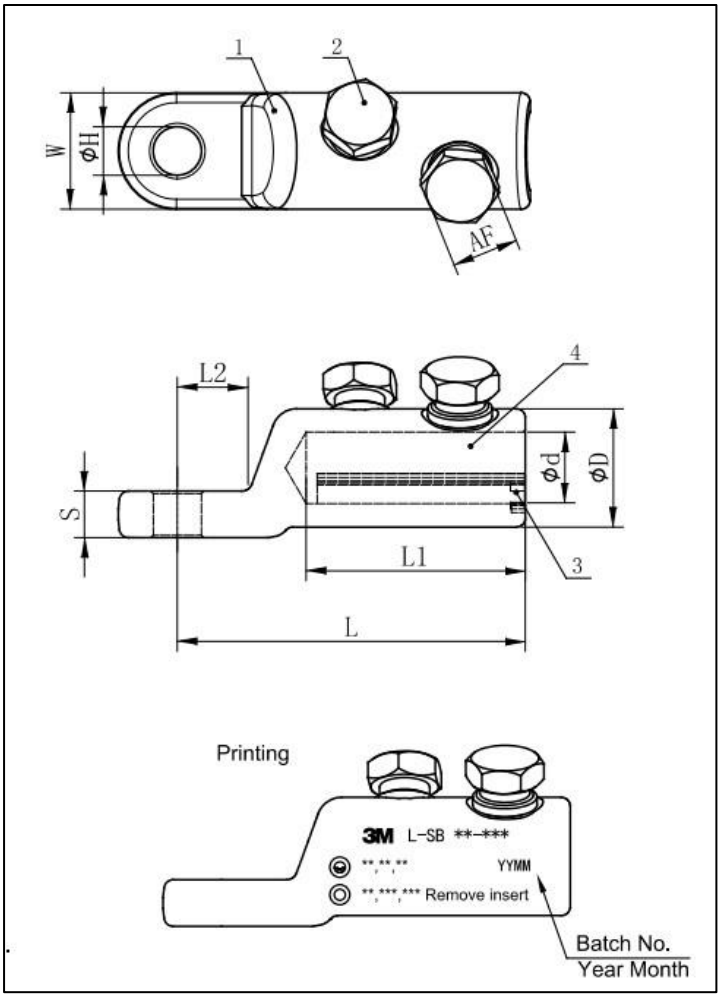
For connection of aluminum and aluminum alloy IEC 60228 – Class 1 and class 2 cables on LV and MV underground networks up to 36 kV from 35 mm² up to 630 mm².

For connection of copper IEC 60228 – Class 1 and class 2 cables on LV and MV underground MV underground networks up to 36 kV from 35 mm² up to 630 mm².

3. Typical Properties

Note: Values presented are typical and are not to be used for specification purposes.

3.1. Dimensions



Product Description	Dimensions									Bolt Nº	Printing
	L	D	d	L1	W	S	L2	H*	AF		
Lug L-SB 35-150 mm^2 - 16/2L	85.0	28	16	51.8	28.0	10	18	17	17	2	3M L-SB 35-150
Lug L-SB 70-240 mm^2 - 16/2L	97.5	33	20	61.3	33.0	13	18	17	19	2	3M L-SB 70-240
Lug L-SB 185-400 mm^2 - 16/3L	120.0	42	26	78.3	42.0	16	19	17	22	3	3M L-SB 185-400
Lug L-SB 300-630 mm^2 - 16/3L	140.0	52	33	90.3	51.5	20	24.5	17	24	3	3M L-SB 300-630

H* - 17mm is ID of the hole, which is allowed 16mm screw with positive tolerance.

3.2. Components

3.2.1. Terminal lug body

Made of high strength, tin-plated aluminum alloy for both aluminum alloy and copper conductors. 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.

3.2.2. Shear Bolt

Made of aluminum alloy. Bolt is a double shear-off-head with hexagon heads. Torque controlled shear head bolts don't cause any damage to conductor and guarantee an excellent electrical and mechanical contact. The double shear-off head in combination with the insert prevents bolt protrusion after shearing off and the bolt is irremovable once its head is sheared off.

3.2.3. Insert

Lugs are provided with preinstalled inserts for a wider application range and a concentric installation of the terminal lug. These inserts have lengthwise striations and a positioning guide and keep the conductor straight and centered preventing bending.

3.2.4. Contact jointing compound

Lug body is prefilled with a conductive compound which has anti-oxidation and anti-corrosion effects to extend the service life.

3.3. Electrical

The mechanical lugs series 3M™ L-SB fulfilled the requirements of the type test according to IEC 61238-1-3 05/2018 (class A) installed on aluminum conductor circular stranded and compacted for the range 35 – 630 mm^2.

The mechanical lugs series 3M™ L-SB fulfilled the requirements of the type test according to IEC 61238-1-3 05/2018 (class A) installed on copper conductor circular stranded and compacted for the range 70 – 400 mm^2.

Independent test reports by ISO/IEC 17025:2018 accredited lab available upon request

3.4. Mechanical

The mechanical lugs series 3M™ L-SB fulfilled the requirements of the type test according to IEC 61238-1-3 05/2018 (class 1*) installed on aluminum conductor circular stranded and compacted for the range 35 – 630 mm^2.

The mechanical lugs series 3M™ L-SB fulfilled the requirements of the type test according to IEC 61238-1-3 05/2018 (class 1*) installed on copper conductor circular stranded and compacted for the range 70 – 400 mm^2.

Independent test reports by ISO/IEC 17025:2018 accredited lab available upon request

Class 1*: Connectors subjected to a mechanical pull-out force related to the conductor nominal cross-sectional area and material but limited to 20 kN pull-out force, for example connectors for underground cable joints

4. User Information

4.1. Product Selection

Detailed application guide:

Product	Retain insert		Remove insert	
	Min [mm²]	Max [mm²]	Min [mm²]	Max [mm²]
Lug L-SB 35-150 mm² - 16/2L	35	70	95	150
Lug L-SB 70-240 mm² - 16/2L	70	120	150	240
Lug L-SB 185-400 mm² - 16/3L	185	240	300	400
Lug L-SB 300-630 mm² - 16/3L	300	400	500	630

4.2. Regulatory information

In compliance to EU Regulation (EC) No 1907/2007 (REACH)
In compliance to EU Directive 2002/95/EC (RoHS)

For additional information about RoHS, **visit www.3M.com/RoHS**

4.3. Storage

3M recommends standard stock rotation practices.

5. Additional Information

To request additional product information see address below.

Important Notice

All statements, technical information and recommendations contained in this document are based upon tests or experience that 3M believes are reliable. However, many factors beyond 3M's control can affect the use and performance of a 3M product in a particular application, including the conditions under which the product is used and the time and environmental conditions in which the product is expected to perform. Since these factors are uniquely within the user's knowledge and control, it is essential that the user evaluates the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method or application.

Values presented have been determined by standard test methods and are average values not meant to be used for specification purposes.

All questions of warranty and liability relating to 3M products are governed by the terms of the respective sale subject, where applicable, to the prevailing law.

3M is a trademark of the 3M Company.