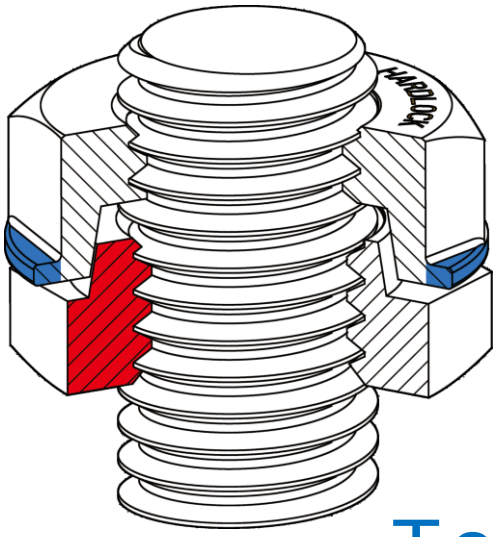


HARDLOCK® Solution

Terminal Blocks

Applications

Terminal Blocks

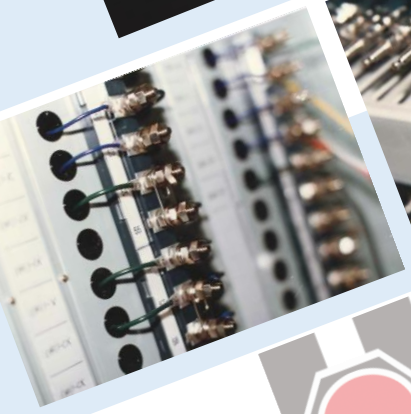
Loosening Prevention Measure for Terminal Lug/Block Installations

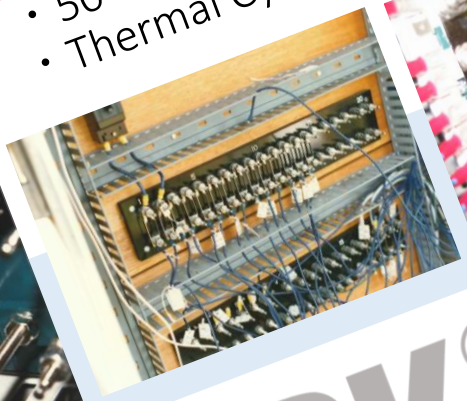
INEVITABLE PROBLEM

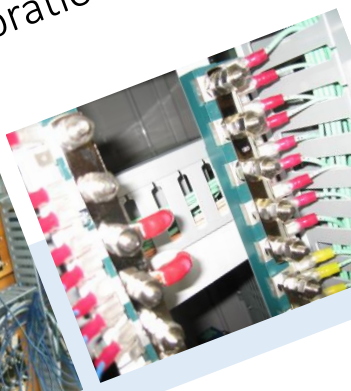
Faulty Equipment, Costly Maintenance, Heat up of Terminal

CAUSE

- 50 ～ 60 Hz of Vibration
- Thermal Cycling

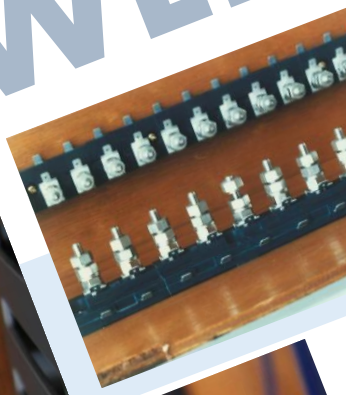






HARDLOCK®

SAFETY IS POWER

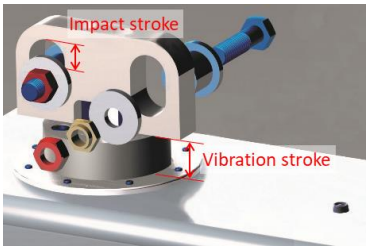


- Maintenance Free
- Ease of Removal/Installation
- Reusability
- Fit for Environmental Resistance

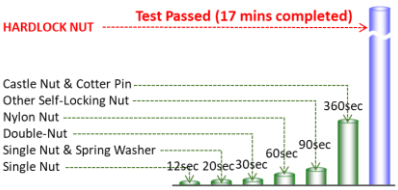
No Change in Spec

HARDLOCK®
The definition of Self-lock Nut.

In order to ensure safety, components must not come loose. One of the tests undergone to prove the integrity of HARDLOCK Nut is the NAS 3350 Vibration Test. A nut is considered to have passed if it can outstand vibration for over 17 minutes. If the Nut rotates 1 full rotation from the original fastened position, it is considered from that point to have failed. This is a test so tough that the viewers are forced to wear earmuffs. So tough that when nuts do loosen, they fly off within seconds before your eyes.



Frequency: 1780 c.p.m
Machine Stroke: 11mm
Impact Stroke: 19mm



☆ Test nuts of size M6 (Terminal Lug purpose Regular Nuts and HARDLOCK Nuts)
☆ Material: BsBm ☆ Torque: 5N.m

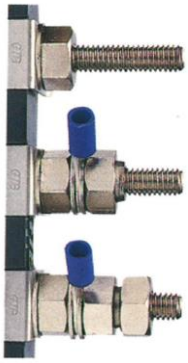
Usages of HLN in Electrical Applications

Used in NEC Network and Sensor Systems, Ltd.'s Travelling Wake Tube (TWT) to solve the problem of loosening components due to high vibrations. Used in Mitsubishi Electric Corporation's Main Transformer (Securing of Transformer Mounting lugs with Resilient Mounting Devices). Japan Railway Company, TERASAKI ELECTRIC CO.,LTD and many other Electric and Railway companies use HARDLOCK Nut for installation of Terminal Blocks. Nihon FTB CO., Ltd. has written a catalog specifying HARDLOCK Nut as a solution to Vibration.

Safety makes the difference = Economical Cost

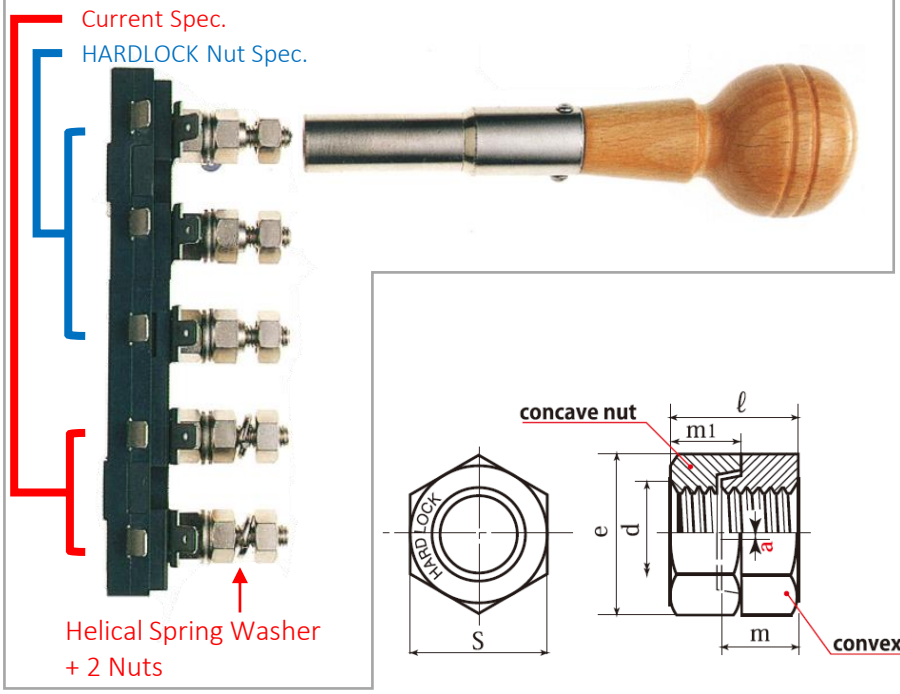
When considering whether to use the more expensive option or not, many designers and procurement teams fall into the trap of choosing the cheaper installation option. When maintenance costs are considered in the equation, many decisions are turned on their head. In the case of HARDLOCK Nut, not just are we helping reduce labor costs by reducing number of components, you can also expect extended maintenance periods, less customer complaints. Installations which can not be checked after installation have a no check guarantee.

INSTALLATION PROCEDURE



1. Fasten the Single Regular Nut
2. After inserting the Terminal Lug, Install the HARDLOCK Convex Nut.
3. Install HARDLOCK Concave Nut.

Reduction on Required Components 3 → 2 Pcs



HARDLOCK NUT (TERMINAL LUG/ BLOCK)

Nominal Size	Pitch	Thickness				Width across flats		e	Overall height	Unit Weight
		Convex nut		Concave nut						
	P	m		m1		s			l	g
d	Coarse	Basic	Tolerance	Basic	Tolerance	Basic	Tolerance	approx.	approx.	approx.
M5	0.9	7	±0.3	5	±0.3	9	0 / -0.6	10.3	10	5
M6	1.0	8	±0.3	6	±0.3	12	0 / -0.6	13.8	12	6
M8	1.25	6.5	±0.3	6.5	±0.3	13	0 / -0.7	15	11	4.5
M10	1.5	8	±0.3	8	±0.3	17	0 / -0.7	19.6	13.5	53.5

PAST EXPERIENCE

- Railway Relay Interlocking Equipment
- Railway Signal Control (Junction Box, Control Unit etc..)
- Railway Track Side Disconnection Box
- +Other Usages

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