

DOUBLE NUT INNOVATION > PERFECT LOCK BOLT v2

NISSEI has developed a low-cost, anti-loosening bolt named PLB v2, a practical and effective bolt which doesn't rely on friction. Now, NISSEI is beginning a new business model for selling small amounts of PLB v2 and/or licensing the production and/or usage of PLB v2...



We might think there are no technical improvements left to be made on a bolt, but let's think again: what about the problem of loosening? It is a fact of mechanical life that bolts loosen. Many techniques for keeping bolts tight have appeared. From the perspective of practical usage, cost-effectiveness, and the ability to truly prevent loosening, making better bolts is an old but new problem. NISSEI invites you to look at their new solution, PLB v2. PLB v2 (Perfect Lock Bolt, version 2) relies on double nuts and multiple threads rolled onto a single shaft.

PRINCIPLES AND FEATURES OF PLB v2

Here is one mechanical method to protect against loosening. Roll the lead of each bolt with two different threads, then add one nut to follow each thread. Because the inner nut's lead is bigger than the one for the outer nut, when vibration inevitably makes the nuts start to rotate loose, the inner nut will be blocked by the outer nut. This is because the lead followed by the outer nut is more closely packed, so the outer nut must rotate more slowly. This is mechanical blocking.

■ HIGH LOCK PERFORMANCE

The lock bolt that NISSEI has developed and named PLB v2 has been tested and conforms to international standard ISO 16130.

For the specified vibration criterion relative residual clamp force of 2,000 cycles, other companies' products received a rating of "Acceptable loss of clamp force," ISO16130 terms. They perform adequately from 85% at best to 40% of the time. PLB v2 is rated ISO 16130 "Good self-locking behaviour," meaning performance is good 93% of the time.

■ PRACTICALITY & EASE OF USE

A major value of PLB v2 is, above and beyond its lock properties, its practicality in actual use. By tightening the outer nut, the inner nut is also tightened. You can tighten both nuts with one action. With ordinary double nuts, you need to tighten each nut individually.

With PLB v2, the inner nut follows the outer nut naturally. It is like having to tighten only one nut instead of two. No PLB v2-specific tools are required; ordinary tools do the job. Ease and practicality in usage are additional advantages of PLB v2.

DO YOU WANT TO BE A PLB v2 PRODUCER IN YOUR AREA?

NISSEI isn't a bolt manufacturer but a machine manufacturer of cylindrical die form rolling machines.

We can manufacture and sell PLB v2, but we have no experience in selling bolts. Therefore, it takes much preparation for sales development.

To spread this safety and liability technology worldwide as quickly as possible, we have decided to adopt a business model where we can receive small orders from users of PLB v2 (pricing includes royalty value)

Bolt manufacturers can use the optional thread rolling dies option to buy thread rolling dies from us to manufacture PLB v2 in the same process as standard bolts with their existing production facilities.

Therefore, there is no need to introduce new machinery and reduce your initial costs.

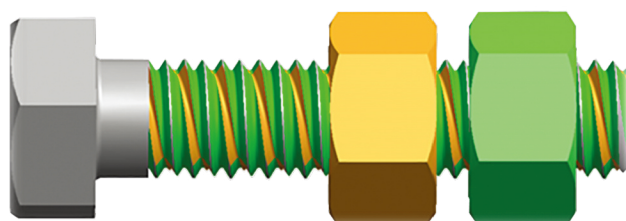
For further discussion, contact the author at NISSEI in Japan or visit the PLB v2 website.

www.nisseiweb.co.jp/e/products.php?page=plbv2

// By tightening the outer nut, the inner nut is also tightened. Both nuts, one action. //

PLB v2 PRINCIPLE

PLB v2 bolt combines a single thread and multiple threads...



Multiple threads nut
Big advancement by one rotation



Single threads nut
Small advancement by one rotation