



SAPER LOCK® nut

The innovative screw lock

BÖLLHOFF

SAPER LOCK® nut – The innovative screw lock

No compromises should be made when it comes to safety.

Screws are exposed to continuous vibrations and dynamic loads in many applications. These loads place particular demands on the fastening technology. When nuts are used, they can often unintentionally loosen independently thus causing the connection to fail, which can sometimes have considerable consequences on the safety of the machine and that of individuals. Self-locking nuts with clamping part, such as DIN 980/ISO 7040 or DIN 6927, prevent components from falling apart completely (loss prevention) by means of the clamping torque and increased friction.

The SAPER LOCK® nut combines the loss prevention function with the anti-rotation lock, thus ensuring that the preload force and clamping force in the connection are simultaneously maintained.

This is an important part of the screw connection, ensuring that the application is safe and which pays off in the end.



The threaded lock principle

The innovative SAPER LOCK® locknut consists of a stainless steel spring that is integrated in the body of the nut. When the nut is screwed into place, the spring expands, integrating itself in the body of the nut with virtually no friction. In contrast to conventional clamping nuts, this makes assembly particularly easy as the spring does not generate any additional frictional torque.

Unlimited reusability is guaranteed as no significant additional friction is generated when it is screwed on and the amount of wear is thus not increased.

Based on the integrated elasticity of the spring, it positions itself in the root of the thread when it is unscrewed, thus grasping the stud bolt so tightly that the nut can no longer be unscrewed. This is regardless of the applied preload force and the hardness of the components being screwed together. This ensures that the connection is secure.

The spring revision hook located on the side guarantees the simple disassembly of the nut. This hook is actuated with a socket wrench attachment so that the safety mechanism of the SAPER LOCK® nut is held in position and blocked. The nut can then be unscrewed without any increased frictional resistance. The “thread lock” principle can be implemented to ensure that screw connections are secured effectively, to prevent loss, and as a control and adjusting element.



Your benefits at a glance

- Self-locking locknut
- Reusable
- Complete anti-rotation lock
- Adjusting nut and loss prevention
- Simple to use
- Efficient application – reduction of maintenance costs





Validated applications

The properties described above ensure that the SAPER LOCK® nut can be implemented in various applications. Our locknuts are already used in many sectors, including:

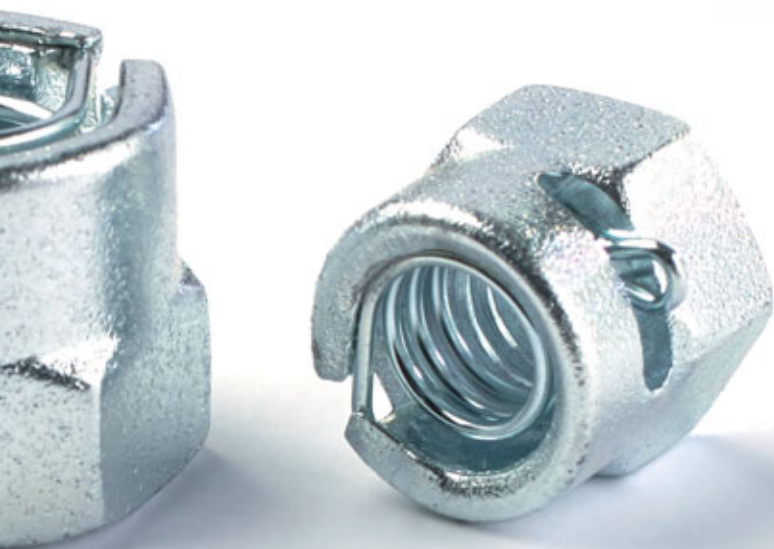
- Rail industry
- Power station construction
- Bridge and structural engineering
- Automotive industry
- Mechanical engineering

It is the first choice for applications where vibrations and dynamic lateral loads can cause standards nuts to unscrew and fail affecting the safety.

A good example would include applications with complicated assembly parameters, where conventional fastening elements do not work, applications in areas that are difficult to access, where maintenance work requires a considerable amount of effort, as well as applications, where high-strength components are implemented.

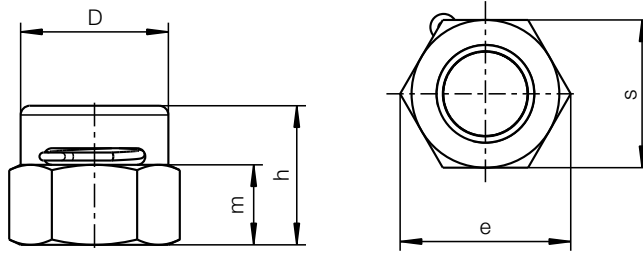
These advantages apply throughout the product lifecycle including:

- During planning and design
- Simple assembly
- Safe and fault-free operation
- Smooth maintenance process



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Available sizes



SAPER LOCK® nut, Steel, strength category 10, zinc nickel, transparent*

Thread	Item no.	p	m	s	e	h	D
M 6	5305510N66	1,00	5,0	10	11,1	9,8	10
M 8	5305510N68	1,25	6,5	13	15,0	12,4	13
M 10	5305510N610	1,50	8,0	17	19,6	15,5	17
M 12	5305510N612	1,75	10,0	19	21,9	19,5	19
M 14	5305510N614	2,00	11,0	22	25,4	20,6	22
M 16	5305510N616	2,00	13,0	24	27,7	22,6	24
M 18	5305510N618	2,50	15,0	27	31,2	26,8	27
M 20	5305510N620	2,50	16,0	30	34,6	28,8	30
M 22	5305510N622	2,50	18,0	32	37,0	30,8	32
M 24	5305510N624	3,00	19,0	36	41,6	34,5	36
M 27	5305510N627	3,00	22,0	41	47,3	37,5	41
M 30	5305510N630	3,50	24,0	46	53,1	41,5	46
M 33	5305510N633	3,50	26,0	50	57,7	44,5	50
M 36	5305510N636	4,00	29,0	55	63,5	49,5	55
M 39	5305510N639	4,00	31,0	60	69,3	52,5	60
M 42	5305510N642	4,50	32,0	65	75,0	55,0	65

*Corrosion-resistant in salt spray test ≥ 480 h

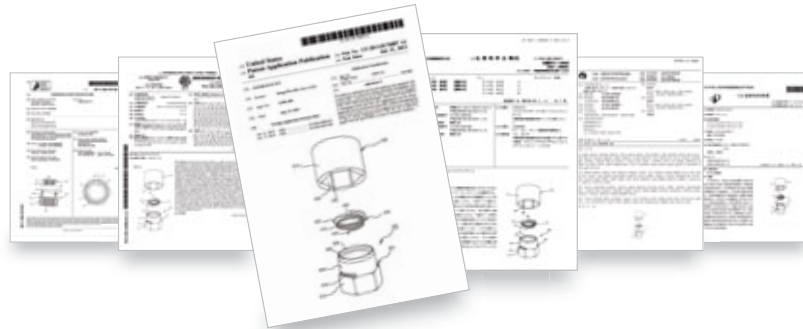
SAPER LOCK® nut, Stainless steel A2, 1.4301

Thread	Item no.	p	m	s	e	h	D
M 6	53055A26	1,00	5,0	10	11,1	9,8	10
M 8	53055A28	1,25	6,5	13	15,0	12,4	13
M 10	53055A210	1,50	8,0	17	19,6	15,5	17
M 12	53055A212	1,75	10,0	19	21,9	19,5	19
M 14	53055A214	2,00	11,0	22	25,4	20,6	22
M 16	53055A216	2,00	13,0	24	27,7	22,6	24
M 18	53055A218	2,50	15,0	27	31,2	26,8	27
M 20	53055A220	2,50	16,0	30	34,6	28,8	30
M 22	53055A222	2,50	18,0	32	37,0	30,8	32
M 24	53055A224	3,00	19,0	36	41,6	34,5	36
M 27	53055A227	3,00	22,0	41	47,3	37,5	41
M 30	53055A230	3,50	24,0	46	53,1	41,5	46
M 33	53055A233	3,50	26,0	50	57,7	44,5	50
M 36	53055A236	4,00	29,0	55	63,5	49,5	55
M 39	53055A239	4,00	31,0	60	69,3	52,5	60
M 42	53055A242	4,50	32,0	65	75,0	55,0	65

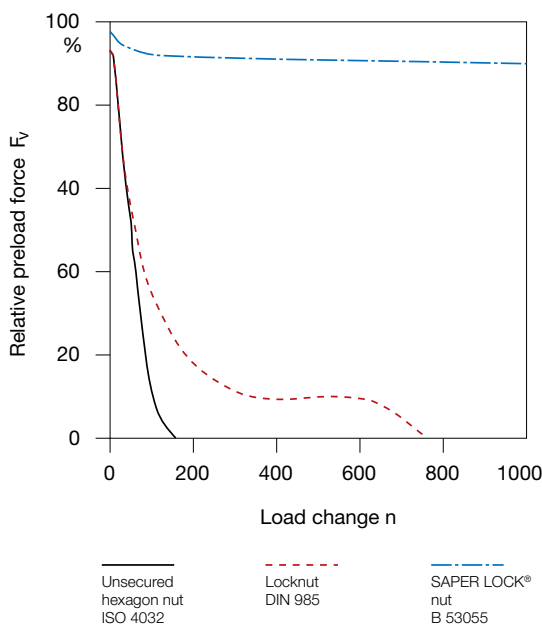
Other dimensions, materials and coatings upon request.

Innovative and certified

SAPER LOCK® nuts are exclusively available from Böllhoff and are patented worldwide.



Daily use by our customers and scientifically proven laboratory testing, such as the Junkers vibration test and American NAS test, confirm the safety function and quality of SAPER LOCK® nuts.



Performance during Junkers vibration test

The Junker vibration test in accordance with DIN 65 151 is a proven method of testing the safety of threaded connections when exposed to vibrations and dynamic loads. During the Junker test, the fasteners are tightened to a defined preload force and are then exposed to a dynamic lateral load. The preload force is continuously recorded while the load is applied.

The preload force in the connection was maintained at above 80% using the SAPER LOCK®, which meant that it passed the test without any problems.

Connections that are not secured sufficiently loosen resulting in a reduction of the preload force. The diagram on the side illustrates the behaviour of threaded connections that were not secured adequately in comparison to threaded connections where the SAPER LOCK® was used.

Performance during NAS 3350 vibration test

The NAS 3350 vibration test was originally developed by the American aerospace industry to assess and compare threaded connections when exposed to strong vibrations. The elements being tested were exposed to vibrations in a perpendicular direction to the threaded axis. The connection is exposed to two shocks per cycle. The shocks are applied in parallel to the threaded axis. Following the test, the fasteners are checked to see if the threaded connections have loosened.

While conventional nuts loosened, the SAPER LOCK® nuts withstood the load and passed the test successfully.

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Apart from these 24 countries, Böllhoff supports its international customers in other important industrial markets in close partnership with agents and dealers.

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