

SEAL LOCK®

Sealing nuts and screws

- Seals in the thread and below the nut
- One-piece element, no extra assembly required

BÖLLHOFF

SEAL LOCK® *sealing nuts*

An effective seal on bolt-nut fasteners



Two problems

- Seal the lock nuts on the adjusting screws of hydraulic components and drives
- Seal the stud bolt nuts on automotive engines where the stud bolt bores are used as oilways

A complete solution for both problems:

- A leak-proof seal below the nut and in the screw thread
- High-strength threaded fastening without loss of screw tension
- Repeated assembly

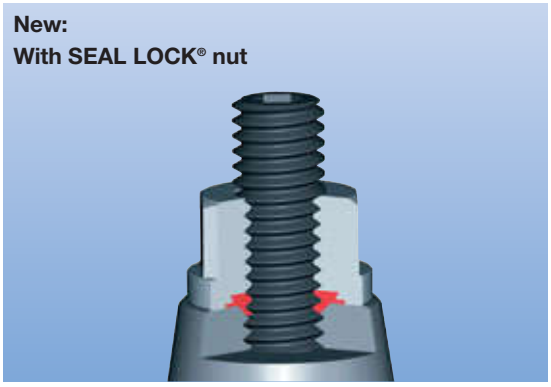
Example application

Locking and sealing of adjusting screw

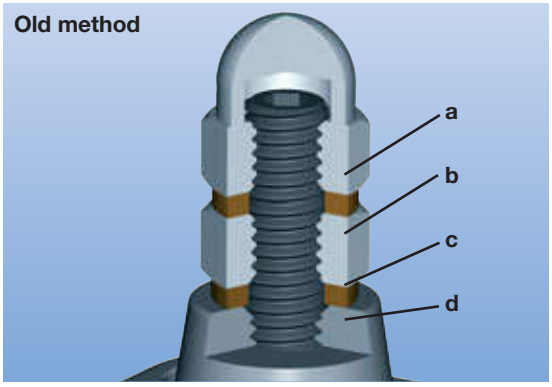


Nut before tightening.

New:
With SEAL LOCK® nut



Old method





Tightened nut.
Metal mating surface for high tightening torque.
Seal in the thread and below the nut.

Advantages with SEAL LOCK® sealing nuts with integrated seal ring

- One-piece element
- Captive seal ring
- Effective seal against gas and liquids below the nut and in the screw thread*
- Temperature resistance from -40° C to 110° C
- High torque metal mating surface, seal ring does not cause loss of screw tension
- Secure screw fastening thanks to threading in seal ring
- Five repeat screwing-unscrewing cycles possible
- Integrated Polyamide PA11 seal ring providing an effective seal against gas and fluids
- Compact element, low space requirement
- Available in M6 to M16 thread sizes, coarse-pitch and fine-pitch, other sizes and special applications available on request
- Captive seal ring, no more lost parts

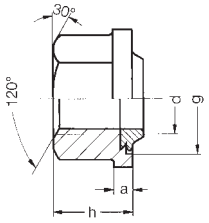
Disadvantages

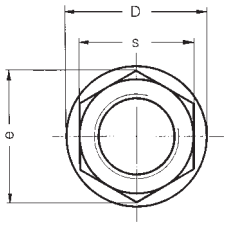
- Many components
  a Cap nut
  b Seal washer 1
  c Lock nut
  d Seal washer 2
- Longer assembly times
- Torque loss caused by seal washer 2
- Bulky, high space requirement

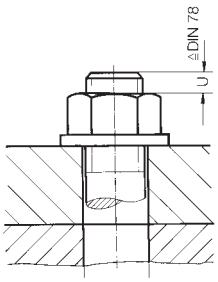
* Test conditions: hydraulic oil, ISO viscosity VG 10 at 250 bar and t = 20°C.

SEAL LOCK® *sealing nuts*

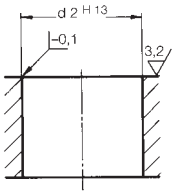
All measurements in mm



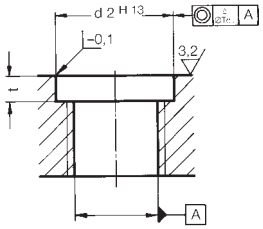




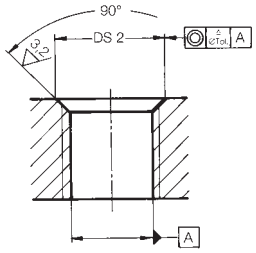
Smooth through hole



ISO thread with cylindrical countersink



ISO thread with 90° countersink



Standard SEAL LOCK® *flanged nuts*

d	Order-no.	D	s	e	a	h	d 2 g	d 2 Ø	Tol. H 13	DS 2 / 90° t min.	DS 2 / 90° Ø	Tol.	recommended tightening torque Class 8 M_A [Nm]
M 6	0531 006 0230	12	10	11.1	1.5	7	9	6.6	+ 0.22	1.5	7.2	+ 0.2	9.0 - 10.1
M 8	0531 008 0230	17	13	14.4	2	8.5	12	9	+ 0.22	2.5	10.2	+ 0.3	21.6 - 24.6
M 8 x 1	0531 008 3230	17	13	14.4	2	8.5	12	9	+ 0.22	2.5	10.2	+ 0.3	22.8 - 26.1
M 10	0532 010 0230	21	17	18.9	3	9	16	11	+ 0.27	3	12.4	+ 0.3	43 - 48
M 10 x 1	0532 010 3230	21	17	18.9	3	9	16	11	+ 0.27	3	12.4	+ 0.3	46 - 53
M 12	0532 012 0230	23	19	21.1	3	10	18	14	+ 0.27	3	15.2	+ 0.3	73 - 84
M 12 x 1	0532 012 3230	23	19	21.1	3	10	18	14	+ 0.27	3	15.2	+ 0.3	82 - 94
M 12 x 1.5	0532 012 4230	23	19	21.1	3	10	18	14	+ 0.27	3	15.2	+ 0.3	76 - 87
M 14 x 1.5	0532 014 4230	27	22	24.5	3	11	21	16	+ 0.27	3	16.8	+ 0.4	124 - 142
M 16	0531 016 0230	30	24	26.8	4	18	23.6	18	+ 0.27	3	19	+ 0.4	180 - 206
M 16 x 1.5	0531 016 4230	30	24	26.8	4	18	23.6	18	+ 0.27	3	19	+ 0.4	189 - 218
M 18	Available on request	34	27	30.1	5	20	26.9	20	+ 0.33	4	21.2	+ 0.4	259 - 295
M 18 x 1.5		34	27	30.1	5	20	26.9	20	+ 0.33	4	21.2	+ 0.4	283 - 327
M 20		37	30	33.5	5	21	30.3	22	+ 0.33	4	23.4	+ 0.4	363 - 415
M 20 x 1.5		37	30	33.5	5	21	30.3	22	+ 0.33	4	23.4	+ 0.4	392 - 454
M 22		39	32	35.7	5	23	33.3	24	+ 0.33	4	25.9	+ 0.4	495 - 567
M 22 x 1.5		39	32	35.7	5	23	33.3	24	+ 0.33	4	25.9	+ 0.4	529 - 613
M 24		44	36	40	5	22	35.8	26	+ 0.33	5	27.8	+ 0.4	625 - 714
M 24 x 1.5		44	36	40	5	22	35.8	26	+ 0.33	5	27.8	+ 0.4	686 - 796
M 27		50	41	45.6	7	29	40.8	30	+ 0.33	5	33.2	+ 0.5	915 - 1050
M 27 x 1.5		50	41	45.6	7	29	40.8	30	+ 0.33	5	33.2	+ 0.5	992 - 1153
M 30		56	46	51.3	7	31	44.5	33	+ 0.39	6	36.6	+ 0.5	1246 - 1348
M 30 x 1.5		56	46	51.3	7	31	44.5	33	+ 0.39	6	36.6	+ 0.5	1378 - 1603

Materials: Flanged nut: M6 and M8 = steel, tested as per DIN-ISO 898 property class 8
from M8 x 1= steel, tested as per DIN 267 property class 8
Seal ring: Polyamide 11 (other materials available on request)

Tightening torque: To ensure an effective seal, select the tightening torque of Property Class 8.

Version: ISO 4759 product class A

Surface finish: 2 = phosphated/ 5 = galvanized, blue chromed

Other sizes, materials and surface finishes available on request.

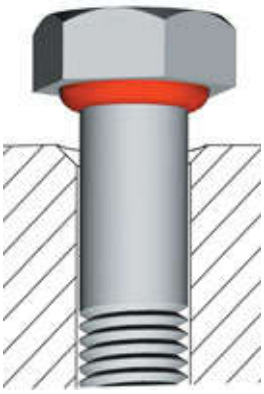
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SEAL LOCK® *sealing screws*



The advantages at a glance:

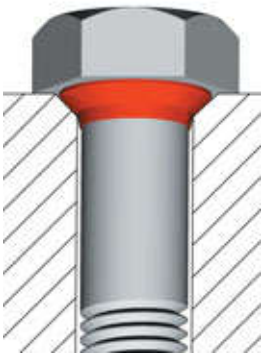
- Effective seal against fluid and gas
- Secure, captive fastener
- Thermal stability from -40° C to 110° C
- Galvanised surface finish also available
- Full tightening torque, no setting required
- One-piece element, quicker to install
- Suitable for automated feed and installation
- Range of versions, materials and special versions available



SEAL LOCK® sealing screws provide a cost-effective solution to the age-old problem of finding an effective seal on screw fasteners. For a long time the conventional solution to this problem has involved extra machining of the mating surfaces under the head, the use of sealing compound, O-rings and other expensive operations on the part to be sealed.

The SEAL LOCK® sealing screw provides leading design engineers with a one-piece assembly fastener. The screw provides an effective seal against gas and fluids even under high pressure and can be tightened and unscrewed for up to a maximum of five times.

SEAL LOCK® sealing screws consist of metal screws of various property classes with the integrated seal ring captured under the head. The seal ring is made from soft Polyamide 11 resistant to oils and solvents.



You tighten the SEAL LOCK® sealing screw just like you would any other screw. As you tighten the screw, the seal ring is pressed under high pressure into the 90∞ countersink and against the walls of the through bore. This creates a secure, effective seal between the metal mating surfaces. This means that you can dispense with the re-tightening normally required on screw fasteners where separate seals or spring washers are used. No more re-tightening required.

SEAL LOCK® sealing screws are ideal for use in series production. We can supply SEAL LOCK® sealing screws designed for your operating conditions, design specifications and application. The standard SEAL LOCK® sealing screw is available in sizes ranging from M6 to M16 and fine-pitch sizes can also be supplied.

Our Technical Advisory Service will be glad to help you with you particular application. The Technical Advisory Service has a wealth of experience and will be glad to show you samples. All this without any obligation on your part. We are always glad to help.

Example applications



- Securing of anchor set screws for electro-magnetic hydraulic valves
- Lock nuts on the tie rods of hydraulic valve blocks
- Locking set screws on steering boxes

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