



## **SEAL LOCK®**

Sealing nuts for high-strength screw joints

# **BÖLLHOFF**

### High-strength connection and maximum sealing

Can you imagine high-quality products without screw connections?

Modern technology cannot do without them as detachable joints. In the industrial sector, fluid technology, pneumatics and sealing technology are among the fields of application. In those sectors, often additional functions such as sealing, insulation or reuse of bolts are required – only to mention a few.

One classic example are adjusting screws on hydraulic components, steering boxes and fuel injection pumps. For those applications, high-strength screw connections with reusable bolts and sealing against leakage are essential. We provide the solution that fulfils those high requirements: the SEAL LOCK® sealing nut. It prevents any unwanted leaking of gaseous or liquid media. The SEAL LOCK® ring integrated on the nut helps to achieve reliable sealing inside the thread without the use of additional elements. It is reliable in two ways because it seals under the head and inside the thread. Not to mention the easy installation.

The following figures show conventional solutions on the one hand and the SEAL LOCK® sealing nut on the other hand.



## Locking and sealing: the example of an adjusting screw

### Conventional solutions

#### Option 1

Adjusting screw with locknut



#### DISADVANTAGES

- Complex special bolt with sealing shank
- O-rings required
- Complex processing of the housing
- Much axial space required for O-rings
- Pilot hole for adjusting shank

#### Option 2

Adjusting screw in combination with two nuts



#### DISADVANTAGES

- Many parts
- Long installation time
- Loss of preload force when the sealing discs are installed
- Much space required

### We recommend: SEAL LOCK® sealing nuts



SEAL LOCK® sealing nuts prior to clamping.



Tightened SEAL LOCK® sealing nuts. Metal head bearing face for high preload force. **Thread and nut bearing face sealed.**

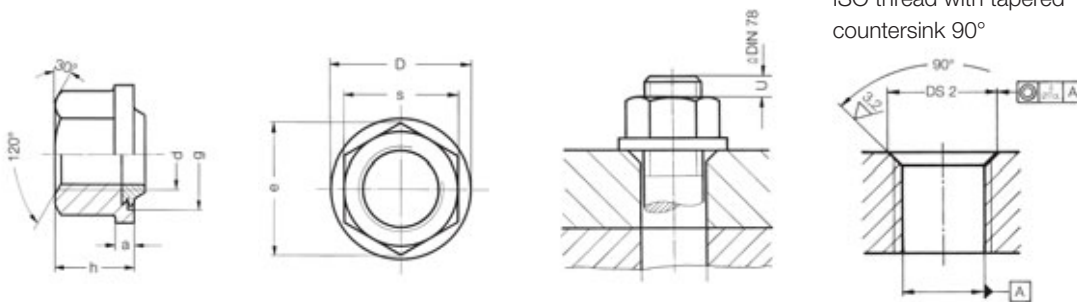


#### ADVANTAGES

- + Captive seal
- + Temperature-resistant from -40 °C to +110 °C
- + High preload force
- + Sealing below the head and inside the thread\*
- + One-piece fastener (nut with seal)
- + Use of a standard bolt
- + Uncomplicated fabrication of the housing
- + Little space required
- + Efficient installation
- + Reusable

\*Test conditions: hydraulic oil with viscosity ISO-VG10 at 250 bar and t = 20 °C

## SEAL LOCK® Standard – Large design



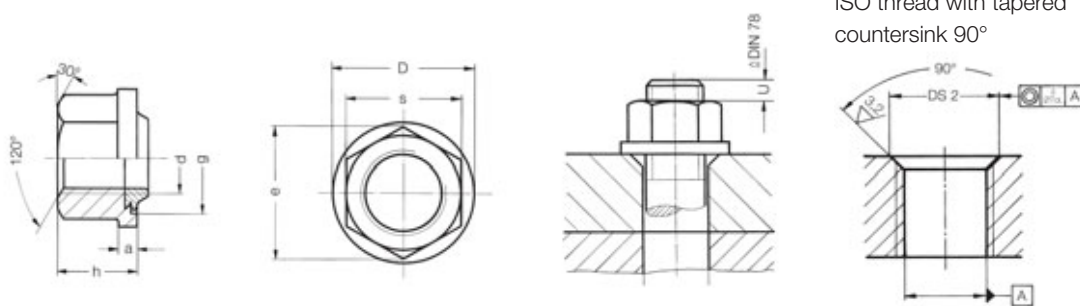
d	Article No.	Surface	D	s	e	a	h	DS 2/90°		Tol.	Recomm. tightening torque cl. 8 MA [Nm]
								t min.	Ø		
M 6	0531 006 0230	phosphated	12	10	11,05	1,5	7	1,5	7,2	0,2	9,0 - 10,1
M 6	0531 006 0530	galvanised (CrVI-free)	12	10	11,05	1,5	7	1,5	7,2	0,2	9,0 - 10,1
M 6 x 0,5	0531 006 1230	phosphated	12	10	11,05	1,5	7	1,5	7,2	0,2	10,0 - 11,0
M 8	0531 008 0230	phosphated	17	13	14,38	2	8,5	2,5	10,2	0,3	21,6 - 24,6
M 8	0531 008 0530	galvanised (CrVI-free)	17	13	14,38	2	8,5	2,5	10,2	0,3	21,6 - 24,6
M 8	0531 008 0630	zinc-nickel	17	13	14,38	2	8,5	2,5	10,2	0,3	21,6 - 24,6
M 8 x 1	0531 008 3230	phosphated	17	13	14,38	2	8,5	2,5	10,2	0,3	22,8 - 26,1
M 8 x 1	0531 008 3530	galvanised (CrVI-free)	17	13	14,38	2	8,5	2,5	10,2	0,3	22,8 - 26,1
M 8 x 1	0531 008 3630	zinc-nickel	17	13	14,38	2	8,5	2,5	10,2	0,3	21,6 - 24,6
M 10	0531 010 0230	phosphated	21	17	18,9	3	11	3	12,4	0,3	43 - 48
M 16	0531 016 0230	phosphated	30	24	26,75	4	18	3	19	0,4	180 - 206
M 16	0531 016 0530	galvanised (CrVI-free)	30	24	26,75	4	18	3	19	0,4	180 - 206
M 16 x 1,5	0531 016 4230	phosphated	30	24	26,75	4	18	3	19	0,4	189 - 218
M 16 x 1,5	0531 016 4530	galvanised (CrVI-free)	30	24	26,75	4	18	3	19	0,4	189 - 218
M 20 x 1,5	0531 120 4230	phosphated	37	30	32,95	5	21	4	23,4	0,4	250 - 255

Further sizes, materials and surfaces on request.

All measures in mm.

i	Surface	Durability
	galvanised (CrVI-free) – VDA 235-104.20	after 240 hours basic metal corrosion* after 96 hours zinc corrosion*
	zinc-nickel – VDA 235-104.25	after 720 hours basic metal corrosion*
	phosphated	As storage protection and primer for subsequent paint Corrosion resistance only after finishing painting of the fastener
* in salt spray test according to DIN EN ISO 9227		

**SEAL LOCK® Standard – Small design**

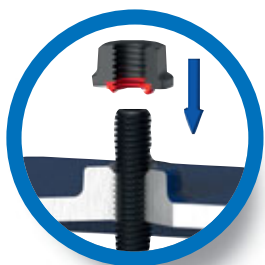


ISO thread with tapered countersink 90°

d	Article No.	Surface	D	s	e	a	h	DS 2 / 90°		Tol.	Recomm. tightening torque cl. 8 MA [Nm]
								t min.	Ø		
M 10	0532 010 0230	phosphated	21	17	18,9	3	9	3	12,4	0,3	43 - 48
M 10	0532 010 0530	galvanised (CrVI-free)	21	17	18,9	3	9	3	12,4	0,3	43 - 48
M 10	0532 010 0630	Zink-Nickel	21	17	18,9	3	9	3	12,4	0,3	43 - 48
M 10 x 1	0532 010 3230	phosphated	21	17	18,9	3	9	3	12,4	0,3	46 - 53
M 10 x 1	0532 010 3530	galvanised (CrVI-free)	21	17	18,9	3	9	3	12,4	0,3	46 - 53
M 10 x 1	0532 010 3630	zinc-nickel	21	17	18,9	3	9	3	12,4	0,3	46 - 53
M 12	0532 012 0230	phosphated	23	19	21,1	3	10	3	15,2	0,3	73 - 84
M 12	0532 012 0530	galvanised (CrVI-free)	23	19	21,1	3	10	3	15,2	0,3	73 - 84
M 12 x 1	0532 012 3230	phosphated	23	19	21,1	3	10	3	15,2	0,3	82 - 94
M 12 x 1	0532 012 3530	galvanised (CrVI-free)	23	19	21,1	3	10	3	15,2	0,3	82 - 94
M 12 x 1,5	0532 012 4230	phosphated	23	19	21,1	3	10	3	15,2	0,3	76 - 87
M 12 x 1,5	0532 012 4530	galvanised (CrVI-free)	23	19	21,1	3	10	3	15,2	0,3	76 - 87
M 14 x 1	0532 014 3230	phosphated	27	22	24,49	3	11	3	16,8	0,4	126 - 144
M 14 x 1,5	0532 014 4230	phosphated	27	22	24,49	3	11	3	16,8	0,4	124 - 142
M 14 x 1,5	0532 014 4530	verzinkt (CrVI-frei)	27	22	24,49	3	11	3	16,8	0,4	124 - 142

Further sizes, materials and surfaces on request.

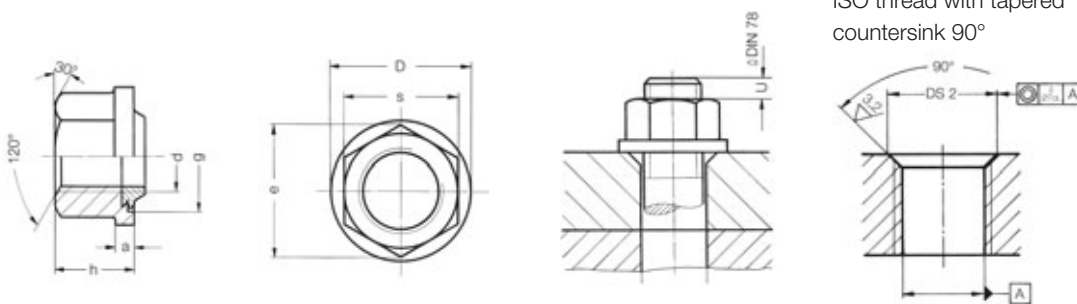
All measures in mm.



**Direction of screwing**

SEAL LOCK® sealing nuts are screwed on the bolt with the sealing ring first. For installation in the other direction, the sealing ring must be supported.

## SEAL LOCK® special designs



d	Article No.	Properties/ Surface	Version	D	s	e	a	h	DS 2/90°		Tol.	Recomm. tightening torque cl. 8 MA [Nm]
									t min.	Ø		
M 6	0531 006 0130	ISO 4042 A2E	–	12	10	11,05	1,5	7	1,5	7,2	0,2	9,0 – 10,1
M 6	0531 006 0904	DBL 8351.93 (ZnFe)	–	12	10	11,05	1,5	7	1,5	7,2	0,2	9,0 – 10,1
M 6	0531 906 0002	phosphated	modified ring height	12	10	11,05	1,5	7	1,5	7,7	0,2	9,0 – 10,1
M 6	0531 906 0004	galvanised (CrVI-free)	modified ring height	12	10	11,05	1,5	7	1,5	7,7	0,2	9,0 – 10,1
M 8	0531 008 0130	ISO 4042 A2E	–	17	13	14,38	2	8,5	2,5	10,2	0,3	21,6 – 24,6
M 8	0531 008 0901	ISO 4042 A2G	–	17	13	14,38	2	8,5	2,5	10,2	0,3	21,6 – 24,6
M 8	0531 908 0002	phosphated	ring: white	17	13	14,38	2	8,5	2,5	10,2	0,3	21,6 – 24,6
M 10	0532 010 0912	galvanised (CrVI-free)	–	18,15	14	15,4	3	10	3	12,4	0,3	43 – 48
M 10	0531 010 0906	ISO 4042 A2G	–	21	17	18,9	3	11	3	12,4	0,3	43 – 48
M 10	0531 010 0908	ISO 4042 R3S	–	21	17	18,9	3	11	3	12,4	0,3	43 – 48
M 16	0531 916 4000	phosphated	–	30	24	26,75	4	30	3	19	0,4	180 – 206

Further sizes, materials and surfaces on request.

All measures in mm.

### Materials:

#### Collar nut:

M 6 and M 8 = steel, proof loads in compliance with DIN-ISO 898 according to property class 8  
 from M 8 x 1 = steel, proof loads in compliance with DIN 267 according to property class [8]

#### Sealing ring:

Polyamide 11 (other materials on request)

#### Tightening torques:

To guarantee the sealing function, the tightening torques MA must be according to property class 8.

#### Version:

ISO 4759 product grade A



## Fields of application

For many years, SEAL LOCK® sealing nuts have proven to be reliable fasteners for many industries and applications.

Among the fields of application are:

- Hydraulic controls
- Pump housings
- Hydraulic screw jacks
- Mobile hydraulics
- Steering gear boxes
- Generator housings
- Fuel injection pumps
- Air filters

**Do not hesitate to contact us so we can work out a specific solution for your application.**

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France  
Germany  
Hungary  
India  
Italy  
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Turkey  
United Kingdom  
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