

QUICKLOC®

Quick releases
– Efficient, secure and variable

BÖLLHOFF

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Innovative joint solutions play an important role in today's modern industry, which is mainly characterised by the aim to strive for economic efficiency and productivity. High-maintenance components require easy accessibility, for example, panelling parts call for a design-oriented function element and housings of protective devices for captive fasteners. For all these and many more requirements in fastening technology, Böllhoff offers quick releases of high performance reliability under the name of QUICKLOC®.

The advantages – an overview

Efficiency

- Quick opening and closing
- Quick subassembly installation without tools
- Counterclockwise and clockwise opening
- Easy closing by turning or axial pressure

Reliable

- Quick release locked against falling out
(as required by Machinery Directive 2006/42/EC)
- Vibration-resistant
- Resistant to soiling
- Tensile load up to 600 N

Insulation

- Corrosion-free
- Electric insulation

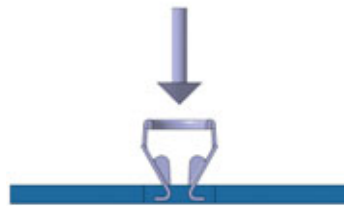
Savings

- Reduced weight due to full-plastic solution

Many designs

We also realise customer-specific design requests regarding geometry and colour of the locking bolt head, so that you get just the right fastener for your installation space.

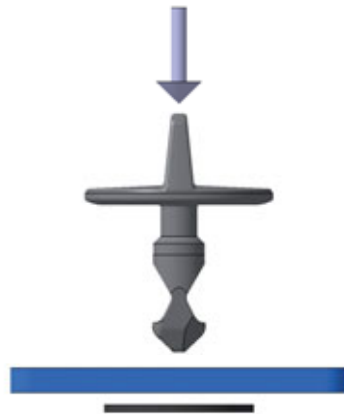
Function example



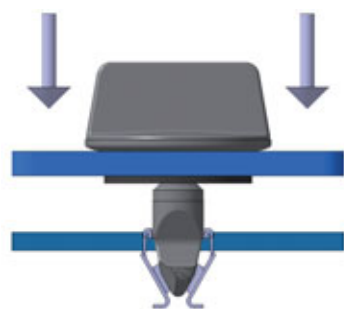
1. Clipping the receptacle into a square or rectangular hole.



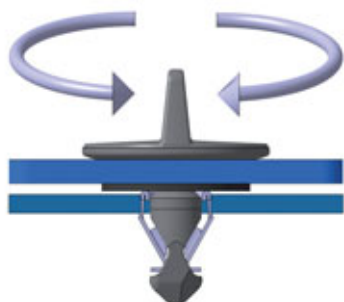
2. Clip-fastened receptacle.



3. Insertion of locking bolt into bore hole; optional locking with retaining washer.



4. To lock the joint, the locking bolt is screwed into the receptacle under light pressure and locks in due to the fittingly shaped curve geometry. Thanks to its geometry, it is then held in place **without clearance**.



5. When the joint is opened by a clockwise or counterclockwise quarter turn, the elastic part of the receptacle is stretched and the locking bolt released.

QUICKLOC® Quick releases – Designs

Currently, QUICKLOC® quick releases are available as standard or special designs.

QUICKLOC® standard design

Different designs of QUICKLOC® locking bolts and lock bottoms are always on stock or can be produced with short lead times. Please see pages 10 to 12 for the design range. Apart from those designs, QUICKMatch can be used to configure more than 2,000 different variants. Please do not hesitate to ask.

Catalogue of requirements

- Desired function
 - Hand- or tool-operated
 - Closing by application of pressure or turning
- Colour design
- Locking function
- Installation conditions
- Size and direction of required tolerances
- Size and direction of required forces

The individual elements of the lock are systematically combined to allow perfect suitability for the intended function.

QUICKLOC® special design

Feel free to contact us for customised quick releases.



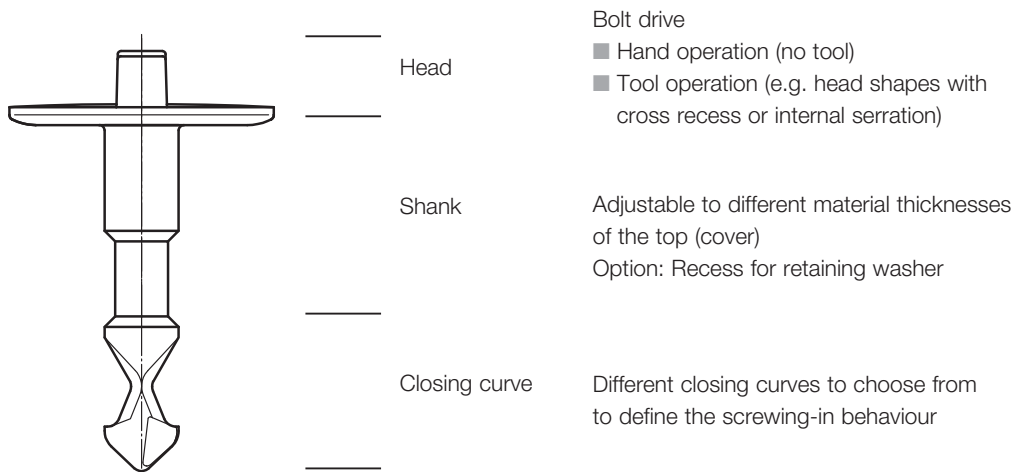
QUICKLOC® quick releases clearly illustrate the potential for innovation that up-to-date Böllhoff fastening technologies have. The locking system is based on three component parts:

- The lock top (bolt)
- The lock bottom (receptacle) and
- The retaining washer (locking device)

Locking bolts

QUICKLOC® locking bolts are injection moulded bolts made of polyamide 6.6 GF. They consist of head, shank and closing curve:

- The head plate of the modular injection mould consists of two components and contains the head geometry. Due to the two-part design, some geometries can only be realised under certain conditions (e.g. bore holes in the head).
- Maximum head diameter: 25 mm / maximum head height: 15 mm



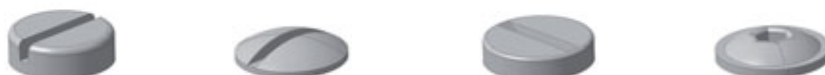
Convincing variety illustrated with the example of the locking bolt – head shapes

We group head shapes according to the mode of operation:

- Hand-operated



- Tool-operated (e.g. slot, internal serration)



Locking bolts – closing curves

Thanks to different curve geometries on the locking bolt, the joint can be perfectly adapted to the intended mode of operation.

Description of available closing curves and functions:

Closing curve 7/2:

- Small space requirement in “depth”
- Open/close counterclockwise and clockwise
- Closing: turning under axial pressure

Closing curve 7/3:

- Closing by pressure on bolt or cover*
- Locking bolt automatically slides into locking position

Closing curve 7/5:

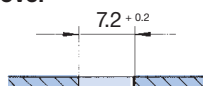
- Closing by pressure on bolt or cover*
- Blade for easier fit into receptacle

Available closing curves:



Notes for installation

Cover

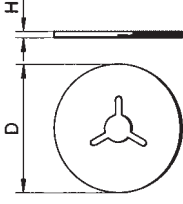
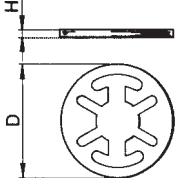


Punch/drill cover with $\varnothing 7.2$ mm, counter-bore from below if required

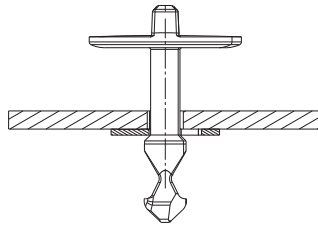
* The cover height must fit precisely.

Retaining washer

A retaining washer is always used as locking device. It is simply pushed on the locking bolt from below. Whether the retaining washer is clamped in place on the bolt shank or movable, depends on the bolt shank diameter.

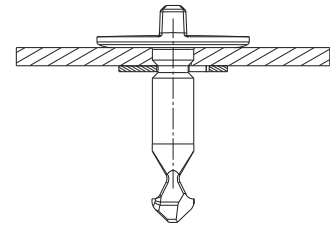
Retaining washer type	Dimensions [mm]	Material/surface	Order No
	D = 18.0 H = 1.0	plastics: polyamide 6 black	0680 108 5310
	D = 20.0 H = 1.0		0680 110 5310
	D = 16.0 H = 0.35	stainless steel bright	0680 206 0005

Type 1



- No recess on the bolt for the retaining washer.
- The washer can axially move on the locking bolt and serves as locking device. Advantage: The bolt can be pushed back when it is swung in. There is no collision.

Type 2



- A recess on the locking bolt guides the washer.
- The bolt does not move under axial pressure.
- For a self-insertion closing curve the cover thickness must be matched precisely.
- Cover height = max. cover height

For customer-specific designs, the locking bolt can also be locked by forming an appropriate geometry such as:

- “Wings” that spread after installation
- “Bosses” where the locking bolt must be installed at slightly higher exertion of force

Lock bottoms – receptacles

Receptacles are available for different material thicknesses. They can be delivered with square or rectangular shape. There are the following advantages:

■ **Square design:**

For hand-operated locking bolts, the orientation can be turned 90° when the joint is closed.



■ **Rectangular design:**

The hand-operated locking bolt can only be installed in one position. For a receptacle with slotted hole, longitudinal tolerance compensation can be realised.

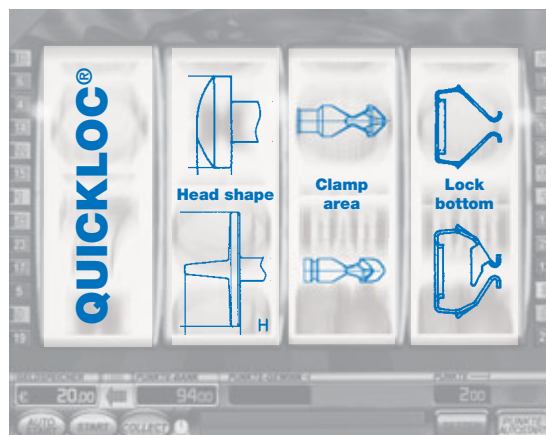


Since the shank length of the locking bolt depends on the receptacle, the receptacle must be chosen first.

QUICKMatch product configurator

Efficiently and effectively towards technical product finding.

With our QUICKMatch product configurator we create your QUICKLOC® quick release quickly and easily. Out of more than 2,000 variants, we select the components that match your specifications.



QUICKMatch product configurator

Convincing diversity

The decisive parameters to select your QUICKLOC® quick release are:

- Head shape
- Clamp area (shank length from 2.5 mm to 37.5 mm)
- Lock bottom (8 different receptacles minimum)

Locking bolts

Grip length receptacle size 1*	Grip length receptacle size 2*	Functional length	Max. cover height	Head shape	Hand operation	Head Ø	Head height	Closing curve	Shank Ø	Order No	Colour
[mm]	[mm]	[mm]	[mm]			[mm]	[mm]		[mm]		
2.6	1.6	13.5	2	cross recess	no	11	3.8	7/4	7	0660 134 5218	white
3.4	2.4	14.3	1.7	cross recess	no	16	2.3	7/5	5	0661 160 5322	black
3.9	2.9	14.8	2.2	handle	yes	25	7	7/3	5	0660 106 5317	black
4.4	3.4	15.3	0.9	handle	yes	17	9	7/5	7	0660 000 0004	silver
4.4	3.4	15.3	2.7	handle	yes	17	7	7/2	5	0660 107 5318	black
4.4	3.4	15.3	2.7	handle	yes	17	7	7/3	5	0660 107 5320	black
4.4	3.4	15.3	2.7	handle	yes	25	7	7/2	5	0660 106 5318	black
4.4	3.4	15.3	2.7	slot	no	13	5	7/3	5	0660 151 5319	black
4.4	3.4	15.3	2.7	slot	no	13	5	7/5	5	0661 151 5323	black
4.4	3.4	15.3	2.7	raised head	no	19	3	7/2	5	0660 152 5318	black
4.9	3.9	15.8	3.2	handle	yes	25.3	12.2	7/2	5	0660 000 0021	green
4.9	3.9	15.8	3.2	handle	yes	25.3	12.2	7/3	5	0660 000 0019	black
4.9	3.9	15.8	3.2	handle	yes	25.3	12.2	7/5	5	0660 000 0020	grey
4.9	3.9	15.8	3.2	TORX	no	14.2	5	7/3	5	0660 157 5320	black
5.1	4.1	16	3.4	handle	yes	19	12	7/3	5	0660 110 5320	black
5.3	4.3	16.2	3.6	raised head	no	25	3	7/3	5	0660 000 0001	black
5.7	4.7	16.6	4	handle	yes	25	7	7/2	5	0660 106 5319	black
5.7	4.7	16.6	4	handle	yes	25	7	7/3	5	0660 106 5321	black
5.7	4.7	16.6	4	handle	yes	25	12.2	7/3	5	0660 106 5320	black
6.3	5.3	17.2	4.6	handle	yes	19	12.5	7/2	5	0660 000 0023	white
8.2	7.2	19.1	2.2	slot	no	11	3.8	7/3	7	0660 134 5923	grey
8.2	7.2	19.1	6.5	raised head	no	19	3	7/3	5	0660 152 5323	black
9.6	8.6	20.5	7.9	handle	yes	17	7	7/1	5	0660 107 5323	black
9.6	8.6	20.5	7.9	raised head	no	19	3.5	7/2	5	0660 152 5324	black
14.1	13.1	25	12.4	handle	yes	25	7	7/3	5	0660 106 5329	black
14.8	13.8	25.7	13.1	handle	yes	19	12	7/3	5	0660 000 0022	black
16.8	15.8	27.7	15.1	coin slot	no	16	3.5	7/3	5	0660 000 0016	black
18.2	17.2	29.1	–	coin slot	no	16	4	7/3	7	0660 140 5333	black
19.1	18.1	30	2.6	cross recess	no	16	4.7	7/5	7	0661 145 5338	black
28.4	27.4	41.5	28.9	handle	yes	19	14.3	7/3	5	0660 000 0024	black
30.1	29.1	41	18.5	raised head	no	19	3	7/3	7	0660 152 5245	white
33.3	32.3	44.2	28.4	slot	no	11	3.8	7/2	7	0660 153 5347	black

* Possible tolerance: +1,5 mm

Overall function

Retaining washer

The retaining washer captively holds the locking bolt to the cover. The maximum cover height describes the position of the retaining washer on the bolt. Thinner covers allow movement.

To achieve self-insertion when pressing the cover, the actual cover height must be the maximum cover height.

Lock bottom – receptacle

The first step is to choose the receptacle because it affects the grip length.

Grip length

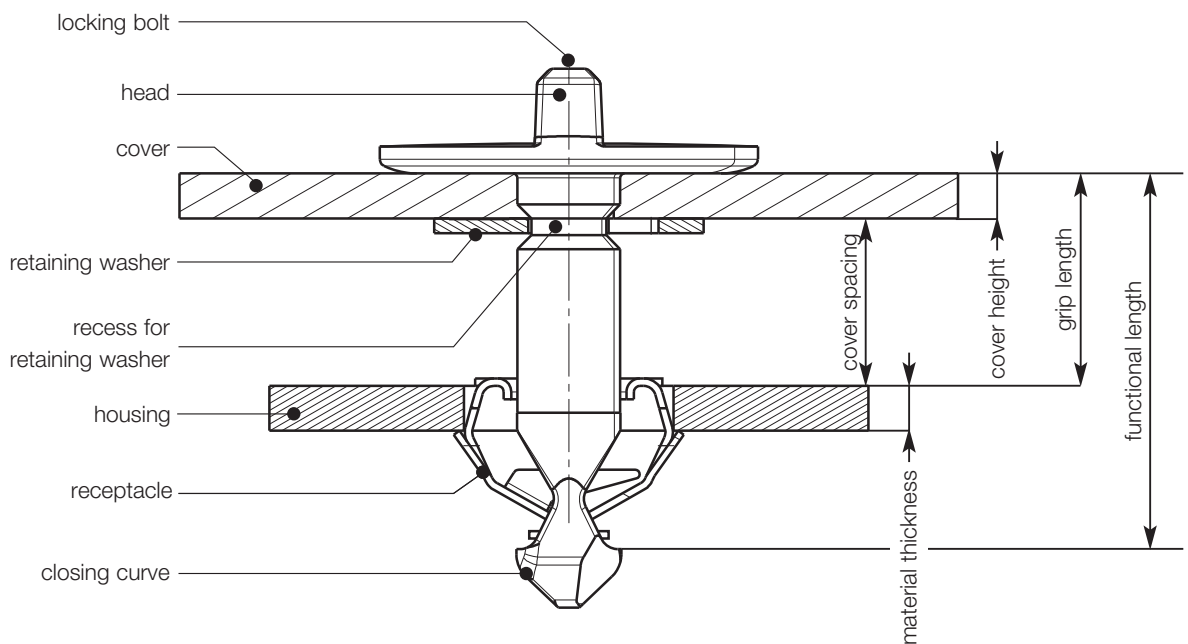
The following parameters are added to determine the grip length:

$$\text{grip length}_{\text{min}} = \text{over height}^* + \text{retaining washer (thickness)}^{**} + 0,7 \text{ mm} + \text{possible cover spacing}$$

Grip lengths vary depending on the receptacle. A + 1.5 mm tolerance can be added to the indicated nominal dimension. Within this tolerance, a noise-free fit of the cover in the housing is guaranteed.

Functional length









Measurable dimension on the bolt. The dimension results from the above-named lengths. It helps to distinguish the bolts.



* The cover height must fit precisely.

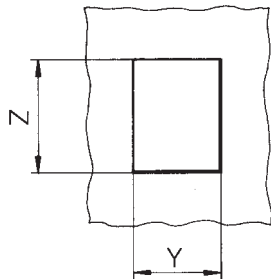
** With a given cover spacing, the thickness of the retaining washer is already included in the cover spacing.

Receptacle

		Dimensions (Y x Z) [mm]	Material / Surface finish	Order No. / Size	Holding material
		9 x 9 max. thickness 2 hole geometry 9.2 ± 0.1 x 9.2 ± 0.1	steel Delta Seal silver	size 1 0670 509 1100	metal
			steel Delta Seal black	size 1 0670 509 1200	
		9,4 x 9,4 max. thickness 3,2 hole geometry 9.4 + 0.1 x 9.4 + 0.1	steel Delta Seal black	size 1 0670 507 1200	plastic
			stainless steel	on request	
		11 x 14 max. thickness 3 hole geometry 11 + 0.2 x 14 ± 0.2	steel zinc flake coating silver	size 2 0670 510 1100	metal
			steel Delta Seal black	size 2 0670 510 1200	
		12 x 16 max. thickness 3 hole geometry 12 + 0.2 x 16.2 + 0.2	steel Delta Seal black	size 2 0670 513 1200	plastic
		14 x 16 R max. thickness 3 hole geometry 14 - 0.2 x 16.2 + 0.4	steel Delta Seal black	size 2 0670 526 1200	plastic

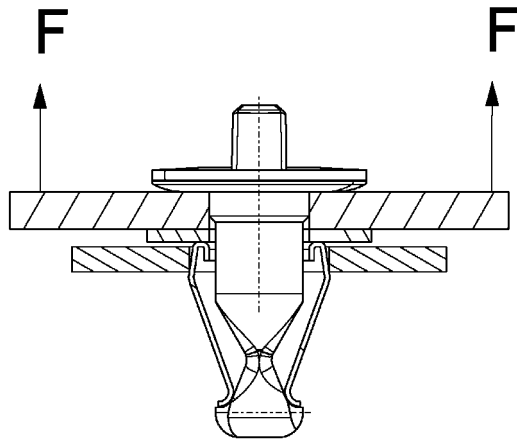
Notes for installation

Housing



Punch a square hole (Y x Z) and insert the receptacle into the housing.
 If the receptacle is not countersunk, it will always project 0.4 mm from the housing.
 The overall height is the same and fits all fasteners.
 Indicated values of the hole geometry are guide values and depends on the material.

Tensile strength



The system has a tensile strength of up to 600 N. This value mainly depends on the used receptacle, the housing material as well as the dimensional accuracy of the fit for the receptacle. Depending on those parameters, the value can be considerably higher.

Contact force / tolerances for the cover height

The contact force depends on the used receptacle as well as the position of the locking bolt's curve geometry in the receptacle. The joint in Figure 1 shows a contact force which is twice the contact force of the joint in Figure 2. The contact force does therefore directly depend on the clamp area and the respective tolerances. In both cases, a noise-free fit is guaranteed.

Figure 1

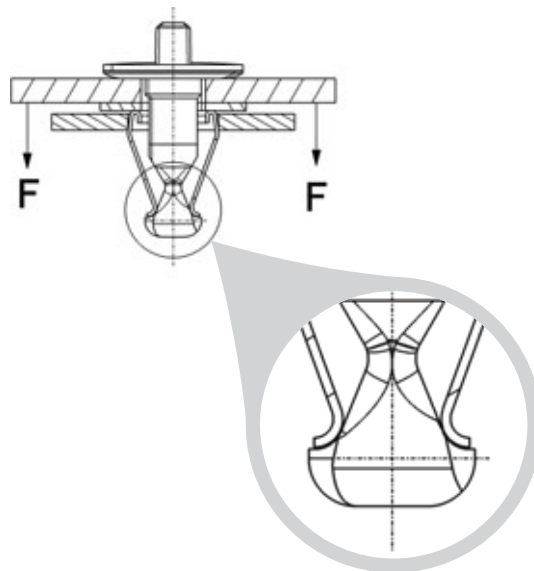
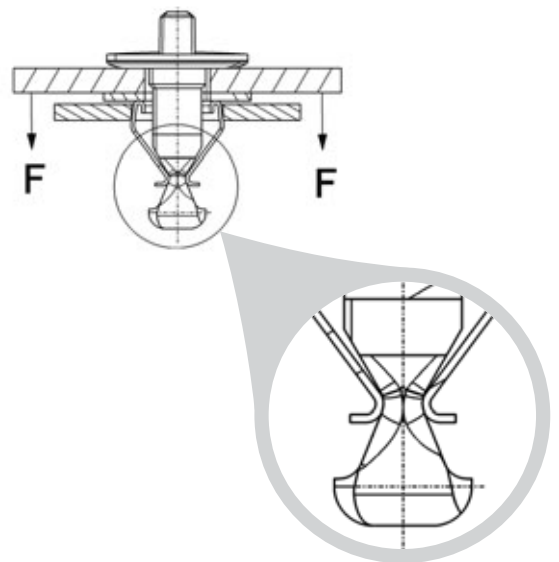


Figure 2



Examples of application



QUICKLOC® Standard

Fastening a plastic cover to a fluorescent lamp which is suitable for sea water use

QUICKLOC® Standard
Fastening a diesel particulate filter
to the vehicle body



QUICKLOC® special design on request

Interior trim in a car boot fastened with turn cam

QUICKLOC® special design on request

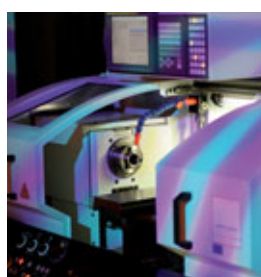
Bench seat fastening in a minivan



Fields of application

QUICKLOC® quick releases are versatile and therefore employed in very diverse fields such as:

- Automotive industry
- Aerospace industry
- Rail cars
- Agricultural machinery
- Construction machinery
- Machine tools
- Mechanical engineering
- Medical engineering
- Solar
- Electrical engineering



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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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