TIFAS®
LockBolt Multigrip
Lockbolt System with extended grip range
## Contents

<table>
<thead>
<tr>
<th>TIFAS® LockBolt Multigrip</th>
<th>Overview</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazier</td>
<td>Steel, galvanised</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Aluminium</td>
<td>7</td>
</tr>
<tr>
<td>Large brazier head</td>
<td>Steel, galvanised</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Aluminium</td>
<td>9</td>
</tr>
<tr>
<td>Countersunk 90°</td>
<td>Steel, galvanised</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Aluminium</td>
<td>11</td>
</tr>
<tr>
<td>Flanged collar</td>
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TIFAS® Lockbolt Multigrip

The lockbolt system with very large grip range.

Lockbolts are ideal for permanently and securely fastening two parts together so that they will never detach, even when subjected to preload or dynamic load. Unlike the standard lockbolt system, the TIFAS® LockBolt Multigrip pin and collar system does not have a pre-defined breakload. The breakoff force for the pin tail can be set variably within a predefined range, whilst the pin offers a very large grip range for the parts to be fastened. The breakneck groove is always located just before the end of the collar. As a result, the pin on the steel version will not protrude at the fastening point in spite of the compensatory tolerance this design offers.

Even when subjected to vibrations, the applied clamp force remains constant. As a positive locking device that fastens permanently with the bolt, the collar is impossible to remove.
Benefits at a glance

- Very large grip range
- Rational fastening system - one lockbolt covers a very large area of installation
- Compensates for extensive differences in wall thickness
- Pin tip breaks off inside the collar (steel version)
- No protruding pin tip, no sharp edges (steel version)
- High clamp force
- Installation steps make for safe build-up of clamp force
- Constant clamp force/preload
- Vibration resistant
- No heat exposure around the joint
- No warping
- No refinishing required around the joint
- No surface damage on components
- Visual inspection
- Installation can be checked using process monitoring
- Maintenance-free
- Quick and easy installation

Installation steps

1. Select lockbolts based on the specified requirements as well as the clamping thicknesses available on-site (sum total of all wall thicknesses to be installed)
2. Select the installation tool, incl. pulling head that matches the lockbolts to be installed (for details, see “Overview – Lockbolts” in the “Tools for Lockbolts” catalogue)
3. Insert the bolt into both through-holes on the components and, with the chamfer aligned to the end of the bolt, slide the collar over the lockbolt. (Fig. 1)
4. Fully press the installation tool with attached pulling head against the collar while securing the pin in place from the opposite side to prevent it from being poked out. (Fig. 2)
5. Press the trigger on the installation tool. The jaws then grip into the grooves on the pin tail and tug at the pin. The pulling head sleeve presses up against the components and the resulting clamp force pushes them together. (Fig. 3)
6. As the tool continues to pull, the pulling head sleeve slides over the collar. (Fig. 4) This reduces the external diameter of the collar. The compressed material slides into the locking grooves of the bolt to form the desired positive fit. As the front side of the sleeve elongates, it is pushed up against the component to create the desired preload where the parts connect.
7. The tool will continue to pull until the lockbolt’s breakload is achieved, causing the tip of the bolt (pulling head) to snap off at the end of the collar (steel version). Installation is now complete. (Fig. 5)

Composition

1 = Brazier or countersunk head
2 = Smooth pin shank
3 = Locking grooves into which the collar is swaged
4 = Pin tail (for installation tool)
5 = Flanged collar with cone-shaped tip
TIFAS® LockBolt Multigrip

Brazier

Material

Steel, tempered (Type 5) galvanised, passivated

<table>
<thead>
<tr>
<th>Nominal bolt ø</th>
<th>Bore ø -0.2</th>
<th>Grip range</th>
<th>L1 max</th>
<th>d1 -0.2</th>
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The tensile strength and clamp shown may be lower in practice and are for guidance purposes only. Lockbolts with a surface coating (zinc, clear passivate) have approx. 15% less tensile strength than shown. For more detailed information, please contact your representative at our company. Flanged collars will need to be ordered separately. Other designs available on request.
## TIFAS® LockBolt Multigrip

### Brazier

**Material**

Aluminium EN AW 7075

<table>
<thead>
<tr>
<th>Nominal bolt ø (d1) [mm]</th>
<th>Bore ø -0.2 [mm]</th>
<th>Grip range [mm]</th>
<th>L1 max [mm]</th>
<th>d1 -0.2 [mm]</th>
<th>d2 max [mm]</th>
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**Please note:**
The break-off point on the bolt may vary depending on the properties of the materials used.
### TIFAS® LockBolt Multigrip

**Large brazier head**

**Material**

Steel, tempered (Type 5) galvanised, passivated

<table>
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<th>Nominal bolt ø (d_1) [mm]</th>
<th>Bore ø (-0.2) [mm]</th>
<th>Grip range [mm]</th>
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Other designs available on request.
TIFAS® LockBolt Multigrip

Large brazier head

Material

Aluminium EN AW 7075

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<th>Nominal bolt ø</th>
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Flanged collars will need to be ordered separately.

Other designs available on request.

Please note:
The break-off point on the bolt may vary depending on the properties of the materials used.
### TIFAS® LockBolt Multigrip

**Countersunk 90°**

**Material**

Steel, tempered (Type 5) galvanised, passivated

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## TIFAS® LockBolt Multigrip

### Countersunk 90°

**Material**

Aluminium EN AW 7075

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For more detailed information, please contact your representative at our company.

Flanged collars will need to be ordered separately.

Other designs available on request.

---

**Please note:**
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## TIFAS® LockBolt Multigrip

### Flanged collar

**Material**

Steel, tempered, galvanised, passivated

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<th>D max [mm]</th>
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All collars supplied with added lubricant.

Other designs available on request.
**TIFAS® LockBolt Multigrip**

**Flanged collar**

**Material**
- Aluminium EN AW 6061

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<th>For nominal bolt ø [mm]</th>
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Other designs available on request.
Notes
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Titgemeyer Group is a leading fastening technology and transport technology group of companies with 15 sites across Europe. Steeped in tradition, the company develops, manufactures and sells more than 30,000 fastening elements, tools and vehicle components – in series and to customer specification.

<table>
<thead>
<tr>
<th>Headquarters</th>
<th>Sales locations</th>
<th>Production locations</th>
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| Titgemeyer GmbH & Co. KG  
Hannoversche Straße 97  
49084 Osnabrück / DE  
POB 4320  
49033 Osnabrück / DE  
T +49 541 5822-0  
E info@titgemeyer.com  
W titgemeyer.com | Titgemeyer Turkey Baglanti Teknolojileri San. ve Tic. A.S.  
Barbaros Mah. Is Merkezi No.1  
Kat. B D.58  
34746 Atasehir, Istanbul / TR  
T +90 (0) 21 66 88 20 – 27  
E sales@titgemeyer.com.tr  
W titgemeyer.com.tr | Baker & Finnemore Limited  
199 Newhall Street  
Birmingham, B3 1SN / UK  
T +44 121 23 62 – 347  
E info@bakfin.com  
W bakfin.com |
| | | Titgemeyer (UK) Limited  
A2 Link One Industrial Park  
George Henry Road  
DY4 7BU Tipton / UK  
T +44 (0) 1 21 5 57 97 – 77  
E sales@titgemeyer.co.uk  
W titgemeyer.co.uk | Titgemeyer GmbH & Co. KG  
Werk Lotte  
Daimlerstraße 13 – 15  
49504 Lotte / DE  
T +49 5404 966 – 0  
E info@titgemeyer.com  
W titgemeyer.com |
| Gebr. Titgemeyer GmbH  
Brunner Straße 77 – 79  
1230 Wien / AT  
T +43 (0) 1/6 67 90 40 – 0  
E sales@titgemeyer.com  
W titgemeyer.at | Titgemeyer Polska sp. z o.o.  
Cypriana Bazylika 17  
98-200 Sieradz / PL  
T +48 (0) 43 828 20 – 15  
E sales@titgemeyer.com  
W titgemeyer.pl | RIEKO GmbH  
Robert-Bosch-Straße 9  
72124 Plietzhausen / DE  
T +49 7127 9744 – 0  
E info@rieko-web.com  
W rieko-web.com |
| Titgemeyer CZ spol. s r.o.  
U Vodárny 1506  
397 01 Pisek / CZ  
T +420 382 2067 – 25  
E sales@titgemeyer.com  
W titgemeyer.cz | Titgemeyer Skandinavien A/S  
Lunikvej 32  
2670 Greve / DK  
T +45 4360 0966  
E info@titgemeyer.dk  
W titgemeyer.dk | Titgemeyer Tools & Automation spol s.r.o.  
U Vodárny 1506  
397 01 Pisek / CZ  
T +42 382 2067 – 11  
E info@rivetec.cz  
W rivetec.cz |
| Titgemeyer Polska sp. z o.o.  
Cypriana Bazylika 17  
98-200 Sieradz / PL  
T +48 (0) 43 828 20 – 15  
E sales@titgemeyer.com  
W titgemeyer.pl | Titgemeyer Skandinavien A/S  
Box 3218  
550 03 Jönköping / SE  
T +46 36 128350  
E info@titgemeyer.se  
W titgemeyer.se | TS Gesellschaft für Transport- und Sicherungsstechnik mbH  
Hablängerstraße 156  
58285 Gevelsberg / DE  
T +49 541 5822 – 900  
E ts@cargosecure.de  
W wir-sind-ladungssicherung.de |