

Fastening Technology / Lockbolt Systems

TIFAS[®] LockBolt Multigrip

Lockbolt System with extended grip range



Contents

| | | | Page |
|---------------------------|--------------------|-------------------|------|
| TIFAS® LockBolt Multigrip | Overview | | 4 |
| | Brazier | Steel, galvanised | 6 |
| | | Aluminium | 7 |
| | Large brazier head | Steel, galvanised | 8 |
| | | Aluminium | 9 |
| | Countersunk 90° | Steel, galvanised | 10 |
| | | Aluminium | 11 |
| | Flanged collar | Steel, galvanised | 12 |
| | | Aluminium | 13 |

TIFAS® Lockbolt Multigrip

The lockbolt system with very large grip range.



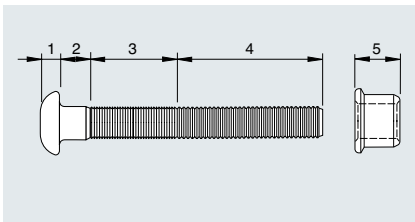
Lockbolts are ideal for permanently and securely fastening two parts together so that they will never detach, even when subjected to preload or dynamic load.

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 break-neck 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

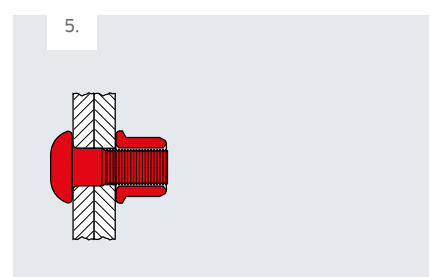
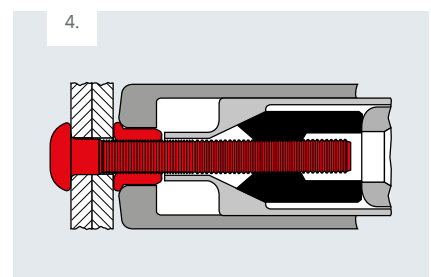
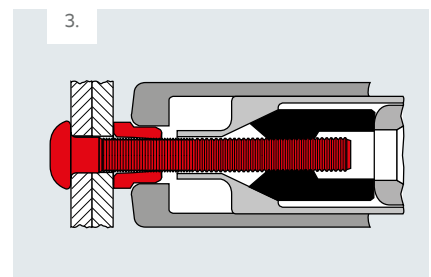
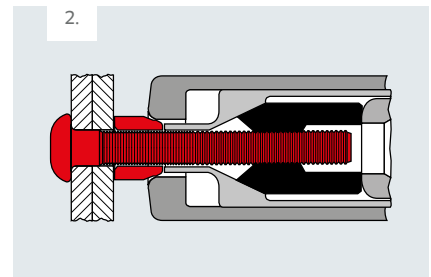
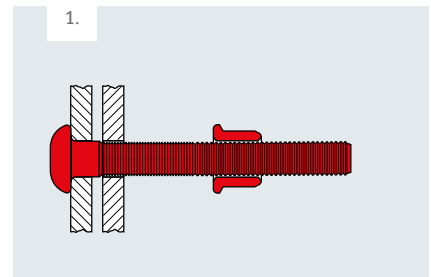
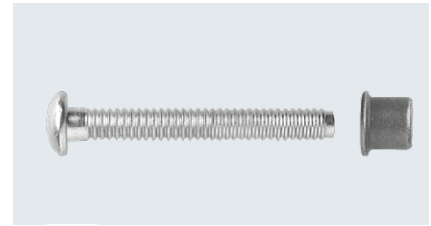


Composition

- 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

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)

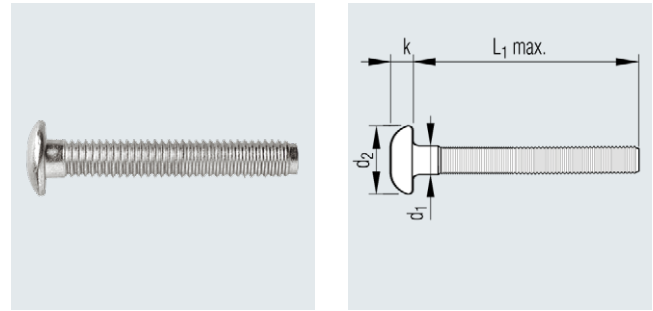


TIFAS® LockBolt Multigrip

Brazier

Material

Steel, tempered (Type 5) galvanised, passivated



| Nominal bolt \varnothing d1 [mm] | Bore \varnothing -0.2 [mm] | Grip range [mm] | L1 max [mm] | d1 -0.2 [mm] | d2 max [mm] | k max [mm] | Shear strength [N] | Tensile strength [N] | Clamp [N] | Article No. |
|--|------------------------------------|-----------------------|----------------|-----------------|----------------|---------------|--------------------------|----------------------------|--------------|-------------|
| 4.8 | 5.2 | 1.6 - 16.0 | 48.0 | 5.0 | 10.1 | 3.3 | 7500 | 7300 | 4000 | 378 900 001 |
| | | 8.0 - 32.0 | 61.0 | 5.0 | 10.1 | 3.3 | 7500 | 7300 | 4000 | 378 904 001 |
| 6.4 | 6.8 | 1.6 - 16.0 | 52.5 | 6.6 | 13.4 | 4.0 | 9800 | 13300 | 5300 | 378 908 001 |
| | | 8.0 - 32.0 | 67.0 | 6.6 | 13.4 | 4.0 | 9800 | 13300 | 5300 | 378 912 001 |

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.

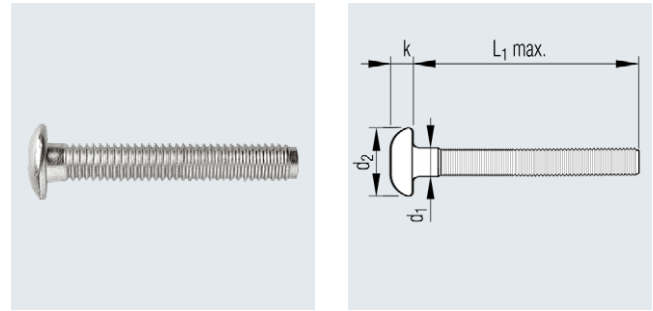
Other designs available on request.

TIFAS® LockBolt Multigrip

Brazier

Material

Aluminium EN AW 7075



| Nominal bolt \varnothing d1 [mm] | Bore \varnothing -0.2 [mm] | Grip range [mm] | L1 max [mm] | d1 -0.2 [mm] | d2 max [mm] | k max [mm] | Shear strength [N] | Tensile strength [N] | Clamp [N] | Article No. |
|--|------------------------------------|--------------------|----------------|-----------------|----------------|---------------|--------------------------|----------------------------|--------------|-------------|
| 4.8 | 5.2 | 1.6 - 16.0 | 48.0 | 5.0 | 10.1 | 3.3 | 3300 | 4000 | 2500 | 378 950 001 |
| | | 8.0 - 32.0 | 61.0 | 5.0 | 10.1 | 3.3 | 3300 | 4000 | 2500 | 378 954 001 |
| 6.4 | 6.8 | 3.2 - 16.0 | 52.5 | 6.6 | 13.4 | 4.0 | 5300 | 7200 | 4000 | 378 958 001 |
| | | 8.0 - 32.0 | 67.0 | 6.6 | 13.4 | 4.0 | 5300 | 7200 | 4000 | 378 962 001 |

The tensile strength and clamp shown may be lower in practice and are for guidance purposes only.
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:

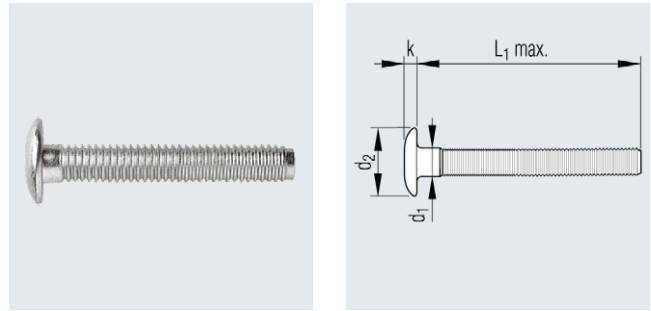
The break-off point on the bolt may vary depending on the properties of the materials used.

TIFAS® LockBolt Multigrip

Large brazier head

Material

Steel, tempered (Type 5) galvanised, passivated



| Nominal bolt \varnothing d1 [mm] | Bore \varnothing -0.2 [mm] | Grip range [mm] | L1 max [mm] | d1 -0.2 [mm] | d2 max [mm] | k max [mm] | Shear strength [N] | Tensile strength [N] | Clamp [N] | Article No. |
|--|------------------------------------|--------------------|----------------|-----------------|----------------|---------------|--------------------------|----------------------------|--------------|-------------|
| 4.8 | 5.2 | 1.6 - 16.0 | 48.0 | 5.0 | 12.6 | 3.0 | 7500 | 7300 | 4000 | 378 902 001 |
| | | 8.0 - 32.0 | 61.0 | 5.0 | 12.6 | 3.0 | 7500 | 7300 | 4000 | 378 905 001 |
| 6.4 | 6.8 | 1.6 - 16.0 | 52.5 | 6.6 | 15.3 | 3.6 | 9800 | 13300 | 5300 | 378 910 001 |
| | | 8.0 - 32.0 | 67.0 | 6.6 | 15.3 | 3.6 | 9800 | 13300 | 5300 | 378 914 001 |

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.

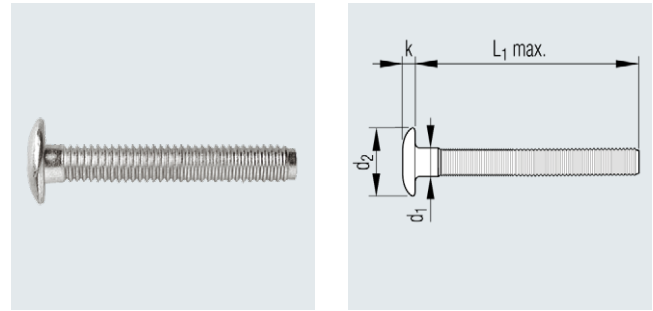
Other designs available on request.

TIFAS® LockBolt Multigrip

Large brazier head

Material

Aluminium EN AW 7075



| Nominal bolt \varnothing d1 [mm] | Bore \varnothing -0.2 [mm] | Grip range [mm] | L1 max [mm] | d1 -0.2 [mm] | d2 max [mm] | k max [mm] | Shear strength [N] | Tensile strength [N] | Clamp [N] | Article No. |
|--|------------------------------------|--------------------|----------------|-----------------|----------------|---------------|--------------------------|----------------------------|--------------|-------------|
| 4.8 | 5.2 | 1.6 - 16.0 | 48.0 | 5.0 | 12.6 | 3.0 | 3300 | 4000 | 2500 | 378 952 001 |
| | | 8.0 - 32.0 | 61.0 | 5.0 | 12.6 | 3.0 | 3300 | 4000 | 2500 | 378 955 001 |
| 6.4 | 6.8 | 3.2 - 16.0 | 52.5 | 6.6 | 15.3 | 3.6 | 5300 | 7200 | 4000 | 378 960 001 |
| | | 8.0 - 32.0 | 67.0 | 6.6 | 15.3 | 3.6 | 5300 | 7200 | 4000 | 378 963 001 |

The tensile strength and clamp shown may be lower in practice and are for guidance purposes only.
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:

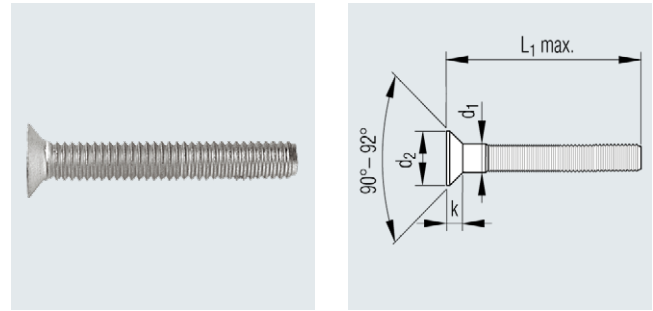
The break-off point on the bolt may vary depending on the properties of the materials used.

TIFAS® LockBolt Multigrip

Countersunk 90°

Material

Steel, tempered (Type 5) galvanised, passivated



| Nominal bolt \varnothing d1 [mm] | Bore \varnothing -0.2 [mm] | Grip range [mm] | L1 max [mm] | d1 -0.2 [mm] | d2 max [mm] | k max [mm] | Shear strength [N] | Tensile strength [N] | Clamp [N] | Article No. |
|--|------------------------------------|--------------------|----------------|-----------------|----------------|---------------|--------------------------|----------------------------|--------------|-------------|
| 4.8 | 5.2 | 3.6 - 16.0 | 48.0 | 5.0 | 9.3 | 2.6 | 7500 | 7300 | 4000 | 378 903 001 |
| | | 8.0 - 32.0 | 61.0 | 5.0 | 9.3 | 2.6 | 7500 | 7300 | 4000 | 378 907 001 |
| 6.4 | 6.8 | 4.3 - 16.0 | 52.5 | 6.6 | 12.2 | 3.3 | 9800 | 13300 | 5300 | 378 911 001 |
| | | 8.0 - 32.0 | 67.0 | 6.6 | 12.2 | 3.3 | 9800 | 13300 | 5300 | 378 915 001 |

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.

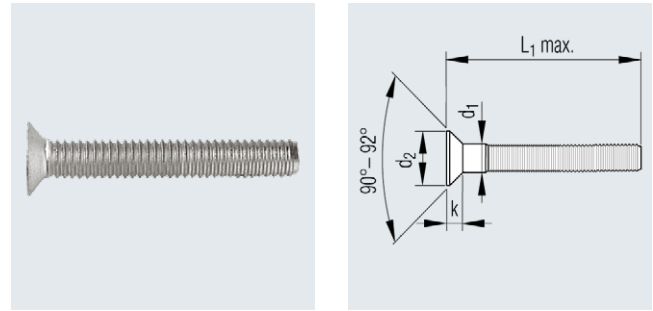
Other designs available on request.

TIFAS® LockBolt Multigrip

Countersunk 90°

Material

Aluminium EN AW 7075



| Nominal bolt \varnothing d1 [mm] | Bore \varnothing -0.2 [mm] | Grip range [mm] | L1 max [mm] | d1 -0.2 [mm] | d2 max [mm] | k max [mm] | Shear strength [N] | Tensile strength [N] | Clamp [N] | Article No. |
|--|------------------------------------|--------------------|----------------|-----------------|----------------|---------------|--------------------------|----------------------------|--------------|-------------|
| 4.8 | 5.2 | 3.6 - 16.0 | 48.0 | 5.0 | 9.3 | 2.6 | 3300 | 4000 | 2500 | 378 953 001 |
| | | 8.0 - 32.0 | 61.0 | 5.0 | 9.3 | 2.6 | 3300 | 4000 | 2500 | 378 957 001 |
| 6.4 | 6.8 | 4.3 - 16.0 | 52.5 | 6.6 | 12.2 | 3.3 | 5300 | 7200 | 4000 | 378 961 001 |
| | | 8.0 - 32.0 | 67.0 | 6.6 | 12.2 | 3.3 | 5300 | 7200 | 4000 | 378 965 001 |

The tensile strength and clamp shown may be lower in practice and are for guidance purposes only.
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:

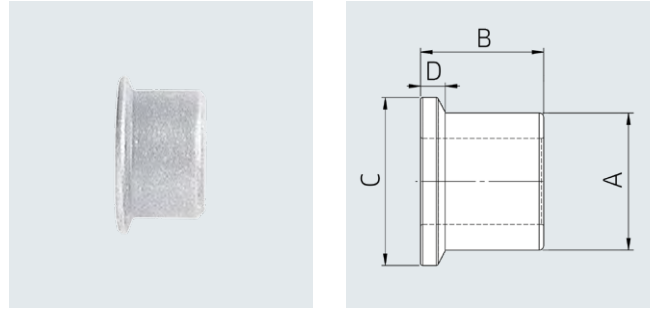
The break-off point on the bolt may vary depending on the properties of the materials used.

TIFAS® LockBolt Multigrip

Flanged collar

Material

Steel, tempered, galvanised, passivated



| For nominal bolt ø | A min | B max | C max | D max | Article No. |
|--------------------|-------|-------|-------|-------|-------------|
| [mm] | [mm] | [mm] | [mm] | [mm] | |
| 4.8 | 7.7 | 7.2 | 9.8 | 1.6 | 378 940 001 |
| 6.4 | 10.2 | 9.7 | 13.1 | 1.8 | 378 941 001 |

All collars supplied with added lubricant.

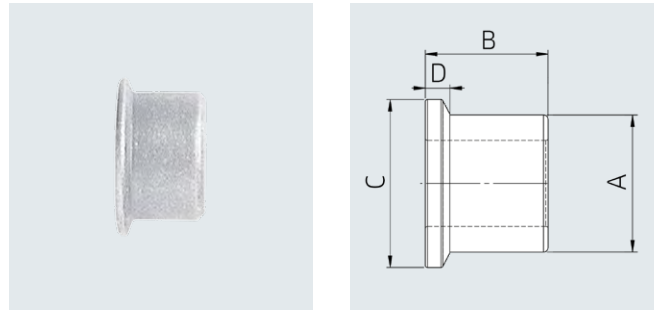
Other designs available on request.

TIFAS® LockBolt Multigrip

Flanged collar

Material

Aluminium EN AW 6061



| For nominal bolt \varnothing | A min [mm] | B max [mm] | C max [mm] | D max [mm] | Article No. |
|--------------------------------|---------------|---------------|---------------|---------------|-------------|
| 4.8 | 7.7 | 7.2 | 9.8 | 4.6 | 378 990 001 |
| 6.4 | 10.2 | 9.7 | 13.1 | 1.8 | 378 991 001 |

All collars supplied with added lubrication.

Other designs available on request.

Notes

A large grid area for taking notes, consisting of 30 columns and 40 rows of small squares.

Copyright

All texts, images, technical documents and other information contained in this catalogue are subject to copyright held by Titgemeyer GmbH & Co. KG. Any reproduction or disclosure, whether as a copy or other form of duplication or use, is expressly prohibited without the prior consent of Titgemeyer GmbH & Co. KG.

Registered trademarks

The trademarks BÖRTI, GETO, GETO therm, GETOVAN, GTO, LockBolt, MEGA PORT, plasti van, PLYFIX, POLYSTIC, press-ti, RIEKO, RIV-TI, ROLL-TO, TIBOLT, TIBULB, TIFAS, TILA, TIOS and Titgemeyer are registered trademarks and the intellectual property of Titgemeyer GmbH & Co. KG.

Term of Delivery and Payment

All deliveries are carried out in compliance with our Terms of Delivery and Payment.

Limitation of liability

All technical data, performance descriptions, drawings, illustrations, measurements, weights or any other performance data, recommendations and guidelines contained in this catalogue and relating to the installation of parts that we supply are only binding if so expressly agreed. Moreover, the user is obliged at all times to check each individual use and decide whether the components that we supply can be used as needed.

We accept liability in the case of wilful intent, gross negligence and infringement of cardinal contractual duties as well as for errors in respect of express or implied representations. Notwithstanding this, any claims for compensation not explicitly agreed to in these terms and conditions are hereby excluded in the case of customers who are not consumers and, in the case of such customers, who are not consumers, at all events limited to the damage foreseeable at the time of concluding the contract as well as to the value of the delivered consignment. To the extent that our liability is excluded or limited, this shall extend accordingly to the personal liability of employees, legal representatives and vicarious agents. In all instances of gross negligence committed by vicarious agents, we shall solely be liable to customers, who are not consumers, to compensate for typically foreseeable damage. The statutory regulation governing the burden of proof shall remain unaffected. The aforementioned limitation of liability shall not apply to claims resulting from product liability, for damage resulting from injury to life, limb or health, or for damage to privately used property.

All technical specifications contained in this brochure are approximate and no guarantee is given as to their accuracy. Designs are subject to change.

About us

The Titgemeyer Group is a leading company for fastening technology and vehicle components at 15 locations in Europe.

The traditional company develops, manufactures and sells more than 30,000 fastening elements, tools and vehicle components – in series production and on request.

Headquarters

Titgemeyer GmbH & Co. KG
Hannoversche Straße 97
49084 Osnabrück / DE

PO Box 4320
49033 Osnabrück / DE

T +49 541 5822-0
E info@titgemeyer.com
W titgemeyer.com



Sales locations

Titgemeyer Austria 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 CZ spol. s r. o.
U Vodárny 1506
397 01 Písek / CZ

T +420 382 2067 - 25
E sales@titgemeyer.com
W titgemeyercz.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
Lunikvej 32
2670 Greve / DK

T +45 4360 0966
E info@titgemeyer.dk
W titgemeyer.dk

Titgemeyer Skandinavien A/S
Box 3218
550 03 Jönköping / SE

T +46 36 128350
E info@titgemeyer.se
W titgemeyer.se

Titgemeyer Skandinavien A/S
Korkeakoulunkatu 7
33720 Tampere / FI

T +358 (0) 400 448 401
E info@titgemeyer.fi
W titgemeyer.fi

Titgemeyer Turkey Baglanti Teknolojileri San. ve Tic. A.S.
Barbaros Mah. Is Merkezi No.1
Kat: 8 D.58
34746 Atasehir, Istanbul / TUR

T +90 (0) 21 66 88 20 - 27
E sales@titgemeyer.com.tr
W titgemeyer.com.tr

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

Production sites

Cirteq Limited
'Hayfield' Colne Road,
Glusburn, Keighley,
West Yorkshire, BD20 8QP

T +44 1535 633333
E sales@cirteq.com
W cirteq.com

Titgemeyer Tools & Automation spol s.r.o.
U Vodárny 1506
397 01 Písek / CZ

T +42 382 2067 - 11
E info@rivetec.cz
W rivetec.cz

RIEKO GmbH
Robert-Bosch-Straße 9
72124 Pliezhausen / DE

T +49 7127 9744 - 0
E info@rieko-web.com
W rieko-web.com

Titgemeyer GmbH & Co. KG Werk Lotte
Daimlerstraße 13 - 15
49504 Lotte / DE

T +49 5404 9666 - 0
E info@titgemeyer.com
W titgemeyer.com

TS Gesellschaft für Transport- und Sicherungssysteme mbH
Haßlinghauser Straße 156
58285 Gevelsberg / DE

T +49 541 5822 - 900
E ts@cargocontrol.de
W wir-sind-ladungssicherung.de