

Fastening Technology / Lockbolt Systems

TIFAS[®] LockBolt

Standard Lockbolt System



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TIFAS® LockBolt standard system



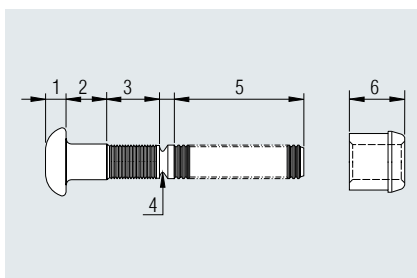
Lockbolts are ideal for permanently and securely fastening two parts together so that they will never detach, even when subjected to preload or dynamic load.

TIFAS® LockBolt is the standard system offered by Titgemeyer GmbH & Co. KG and comprises a pin as well as three versions of collar: standard, low-profile or flanged. The components marry perfectly with each other to ensure correct assembly and a reliable fixing. 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. The expertise that we have acquired through manufacturing these components in-house means we can also offer bespoke solutions for customers, subject to feasibility.

Benefits at a glance

- High clamp force
- Installation process guarantees 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
- Bespoke customer solutions available on request

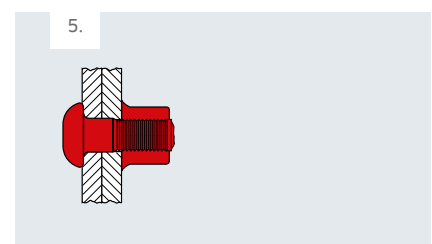
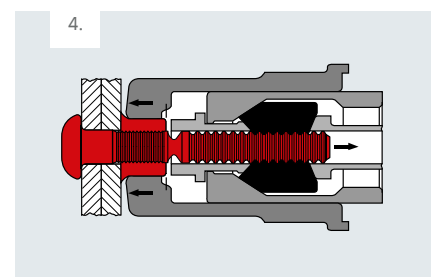
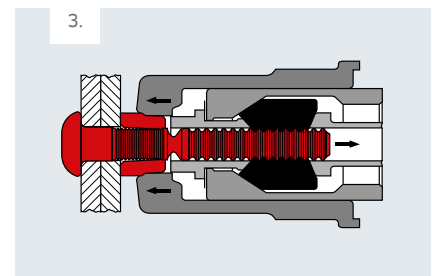
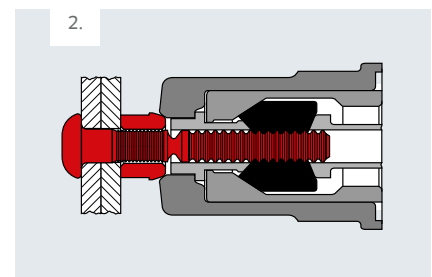
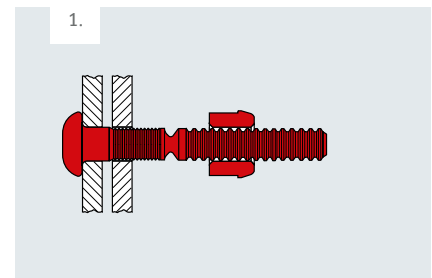


DeltaBolt® standard lockbolt system

- 1 = Brazier or countersunk head
 2 = Smooth pin shank (minimum grip range)
 3 = Locking grooves into which the collar is swaged
 4 = Breakneck groove
 5 = Pin tail (for installation tool)
 6 = 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 component and, with the chamfer aligned to the end of the bolt, slide the collar over the pin. (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 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 breakneck groove. Installation is now complete. (Fig. 5)

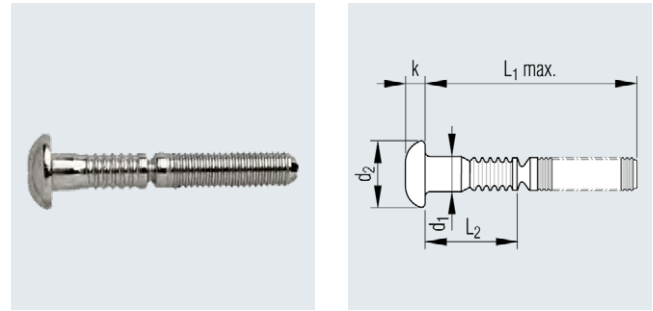


TIFAS® LockBolt

Brazier

Material

Steel, tempered (Type 5) galvanised, passivated



Nominal bolt $\varnothing$ d1 [mm]	Bore $\varnothing$ -0.2 [mm]	Grip range s [mm]	L1 max [mm]	L2 max [mm]	d1 -0.2 [mm]	d2 * [mm]	k max [mm]	Shear strength [N]	Tensile strength [N]	Clamp [N]	Article No.
6.4	6.8	1.6 - 4.8	42.0	13.2	6.6	13.4	3.9	13500	13300	8000	376 742 001
		3.2 - 6.4	43.5	14.8	6.6	13.4	3.9	13500	13300	8000	376 743 001
		4.8 - 7.9	45.0	16.4	6.6	13.4	3.9	13500	13300	8000	376 744 001
		6.4 - 9.5	47.0	18.0	6.6	13.4	3.9	13500	13300	8000	376 745 001
		7.9 - 11.1	48.5	19.6	6.6	13.4	3.9	13500	13300	8000	376 746 001
		9.5 - 12.7	50.0	21.2	6.6	13.4	3.9	13500	13300	8000	376 747 003
		11.1 - 14.3	51.5	22.7	6.6	13.4	3.9	13500	13300	8000	376 748 001
		12.7 - 15.9	53.0	24.3	6.6	13.4	3.9	13500	13300	8000	376 749 001
		14.3 - 17.5	55.0	25.9	6.6	13.4	3.9	13500	13300	8000	376 750 001
		15.9 - 19.1	56.5	27.5	6.6	13.4	3.9	13500	13300	8000	376 751 001
		17.5 - 20.6	58.0	29.1	6.6	13.4	3.9	13500	13300	8000	376 752 001
		19.1 - 22.2	59.5	30.6	6.6	13.4	3.9	13500	13300	8000	376 753 001
		22.2 - 25.4	62.5	33.9	6.6	13.4	3.9	13500	13300	8000	376 755 001
		23.8 - 27.0	64.5	35.4	6.6	13.4	3.9	13500	13300	8000	376 756 001
		25.4 - 28.6	66.0	37.0	6.6	13.4	3.9	13500	13300	8000	376 757 001
		27.0 - 30.2	67.5	38.6	6.6	13.4	3.9	13500	13300	8000	376 758 001
		28.6 - 31.8	69.0	40.2	6.6	13.4	3.9	13500	13300	8000	376 759 001
		30.2 - 33.3	70.5	41.8	6.6	13.4	3.9	13500	13300	8000	376 760 001
		33.3 - 36.6	74.0	45.0	6.6	13.4	3.9	13500	13300	8000	376 761 001
		36.6 - 39.7	77.0	48.2	6.6	13.4	3.9	13500	13300	8000	376 762 001
		39.7 - 42.9	80.0	51.4	6.6	13.4	3.9	13500	13300	8000	376 763 001
9.6	10.0	42.9 - 46.0	83.5	54.6	6.6	13.4	3.9	13500	13300	8000	376 765 001
		46.0 - 49.2	86.5	57.7	6.6	13.4	3.9	13500	13300	8000	378 559 001
		49.2 - 52.4	89.5	60.8	6.6	13.4	3.9	13500	13300	8000	378 561 001
		3.2 - 9.5	57.5	21.4	9.8	20.0	6.3	30500	28000	17800	378 580 001
		4.8 - 11.1	59.0	23.0	9.8	20.0	6.3	30500	28000	17800	378 588 001
		6.4 - 12.7	60.5	24.6	9.8	20.0	6.3	30500	28000	17800	378 581 001
		9.5 - 15.9	63.5	27.8	9.8	20.0	6.3	30500	28000	17800	378 582 001
		12.7 - 19.1	67.0	30.9	9.8	20.0	6.3	30500	28000	17800	378 583 001
		15.9 - 22.2	70.0	34.1	9.8	20.0	6.3	30500	28000	17800	378 584 001
		19.1 - 25.4	73.5	37.3	9.8	20.0	6.3	30500	28000	17800	378 585 001
9.6	10.0	22.2 - 28.6	76.5	40.5	9.8	20.0	6.3	30500	28000	17800	378 586 001
		25.4 - 31.8	79.5	43.6	9.8	20.0	6.3	30500	28000	17800	378 587 001
		28.6 - 34.9	83.0	46.8	9.8	20.0	6.3	30500	28000	17800	378 590 001

* Tolerance: $\varnothing$ 6.4: -1.4 mm; $\varnothing$ 9.6: -2.0 mm

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.

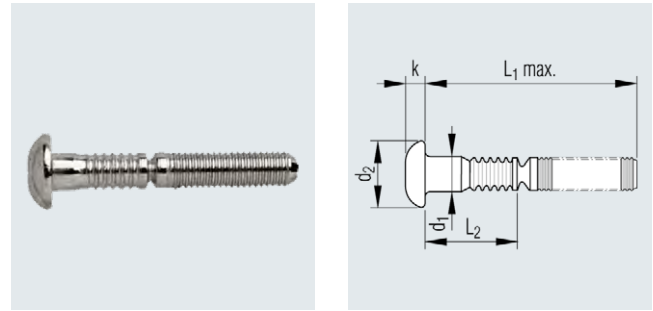
Other designs available on request.

TIFAS® LockBolt

Brazier

Material

Steel, tempered (Type 8) EN 163-4, galvanised, passivated



Nominal bolt ø d1 [mm]	Bore ø -0.2 [mm]	Grip range s [mm]	L1 max [mm]	L2 max [mm]	d1 -0.2 [mm]	d2 * [mm]	k max [mm]	Shear strength [N]	Tensile strength [N]	Clamp [N]	Article No.
4.8	5.2	1.6 - 4.8	38.5	10.8	5.0	10.0	3.2	10800	9200	5300	376 500 001
		3.2 - 6.4	40.0	12.4	5.0	10.0	3.2	10800	9200	5300	376 508 001
		4.8 - 7.9	41.5	14.0	5.0	10.0	3.2	10800	9200	5300	376 501 001
		6.4 - 9.5	43.0	15.6	5.0	10.0	3.2	10800	9200	5300	376 510 001
		7.9 - 11.1	44.5	17.2	5.0	10.0	3.2	10800	9200	5300	376 502 001
		9.5 - 12.7	46.5	18.8	5.0	10.0	3.2	10800	9200	5300	376 511 001
		11.1 - 14.3	48.0	20.4	5.0	10.0	3.2	10800	9200	5300	376 509 001
		12.7 - 15.9	49.5	22.0	5.0	10.0	3.2	10800	9200	5300	376 512 001
		14.3 - 17.5	51.0	23.5	5.0	10.0	3.2	10800	9200	5300	376 504 001
		17.5 - 20.6	54.0	26.7	5.0	10.0	3.2	10800	9200	5300	376 505 001
		20.6 - 23.8	57.5	29.9	5.0	10.0	3.2	10800	9200	5300	376 506 001
		23.8 - 27.0	60.5	33.1	5.0	10.0	3.2	10800	9200	5300	376 541 001
		27.0 - 30.2	64.0	36.3	5.0	10.0	3.2	10800	9200	5300	376 513 001
		30.2 - 33.3	67.0	39.5	5.0	10.0	3.2	10800	9200	5300	376 514 001
8.0	8.4	1.6 - 7.9	50.0	18.2	8.2	16.7	5.1	29200	26300	18600	376 800 007
		3.2 - 9.5	52.0	19.8	8.2	16.7	5.1	29200	26300	18600	376 805 007
		4.8 - 11.1	53.5	21.4	8.2	16.7	5.1	29200	26300	18600	376 810 007
		6.4 - 12.7	55.0	23.0	8.2	16.7	5.1	29200	26300	18600	376 801 007
		9.5 - 15.9	58.0	26.2	8.2	16.7	5.1	29200	26300	18600	376 808 007
		12.7 - 19.1	61.5	29.3	8.2	16.7	5.1	29200	26300	18600	376 802 007
		15.9 - 22.2	64.5	32.5	8.2	16.7	5.1	29200	26300	18600	376 809 007
		19.1 - 25.4	67.5	35.7	8.2	16.7	5.1	29200	26300	18600	376 803 007
		22.2 - 28.6	71.0	38.9	8.2	16.7	5.1	29200	26300	18600	376 811 007
		25.4 - 31.8	74.0	42.0	8.2	16.7	5.1	29200	26300	18600	376 804 007
		28.6 - 34.9	77.0	45.2	8.2	16.7	5.1	29200	26300	18600	376 812 007
9.6	10.0	3.2 - 9.5	57.5	21.4	9.8	20.0	6.3	40500	37400	23000	377 130 001
		9.5 - 15.9	63.5	27.8	9.8	20.0	6.3	40500	37400	23000	377 131 001
		12.7 - 19.1	67.0	30.9	9.8	20.0	6.3	40500	37400	23000	377 132 001
		15.9 - 22.2	70.0	34.1	9.8	20.0	6.3	40500	37400	23000	377 133 001

* Tolerance: ø 4.8: -1.0 mm; ø 8.0: -1.7 mm, ø 10.0: -2.0 mm

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.

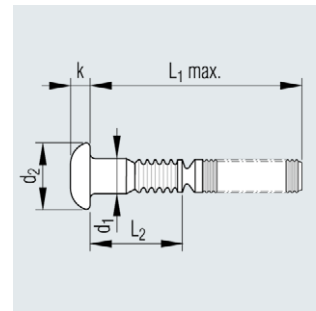
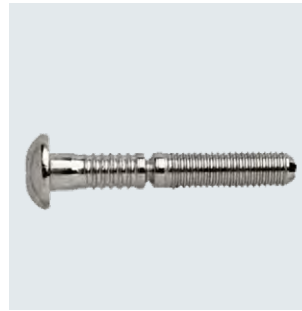
Other designs available on request.

TIFAS® LockBolt

Brazier

Material

Stainless steel 1.4567 EN 10263-5



Nominal bolt $\varnothing$ d1 [mm]	Bore $\varnothing$ -0.2 [mm]	Grip range s [mm]	L1 max [mm]	L2 max [mm]	d1 -0.2 [mm]	d2 * [mm]	k max [mm]	Shear strength [N]	Tensile strength [N]	Clamp [N]	Article No.
4.8	5.2	1.6 - 4.8	38.5	10.8	5.0	10.0	3.2	7500	6400	4500	376 474 001
		3.2 - 6.4	40.0	12.4	5.0	10.0	3.2	7500	6400	4500	376 476 001
		4.8 - 7.9	41.5	14.0	5.0	10.0	3.2	7500	6400	4500	376 484 001
		6.4 - 9.5	43.0	15.6	5.0	10.0	3.2	7500	6400	4500	376 473 001
		7.9 - 11.1	44.5	17.2	5.0	10.0	3.2	7500	6400	4500	376 487 001
		11.1 - 14.3	48.0	20.4	5.0	10.0	3.2	7500	6400	4500	376 489 001
		14.3 - 17.5	51.0	23.5	5.0	10.0	3.2	7500	6400	4500	376 482 001
		17.5 - 20.6	54.0	26.7	5.0	10.0	3.2	7500	6400	4500	376 483 001
		20.6 - 23.8	57.5	29.9	5.0	10.0	3.2	7500	6400	4500	376 485 001
		23.8 - 27.0	60.5	33.1	5.0	10.0	3.2	7500	6400	4500	376 494 001
		27.0 - 30.2	64.0	36.3	5.0	10.0	3.2	7500	6400	4500	376 496 001
		30.2 - 33.3	67.0	39.5	5.0	10.0	3.2	7500	6400	4500	376 497 001
6.4	6.8	1.6 - 4.8	42.0	13.2	6.6	13.4	3.9	13900	12500	8000	376 475 001
		3.2 - 6.4	43.5	14.8	6.6	13.4	3.9	13900	12500	8000	376 472 001
		4.8 - 7.9	45.0	16.4	6.6	13.4	3.9	13900	12500	8000	376 486 001
		6.4 - 9.5	47.0	18.0	6.6	13.4	3.9	13900	12500	8000	376 498 001
		7.9 - 11.1	48.5	19.6	6.6	13.4	3.9	13900	12500	8000	376 488 001
		9.5 - 12.7	50.0	21.2	6.6	13.4	3.9	13900	12500	8000	376 499 001
		11.1 - 14.3	51.5	22.7	6.6	13.4	3.9	13900	12500	8000	376 490 001
		12.7 - 15.9	53.3	24.3	6.6	13.4	3.9	13900	12500	8000	376 503 001
		14.3 - 17.5	55.0	25.9	6.6	13.4	3.9	13900	12500	8000	376 491 001
		15.9 - 19.1	56.5	27.5	6.6	13.4	3.9	13900	12500	8000	376 534 001
		17.5 - 20.6	58.0	29.1	6.6	13.4	3.9	13900	12500	8000	376 507 001
		20.6 - 23.8	61.0	32.2	6.6	13.4	3.9	13900	12500	8000	376 515 001
8.0	8.4	23.8 - 27.0	64.5	35.4	6.6	13.4	3.9	13900	12500	8000	376 516 001
		27.0 - 30.2	67.5	38.6	6.6	13.4	3.9	13900	12500	8000	376 517 001
		30.2 - 33.3	70.5	41.8	6.6	13.4	3.9	13900	12500	8000	376 518 001
		3.2 - 9.5	52.0	19.8	8.2	16.7	5.1	22000	22000	12000	376 519 001
		6.4 - 12.7	55.0	23.0	8.2	16.7	5.1	22000	22000	12000	376 520 001
		9.5 - 15.9	58.0	26.2	8.2	16.7	5.1	22000	22000	12000	376 521 001
		12.7 - 19.1	61.5	29.3	8.2	16.7	5.1	22000	22000	12000	376 522 001
		15.9 - 22.2	64.5	32.5	8.2	16.7	5.1	22000	22000	12000	376 523 001
		19.1 - 25.4	67.5	35.7	8.2	16.7	5.1	22000	22000	12000	376 524 001
		22.2 - 28.6	71.0	38.9	8.2	16.7	5.1	22000	22000	12000	376 525 001
		25.4 - 31.8	74.0	42.0	8.2	16.7	5.1	22000	22000	12000	376 526 001
		28.6 - 34.9	77.0	45.2	8.2	16.7	5.1	22000	22000	12000	376 527 001

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TIFAS® LockBolt

Cont'd

Nominal bolt $\varnothing$ d1 [mm]	Bore $\varnothing$ -0.2 [mm]	Grip range s [mm]	L1 max [mm]	L2 max [mm]	d1 -0.2 [mm]	d2 * [mm]	k max [mm]	Shear strength [N]	Tensile strength [N]	Clamp [N]	Article No.
9.6	10.0	3.2 - 9.5	57.5	21.4	9.8	20.0	6.3	29000	35000	17500	376 528 001
		6.4 - 12.7	60.5	24.6	9.8	20.0	6.3	29000	35000	17500	376 492 001
		9.5 - 15.9	63.5	27.8	9.8	20.0	6.3	29000	35000	17500	376 478 001
		12.7 - 19.1	67.0	30.9	9.8	20.0	6.3	29000	35000	17500	376 479 001
		15.9 - 22.2	70.0	34.1	9.8	20.0	6.3	29000	35000	17500	376 481 001
		19.1 - 25.4	73.5	37.3	9.8	20.0	6.3	29000	35000	17500	376 480 001
		22.2 - 28.6	76.5	40.5	9.8	20.0	6.3	29000	35000	17500	376 529 001
		25.4 - 31.8	79.5	43.6	9.8	20.0	6.3	29000	35000	17500	376 531 001
		28.6 - 34.9	83.0	46.8	9.8	20.0	6.3	29000	35000	17500	376 532 001

* Tolerance: $\varnothing$ 4.8: -1.0 mm; $\varnothing$ 8.0: -1.7 mm, $\varnothing$ 10.0: -2.0 mm

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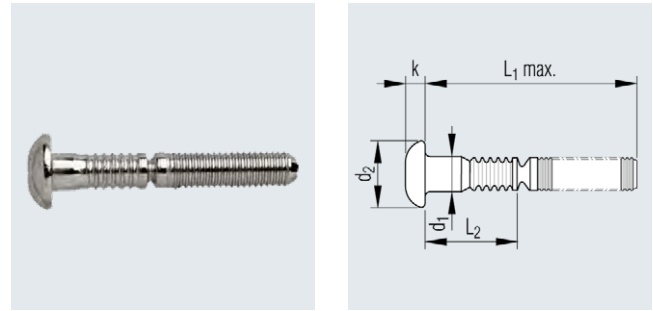
Other designs available on request.

TIFAS® LockBolt

Brazier

Material

Aluminium EN AW 2024



Nominal bolt $\varnothing$ d_1 [mm]	Bore $\varnothing$ -0.2 [mm]	Grip range s [mm]	$L_1 \text{ max}$ [mm]	$L_2 \text{ max}$ [mm]	$d_1 - 0.2$ [mm]	d_2^* [mm]	$k \text{ max}$ [mm]	Shear strength [N]	Tensile strength [N]	Clamp [N]	Article No.
4.8	5.2	1.6 - 4.8	38.5	10.8	5.0	10.0	3.2	4500	3600	2000	378 692 001
		3.2 - 6.4	40.0	12.4	5.0	10.0	3.2	4500	3600	2000	378 693 001
		4.8 - 7.9	41.5	14.0	5.0	10.0	3.2	4500	3600	2000	378 694 001
		6.4 - 9.5	43.0	15.6	5.0	10.0	3.2	4500	3600	2000	378 695 001
		7.9 - 11.1	44.5	17.2	5.0	10.0	3.2	4500	3600	2000	378 696 001
		11.1 - 14.3	48.0	20.4	5.0	10.0	3.2	4500	3600	2000	378 697 001
		14.3 - 17.5	51.0	23.5	5.0	10.0	3.2	4500	3600	2000	378 698 001
		17.5 - 20.6	54.0	26.7	5.0	10.0	3.2	4500	3600	2000	378 699 001
		20.6 - 23.8	57.5	29.9	5.0	10.0	3.2	4500	3600	2000	378 700 001
		23.8 - 27.0	60.5	33.1	5.0	10.0	3.2	4500	3600	2000	378 701 001
		27.0 - 30.2	64.0	36.3	5.0	10.0	3.2	4500	3600	2000	378 702 001
6.4	6.8	30.2 - 33.3	67.0	39.5	5.0	10.0	3.2	4500	3600	2000	378 703 001
		1.6 - 4.8	42.0	13.2	6.6	13.4	3.9	8300	7000	4000	378 725 006
		3.2 - 6.4	43.5	14.8	6.6	13.4	3.9	8300	7000	4000	378 726 006
		4.8 - 7.9	45.0	16.4	6.6	13.4	3.9	8300	7000	4000	378 727 006
		6.4 - 9.5	47.0	18.0	6.6	13.4	3.9	8300	7000	4000	378 728 001
		7.9 - 11.1	48.5	19.6	6.6	13.4	3.9	8300	7000	4000	378 729 002
		9.5 - 12.7	50.0	21.2	6.6	13.4	3.9	8300	7000	4000	378 730 002
		11.1 - 14.3	51.5	22.7	6.6	13.4	3.9	8300	7000	4000	378 731 002
		14.3 - 17.5	55.0	25.9	6.6	13.4	3.9	8300	7000	4000	378 732 002
		17.5 - 20.6	58.0	29.1	6.6	13.4	3.9	8300	7000	4000	378 733 002
		20.6 - 23.8	61.0	32.2	6.6	13.4	3.9	8300	7000	4000	378 734 002
8.0	8.4	23.8 - 27.0	64.5	35.4	6.6	13.4	3.9	8300	7000	4000	378 735 002
		27.0 - 30.2	67.5	38.6	6.6	13.4	3.9	8300	7000	4000	378 736 002
		30.2 - 33.3	70.5	41.8	6.6	13.4	3.9	8300	7000	4000	378 737 002
		3.2 - 9.5	52.0	19.8	8.2	16.7	5.1	13000	12500	6500	378 760 007
		6.4 - 12.7	55.0	23.0	8.2	16.7	5.1	13000	12500	6500	378 761 007
		9.5 - 15.9	58.0	26.2	8.2	16.7	5.1	13000	12500	6500	378 762 007
		12.7 - 19.1	61.5	29.3	8.2	16.7	5.1	13000	12500	6500	378 763 007
		15.9 - 22.2	64.5	32.5	8.2	16.7	5.1	13000	12500	6500	378 764 007
		19.1 - 25.4	67.5	35.7	8.2	16.7	5.1	13000	12500	6500	378 765 007
		22.2 - 28.6	71.0	38.9	8.2	16.7	5.1	13000	12500	6500	378 766 007
		25.4 - 31.8	74.0	42.0	8.2	16.7	5.1	13000	12500	6500	378 767 007
9.6	10.0	28.6 - 34.9	77.0	45.2	8.2	16.7	5.1	13000	12500	6500	378 768 007
		3.2 - 9.5	57.5	21.4	9.8	20.0	6.3	18500	18500	9500	378 775 001
		6.4 - 12.7	60.5	24.6	9.8	20.0	6.3	18500	18500	9500	378 776 001

Continued on next page

TIFAS® LockBolt

Cont'd

Nominal bolt $\varnothing$ d1 [mm]	Bore $\varnothing$ -0.2 [mm]	Grip range s [mm]	L1 max [mm]	L2 max [mm]	d1 -0.2 [mm]	d2 * [mm]	k max [mm]	Shear strength [N]	Tensile strength [N]	Clamp [N]	Article No.
9.6	10.0	9.5 - 15.9	63.5	27.8	9.8	20.0	6.3	18500	18500	9500	378 777 001
		12.7 - 19.1	67.0	30.9	9.8	20.0	6.3	18500	18500	9500	378 778 001
		15.9 - 22.2	70.0	34.1	9.8	20.0	6.3	18500	18500	9500	378 779 001
		19.1 - 25.4	73.5	37.3	9.8	20.0	6.3	18500	18500	9500	378 780 001
		22.2 - 28.6	76.5	40.5	9.8	20.0	6.3	18500	18500	9500	378 781 001
		25.4 - 31.8	79.5	43.6	9.8	20.0	6.3	18500	18500	9500	378 782 001
		28.6 - 34.9	83.0	46.8	9.8	20.0	6.3	18500	18500	9500	378 783 001

*Tolerance: $\varnothing$ 4.8: -1.0 mm; $\varnothing$ 8.0: -1.7 mm, $\varnothing$ 9.6: -2.0 mm

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.

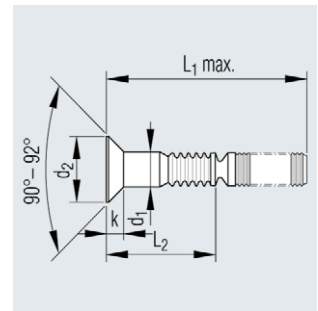
Other designs available on request.

TIFAS® LockBolt

Countersunk 90°

Material

Steel, tempered (Type 5) EN 10263-4, galvanised, passivated



Nominal bolt $\varnothing$ d1 [mm]	Bore $\varnothing$ -0.2 [mm]	Grip range s [mm]	L1 max [mm]	L2 max [mm]	d1 -0.2 [mm]	d2 * [mm]	k max [mm]	Shear strength [N]	Tensile strength [N]	Clamp [N]	Article No.
6.4	6.8	4.8 - 7.9	45.0	16.4	6.6	12.0	3.0	13500	13300	8000	378 652 001
		7.9 - 11.1	48.5	19.6	6.6	12.0	3.0	13500	13300	8000	378 653 001
		11.1 - 14.3	51.5	22.7	6.6	12.0	3.0	13500	13300	8000	378 655 001
		14.3 - 17.5	55.0	25.9	6.6	12.0	3.0	13500	13300	8000	378 656 001
		17.5 - 20.6	58.0	29.1	6.6	12.0	3.0	13500	13300	8000	378 657 001
		20.6 - 23.8	61.0	32.2	6.6	12.0	3.0	13500	13300	8000	378 658 001
		23.8 - 27.0	64.5	35.4	6.6	12.0	3.0	13500	13300	8000	378 659 001
		27.0 - 30.2	67.5	38.6	6.6	12.0	3.0	13500	13300	8000	378 660 001
		30.2 - 33.3	70.5	41.8	6.6	12.0	3.0	13500	13300	8000	378 661 001
9.6	10.0	6.4 - 12.7	60.5	24.6	9.8	18.0	4.4	30500	28000	17800	376 675 001
		9.5 - 15.9	63.5	27.8	9.8	18.0	4.4	30500	28000	17800	376 676 001
		12.7 - 19.1	67.0	30.9	9.8	18.0	4.4	30500	28000	17800	376 677 001
		15.9 - 22.2	70.0	34.1	9.8	18.0	4.4	30500	28000	17800	376 678 001
		19.1 - 25.4	73.5	37.3	9.8	18.0	4.4	30500	28000	17800	376 679 001
		22.2 - 28.6	76.5	40.5	9.8	18.0	4.4	30500	28000	17800	376 680 001
		25.4 - 31.8	79.5	43.6	9.8	18.0	4.4	30500	28000	17800	376 681 001
		28.6 - 34.9	82.5	46.8	9.8	18.0	4.4	30500	28000	17800	376 682 001
		6.4 - 12.7	60.5	24.6	9.8	18.0	4.4	30500	28000	17800	377 180 001
		19.1 - 25.4	73.5	37.3	9.8	18.0	4.4	30500	28000	17800	378 595 001

* Tolerance: $\varnothing$ 6.4: -1.0 mm; $\varnothing$ 9.6: -1.2 mm

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.

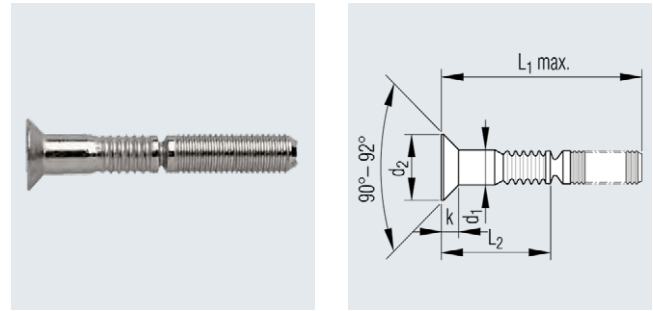
Other designs available on request.

TIFAS® LockBolt

Countersunk 90°

Material

Steel, tempered (Type 8) EN 163-4, galvanised, passivated



Nominal bolt ø d1 [mm]	Bore ø -0.2 [mm]	Grip range s [mm]	L1 max [mm]	L2 max [mm]	d1 -0.2 [mm]	d2 * [mm]	k max [mm]	Shear strength [N]	Tensile strength [N]	Clamp [N]	Article No.
4.8	5.2	3.2 - 6.4	40.0	12.4	5.0	9.3	2.6	10800	9700	5300	376 569 001
		4.8 - 7.9	41.5	14.0	5.0	9.3	2.6	10800	9700	5300	376 570 001
		7.9 - 11.1	44.5	17.2	5.0	9.3	2.6	10800	9700	5300	376 571 001
		11.1 - 14.3	48.0	20.4	5.0	9.3	2.6	10800	9700	5300	376 572 001
		14.3 - 17.5	51.0	23.5	5.0	9.3	2.6	10800	9700	5300	376 573 001
		17.5 - 20.6	54.0	26.7	5.0	9.3	2.6	10800	9700	5300	376 574 001
		20.6 - 23.8	57.5	29.9	5.0	9.3	2.6	10800	9700	5300	376 575 001
		23.8 - 27.0	60.5	33.0	5.0	9.3	2.6	10800	9700	5300	376 576 001
		27.0 - 30.2	64.0	36.3	5.0	9.3	2.6	10800	9700	5300	376 577 001
		30.2 - 33.3	67.0	39.5	5.0	9.3	2.6	10800	9700	5300	376 578 001
8.0	8.4	3.2 - 9.5	52.0	19.8	8.2	15.0	3.7	29200	26300	18600	378 650 007
		6.4 - 12.7	55.0	23.0	8.2	15.0	3.7	29200	26300	18600	378 651 007
		9.5 - 15.9	58.0	26.2	8.2	15.0	3.7	29200	26300	18600	378 662 007
		12.7 - 19.1	61.5	29.3	8.2	15.0	3.7	29200	26300	18600	378 664 007
		15.9 - 22.2	64.5	32.5	8.2	15.0	3.7	29200	26300	18600	378 665 007
		19.1 - 25.4	67.5	35.7	8.2	15.0	3.7	29200	26300	18600	378 666 007
		22.2 - 28.6	71.0	38.9	8.2	15.0	3.7	29200	26300	18600	378 667 007
		25.4 - 31.8	74.0	42.0	8.2	15.0	3.7	29200	26300	18600	378 668 007
		28.6 - 34.9	77.0	45.2	8.2	15.0	3.7	29200	26300	18600	378 669 007

* Tolerance: ø 4.8: -1.0 mm; ø 8.0: -1.1 mm

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.

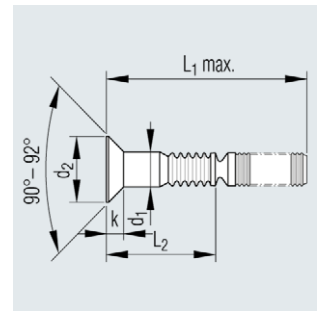
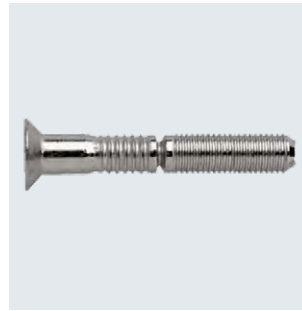
Other designs available on request.

TIFAS® LockBolt

Countersunk

Material

Aluminium EN AW 2024



Nominal bolt $\varnothing$ d1 [mm]	Bore $\varnothing$ -0.2 [mm]	Grip range s [mm]	L1 max [mm]	L2 max [mm]	d1 -0.2 [mm]	d2 * [mm]	k max [mm]	Shear strength [N]	Tensile strength [N]	Clamp [N]	Article No.
4.8	5.2	3.2 - 6.4	40.0	12.4	5.0	9.3	2.6	4500	3600	2000	376 551 001
		4.8 - 7.9	41.5	14.0	5.0	9.3	2.6	4500	3600	2000	376 552 001
		6.4 - 9.5	43.0	15.6	5.0	9.3	2.6	4500	3600	2000	376 553 001
		7.9 - 11.1	44.5	17.2	5.0	9.3	2.6	4500	3600	2000	376 554 001
		11.1 - 14.3	48.0	20.4	5.0	9.3	2.6	4500	3600	2000	376 555 001
		14.3 - 17.5	51.0	23.5	5.0	9.3	2.6	4500	3600	2000	376 556 001
		17.5 - 20.6	54.0	26.7	5.0	9.3	2.6	4500	3600	2000	376 557 001
		23.8 - 27.0	60.5	33.1	5.0	9.3	2.6	4500	3600	2000	376 559 001
		27.0 - 30.2	64.0	36.3	5.0	9.3	2.6	4500	3600	2000	376 560 001
		30.2 - 33.3	67.0	39.5	5.0	9.3	2.6	4500	3600	2000	376 561 001
6.4	6.8	4.8 - 7.9	45.0	16.4	6.6	12.0	3.0	8300	7000	4000	376 562 001
		7.9 - 11.1	48.5	19.6	6.6	12.0	3.0	8300	7000	4000	376 563 001
		11.1 - 14.3	51.5	22.7	6.6	12.0	3.0	8300	7000	4000	376 564 001
		14.3 - 17.5	55.0	25.9	6.6	12.0	3.0	8300	7000	4000	376 565 001
		17.5 - 20.6	58.0	29.1	6.6	12.0	3.0	8300	7000	4000	376 566 001
		20.6 - 23.8	61.0	32.2	6.6	12.0	3.0	8300	7000	4000	376 567 001
		23.8 - 27.0	64.5	35.4	6.6	12.0	3.0	8300	7000	4000	376 568 001
		27.0 - 30.2	67.5	38.6	6.6	12.0	3.0	8300	7000	4000	376 579 001
8.0	8.4	30.2 - 33.3	70.5	41.8	6.6	12.0	3.0	8300	7000	4000	376 580 001
		3.2 - 9.5	52.0	19.8	8.2	15.0	3.7	13000	12500	6500	376 581 007
		6.4 - 12.7	55.0	23.0	8.2	15.0	3.7	13000	12500	6500	376 582 007
		9.5 - 15.9	58.0	26.2	8.2	15.0	3.7	13000	12500	6500	376 583 007
		12.7 - 19.1	61.5	29.3	8.2	15.0	3.7	13000	12500	6500	376 584 007
		15.9 - 22.2	64.5	32.5	8.2	15.0	3.7	13000	12500	6500	376 585 007
		19.1 - 25.4	67.5	35.7	8.2	15.0	3.7	13000	12500	6500	376 586 007
		22.2 - 28.6	71.0	38.9	8.2	15.0	3.7	13000	12500	6500	376 587 007
		25.4 - 31.8	74.0	42.0	8.2	15.0	3.7	13000	12500	6500	376 588 007
		28.6 - 34.9	77.0	45.2	8.2	15.0	3.7	13000	12500	6500	376 589 007
9.6	10.0	6.4 - 12.7	60.5	24.5	9.8	18.0	4.4	18500	18500	9500	376 590 001
		9.5 - 15.9	63.5	27.7	9.8	18.0	4.4	18500	18500	9500	376 591 001
		12.7 - 19.1	67.0	30.9	9.8	18.0	4.4	18500	18500	9500	376 592 001
		15.9 - 22.2	70.0	34.1	9.8	18.0	4.4	18500	18500	9500	376 593 001
		19.1 - 25.4	73.5	37.3	9.8	18.0	4.4	18500	18500	9500	376 594 001
		22.2 - 28.6	76.5	40.5	9.8	18.0	4.4	18500	18500	9500	376 595 001
		25.4 - 31.8	79.5	43.6	9.8	18.0	4.4	18500	18500	9500	376 596 001
		28.6 - 34.9	82.5	46.8	9.8	18.0	4.4	18500	18500	9500	376 597 001

* Tolerance: $\varnothing$ 4.8: -1.0 mm; $\varnothing$ 6.4: -1.0 mm; $\varnothing$ 8.0: -1.1 mm; $\varnothing$ 9.6: -1.2 mm

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.

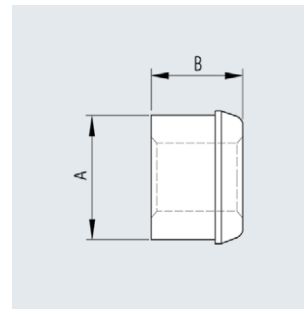
TIFAS® LockBolt

Standard collar

Material



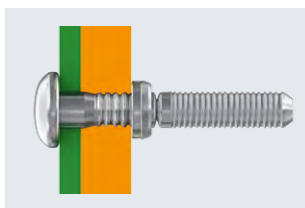
Stahl EN 10263-2 galvanised, passivated



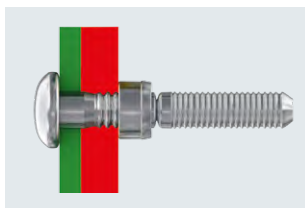
For nominal bolt ø			Article No.
[mm]	A min [mm]	B max [mm]	
4.8	7.7	7.2	376 305 001
6.4	10.1	8.2	376 307 001
8.0	12.3	9.5	376 308 001
9.5	14.9	11.9	376 310 001

Other designs available on request.

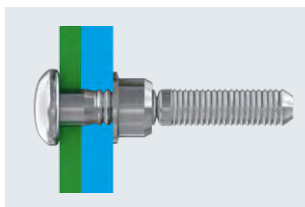
Please note:



Low-profile collar = larger grip range



Standard collar = see tables for grip range



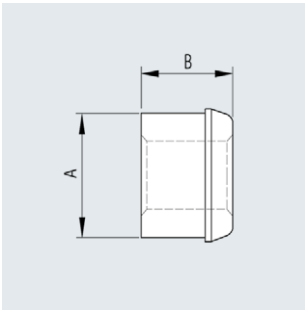
Flanged collar = smaller grip range

TIFAS® LockBolt

Standard collar

Material

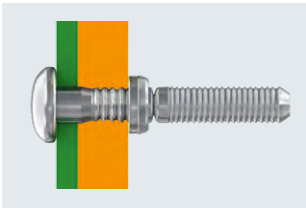
Stainless steel 1.4567 EN 10263-5



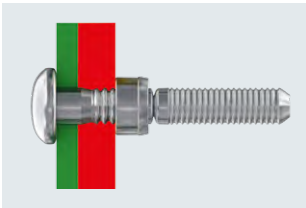
For nominal bolt ø	A min	B max	Article No.
[mm]	[mm]	[mm]	
4.8	7.7	6.2	376 370 001
6.4	10.1	8.2	376 371 001
8.0	12.3	9.5	376 372 001
9.6	14.9	11.9	376 373 001

Other designs available on request.

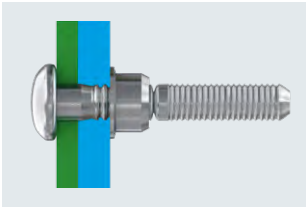
Please note:



Low-profile collar = larger grip range



Standard collar = see tables for grip range



Flanged collar = smaller grip range

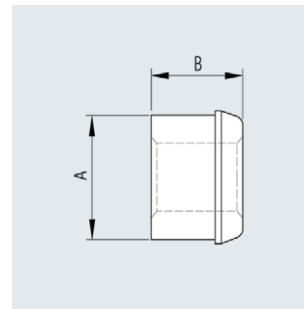
TIFAS® LockBolt

Standard collar

Material



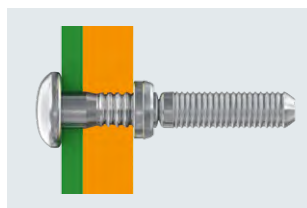
Aluminium EN AW 6061



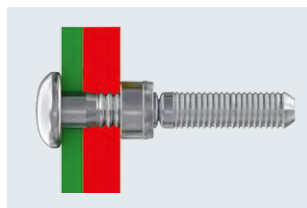
For nominal bolt ø			Article No.
[mm]	A min [mm]	B max [mm]	
4.8	7.7	6.2	376 395 001
6.4	10.1	8.2	376 397 001
8.0	12.3	9.5	376 398 001
9.6	14.9	11.9	376 399 001

Other designs available on request.

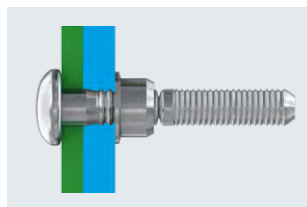
Please note:



Low-profile collar = larger grip range



Standard collar = see tables for grip range



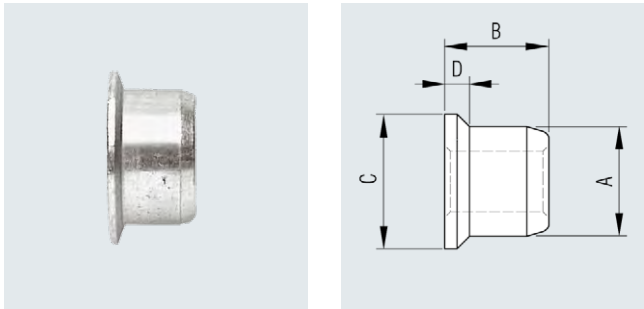
Flanged collar = smaller grip range

TIFAS® LockBolt

Flanged collar

Material

Stahl EN 10263-2 galvanised, passivated

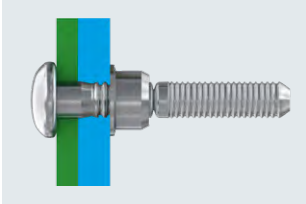


For nominal bolt ø					Article No.
[mm]	A min [mm]	B max [mm]	C max [mm]	D * [mm]	
4.8	7.7	7.0	10.0	1.6	376 325 001
6.4	10.1	9.5	13.2	2.0	376 327 001
8.0	12.3	10.6	16.4	2.4	376 328 001
9.6	14.9	13.3	19.7	3.2	376 330 001

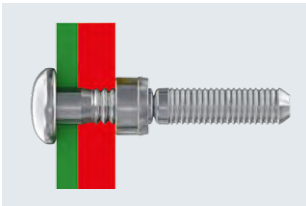
* If using flanged collars, the grip range will be that of a standard collar minus dimension D.

Other designs available on request.

Please note:



Flanged collar = grip range
reduces by dimension D



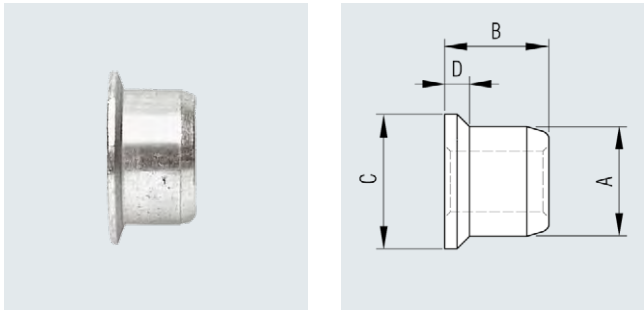
Standard collar = see tables for grip range

TIFAS® LockBolt

Flanged collar

Material

Stainless steel 1.4567 EN 10263-5

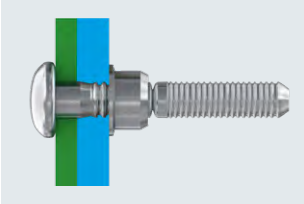


For nominal bolt ø					Article No.
[mm]	A min [mm]	B max [mm]	C max [mm]	D * [mm]	
4.8	7.7	7.0	10.0	1.6	376 386 001
6.4	10.1	9.5	13.2	2.0	376 387 001
8.0	12.3	10.6	16.4	2.4	376 388 001
9.6	14.9	13.3	19.7	3.2	376 389 001

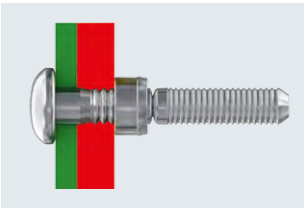
* If using flanged collars, the grip range will be that of a standard collar minus dimension D.

Other designs available on request.

Please note:



Flanged collar = grip range
reduces by dimension D



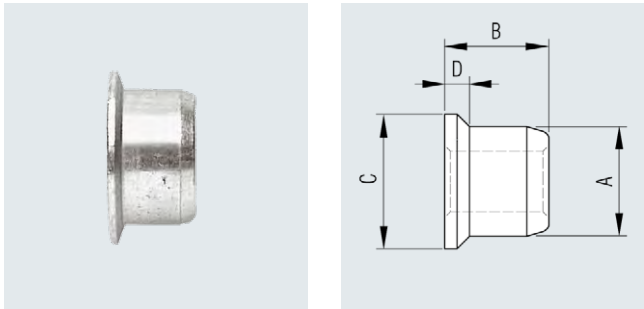
Standard collar = see tables for grip range

TIFAS® LockBolt

Flanged collar

Material

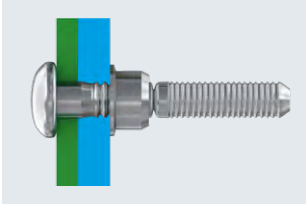
Aluminium EN AW 6061



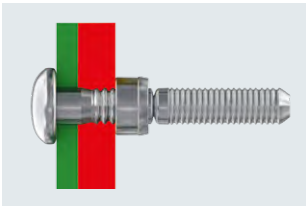
For nominal bolt ø					Article No.
[mm]	A min [mm]	B max [mm]	C max [mm]	D * [mm]	
4.8	7.7	7.0	10.0	1.6	376 355 001
6.4	10.1	9.5	13.2	2.0	376 390 001
8.0	12.3	10.6	16.4	2.4	376 391 001
9.6	14.9	13.3	19.7	3.2	376 360 001

* If using flanged collars, the grip range will be that of a standard collar minus dimension D.
Other designs available on request.

Please note:



Flanged collar = grip range reduces by dimension D



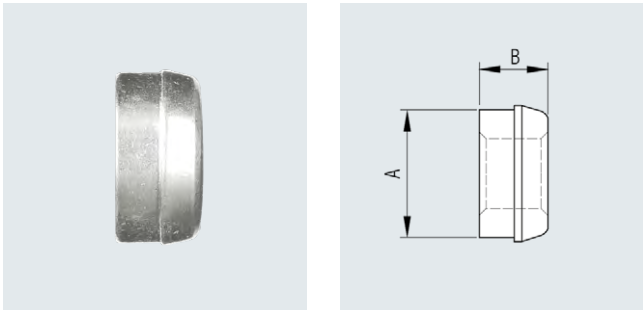
Standard collar = see tables for grip range

TIFAS® LockBolt

Low-profile collar

Material

Steel EN 10263-2 galvanised, passivated

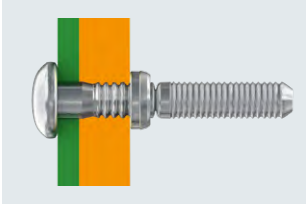


For nominal bolt ø	A min	B max	C *	Article No.
[mm]	[mm]	[mm]	[mm]	
4.8	7.7	4.3	2.4	376 315 001
6.4	10.1	5.5	3.2	376 323 001
8.0	12.3	6.5	3.2	376 318 001
9.6	14.9	8.5	4.0	376 320 001

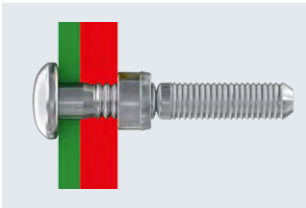
* If using low-profile collars, the grip range will be that of a standard collar plus dimension C.

Other designs available on request.

Please note:



Low-profile collar = grip range increases by dimension C



Standard collar = see tables for grip range

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.

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