



BTS

PRODUCT CATALOG



PRODUCT OVERVIEW



BEAM CLAMPS



TIMBER CONNECTORS



WING NUTS



WING SCREWS



THUMB SCREWS



CHANNEL NUTS



HAMMER HEAD BOLTS



CAP NUTS



PURLIN CLIPS



SPECIAL ITEMS

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BTSQUALITY
THAT FASTENED

THE COMPANY

As a German manufacturer of fastening and fixing elements, BTS Befestigungselemente-Technik satisfies the highest requirements of German quality. This applies to both DIN and standard parts, as well as customerspecific products created from drawings or prototypes. The complete planning and design of new parts is also possible on request.

Our strengths are processing, including drilling, thread cutting, welding and assembly as well as customer-specific packaging. We mainly work with cast parts.

The blanks from our sister company VS GmbH & Co. KG are the foundation of the high quality of our products. VS has over 100 years of experience in manufacturing thin-walled small cast products with a unit weight up to 1,500 grams. All standard qualities in blackheart and whiteheart malleable iron as well as grey iron are cast. Convince yourself of the high standards of this foundry by visiting the website www.vsguss.de.

BTS is firmly committed to its German location. As our customer you can benefit in this way from products with a consistently high quality in accordance with international standards.

In addition to the products from our own production we have established a trading program that is constantly being expanded. Besides standard parts we offer meanwhile on request also special parts according to customers specification in materials cast iron, steel, stainless steel, brass and aluminium.

CERTIFICATES AND APPROVALS



BTS QUALITY THAT FASTENED



**OUR
PRODUCTS**

BEAM CLAMPS

PRODUCT BENEFITS

Product benefits of approved beam clamps:

- » Enable use in certified fixed sprinkler systems
- » Load values assured by independent approval bodies
- » Set screw with cup point end to prevent sideways slipping off the I-Beam
- » In case of beam clamps with plain hole a simple height adjustment can also be undertaken after assembling
- » Pre-assembly with threaded rod and lock nut possible

Further product benefits of BTS beam clamps:

- » Malleable cast iron body, made in Germany
- » Prior to processing, inspection of all cast parts for visible bubbles
- » Set screws and lock nuts of all beam clamps can be tightened using just one and the same spanner
- » Type TK and TKN are approved for both pull direction against the set screw mounting and pull direction against lower jaw
- » Additional UL certificate for type TK and TKN for use in electrical installations
- » Elevated marking to prevent twisting of the beam clamps during tightening of the set screw (internationally registered design DM/0081 575)
- » Complete warehouse programme for threaded rods from M6 to M16
- » Clamping range from 18–45 mm available in stock
- » Zinc-plated, zinc flake coating and hot-dip galvanised as standard

On request:

- » 3.1 Certification of German origin for cast
- » With cone point set screw
- » Beam clamps with inch thread
- » Special finishes and special packaging

Also available in A4 (see separate product sheet)



BEAM CLAMPS

For securing to beams without drilling or welding for: sprinkler systems, heating, ventilation and air-conditioning systems, acoustics systems, electrical, piping and sanitation fittings, engineering and steel structures.

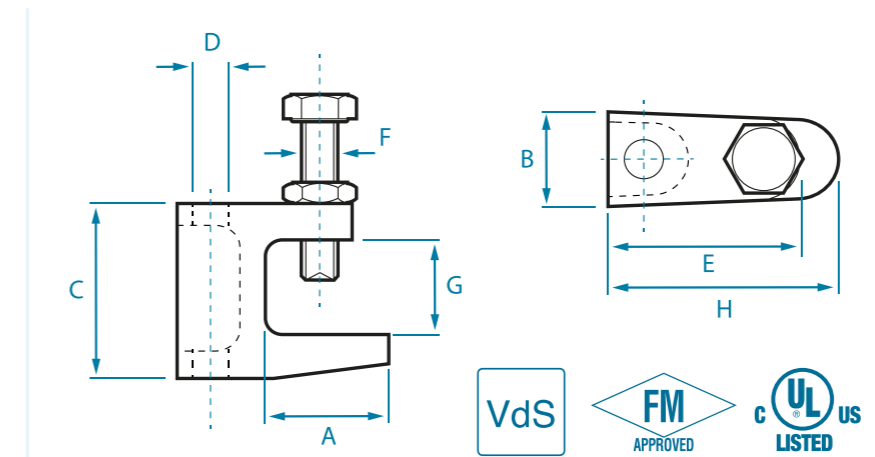


Fig. shows TK12

The raised marking serves as anti-twist protection when tightening the set screw and is protected by internationally registered design DM/0081575!

Model	A (approx. mm)	B (approx. mm)	C (approx. mm)	D	E (approx. mm)	F (approx. mm)	G (approx. mm)	H (approx. mm)	Weight (approx. g)	Safe working loads (N)	Certificates
TKN 8	21	19	35	M8 / ø 9	35	M8	18	38	85	1200	VdS, UL
	21	19	35	M6 / ø 7	35	M8	18	38	85	1200	UL
TK 10	29	21	45	M8 / ø 9	41	M10	23	50	145	2500	VdS, UL
	29	21	45	M6 / ø 7	41	M10	23	50	145	2500	UL
TKN 10	23	21	42	M10 / ø 11	41	M10	20	44	143	2500	VdS, UL, FM
TK 12	32	23,5	54	M12 / ø 13	48	M10	26	58	216	3500	VdS, UL, FM
TK 16	26	29,5	58	M10, M12, M16 / ø 11, ø 13, ø 17	55	M12	28	58	335	5500	VdS, UL, FM
TKC*	44	55	78	ø 13	59	M12	45	71	551	3500	-

* Please note the different packaging unit and the different material.



Fig. shows TKC

- » As far as possible, VdS, FM and UL approved
- » Full range for M6 – M16 threaded rods from stock
- » Inch thread on request
- » Distances between jaws from 18 – 45 mm
- » Please also note "Product benefits" information sheet

PACKAGING:	50 pcs in box or according to customer specification / TKC: 20 pcs in box
MATERIAL:	Malleable cast iron body, general tolerances acc. to DIN EN ISO 8062-3 CT8 TKC: steel casting GS-60
SCOPE OF SUPPLY:	Mounted with DIN 933 8.8 hex bolt, end with cup point (CP) acc. to EN ISO 4753 and DIN 439 lock nut
SURFACE FINISH:	Zinc-plated acc. to DIN EN ISO 4042, hot-dip galvanised acc. to DIN EN ISO 1461, or also coated with zinc flake (e.g. Geomet)

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

BEAM CLAMPS

WITH ZINC FLAKE COATING



Fig. shows models TKN8, TKN10 and TK12 with Geomet 500B coating.

Zinc flake coatings are used in all areas of application for corrosion protection of fastening elements and all kinds of metal parts.

DETAILS OF THIS SURFACE

- » High mechanical and chemical resistance with low coat thickness thanks to a combination of the barrier effect of flake structure, controlled cathodic protection of zinc and passivation of zinc and aluminium
- » Meets specifications of automotive industry worldwide: Salt spray test in accordance with DIN EN ISO 9227 NSS/ASTM B117
- » No hydrogen embrittlement
- » Chromium VI-free
- » Fulfils REACH requirements
- » Standard coating acc. to DIN EN ISO 10683 f/ZnL/nc/x/x/960h/x, 8-10µm, >36g/m², e.g. Geomet 500B

Advantages of these beam clamps:

- » **Highly corrosion resistant**
- » **Economical alternative to hot-dip galvanised beam clamps, thanks to improved production characteristics**
- » **Small volumes can also be supplied with TKN8 Ø9, TKN10 Ø11 and TK12 Ø13mm**
- » **Accurate fit, free moving**
- » **Attractive appearance**

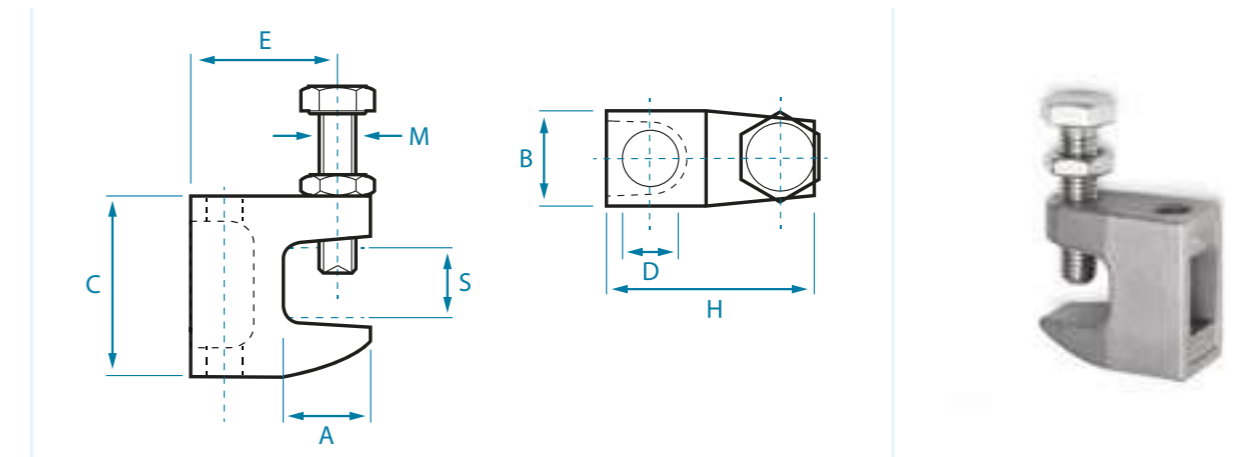
All of the dimensions stated above are approximate and may deviate both upwards and downwards.

BEAM CLAMPS

STAINLESS STEEL

**NEW
IMPROVED
VERSION!
AVAILABLE NOW!**

For securing to beams in the following areas: sprinkler systems, heating, ventilation and air-conditioning systems, acoustics systems, electrical, piping and sanitation fittings, engineering and steel structures.



Safe working loads [N]	For threaded rods	Dimensions [mm]							Icon
		S	A	B	C	D	E	H	
1200	M8	0-16,5	21,5	22,0	38,4	9,0	34,0	41,5	50
1800	M10	0-16,5	21,5	22,0	38,4	11,0	34,0	41,5	50
2000	M12	0-16,5	21,5	22,0	38,4	13,0	34,0	41,5	50

Advantages compared to the previous version:

- » **No washers needed**
- » **Easier Installation and improved handling**
- » **Higher safe working loads**
- » **Due to a longer lead of the thread rod, no premature bending**

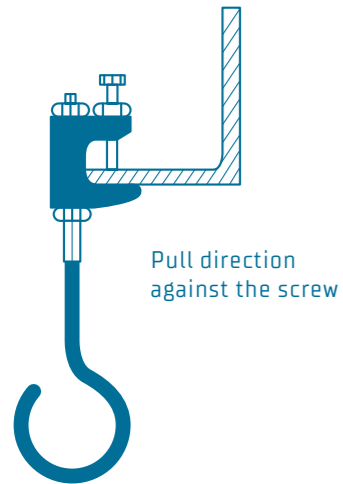
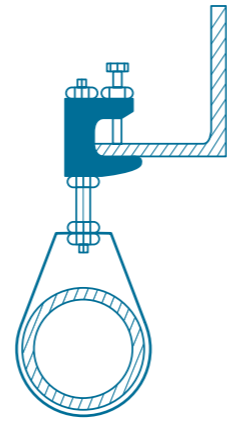
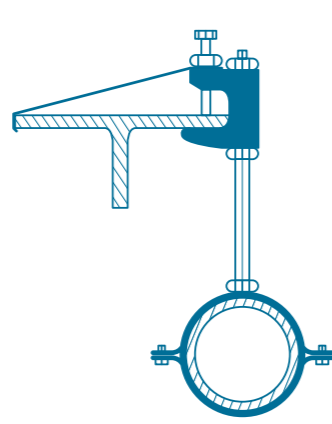
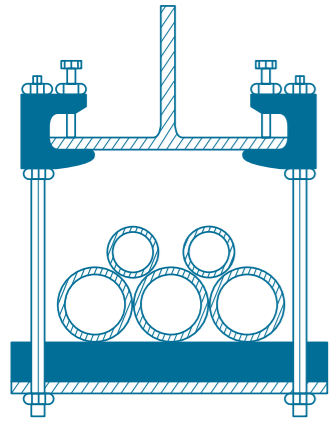
- » **With DIN 933 M10x40 set screw with cup point [CP] and DIN 439 hex nut**
- » **Marking "9mm", "11mm" or "13mm" and material**

MATERIAL: Stainless steel A4 (1.4401), A2 (1.4301) on request

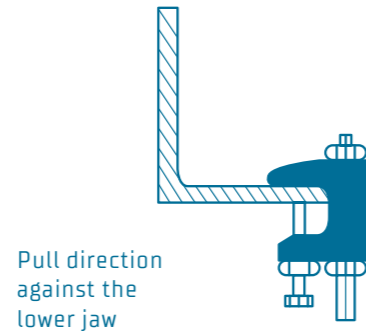
SCOPE OF SUPPLY: Mounted with DIN 933 hex bolt, end with cup point [CP] acc. to EN ISO 4753 and DIN 439 lock nut

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

BEAM CLAMPS



Pull direction against the screw



Pull direction against the lower jaw

Our type TK and TKN beam clamps can be fixed with the pull direction against the set screw or against the lower jaw. Please see our installation instructions for further information.

SAFETY STRAPS

According to VdS regulations the use of safety straps for beam clamps is compulsory for fixing pipes larger DN65. All beam clamps can be secured with a safety strap against sideways slipping from the beam. Responsible authority regulations are to be observed.



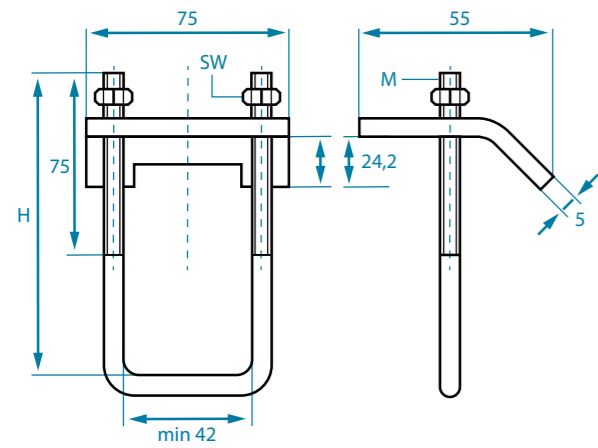
Fits	Length (mm)	Width (mm)	Thickness (mm)	Hole-ø (mm)	
TKN 8, TK 10, TKN 10, TK 12	350	25	3	10,5 / 12,5	12
TK 16	400	40	3	12,5 / 17,0	12

MATERIAL: Steel
 SURFACE FINISH: Zinc-plated acc. to DIN EN ISO 4042

BEAM CLAMPS WITH U-BOLT

TO FIX STRUT CHANNELS TO I-BEAMS WITHOUT DRILLING AND WELDING

NEW IN OUR PRODUCT RANGE!
AVAILABLE NOW

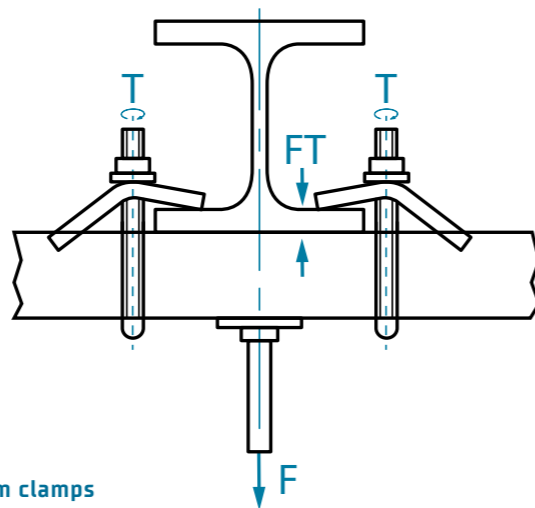


Beam clamps with U-bolt					
Model		H [mm]	M	SW [mm]	
BTK 110	41/21- 41/41	110	M10	17	10
BTK 150	41/62 - 41/83	150	M10	17	10

Assembly instructions

The following safe working loads "F" apply for BTS beam clamps with U-Bolt and strut channels for static load. Beam clamps have to be used always in pairs (like shown in the picture on the right side).

The maximum safe working load of the used strut channel has to be observed. BTS provides no guarantee for the safe working loads of the channel.

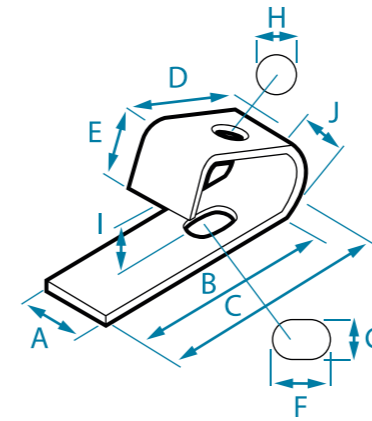


Model	T [Nm]	Max. beam thickness FT [mm]	F [N]
BTK 110	22	18	3200
BTK 150	22	18	3200

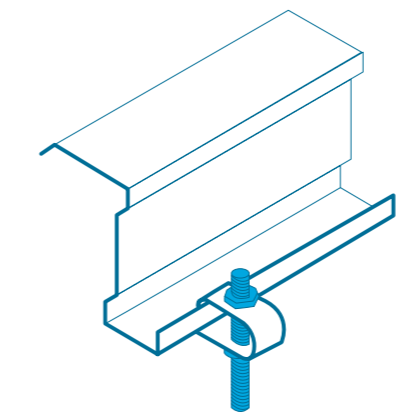
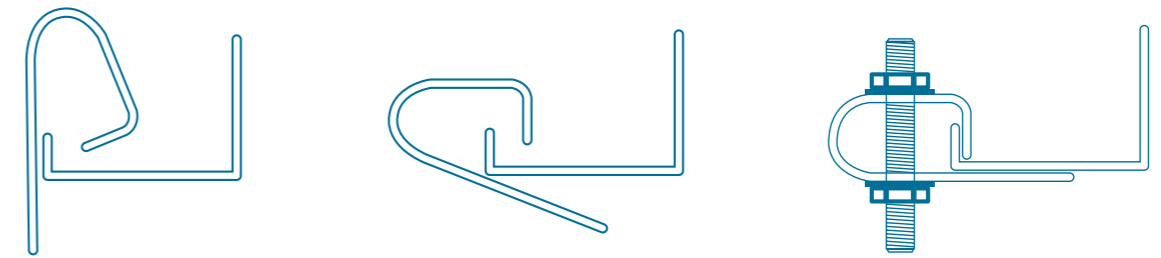
- » Completely pre-installed mounting kit with plate, hexagon nuts and washers
- » U-Bolt for centring the strut channel
- » The strut channel can be adjusted even after installing the beam clamps

MATERIAL: Steel min. hardness 130 HB
 SCOPE OF DELIVERY: U-Bolt, base plate, 2 hexagon nuts, 2 washers
 SURFACE: Zinc-plated acc. to DIN EN ISO 4042, hot-dip galvanized

PURLIN CLIPS



A	B	C	D	E	F	G	H	I	J	THICKNESS
25	77	85,5	49	22	17,5	12	11	~17	23	3



The purlin clip enables the suspension of Z-shaped purlins.

PACKAGING: 100 Pcs/box
 MATERIAL: Steel, zinc-plated acc. to DIN EN ISO 4042



SIMPLEX
TIMBER CONNECTORS



TIMBER
CONNECTORS

SIMPLEX TIMBER CONNECTORS

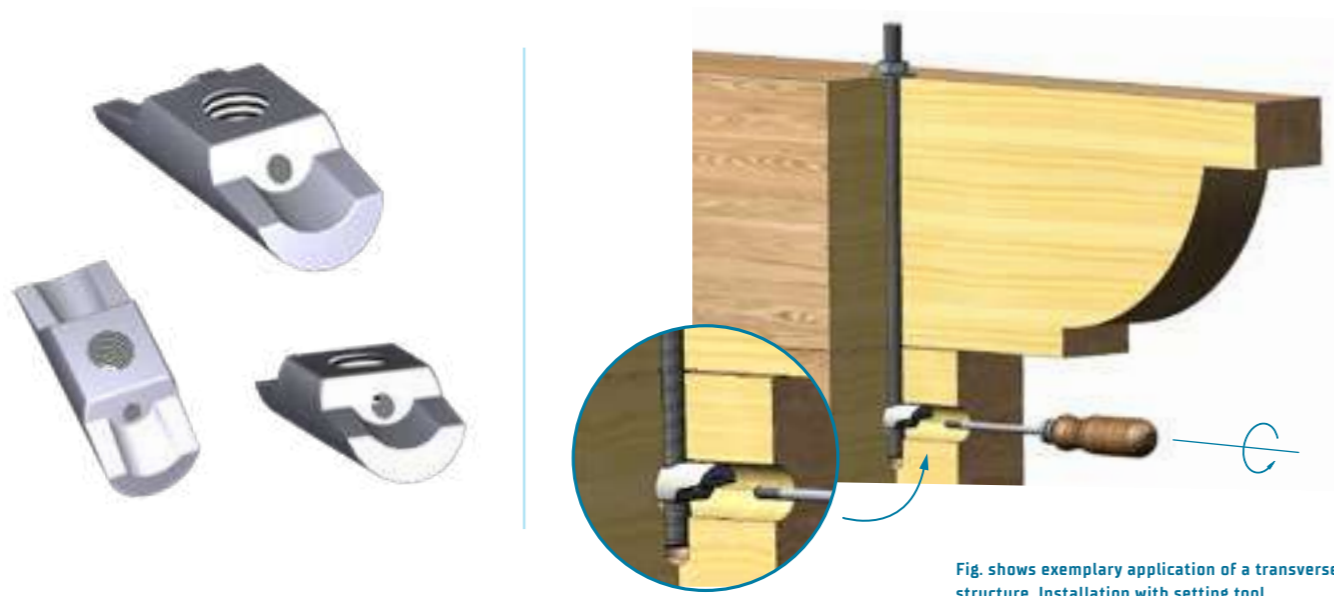


Fig. shows exemplary application of a transverse structure. Installation with setting tool.

- » Available in all popular dimensions and acc. to fire resistance class F30B
- » All SIMPLEX connectors with M5 cross-thread to mount with a setting tool
- » Made in Europe

SIMPLEX connectors are used to secure position of specifically designed wooden dowels. They are the perfect solution for lengthwise and transverse connections in timber structures, especially in challenging structures and for increased fire safety requirements.

- » Perfect for use against shear forces, especially combined with BTS plate connectors type C10 and C11 acc. to EN912. Compared to structures with mortise and tenon joints this method is easier and cheaper.
- » The timber connection parts can be installed completely concealed.
- » Types S3 can be used acc. to the standards of fire resistance class F30B after a prior verification by the user.

Simplex Timber Connectors			
Type	Thread	Dimensions [LxW in mm]	
S1	M12	54 x 22	200
S2	M16	72 x 28	100
S3	M20	92 x 38	50

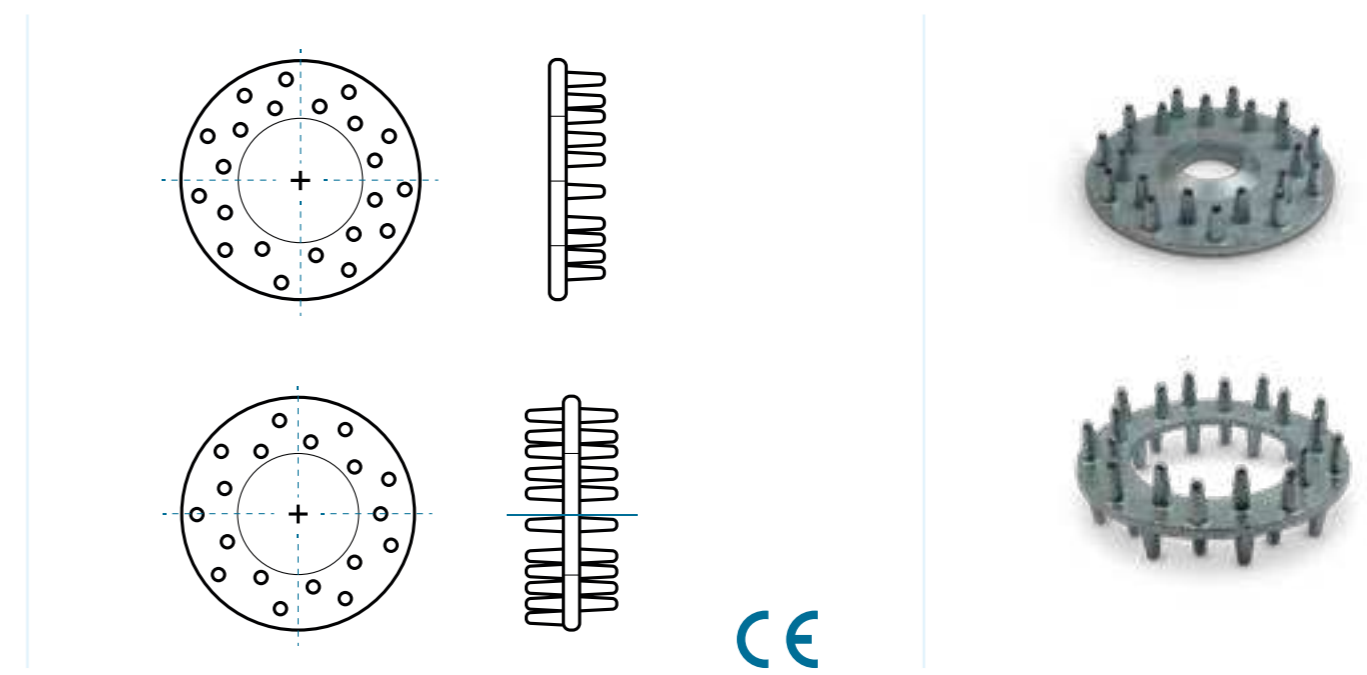
Simplex Timber Connectors acc. to F30B			
Type	Thread	Dimensions [LxW in mm]	
S3	M12	92 x 38	50
S3	M16	92 x 38	50
S3	M20	92 x 38	50

MATERIAL: Malleable cast iron EN-GJMW-400-5 acc. to DIN EN 1562
 SURFACE FINISH: Zinc-plated A2K acc. to DIN EN ISO 4042, further finishes on request
 MARKING: All types with marking S1, S2, S3 and manufacturer code

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

TOOTHED PLATE CONNECTOR EN 912 (DIN 1052)

TYP C 11 SINGLE-SIDED AND C 10 DOUBLE-SIDED



C 11 single-sided					
Diameter approx. mm	50	65	80	95	115
Quantity per bundle	50	50	25	25	25
Weight approx. kg/100 pcs	4,600	8,400	13,000	15,500	21,500
for bolts	M 12	M 16	M 20	M 24	M 24

C 10 double-sided					
Diameter approx. mm	50	65	80	95	115
Quantity per bundle	50	50	25	25	25
Weight approx. kg/100 pcs	4,440	8,250	10,520	13,400	17,600

- » Complete formation of the pins acc. to DIN 1052, only possible due to natural sand production
- » Final inspection for cracking and missing pins when bundling
- » Precise formation of the inner bore = savings of time and labour when fastening the connector at the assembly site
- » With certificate of compliance 3.1 acc. to EN 10204 – if required
- » Made in Germany
- » The CE declaration of performance is available for downloading on our website

MATERIAL: Malleable cast iron EN-GJMB-350-10 acc. to DIN EN 1562
 SURFACE FINISH: Non-plated, zinc-plated acc. to DIN EN ISO 4042, hot-dip galvanised, further finishes on request

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

1. **Product type:** Toothed plated Connector with teeth (double-sided)
2. **Identification:** C10
3. **Purpose:** For timber products intended for load bearing
4. **Manufacturer:** BTS Befestigungselemente-Technik GmbH, Max-Planck-Str. 1, 54439 Saarburg
5. **Authorised representative:** N/A
6. **Rating system:** 2+

7./8. **Technical specifications & notified offices:**

	Name	No.	Rating system	Reference document	EAD (ETAG) No. / EN Standard
Technical rating	BTS GmbH Saarburg	-	2+	BTS ITT Report Type C10	EN 14545:2008
In-house production inspection	Karlsruhe Institute of Technology	0769	2+	0769-CPR-6154/01	-

9. **Declared performance:**

Key characteristics	Performance	Technical specification
Designation	Toothed Plate Connector C10	
Dimensions		
Diameter - dc (mm)	50 65 80 95 115	EN 912
Mechanical strength and rigidity		
Characteristic load capacity - R c,k (kN)	8,81 13,19 17,99 23,33 31,02	EN 14545 section 6.1.3; EN 13271
Slip modulus - K ser (kN/mm ²)	7,86 10,29 12,65 15,04 18,18	EN 14545 section 6.1.3; EN 13271
Material	Malleable cast iron EN-GJMB-350-10	DIN-EN 1562
Corrosion protection	Galvanised - Fe/Zn12/B	DIN-EN-ISO 2081
	Hot-dip galvanised	DIN-EN ISO 1461 - min. 40 μm

10. The performance of the product acc. to numbers 1 and 2 corresponds to the declared performance as per number 9. The manufacturer acc. to number 4 is solely responsible for the drafting of this declaration of performance.

1. **Product type:** Toothed plated Connector with teeth (single-sided)
2. **Identification:** C11
3. **Purpose:** For timber products intended for load bearing
4. **Manufacturer:** BTS Befestigungselemente-Technik GmbH, Max-Planck-Str. 1, 54439 Saarburg
5. **Authorised representative:** N/A
6. **Rating system:** 2+

7./8. **Technical specifications & notified offices:**

	Name	No.	Rating system	Reference document	EAD (ETAG) No. / EN Standard
Technical rating	BTS GmbH Saarburg	-	2+	BTS ITT Report Type C10	EN 14545:2008
In-house production inspection	Karlsruhe Institute of Technology	0769	2+	0769-CPR-6154/01	-

9. **Declared performance:**

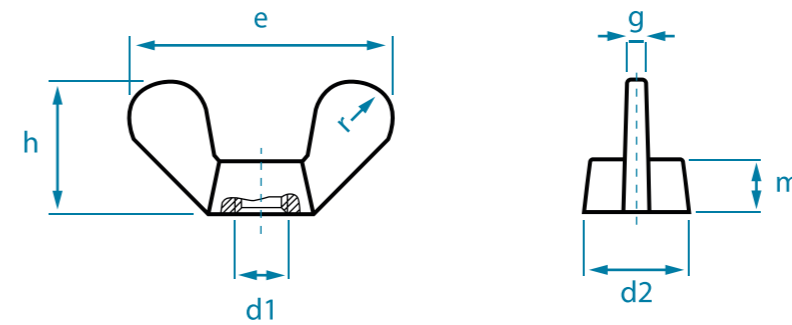
Key characteristics	Performance	Technical specification
Designation	Toothed Plate Connector C11	
Dimensions		
Diameter - dc (mm)	50 65 80 95 115	EN 912
Mechanical strength and rigidity		
Characteristic load capacity - R c,k (kN)	9,01 13,22 17,93 23,10 30,86	EN 14545 section 6.1.3; EN 13271
Slip modulus - K ser (kN/mm ²)	7,98 10,30 12,62 14,94 18,13	EN 14545 section 6.1.3; EN 13271
Material	Malleable cast iron EN-GJMB-350-10	DIN-EN 1562
Corrosion protection	Galvanised - Fe/Zn12/B	DIN-EN-ISO 2081
	Hot-dip galvanised	DIN-EN ISO 1461 - min. 40 μm

10. The performance of the product acc. to numbers 1 and 2 corresponds to the declared performance as per number 9. The manufacturer acc. to number 4 is solely responsible for the drafting of this declaration of performance.

WING NUTS AND CAP NUTS



WING NUTS DIN 315 | CAST VERSION



METRIC d1	UNC/BSW d1	DIMENSIONS						
		e	h	d2	g	m	r	
M 4	5/32"	19,0	9,5	7,0	1,5	3,9	3	500
M 5	3/16"	25,0	12,0	9,5	1,9	5,3	4	500
M 6	1/4"	31,5	16,0	11,5	1,9	6,5	5	200
M 8	5/16"	37,5	19,0	14,5	2,4	8,3	6	100
M 10	3/8"	49,5	24,0	18,5	4,0	10,0	8	100
M 12	1/2"	63,5	32,3	21,5	4,5	12,0	10	50
M 14	9/16"	63,5	32,3	21,5	4,5	12,0	10	50
M 16	5/8"	71,5	36,3	27,5	6,0	15,0	11	20
M 20	3/4"	88,0	45,3	33,5	6,5	18,5	14	10
M 24	1"	108,0	55,0	42,5	9,0	22,5	18	5

- » Radiuses acc. to DIN 315, ergonomically formed, no sharp edges
- » Complete range M4 – M24 available while stocks last
- » On request: special threads, special parts based on DIN 315 e.g. with sealing hole
- » RoHS-compliant galvanisation [chromium VI - free]
- » See also "Special wing nuts"

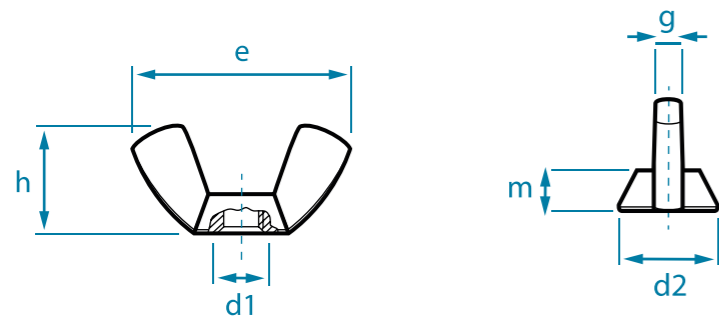
PACKAGING: Standard or according to customer specification

MATERIAL: Malleable cast iron EN-GJMB-350-10 acc. to DIN EN 1562 non-plated, zinc-plated acc. to DIN EN ISO 4042, brass (MS) 2.0401 acc. to DIN CEN/TS 13388 non-plated, nickel-plated acc. to DIN EN ISO 4042, aluminium (AL); stainless steel A2 and A4, pickled, passivated

TOLERANCE: Metric thread 6 H (non-plated 6 G) acc. to DIN EN ISO 965-1

WING NUTS

AMERICAN FORM | COLD-FORMED



METRIC d1	INCH d1	DIMENSIONS								
		e	h	d	g	m	Steel	A2	A4	Brass
M 3	1/8"	18,5	8,8	7,8	2,0	3,0	500	100	100	500
M 4	5/32"	18,5	8,8	7,8	2,0	3,0	500	100	100	500
M 5	3/16"	22,0	10,5	9,5	2,6	4,0	500	100	100	500
M 6	1/4"	26,8	12,9	11,9	3,0	4,9	500	100	100	500
M 8	5/16"	30,3	14,8	13,5	3,3	5,4	200	100	100	100
M 10	3/8"	35,3	17,3	15,3	4,0	6,3	100	100	100	100
M 12	1/2"	47,5	22,5	20,5	5,0	7,9	50	50	50	50
M 14	9/16"	65,0	30,8	25,0	6,5	10,6	50	50	50	50
M 16	5/8"	65,0	30,8	25,0	6,5	10,6	50	20	20	-
M 20	3/4"	66,5	31,2	29,3	7,2	12,2	50	20	20	-

- » Metric thread from M3 to M20 available while stocks last
- » On request: Inch thread, special parts based on the American form, e.g. with sealing hole

PACKAGING: Standard or according to customer specification

MATERIAL: Steel non-plated, zinc-plated, nickel-plated acc. to DIN EN ISO 4042, brass non-plated, nickel-plated acc. to DIN EN ISO 4042, stainless steel A2 or A4, pickled, passivated

TOLERANCE: Metric thread 7 H (non-plated 7 G) acc. to DIN EN ISO 965-1

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

SPECIAL WING NUTS

PRODUCT EXAMPLES IN MALLEABLE CAST IRON EN-GJMB-350-10 ACC. TO DIN EN 1562

Model „S“ – 40 mm wing width
M5 or M6
Surface finish as requested



Model „SO“ – 60 mm wing width
M5, M6 or M8
Surface finish as requested



Hex wing nuts
M6 / spanner width 11 mm
M6, M8 or M10 / spanner width 13 mm
Thread continuously from wing to hexagon
Completely casted in one piece
Surface finish as requested



PRODUCT EXAMPLES IN SHEET METAL

Sheet Metal wing nuts, zinc-plated
Flat form
M4, M5, M6 or M8



Sheet Metal wing nuts, zinc-plated
High form
M5, M6 or M8



- » According to BTS company standard
- » As complete special part acc. to drawing / sample
- » On request: Complete planning and design of new parts

Minimum volumes are required, depending on article or surface finish.

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

SPECIAL WING NUTS

PRODUCT EXAMPLES IN BRASS

Wing nuts with molded washer

Cast design

M8, M10, M12

Surface finish non-plated or nickel-plated

Wing nuts with only one wing

Cast design

M8

Surface finish non-plated or nickel-plated

Scythe nuts

Cast design

M10

- » According to BTS company standard
- » As complete special part acc. to drawing / sample
- » On request: Complete planning and design of new parts

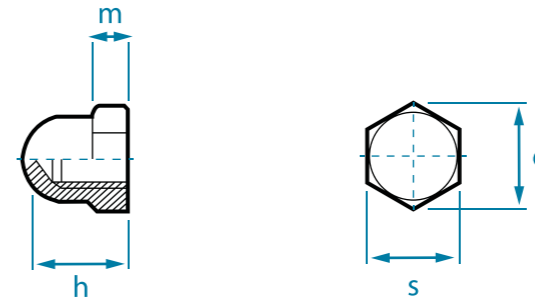
STANDARD FINISHES: Non-plated, nickel-plated acc. to DIN EN ISO 4042

Further materials, finishes and special packaging on request.
Minimum volumes are required, depending on article or surface finish.



CAP NUTS

DIN 1587



DIMENSIONS					
	e	h	m	s	
M 3*	6,0	6	3,2	5,5	1000
M 4	7,6	8	3,2	7	1000
M 5	8,7	10	4,0	8	1000
M 6	11,0	12	5,0	10	1000
M 8	14,3	15	6,5	13	500
M 10**	17,7	18	8,0	17	250
M 12**	20,0	22	10,0	19	250
M 14**	23,3	25	11,0	22	100
M 16	26,7	28	13,0	24	50
M 18	30,1	32	15,0	27	50
M 20	33,5	34	16,0	30	25
M 24	39,9	42	19,0	36	25

* M 3 is not included in DIN 1587

** Threads M10, M12 and M14 are delivered with customary spanner sizes.
[According to standard the following apply for M10 key-width = 16, M12 key-width = 18 and M14 key-width = 21]

PACKAGING: Standard or according to customer specification

MATERIAL: Steel non-plated, zinc-plated, nickel-plated, brass non-plated, nickel-plated acc. to DIN EN ISO 4042, further finishes on request, stainless steel A2 or A4

TOLERANCE: Metric thread 6 H (non-plated 6 G) acc. to DIN EN ISO 965-1

All of the dimensions stated above are approximate and may deviate both upwards and downwards.



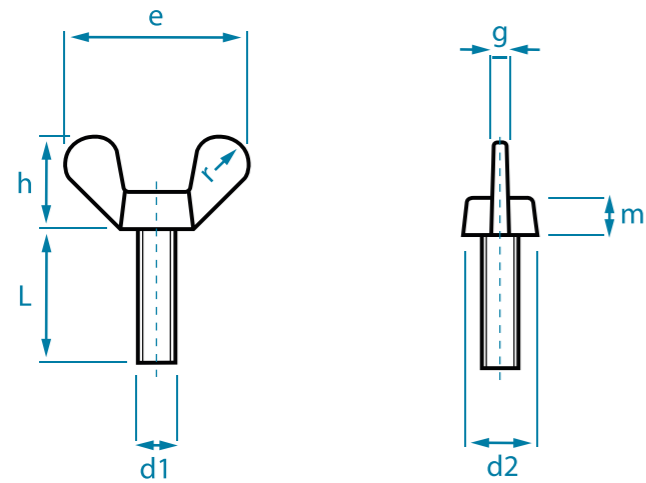
WING
SCREWS AND



THUMB
SCREWS

WING SCREWS

DIN 316 | MALLEABLE CAST IRON HEAD WITH STEEL SHANK



DIMENSIONS		M4	M5	M6	M8	M10	M12	M16
HEAD	d2	7,0	9,5	11,5	14,5	18,5	21,5	27,5
	e	20,0	25,0	31,5	37,0	49,5	63,5	71,5
	g	1,5	1,9	1,9	2,4	4,0	4,5	6,0
	h	9,5	12,0	16,0	19,0	24,0	32,3	36,3
	m	3,9	5,3	6,5	8,3	10,0	12,0	15,0
	r	3	4	5	6	8	10,0	11,0
LENGTH	☞							
	8	200	200	200	-	-	-	-
	10	200	200	200	100	-	-	-
	12	200	200	100	100	-	-	-
	16	200	200	100	100	50	20	-
	20	200	200	100	100	50	20	-
	25	200	200	100	100	50	20	-
	30	200	100	100	100	50	20	10
	35	200	100	100	100	50	20	-
	40	200	100	100	50	50	20	10
	45	-	100	100	50	-	20	-
	50	-	100	100	50	20	20	10
	60	-	-	100	50	20	20	10
	70	-	-	50	50	20	20	-
	80	-	-	50	50	20	20	10

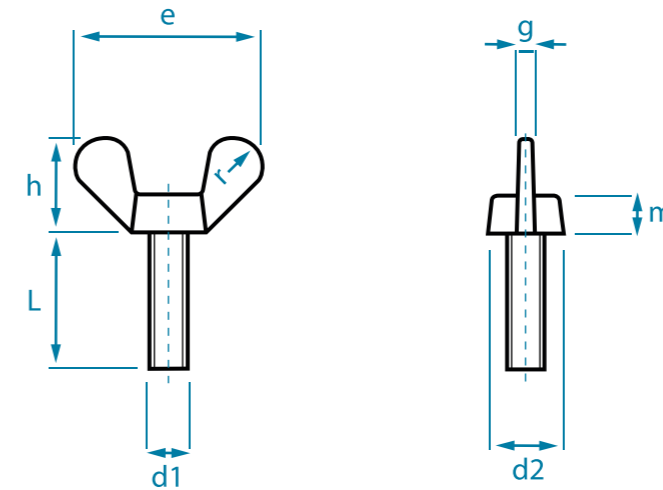
- » Radiuses acc. to DIN 316, i.e. ergonomic wings, no sharp edges
- » Complete range M4x8 – M16x60 available while stocks last
- » On request: Special lengths up to 300 mm, with partial thread, with special thread ends or with washer
- » See also separate product sheet "Special wing screws"

PACKAGING: Standard or according to customer specification
 MATERIAL: Malleable cast iron head, EN-GJMB-350-10 acc. to DIN EN 1562, steel shank min. quality 4.6, non-plated, zinc-plated, nickel-plated acc. to DIN EN ISO 4042
 On request: Stainless steel A2 or A4, surface pickled, passivated
 TOLERANCE: Metric thread 6 h (non-plated 6 g) acc. to DIN EN ISO 965-1

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

WING SCREWS

DIN 316 | CAST BRASS VERSION



DIMENSIONS		M4	M5	M6	M8	M10	M12
HEAD	d2	8,0	8,5	10,0	11,5	15,5	18,5
	e	20,0	25,0	31,5	37,0	49,5	63,5
	g	1,5	1,9	1,9	2,4	4,0	4,5
	h	9,5	12,0	16,0	19,0	24,0	32,3
	m	3,9	5,3	6,5	8,3	10,0	12,0
	r	3	4	5	6	8	10,0
LENGTH	☞						
	8	200	200	200	-	-	-
	10	200	200	200	100	-	-
	12	-	200	100	100	-	-
	16	200	200	100	100	50	-
	20	200	200	100	100	50	20
	25	-	200	100	100	50	20
	30	-	100	100	100	50	20
	35	-	-	100	100	50	20
	40	-	-	100	50	50	20
	45	-	-	-	50	50	-
	50	-	-	-	50	20	-
	60	-	-	-	50	-	20

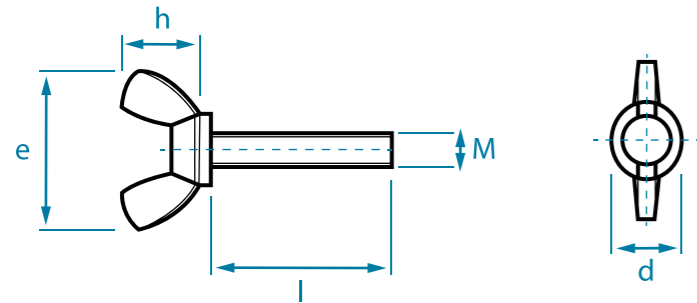
- » Radiuses acc. to DIN 316, i.e. ergonomic wings, no sharp edges
- » Complete range M4x8 – M12x60 available while stocks last
- » One-piece cast model

PACKAGING: Standard or according to customer specification
 MATERIAL: Brass (M5) 2.0401 acc. to DIN CEN/TS 13388 non-plated, nickel-plated acc. to DIN EN ISO 4042
 On request: Stainless steel A2 or A4, surface pickled, passivated
 TOLERANCE: Metric thread 6 h (non-plated 6 g) acc. to DIN EN ISO 965-1

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

WING SCREWS

AMERICAN FORM | COLD-FORMED



		200						
HEAD		M3	M4	M5	M6	M8	M10	M12
	e	18,5	22,0	22,0	26,8	30,3	35,3	47,5
	h	8,8	10,5	10,5	12,9	14,8	17,3	22,5
	d	7,8	9,5	9,5	11,9	13,5	15,3	20,5
LENGTH	6	500	-	-	-	-	-	-
	8	500	-	200	-	-	-	-
	10	500	200	200	100	100	-	-
	12	500	200	100	100	100	-	-
	15	500	200	100	100	100	50	-
	20	500	200	100	100	100	50	20
	25	500	100	100	100	100	50	20
	30	500	100	100	100	100	50	20
	35	-	100	100	100	100	50	20
	40	-	-	100	100	50	50	20
	45	-	-	-	-	50	50	-
	50	-	-	100	100	50	20	20
60	-	-	-	100	50	20	20	

- » From M3x6 – M12x60 available while stocks last
- » On request: Special lengths and individual thread ends
- » With flange beneath wing head, also available without flange on request

PACKAGING: Standard or according to customer specification

MATERIAL: Steel non-plated, zinc-plated, nickel-plated acc. to DIN EN ISO 4042, further finishes on request, stainless steel A2 or A4, pickled, passivated

TOLERANCE: Metric thread 6 h (non-plated 6 g) acc. to DIN EN ISO 965-1

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

SPECIAL WING SCREWS

PRODUCT EXAMPLES BASED ON DIN 316

Special lengths up to 300 mm, with partial or full thread

With threaded rod 8.8, 10.9 and 12.9

Screws with fixed or captive washer

Partial thread, with or without sealing hole

Thread end with cap point, cone point, rivet pin or similar acc. to EN ISO 4753

Thread recess



PRODUCT EXAMPLES WITH SPECIAL WING FORMS

Wing screws with extra-large wings



Wing screws with hexagon and adapter



PRODUCT EXAMPLES IN BRASS

Wing screws with molded washer

M10 x 25

Non-plated or nickel-plated



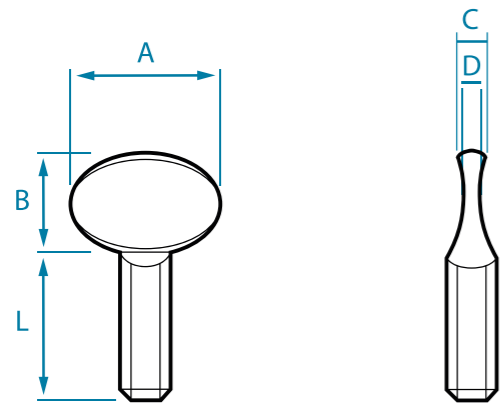
- » According to BTS company standard
- » As complete special part acc. to drawing / sample
- » On request: Complete planning and design of new parts

Minimum volumes are required, depending on article or surface finish.

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

THUMB SCREWS

CAST



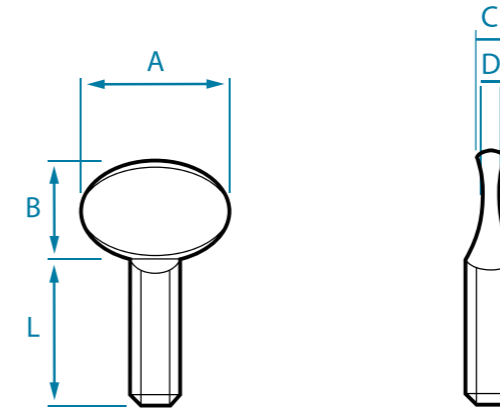
		DIMENSIONS			
HEAD		M5	M6	M8	M10
	A	20,5	23,5	27,5	36,0
	B	15,5	16,0	19,0	25,0
	C	3,5	4,5	4,5	6,5
	D	2,0	2,5	2,5	3,0
LENGTH	8	-	-	-	-
	10	200	200	-	-
	12	200	200	100	-
	16	200	100	100	-
	20	200	100	100	50
	25	-	100	100	50
	30	-	100	100	50

PACKAGING: Standard or according to customer specification
 MATERIAL: Malleable cast iron, EN-GJMB-350-10 acc. to DIN EN 1562, non-plated, zinc-plated, nickel-plated acc. to DIN EN ISO 4042, further finishes on request
 TOLERANCE: Metric thread 6 h (non-plated 6 g) acc. to DIN EN ISO 965-1

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

THUMB SCREWS

COLD FORMED



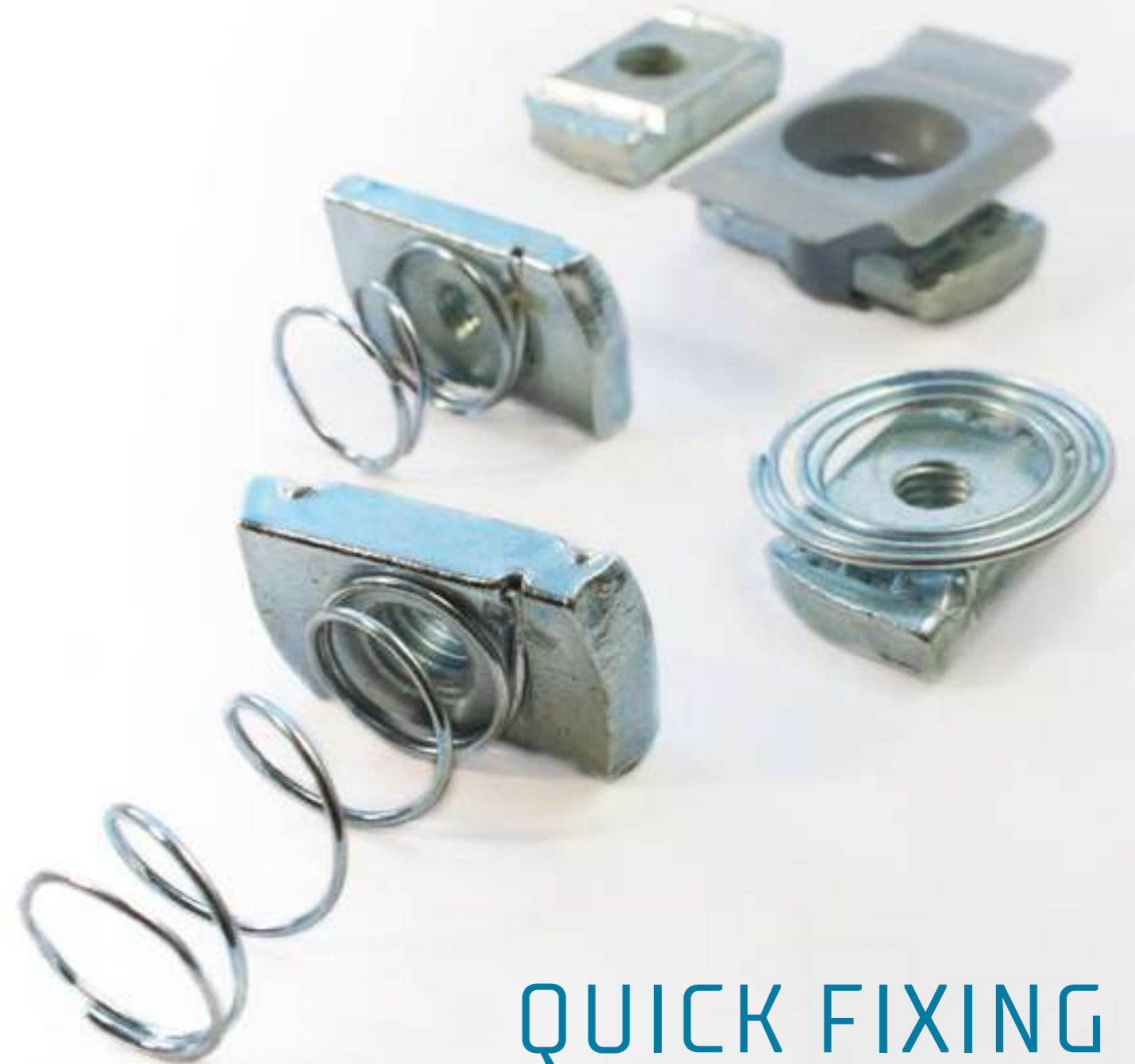
		DIMENSIONS				
HEAD		M4	M5	M6	M8	M10
	A	11,2	14,0	16,5	22,0	26,0
	B	7,7	10,8	14,0	17,0	19,0
	C	2,6	3,1	4,1	4,7	6,0
	D	1,3	1,5	1,8	2,2	2,8
LENGTH	10	500	200	100	-	-
	12	200	200	100	-	-
	15	200	100	100	100	-
	20	200	100	100	100	100
	25	200	100	100	100	100
	30	200	100	-	100	100
	35	-	-	-	100	100
	40	-	-	100	100	100
	50	-	-	-	100	50
	60	-	-	-	100	20

PACKAGING: Standard or according to customer specification
 MATERIAL: Steel non-plated, zinc-plated, nickel-plated acc. to DIN EN ISO 4042, further finishes on request
 TOLERANCE: Metric thread 7 h (non-plated 7 g) acc. to DIN EN ISO 965-1

All of the dimensions stated above are approximate and may deviate both upwards and downwards.



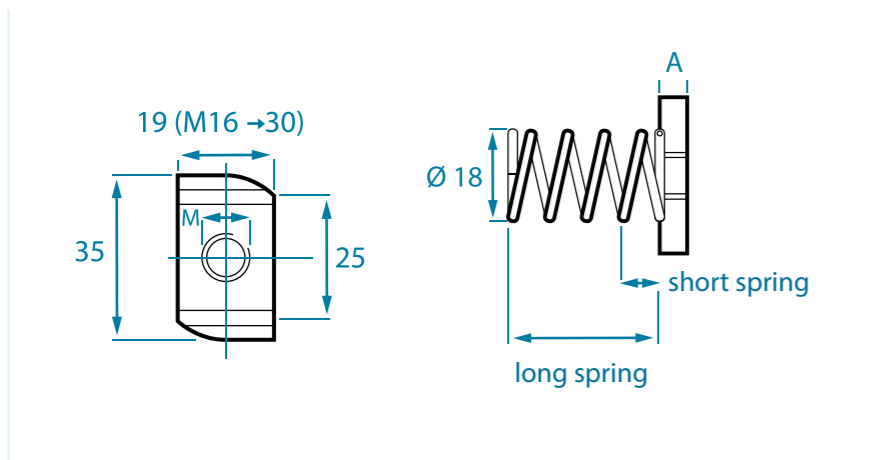
CHANNEL
NUTS AND



QUICK FIXING
CHANNEL NUTS

CHANNEL NUTS

TOOTHED FOR STRUT CHANNELS



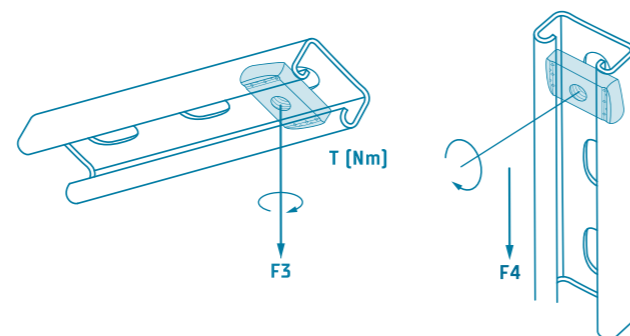
	without spring		short spring		long spring		TOPNUT	
	A		A		A		A	
M 6	6	100 / 400	6	100 / 400	6	100 / 400	6	100 / 400
M 8	6	100 / 400	6	100 / 400	6	100 / 400	6	100 / 400
M 10	8	100 / 400	8	100 / 400	8	100 / 400	8	100 / 400
M 12	9	100 / 400	8	100 / 400	9	100 / 400	9	100 / 400
M 16	10	100 / 400	-	-	-	-	-	-

Safe working loads Channel nuts

The following safe working loads apply for BTS channel nuts in steel and stainless steel for strut channels in combination with a threaded rod

Dimension	F3 [kN]	F4 [kN]	T [Nm]
M 6	5	1	3,5
M 8	6	2,4	8,4
M 10	7	3,5	17
M 12	7	4	29
M 16	12	4	71

of strength class 4.6 (A4 - 50) exposed to static load. The maximum safe working load of the channel used is to be observed. BTS provides no guarantee for the safe working load of the channel.

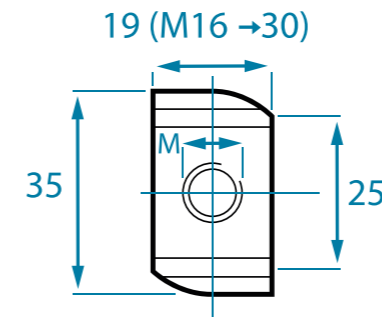


- » On request: Hot-dip galvanised channel nuts with oversize, individual tothing and tooth distance, special thicknesses
- » As complete special part, also for other profile sizes

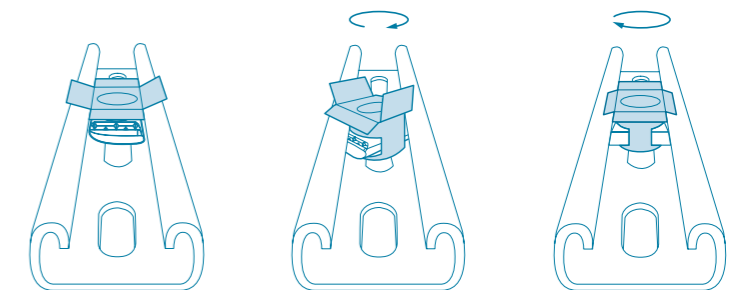
MATERIAL: Steel, minimum hardness 130 HB zinc-plated acc. to DIN EN ISO 4042, hot-dip galvanised, stainless steel A4, further finishes on request

CHANNEL NUTS

TOOTHED, WITH FIXING RETAINER FOR STRUT CHANNELS



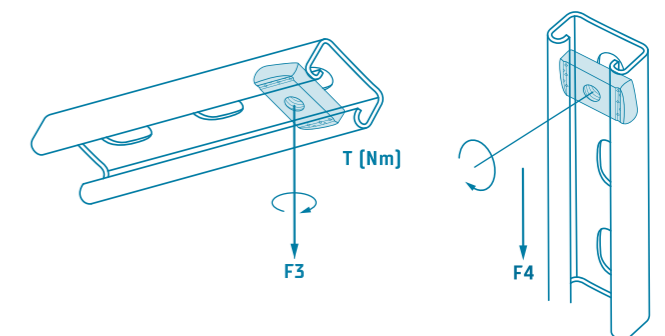
Channel nuts with fixing retainer		
	Thickness [mm]	
M6	6	100
M8	6	100
M10	8	100
M12	9	100



Safe working loads Channel nuts

The following safe working loads apply for BTS channel nuts in steel and stainless steel for strut channels in combination with a threaded rod of strength class 4.6 (A4 - 50) exposed to static load.

Dimensions	F3 [kN]	F4 [kN]	T [Nm]
M 6	5	1	3,5
M 8	6	2,4	8,4
M 10	7	3,5	17
M 12	7	4	29
M 16	12	4	71



"Fixing at the flick of a wrist"

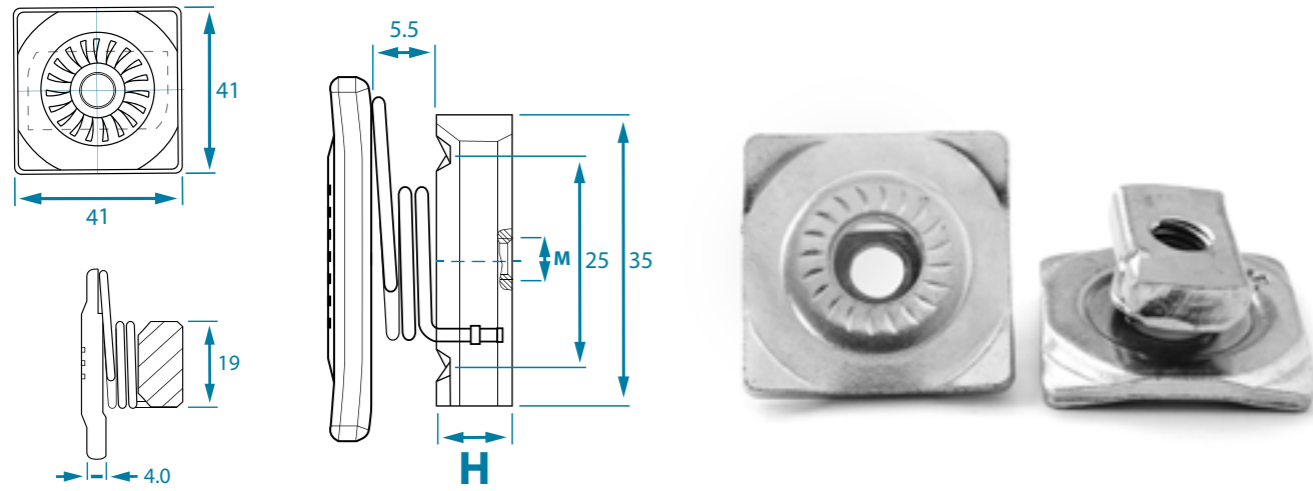
The maximum safe working load of the channel used is to be observed. BTS provides no guarantee for the safe working load of the channel.

- » One type for all strut channels
- » Simple and fast mounting with one hand
- » Holds after rotation in the rail, ideal for vertically installed channels
- » Remains easy to move after mounting
- » No jamming of the spring in perforated channels
- » On request: Hot-dip galvanised channel nuts with oversize, individual tothing /tooth spacing, special thicknesses, plastic in RAL colour on customer request
Complete special part, also for other profile sizes

MATERIAL: Steel channel nut, min hardness 130 HB zinc-plated acc. to DIN EN ISO 4042 or hot-dip galvanised, stainless steel A4, polypropylene (plastic) fixing retainer with grey colour acc. to RAL7040, further finishes on request

COMBO CHANNEL NUTS

WITH PRE-INSTALLED SQUARE WASHER AND SPRING FOR STRUT CHANNELS



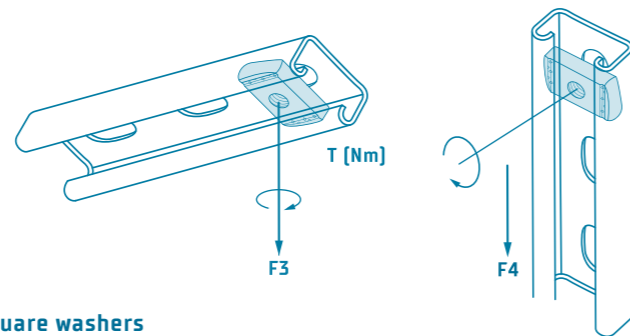
Combo Channel Nuts		
M	H (mm)	
M6	6	100
M8	6	100
M10	8	100
M12	9	100

Safe working loads Channel nuts

The following safe working loads apply for BTS channel nuts in steel and stainless steel for strut mounting rails in combination with a threaded rod of strength class 4.6 [A4- 50] exposed to static load.

The maximum safe working load of the channel used is to be observed. BTS provides no guarantee for the safe working load of the channel.

Dimension	F3 [kN]	F4 [kN]	T [Nm]
M 6	5	1	3,5
M 8	6	2,4	8,4
M 10	7	3,5	17
M 12	7	4	29



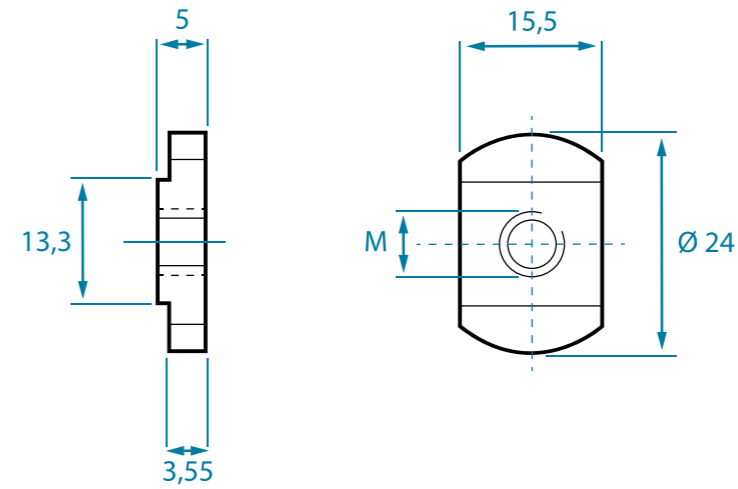
- » Combines the functions of spring channel nuts and square washers
- » Square washer with tothing for a conditional protection against self-loosening of the bolt
- » No jamming in perforated channels thanks to the spring on the top
- » All parts made of steel – robust product
- » One type for all strut channels
- » Ideal for vertically installed channels – holds in the channel after rotation
- » Remains easy to move after mounting

» On request: Hot-dip galvanised channel nuts, stainless steel A4, individual tothing / tooth spacing, special thicknesses, complete special part – also for other profile sizes

MATERIAL: Steel channel nut and square washer, min. hardness 130 HB, zinc-plated

CHANNEL NUTS

FOR CHANNELS WITH STRAIGHT FLANGES



Dimensions			
	Length	Width	
M 6, 8, 10	24,0 mm	15,5 mm	100 / 1800

MATERIAL: Steel, min. hardness 130 HB, zinc-plated acc. to DIN EN ISO 4042, further finishes on request

FOR HYDRAULIC CLAMP BODIES

LIGHT SERIES: For securing of pipe and hose clamps in mounting rails
M6, 1/4", M8, 5/16"

HEAVY SERIES: For securing of pipe and hose clamps in mounting rails GMV10 + 12, M10, M12



MATERIAL: Malleable cast iron, EN-GJMB-350-10 acc. to DIN EN 1562, non-plated, zinc-plated, nickel-plated acc. to DIN EN ISO 4042, on request stainless steel A2 and A4, pickled, passivated



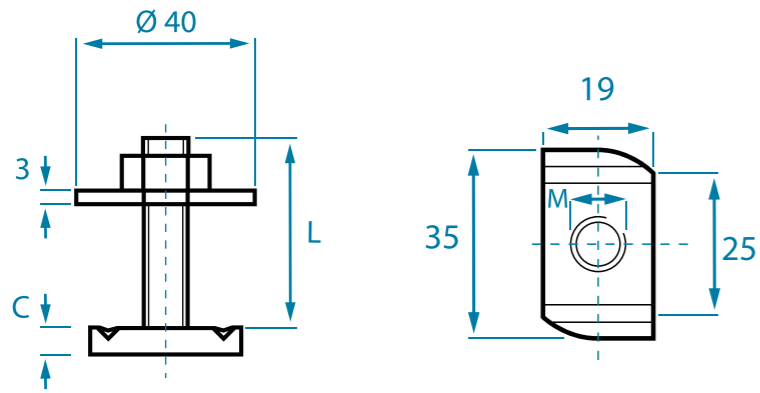
HAMMER HEAD
BOLTS AND



TOP-
SCREWS

HAMMER HEAD BOLTS

TWO-PIECE MODEL FOR STRUT CHANNELS



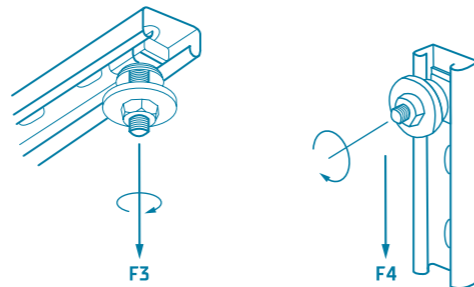
DIMENSIONS /				
LENGTH [L]		M 8	M 10	M 12
		C	6 mm	8 mm
20		50 / 200	-	-
30		50 / 200	50 / 200	50 / 200
40		50 / 200	50 / 200	50 / 200
50		50 / 200	50 / 200	-
60		50 / 200	50 / 200	50 / 200
80		50 / 200	50 / 200	50 / 200
90		-	50	-
100		-	50	50

Safe working loads for hammer head bolts

The following safe working loads apply for BTS hammer head bolts in steel and stainless steel for strut channels exposed to static load.

The maximum safe working load of the channel used is to be observed. BTS provides no guarantee for the safe working load of the channel.

Dimension	F3 [kN]	F4 [kN]	T [Nm]
M 6	5	1	3,5
M 8	6	2,4	8,4
M 10	7	3,5	17
M 12	7	4	29
M 16	12	4	71

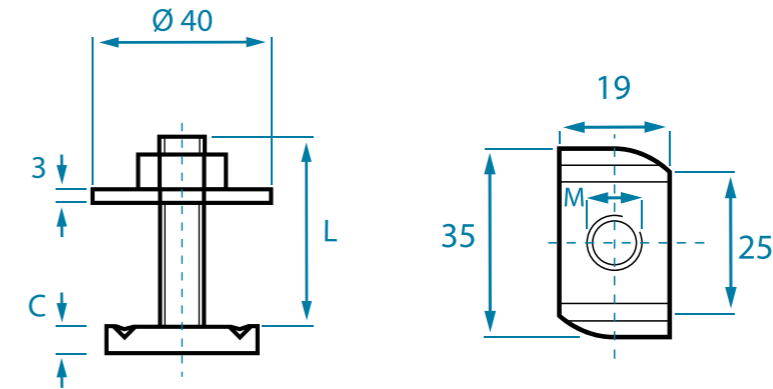


- » Pre-mounted with washer and hex nut DIN 934
- » On request: Hot-dip galvanised hammer head bolts, individual tothing and tooth distance, special thicknesses, special lengths
- » Complete special part, also for other profile sizes

MATERIAL: Steel, minimum hardness 130 HB zinc-plated acc. to DIN EN ISO 4042, stainless steel A4, further finishes on request

TOPSCREWS

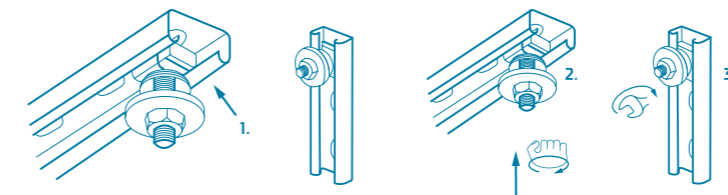
TWO-PIECE MODEL FOR STRUT CHANNELS



DIMENSIONS /				
LENGTH		M 8	M 10	M 12
		C	6 mm	8 mm
30		50 / 200	50 / 200	50 / 200
40		50 / 200	50 / 200	50 / 200
50		50 / 200	50 / 200	-
60		50 / 200	50 / 200	-

Product benefits:

1. Time savings by pre-assembled system in various lengths
2. Sticks in the channel, ideal for vertical installations
3. Easy to move within the rail
4. No jamming of the spring in perforated channels
5. Just one system for all strut channels



Mounting:

1. Guide topscrew through the opening in the profile
2. Press against topscrew whilst simultaneously rotating by 90°
3. Finally, tighten hex nut

Dimension	F3 [kN]	F4 [kN]	T [Nm]
M 6	5	1	3,5
M 8	6	2,4	8,4
M 10	7	3,5	17
M 12	7	4	29
M 16	12	4	71

Safe working loads

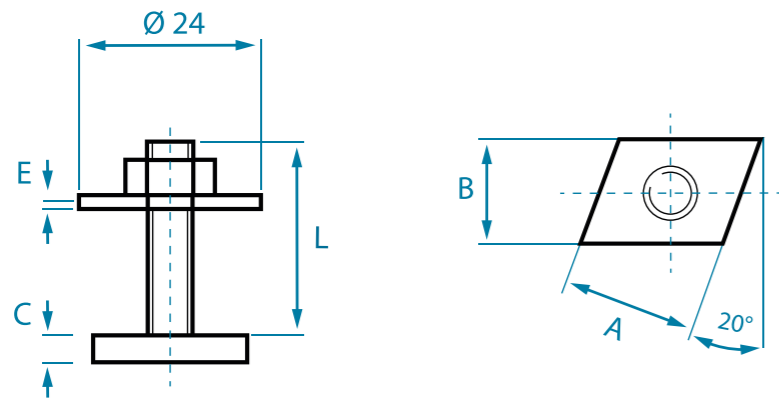
The following safe working load apply for BTS topscrews in steel and stainless steel for strut channels exposed to static load. The maximum safe working load of the channel used is to be observed. BTS provides no guarantee for the safe working load of the channel.

- » Pre-mounted with washer and hex nut DIN 934
- » On request: Hot-dip galvanised topscrews, individual tothing and tooth distance, special thicknesses, special lengths
- » Complete special part, also for other profile sizes

MATERIAL: Steel, minimum hardness 130 HB zinc-plated acc. to DIN EN ISO 4042, stainless steel A4, further finishes on request

HAMMER HEAD BOLTS

FOR PROFILES WITH STRAIGHT FLANGES TYPE 27/18 & 28/30



DIMENSIONS M8xL	A	B	C	D	E	
M8x30	21	16	5	24	2	50
M8x40	21	16	5	24	2	50
M8x50	21	16	5	24	2	50
M8x80	21	16	5	24	2	50

- » Completely mounted with DIN 9021 washer and DIN 934 hex nut
- » On request: Special parts, also for other profile sizes

MATERIAL: Steel, zinc-plated acc. to DIN EN ISO 4042, further finishes on request

HAMMER HEAD BOLTS

ONE-PIECE MODEL FOR PROFILES WITH STRAIGHT FLANGES

Type
20/12
28/15
38/17
41/22

- » As standard for profiles: 20/12 and 28/15 with and without square, 38/17 with square, 41/22 without square
- » On request as complete special part, according to customer drawing or sample, also for other profile sizes



HAMMER HEAD BOLTS

ONE-PIECE MODEL FOR C-PROFILES

Type
40/22
50/30
72/48

- » As standard for profiles: 40/22, 50/30, 72/48
- » As complete special part, according to customer drawing or sample, also for other profile sizes



MATERIAL: Steel 4.6 or 8.8 zinc-plated acc. to DIN EN ISO 4042 or hot-dip galvanised, stainless steel A2 or A4

PACKAGING: Standard or according to customer specification

Optionally with or without hex nut acc. to DIN 934 and washer.




**SPECIAL
ITEMS**

KEYS

Mandril key, triangular or square socket

Dimensions: 4,0 mm 5,0 mm 6,0 mm 6,5 mm 7,0 mm 7,5 mm
 Dimensions: 8,0 mm 8,5 mm 9,0 mm 10,0 mm 11,0 mm 12,0 mm

 4,0 - 8,5 100 Pcs 9,0 - 12,0 50 Pcs

Square wrench key, length approx. 110 mm, conus approx. 7-9 mm

 50 Pcs

Water tap key, square socket 5.3 x 5.3 mm for size 5

 100 Pcs

Angle key with hole, conus approx. 6-9 mm, square socket: 8 mm

 50 Pcs

Angle key without hole, conus approx. 6-9 mm, square socket: 8 mm


 50 Pcs


MATERIAL: Malleable cast iron EN-GJMB-350-10 acc. to DIN EN 1562
 SURFACE FINISH: Non-plated, zinc-plated, nickel-plated acc. to DIN EN ISO 4042, further finishes on request


Minimum volumes are required, depending on article or surface finish.



HOOKS AND EYES

Suspension eyes	AO 700	AO 701	AO 702
Height approx. mm	28	35	54
Eye Ø approx. mm	10	14	28
Thread	M 6	M 6 / M 8	M 6 / M 8 / M 10
	100 Pcs	50 Pcs	50 Pcs

Suspension hooks	AH 710	AH 711	
Height approx. mm	28	34	
Eye Ø approx. mm	10	13	
Thread	M 6 / M 8	M 6 / M 8	
	100 Pcs	100 Pcs	

Mounting eyes	BO 716	BO 718	
Height x width approx. mm	40 x 18	45 x 24	
Eye Ø approx. mm	9	12	
Thread	M 6 / M 8	M 6 / M 8 / M 10 / M 12	
	100 Pcs	50 Pcs	

Staples	25 mm	30 mm	14x68 mm
Malleable cast iron EN-GJMB-350-10 acc. to DIN EN 1562			
Hole centre distance	50,8 mm	56,4 mm	54,3 mm
Clear span	25,5 mm	31,0 mm	30,2 mm
Full height	13,8 mm	13,9 mm	14,2 mm

Single hook	Mounting plate approx. 50x14 mm
Hole centre distance	38 mm

Double hook	Mounting plate approx. 45x14 mm
Hole centre distance	20 mm

MATERIAL: Malleable cast iron EN-GJMB-350-10 acc. to DIN EN 1562
 SURFACE FINISH: Steel untreated, galvanised, nickel-plated acc. to DIN EN ISO 4042, further finishes on request
 TOLERANCE: Metric thread 6 H (non-plated 6 G) acc. to DIN EN ISO 965-1

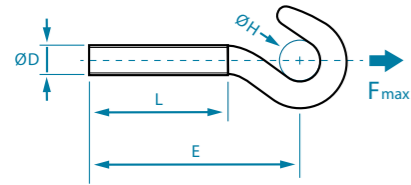
Minimum volumes are required, depending on article or surface finish.



HOOK BOLTS WITH SHAPED HOOK



- » **Area of application:** Suspension of heavy loads, use in turnbuckles acc. to DIN1480 or in anchors
- » **Heavy type:** Loads see last column
- » **All dimensions are available at short notice**
- » **Also available with left-hand thread and in stainl. steel A2/A4**
- » **On request:** Threads from M16-M33, strength class 8.8, BSW-thread
- » **Made in Europe**

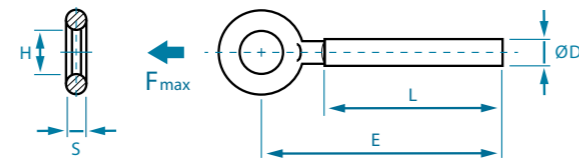


ØD	L [mm]	E	øH [mm]		*F max [N]
M 5	40	53,6	7,5	1.500	380
M 5	48	63	7,5	1.250	380
M 6	40	55,5	9,5	1.000	600
M 6	50	65,5	9,5	750	600
M 6	55	70,5	9,5	750	600
M 8	52	75,5	11,0	400	1.100
M 8	60	83,5	11,0	350	1.100
M 10	60	87,5	14,0	200	1.500
M 10	73	100,5	14,0	200	1.500
M 12	66	101,5	18,0	125	2.750
M 12	90	125,5	18,0	75	2.750
M 14	82	120,5	17,0	75	3.850

MATERIAL:
TOLERANCES:
LOAD VALUES "Fmax":

Steel, zinc-plated A2K acc. to DIN EN ISO 4042, stainless steel A2 or A4
Metric thread 6h acc. to DIN EN ISO 965-1
Length "L": +2x pitches
Nominal static load in direction of the arrow, safety factor 3

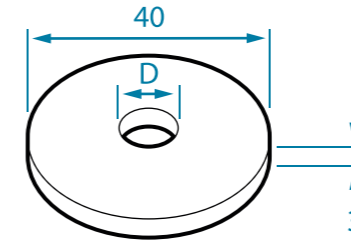
EYEBOLTS WITH CONTINUOUS RING



ØD	L [mm]	E [mm]	H [mm]			*F max [N]
			Min	Max		
M 5	40	52,7	8,05	8,55	1.750	1.200
M 5	48	57,7	8,05	8,55	1.500	1.200
M 6	40	54,6	9,75	10,25	1.100	1.850
M 6	50	64,6	9,75	10,25	900	1.850
M 6	55	69,6	9,75	10,25	750	1.850
M 8	52	67,4	10,75	11,25	500	3.600
M 8	60	75,4	11,55	12,05	500	3.600
M 10	60	80,6	14,25	14,75	275	5.400
M 10	73	93,6	14,25	14,75	225	5.400
M 10	93	113,6	14,25	14,75	175	5.400
M 12	66	89,5	16,75	17,25	150	8.100
M 12	72	95,5	16,75	17,25	150	8.100
M 12	90	113,5	16,75	17,25	125	8.100
M 14	85	109,4	17,75	18,25	100	11.400
M 16	95	122,1	22,70	23,30	50	15.400

All of the dimensions stated above are approximate and may deviate both upwards and downwards.

WASHERS



Diameter D
8,4
10,5
13

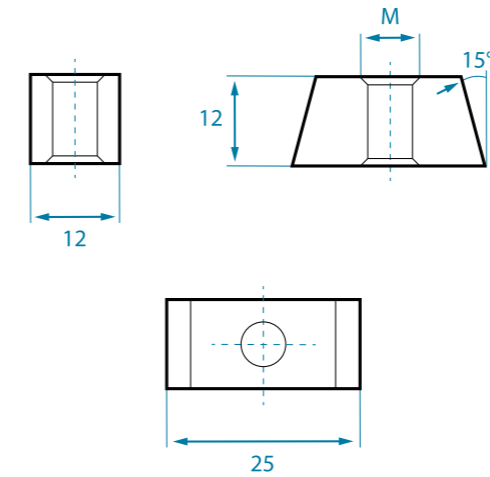


- » **Ideal dimensions for use in connection with strut channel system**

PACKAGING: 100 pcs/box
MATERIAL: Steel, minimum hardness 130 HB, zinc-plated acc. to DIN EN ISO 4042, stainless steel A4, further dimensions and finishes on request

WEDGE NUTS

FOR CEILING SUSPENSION ON HOLORIB DECKING SYSTEMS WITH 15° V-SHAPED GROOVE



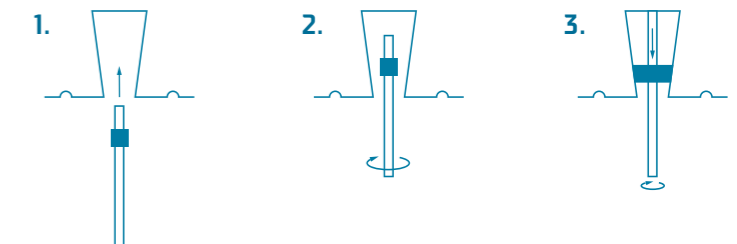
Thread M
M 4
M 5
M 6
M 8
M 10



PACKAGING: 100 pcs/box
MATERIAL: Steel, min. hardness 130 HB, zinc-plated acc. to DIN EN ISO 4042, further finishes on request

Application:

1. Screw wedge nut on threaded rod
2. Guide wedge nut through the opening in the profile
3. Rotate threaded rod with wedge nut 90°, then pull downwards before tightening upwards until locking. The conical form then lies flat with the angle of the profile



All of the dimensions stated above are approximate and may deviate both upwards and downwards.

SPECIAL ITEMS

Semicircular washer

Malleable cast iron EN-6JMB-350-10

23 x 26 x 7 mm

With hole 12 mm



Star grip nut

Malleable cast iron EN-6JMB-350-10

With thread M10



Flag holders/ jointing sleeves

Malleable cast iron EN-6JMB-350-10 with or without lug



Holder for window shutter

Grey cast iron



NOTES / REMARKS

Large grid area for notes and remarks.

- » According to BTS company standard
- » As complete special part acc. to drawing or sample
- » On request: Complete planning and design of new parts

SURFACE FINISH: For malleable cast iron parts, non-plated, zinc-plated, nickel-plated acc. to DIN EN ISO 4042, further finishes on request, see respective comments for other materials.

Minimum volumes are required, depending on article or surface finish.

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