



HUCK BOBTAIL®

The next generation lock bolts

The center of excellence for highperformance fastening technology

KVT-Fastening is an expert for high-quality fastening applications and offers engineering solutions based on the wide product portfolio of the leading manufacturers in the market.



Mechanical engineering | Automotive | Electrical engineering | Energy | Precision engineering | Fluid power | Transportation | Off-shore and Marine | Medical equipment Aviation and aerospace | Construction industry | Watch manufacturing industry

www.kvt-fastening.com



High-performance solutions from KVT-Fastening are found wherever absolutely safe and secure connections are essential. These small but extremely resilient components play key roles where it matters most – whether in the electronics and energy sector, the automotive and transportation industries, aviation and aerospace, engineering and construction, precision engineering, or medical equipment.

KVT-Fastening does not just supply standard products and individual components, but also provides close and active customer support in the search for ideal solutions, particularly when specific requirements must be fulfilled. This portfolio is complemented by a range of innovative tools and machines as well as, if needed, the integration into automated serial production workflows.

Ever since 1927, KVT-Fastening has stood for experience, solution-driven know-how, unique expertise in development and consultancy as well as the ultimate in reliability. Since December 2012, KVT-Fastening is a member of the Bossard Group. Bossard is a leading provider of intelligent solutions for industrial fastening technology. The range includes global sales, technical consulting (engineering) and logistics of fastening technology components and bolts. Customers benefit from the extension of competencies in industrial fastening technology and from an optimally enhanced product or service portfolio.



HUCK BobTail[®] – lock bolts

The HUCK BobTail® lock bolts enable simple connections of extremely high strength to be made. Unlike previous lock bolts, the HUCK BobTail® is designed without a pin-tail, meaning that no uncoated pin-break is needed. Using the newlydeveloped, compact, semi-automatic setting tools, the lock bolts are set in only two seconds – almost twice as fast as competing products.

Design

Various materials and versions are available

Tools

Assembly tools included in rage





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Technical performances, installation recommendations as well as unspecified tolerances regarding the dimensions of the parts have to be requested individual for each application before starting the series production.

All dimensions are specified in mm.

Technical information

The HUCK BobTail[®] system includes lock bolts and installation tooling that will deliver you benefits beyond anything.

Key benefits

Installation speed

Speed of fastener installation has to be seen to be believed with the 1/4" diameter BobTail® fastener installing in less than one second. The 16 mm diameter BobTail® fastener installs in two seconds, up to twice as fast as any large diameter lock bolt on the market.

To see installation video visit www.afshuck.net.

No pin-tail or pin-break

- No material waste
- Low installation noise
- Increased corrosion resistance

Smooth, shock free installation sequence

Eliminates jolts to the operator's arms and hands

Unique helical lock groove (12 mm diameter upwards)

Holds pin and collar in place prior to installation

High fatigue strength thread form

Shallow thread and large root radius increase fatigue strength

Installation indicator on collar for visual inspection (12 mm diameter upwards)

The swage indicators indent when installation is complete



Hardened pin

Softer collar material flows between lock-grooves



Prior to installation



After installation

Technical information

Combined with all the benefits of using a $HUCK^{\circledast}$ lock bolt

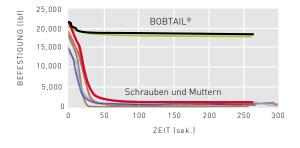
- Permanent, mechanically locked fastener
- Installation process automatically provides fastener values
 - No torque or re-torque required
 - Unlike conventional nuts and bolts, they will not work loose, even during extreme vibration
- Easy visual inspection ensures correct installation

Convert from other HUCK® lock bolts to BobTail®

If you are currently using HUCK[®] C50L or C6L lock bolts then due to the dimensional and strength similarities it is quick and easy to switch BobTail[®] to gain the extra benefits listed above*.

Consistent clamp with BobTail®

This chart shows nut and bolt clamp scatter is much wider compared to BobTail[®], and that once vibration begins, clamp load quickly decays with conventional nuts and bolts, while it holds constant with the BobTail[®].



BobTail® With small diameter

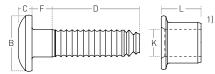
Inch

Head style Round, truss head

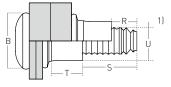
Material Carbon steel

Additional types on request

Before installation



After installation



Dimensions bolt

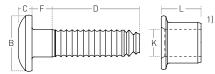
				Bolt-X				
		range ction		.4 (4")		.9 16")		.5 (8")
Code number grip range	up	to	D max.	F nominal	D max.	F nominal	D max.	F nominal
1	0.0	4.7	20.7	1.0	-	-	-	-
2	0.0	6.4	22.2	1.6	-	-	-	-
3	1.6	7.9	23.8	3.2	-	-	-	-
4	3.2	9.5	25.4	4.7	29.4	4.7	33.3	4.8
5	4.7	11.1	27.0	6.4	-	-	-	-
6	6.4	12.7	28.6	7.9	32.5	7.9	36.5	7.9
8	9.5	15.9	30.2	11.1	35.7	11.1	39.6	11.1
10	12.7	19.1	31.8	14.3	38.9	14.3	42.8	14.3
12	15.9	22.2	33.3	17.4	42.1	17.4	46.0	17.5
14	19.1	25.4	34.9	20.6	45.2	20.6	49.1	20.6
16	22.2	28.6	36.5	23.8	48.4	23.8	52.3	23.8
18	25.4	31.8	38.1	27.0	51.6	27.0	55.5	27.0
20	28.6	34.9	39.7	30.1	54.8	30.1	58.7	30.2

BobTail® With small diameter

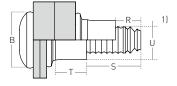
See page 8



Before installation



After installation



Dimensions head and collar

	He	ad	Collar			
Bolt-X	B max.	C max.	K max.	L max.		
6.4 (1/4")	13.60	3.60	13.10	9.70		
7.9 (5/16")	17.30	4.40	16.30	12.10		
9.5 (3/8")	20.83	5.30	19.56	14.35		

Installed information and maximal hole table

	Clas	s 5.8 – after ins	tallation	Clas	s 8.8 – after ins						
Bolt-X	Clamp force (kN)	Tensile strength (kN)	Shear strength (kN)	Clamp force (kN)	Tensile strength (kN)	Shear strength (kN)	R min.	S max.	T min.	U max.	Max. hole size
6.4 (1/4")	8.0	13.3	13.6	10.2	16.5	19.1	5.7	13.6	6.6	9.2	7.1
7.9 (5/16")	12.5	20.5	21.0	18.7	26.7	29.8	7.1	15.2	8.3	11.6	8.73
9.5 (3/8")	17.9	28.9	30.4	26.6	41.4	42.7	8.8	16.9	9.9	13.8	10.72

BobTail® With large diameter

Inch

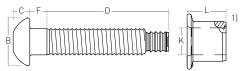
Head style Round

Material Carbon steel

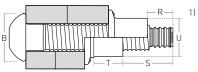
Additional types on request



Before installation



After installation



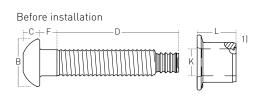
Dimensions bolt

	Bolt-X												
	the second se	range ction				5.9 19.1 /8") (3/4")		22.2 (7/8")		25.4 (1")			
Code number grip range	up	to	D max.	F nominal	D max.	F nominal	D max.	F nominal	D max.	F nominal	D max.	F nominal	
4	6.4	15.7	48.3	3.8	52.6	3.8	61.8	4.1	68.7	6.4	76.2	6.4	
8	12.7	22.1	54.6	3.8	58.9	3.8	68.1	4.1	75.1	6.4	82.6	6.4	
12	19.1	28.4	61.0	3.8	65.3	3.8	74.5	4.1	81.4	6.4	88.9	6.4	
16	25.4	34.8	67.3	3.8	71.6	3.8	80.8	4.1	87.8	6.4	95.3	6.4	
20	31.8	41.1	73.7	3.8	78.0	3.8	87.2	4.1	94.1	6.4	101.6	6.4	
24	38.1	47.5	80.0	3.8	84.3	3.8	93.5	4.1	100.5	6.4	108.0	6.4	
28	44.5	53.8	86.4	3.8	90.7	3.8	99.9	4.1	106.8	6.4	114.3	6.4	
32	50.8	60.2	92.7	3.8	97.0	3.8	106.2	4.1	113.2	12.7	120.7	12.7	
36	57.2	66.5	99.1	3.8	103.4	3.8	112.6	4.1	119.5	12.7	127.0	12.7	
40	63.5	72.9	105.4	3.8	109.7	3.8	118.9	9.5	125.9	12.7	133.4	12.7	
44	69.9	79.2	111.8	3.8	116.1	9.5	125.3	9.5	132.2	12.7	139.7	12.7	
48	76.2	85.6	118.1	9.5	122.4	9.5	131.6	9.5	138.6	12.7	146.1	12.7	
52	82.6	91.9	124.5	9.5	-	-	138.0	9.5	144.9	12.7	152.4	12.7	
56	88.9	98.3	130.8	9.5	-	-	144.3	9.5	151.3	12.7	158.8	12.7	
60	95.3	104.6	137.2	9.5	-	-	150.7	9.5	157.6	12.7	165.1	12.7	
64	101.6	111.0	-	-	-	-	157.0	9.5	164.0	12.5	171.5	12.7	
68	108.0	117.3	-	-	-	-	163.4	9.5	170.3	12.7	177.8	12.7	
72	114.3	123.7	-	-	-	-	169.7	9.5	176.7	12.7	184.2	12.7	

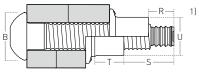
BobTail® With large diameter

See page 10





After installation



Dimensions head and collar

	He	ad	Collar			
Bolt-X	B max.	C max.	K max.	L max.		
12.7 (1/2")	24.2	8.5	13.2	19.0		
15.9 (5/8")	30.4	11.0	16.4	23.7		
19.1 (3/4")	36.6	13.5	19.7	28.3		
22.2 (7/8")	42.3	14.9	22.9	33.0		
25.4 (1")	50.8	16.5	26.2	37.8		

Installed information and maximal hole table

	Clas	s 10.9 – after insta	llation					
Bolt-X	Clamp force (kN)	Tensile strength (kN)	Shear strength (kN)	R min.	S max.	T min.	U max.	Max. hole size
12.7 (1/2")	53.6	75.8	62.3	10.9	23.7	14.4	18.4	14.3
15.9 (5/8")	85.4	120.5	100.1	10.9	24.4	18.0	23.1	17.5
19.1 (3/4")	126.3	178.4	144.1	13.6	27.9	21.6	27.7	20.6
22.2 (7/8")	174.6	246.7	193.1	15.2	30.3	25.1	32.0	23.8
25.4 (1")	229.1	323.4	251.3	17.4	33.2	29.2	36.9	28.6

BobTail® With large diameter

Metric

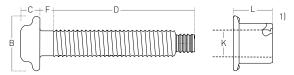
Head style Flanged

Material Carbon steel

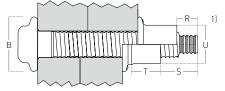
Additional types on request



Before installation



After installation



Dimensions bolt

					Bolt-X					
	Grip range	e selection	1	12		14		6	2	:0
Code number grip range	up	to	D max.	F nominal	D max.	F nominal	D max.	F nominal	D max.	F nominal
10	5	15	46.1	3.8	49	3.8	52	3.8	60.7	3.8
15	10	20	51.1	3.8	54	3.8	57	3.8	65.7	3.8
20	15	25	56.1	3.8	59	3.8	62	3.8	70.7	3.8
25	20	30	61.1	3.8	64	3.8	67	3.8	75.7	3.8
30	25	35	66.1	3.8	69	3.8	72	3.8	80.7	3.8
35	30	40	71.1	3.8	74	3.8	77	3.8	85.7	3.8
40	35	45	76.1	3.8	79	3.8	82	3.8	90.7	3.8
45	40	50	81.1	3.8	84	3.8	87	3.8	95.7	3.8
50	45	55	86.1	3.8	89	3.8	92	9.5	100.7	3.8
55	50	60	91.1	3.8	94	3.8	97	9.5	105.7	3.8
60	55	65	96.1	3.8	99	3.8	102	9.5	110.7	3.8
65	60	70	101.1	3.8	104	3.8	107	9.5	115.7	9.5
70	65	75	106.1	3.8	109	3.8	112	9.5	120.7	9.5
75	70	80	111.1	3.8	114	9.5	117	9.5	125.7	9.5
80	75	85	116.1	9.5	119	9.5	122	9.5	130.7	9.5

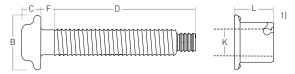
HUCK BOBTAIL®

$\begin{array}{c} \text{BobTail}^{\mathbb{R}} \\ \text{With large diameter} \end{array}$

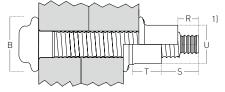
See page 12



Before installation



After installation



Dimensions head and collar

	He	ad	Collar			
Bolt-X	B max.	C max.	K max.	L max.		
12	25.4	9.6	12.3	17.9		
14	30.0	11.5	14.4	21.5		
16	33.8	12.2	16.4	23.7		
20	42.4	16.0	20.5	29.6		

Installed information and maximal hole table

	Clas	s 10.9 – after insta	llation					
Bolt-X	Clamp force (kN)	Tensile strength (kN)	Shear strength (kN)	R min.	S max.	T min.	U max.	Max. hole size
12	64.9	87.7	65.4	11.1	23.7	13.1	17.3	13.5
14	87.0	120.0	94.0	11.2	24.6	15.5	20.2	15.5
16	116.0	163.0	122.0	11.2	23.3	17.4	23.1	17.5
20	181.0	255.0	191.0	14.0	26.7	21.8	28.8	22.0

Definition of the order description

The order description consists of the blue highlighted details. The grip range code you can find on page 8 – 11.

Small diameter BobTail® pin up to 9.5 mm, inch

Head st	yle	Material		Bolt->	<	Grip range	Finish	
Round		Carbon steel grade 5.8	R			Code on page 8/9		
Truss head	98T	Carbon steel grade 8.8	BR	6.4 (1/4")	8		Zinc electroplate	GA
				7.9 (5/16")	10		Zinc electroplate	GA
				9.5 (3/8")	12		Zinc electroplate	GA

Example for an order description

Large diameter BobTail® pin 12.7 to 25.4 mm, inch

Head style		Material	Material		<	Grip range	Finish	
Round	R	Carbon steel grade 8.8	BR	12.7 (1/2")	16	Code on page 10/11	Zinc electroplate	GA
				15.9 (5/8")	20		Zinc electroplate	GA
					24		Zinc electroplate	GA
					28		Zinc electroplate	GA
				25.4 (1")	32		Zinc electroplate	GA

Example for an order description

BTR-BR16-4GA – is a BobTail[®] lock bolt fastener, round head, carbon steel grade 8.8, 12.7 mm (1/2") bolt-**x**, grip 4 (6.4 - 15.7 mm), zinc electroplate

BobTail[®] collar 6.4 to 25.4 mm, inch

Grade		Material		Collar-X		Finish			
for pin 5.8		Low carbon steel	R						
for pin 8.8	5	Low carbon steel	R	6.4 (1/4")	8	Zinc electroplate	GAH		
				7.9 (5/16")	10	Zinc electroplate	GAH		
				9.5 (3/8")	12	Zinc electroplate	GAH		
				12.7 (1/2")	16	Zinc electroplate	GAT	Zinc + black	BL
				15.9 (5/8")	20	Zinc electroplate	GAT	Zinc + black	BL
				19.1 (3/4")	24	Zinc electroplate	GAT	Zinc + black	BL
				22.2 (7/8")	28	Zinc electroplate	GAT	Zinc + black	BL
				25.4 (1")	32	Zinc electroplate	GAT	Zinc + black	BL

Example for an order description

BTC-R8 GAH – is a standard BobTail® collar, low carbon steel, 6.4 mm collar-x, zinc electroplate

BT-R8-4GA – is a BobTail[®] lock bolt fastener, round head, carbon steel grade 5.8, 6.4 mm (1/4") bolt-x, grip 4 (3.2 - 9.5 mm), zinc electroplate

Definition of the order description

The order description consists of the blue highlighted details. The grip range code you can find on page 12/13.

Large diameter BobTail® pin 12 to 20 mm, metric

Head style	Material		Bolt-X		Grip range	Finish	
Flanged	Carbon steel grade 10.9	DT	12	12	Code on page 12/13	Mechanical zinc	G
			14	14			
			16	16			
			20	20			

Example for an order description

MBT-DT12-10G – is a BobTail[®] lock bolt fastener, flanged head, carbon steel grade 10.9, 12 mm bolt-x, grip 10 (5 - 15 mm), mechanical zinc

BobTail® collar 12 to 20 mm, metric

Material		Collar-X X		Finish		
Low carbon steel	R	12	12	Zinc + black	BL	
		14	14	Zinc + black	BL	
		16	16	Zinc + black	BL	
		20	20	Zinc + black	BL	

Example for an order description

MBTC-R16BL – is a standard BobTail® collar, low carbon steel, 16 mm collar-x, zinc + black

Depending on the environmental conditions there are many different types of installation systems (for the BobTail[®], dependent of fastener diameter, application type and application access). Some of the most popular tools are shown below but this is just part of our BobTail[®] tooling range. Discuss your requirements with our dedicated KVT team to find the optimum solution to suit your need.

To install BobTail® the basic tooling requirement is:

- Installation tool Either pneumatic or hydraulic
- Nose assembly To match with the fastener and tool
- Powerig[®] To supply power to hydraulic tools
- Additional hose set Sometimes required to connect hydraulic tools to the Powerig[®]

244BT/256BT

Pneumatic

The 244BT (4.8 – 6.4 mm) & 256BT (7.9 – 9.5 mm x) pneumatic tools are specifically designed for installation of BobTail[®].



2480L

Hydraulic

Hydraulic compact installation tool; high speed & high durability. Ideal for high volume production to install BobTail[®] with diameter 4.8 – 6.4 mm as well as other small diameter lock bolts and structural blind rivets.

2503

Hydraulic

Hydraulic installation with extra long stroke. Ideal for installing BobTail® with 7.9 – 9.5 mm **x**. Will also install other lock bolts & structural blind rivets.

2620-PT/2620

Hydraulic Hydraulic installation tool, installs BobTail[®] with 12 and 12.7 mm **x**.



2628/3585PT

Hydraulic Hydraulic installation tool. Installs BobTail[®] with 12.7, 15.9, 16 and 19.1 mm **x**.







HUCK[®] tooling systems

BTT Serie

Hydraulic

The compact inline design of the BTT tools is configured for where reduced centre edge distance is required for 12, 14, 16, 20, 12.7, 15.9, 19.1, 22.2 and 25.4 mm **x**.

Swageforward® Werkzeugserie Hydraulic

Hydraulic tooling. Ideal for use when application space is limited. Installs 9.5 mm and 12 – 25.4 mm **x** BobTail[®] lock bolts.





HK32-002 Powerig®

Compact portable Powering[®]. Can be used with all hydraulic installation tools.



BobTail[®] collar cutter

A quick change of nose assembly from the installation nose to the cutter nose enables removal of BobTail[®] fasteners using the same tooling system. BobTail[®] cutter nose assemblies available in sizes 6.4, 9.5, 12, 12.7, 14, 15.9, 16, 19.1, 20, 22.2 and 25.4 mm **x**.

Aftermarket solution

The BobTail[®] can be installed outside the factory environment utilising the following:

- Required nose assembly and collar cutter
- BTT35LS BobTail® tool
- Additional hose sets
- To provide hydraulic power:
- HP690 hand pump or
 911D Hydraulic Diesel Powerig[®]



Installation gauges

Easy to use ring gauge used to ensure each installation is correct.



How Bobtail® works

Functionality

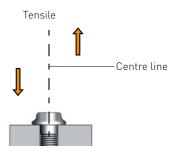
Clamp force or pre-load: In the initial stages of the installation process, the tool engages and pulls on the tail of the fastener. The joint is pulled together before the anvil portion of the nose assembly is forced down the collar. This progressively locks (swages) it into the grooves of the harder pin. The pin and swaged collar combine to form the installed fastener.

The squeezing action reduces the diameter of the collar, increasing its length. This in turn stretches the pin, generating a clamp force over the joint.

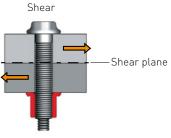
Shear strength of BobTail[®] fasteners vary according to the material strength and minimal diameter of the fastener. By increasing the diameter or the grade of material, the shear strength of the fastener can be increased.

The tensile strength of BobTail[®] fasteners is dependent on the shear resistance of the collar material and the number of grooves it fills.





BobTail[®] after installation



BobTail[®] after installation

Installation Sequence

1.

- Pin placed into prepared hole
- Collar spun onto pin

2.

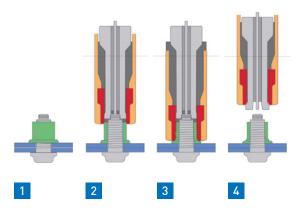
- Tool is applied to the annular pull grooves and activated
- Pullers in nose assembly draw the pin into the tool
- Anvil pushes collar against joint
- Initial clamp generated

3.

- Tool swages collar, increasing clamp

4.

- Swaging of collar complete
- Tool ejects the fastener and releases the puller, Installation complete



HUCK BOBTAIL®

Further designs

Key benefits

- Permanent, mechanically locked fastener
- Installation process automatically provides fastener values
- No torque or re-torque required
- Unlike conventional nuts and bolts, they will not work loose, even during extreme vibration
- Rapid installation with Quick and easy visual inspection
- Excellent gap closure capability
- Can be installed onto angled surfaces (5° maximium)
- Tamperproof
- Various tools are available

$C6L^{\circledast}$ – The original HUCK $^{\circledast}$ design

- 5.8 grade small diameter Lockbolt
- Made to British Standard B7805: Part 1: 1997: A mark of quality, safety and performance
- Wide flange collar available: Enables installation into non metallic materials
- Pin head style: Brazier, truss, countersunk, specific headstyle for palisade fencing
- Collar style: Standard, flanged, wide flanged and low profile
- Materials: Steel, stainless steel, aluminum

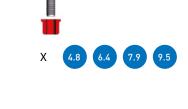
C120L®

- 8.8 grade small diameter Lockbolt
- High tensile strength version of C6L
- Pin head style: Brazier, truss, countersunk
- Collar style: Standard, flanged
- Material: Steel



Magna-Grip®

- Huge grip range: Accommodates wide variations in joint thickness – 14.3/23.9 mm. Based on x 6.4 mm. Two different grip lengths available. One pin and one collar cover a wide variety of applications: Reducing the risk of incorrect fastener installation. Wide grip range minimises fastener inventory.
- Flush pinbreak: No catching on clothes, skin or goods
- Pin head style: Button, truss, countersunk, rivet, broad truss
- Collar style: Standard flange, medium flange, wide flange
- Materials: Steel, aluminum



Further designs

C50L®

- 8.8 grade large diameter Lockbolt
- Made to British Standard B7805: Part 2: 1997: A mark of quality, safety and performance
- High tensile friction grip fastener
- Pin head style: Round, truss, countersunk, thread head
- Collar style: Standard, flanged, low profile
- Materials: Steel, stainless steel, aluminum



Hucktainer®

Designed specifically for joining composite board in trailer applications.

- Will not crush or damage the composite board
- Integral seal around pin head prevents moisture ingress
- Low profile on both sides when installed: No catching on clothes, skin or goods. Not as grip sensitive as some competitor products
- Pin head style: Standard low profile, encapsulated in plastic
- Sleeve style: Wide bearing, medium bearing, clearance
- Material: Steel

KVT-Fastening – Fastening technology



Blind rivet nuts



Blind rivet technology



Thread inserts

Access solutions



Self-clinching fasteners



Quick fastening elements and clips





Stud welding systems^{1]}



Lock nuts





Adhesives and sealants^{1]}



Installation technology Quick connectors 4)





Intelligent logistic systems

applications

Bossard SmartBin and SmartLabel are intelligent logistics systems which monitor stock with total reliability and ensure stock replenishment automatically. An online system transmits the data to our server, and this - if necessary triggers an order. These systems ensure quick and easy availability of C-parts while production is running.

Competent analysis for efficient **Engineering Services**

KVT-Fastening's highly qualified experts analyze the given task at hand. Based on this sound understanding of the project, they then develop ideal solutions that are economical, efficient, and safe.



Logistic systems



Engineering Services

For more information about our range of products and order at our E-shop, please visit www.kvt-fastening.com

¹⁾ Not available in Germany. ²⁾ Only available in Switzerland. ³⁾ Not available in Switzerland. ⁴⁾ Not available in Austria.





Fastening, sealing and flow control solutions for complex

The extensive KVT-Fastening portfolio offers optimal solutions for your most challenging applications. The products included in this catalog represent only a selection from our entire product portfolio. Upon request, we will be pleased to provide additional

Plugs

information or an individual consultation to you.



Pressure intensifiers^{3]}



Quick release pins and spring plungers

KVT-Fastening Branch of Bossard Ltd

Dietikon/Zürich|Switzerland Tel: +41 44 743 33 33 info-CH@kvt-fastening.com www.kvt-fastening.ch

KVT-Fastening GmbH

Illerrieden | Germany Tel: +49 7306 782 - 0 info-DE@kvt-fastening.com www.kvt-fastening.de

KVT-Fastening GmbH

Linz/Pichling | Austria Tel: +43 732 25 77 00 info-AT@kvt-fastening.com www.kvt-fastening.at



www.kvt-fastening.com

KVT-Fastening Sp. z o.o.

Radom | Poland Tel: +48 58 762 17 80 info-PL@kvt-fastening.com www.kvt-fastening.pl

KVT-Fastening S.R.L.

București | Romania Tel: +40 37 1381155 info-RO@kvt-fastening.com www.kvt-fastening.ro

KVT-Fastening spol. s.r.o.

Bratislava|Slovakia Tel: +421 9 11102510 info-SK@kvt-fastening.com www.kvt-fastening.sk

KVT-Tehnika pritrjevanja d.o.o.

Ljubljana | Slovenia Tel: +386 1 2808019 info-Sl@kvt-fastening.com www.kvt-fastening.si

KVT-Fastening s.r.o.

Brno|Czech Republic Tel: +420 547 125200201 info-CZ@kvt-fastening.com www.kvt-fastening.cz

KVT-Fastening Kft.

Budapest|Hungary Tel: +36 1 769 0925 info-HU@kvt-fastening.com www.kvt-fastening.hu

