



Deutsches  
Institut  
für  
Bautechnik

DIBt

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**HUCK**<sup>®</sup>

## It's Official: Huck BobTail Offers Maintenance Free Joints

The Huck BobTail 12,14,16, 20mm and 1 inch diameters, after lengthy and vigorous independent testing, has gained the prestigious Allgemeine bauaufsichtliche Zulassungen (German national technical approval) from the world renowned DIBt (Deutsches Institut für Bautechnik) for use in both static and dynamic applications in civil engineering.



Furthermore, the approval concludes that retorquing/retension of an installed Huck BobTail LockBolt is not possible and also not necessary and connections do not require maintenance regarding preload.

Thus joints fastened together by BobTail large diameter LockBolts, within the range specified, are maintenance free.

## About DIBt

DIBt is the German approval body for non-regulated construction products and types of construction. As a provider of services and public functions, DIBt fulfils a large range of technical and regulatory tasks in the field of construction, including:

- Granting national technical approvals (allgemeine bauaufsichtliche Zulassungen, abZ) for unregulated construction products and types of construction within the framework of the Building Codes of the German federal states (Länder)
- Issuing European Technical Assessments (ETAs) for non-standardised construction products and kits under the Construction Products Regulation
- Keeping a register of energy performance certificates and inspection reports for air-conditioning systems in accordance with the Energy Saving Ordinance (EnEV 2013) and electronically verifying these documents on the basis of a random selection
- EnEV-Registrierstelle (German)
- Preparing the Construction Products Lists (Bauregellisten) A and B as well as List C and publishing them
- Preparing notifications for the introduction of Technical Building Rules (Technische Baubestimmungen)
- Promoting research in the field of construction
- Recognising testing laboratories, inspection and certification bodies (PÜZ-Stellen) for tasks at national level and monitoring these bodies
- Notifying independent third party bodies – also called notified bodies – in accordance with the Construction Products Regulation
- Acting as Joint Market Surveillance Authority within the framework of the market surveillance of harmonised construction products
- Granting structural design approvals (Typenprüfung) for construction works or parts thereof intended for multiple use (use of the same design in several locations)
- Actively contributing to the development of technical rules (especially standards) at national, European and international level
- Contributing to the work of national, European and international groups and committees

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# Procuring the Huck BobTail DIBt Approval

A copy of the controlled approval document in German can be purchased directly from the DIBt official website ([www.dibt.de](http://www.dibt.de)).

Registration is necessary to ensure the purchaser is kept up to date with any changes to the approval. After entering the website use the search function to find Z-14.4-591.

After entering  
the website  
use the search  
function to find  
Z-14.4-591

## Huck BobTail DIBt Approval

APPROVAL NUMBER Z-14.4-591

Valid from 1 July 2015 to 4 November 2021  
(First approval 2011)

The testing and validation of test results are carried out independently of each other and the DIBt, to ensure the impartiality and integrity of the approval process.

The results of the testing have been calculated to meet the needs of both DIN EN 1993 (EURO Code 3 – Design of Steel Structures)



### DIN EN 1993

(EURO Code 3 – Design of Steel Structures)

- Characteristic value of shear resistance ( $F_v, R_k$ )
- Characteristic value of tension resistance ( $F_t, R_k$ )
- Characteristic preload ( $F_p, C^*$ )

# Mechanical Values of the Huck BobTail LockBolt

Nominal Diameter	F <sub>v,Rk</sub> [KN]	F <sub>t,Rk</sub> [KN]	F <sub>p,C</sub> [KN]	A <sub>s</sub> [mm <sup>2</sup> ]
M12	74,6	89,8	64,7	92,5
M14	98,0	118,4	88,3	126,1
M16	127,5	151,9	114,5	163,5
M20	204,6	233,5	179,3	256,2
1" (dia 25,4)	347,0	374,3	293,1	418,7

**F<sub>v,Rk</sub>** Characteristic value of shear resistance

**F<sub>t,Rk</sub>** Characteristic value of tension resistance

**F<sub>p,C</sub>** Characteristic preload

**A<sub>s</sub>** Tensile stress area

## Service and Maintenance

As it's such an important part of the approval, the following text is exact wording taken from the Approval Document:

### SECTION 5 OF DIBt APPROVAL

#### Provision for service and maintenance

Accordingly executed connections with LockBolts (e.g. direct contact of structural parts, no unsuitable coating) do not require maintenance regarding preload. Possible incorrect installed or damaged LockBolts shall be replaced.

## Additional Information

Additional rules/guidelines are included in the approval pertinent to use in wind energy plants.

As expected the approval documents illustrates the need for trained staff to use Huck tooling to install the fasteners, and lists checks post installation and corrective methods if the fastener is not installed properly.



### BobTail Removal

A quick change of nose assembly from the installation nose to the cutter nose enables removal of BobTail fasteners using the same tooling system without any damage to the materials being joined.

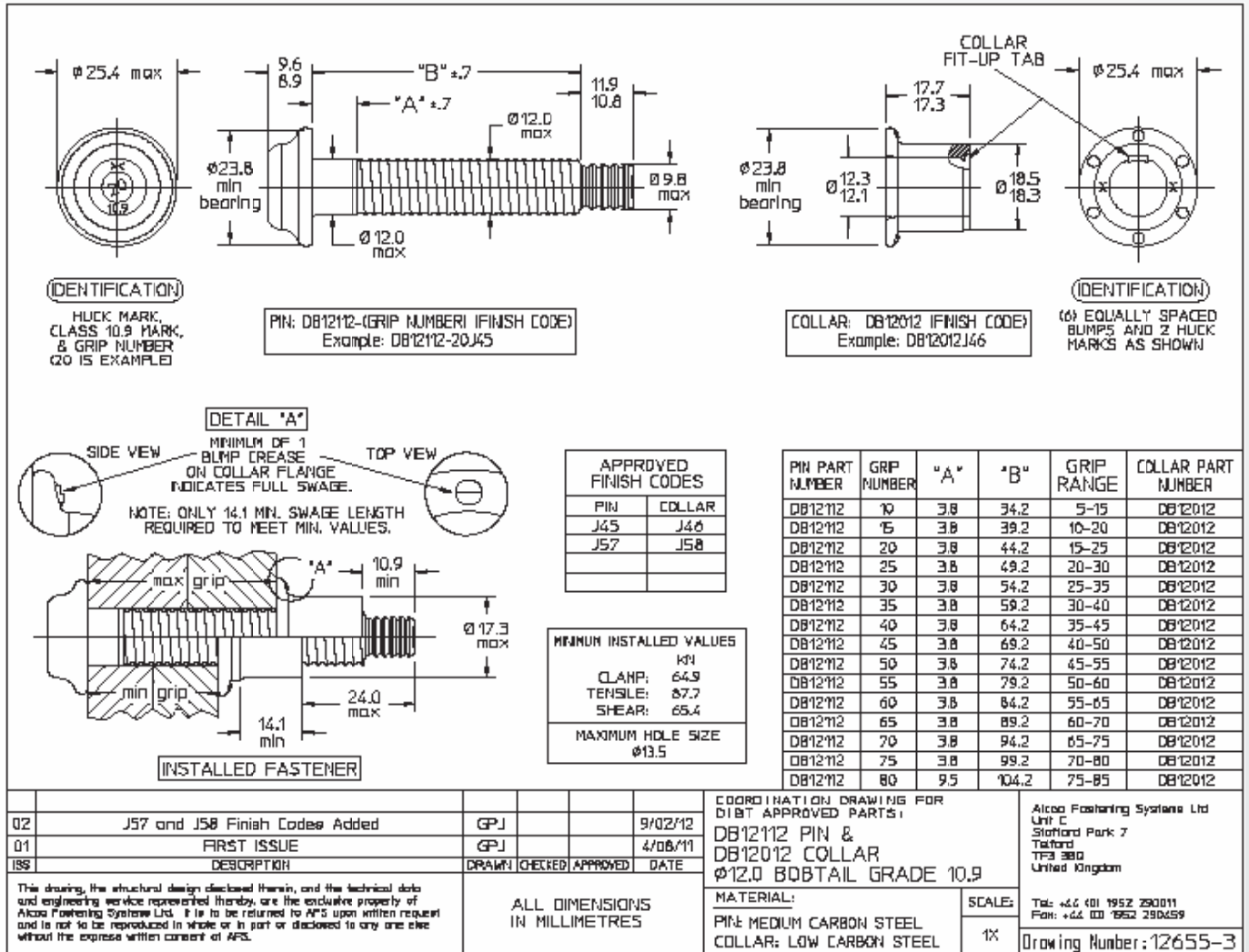
# Part Numbers

Due to the verification of conformity requirement, the products included in the approval have specific part numbers. This ensures that when the products are ordered they meet the DIBt approval standard.

DB12112 (pin) DB12012 (collar)	12mm
DB12114 (pin) DB12014 (collar)	14mm
DB12116 (pin) DB12016 (collar)	16mm
DB12120 (pin) DB12020 (collar)	20mm
DB12126 (pin) DB12026 (collar)	25.4mm/1inch

## Example of Co-ordination Drawing shown below:

UNCONTROLLED DOCUMENT



Drawing shown above is for illustrative purposes only and is not the current drawing

Delivery sheets will be marked with conformity mark Ü (Ü-mark) in accordance with the decrees on conformity marking of Germany.

# Procuring the Huck Magna-Lok and Magna-Bulb DIBt Approval

The Huck Magna-Lok 1/4", 3/8" and 1/2" and Magna-Bulb 1/4" blind rivets are now certified and approved under the DIBt accreditation.

These blind rivets can be used in civil engineering and are installed using suitable tools as discussed on the next page. Applications include steel structural elements.

Both the Magna-Lok and the Magna-Bulb have similar features such as high strength and vibration resistant performance and can both be used in numerous metals.

What sets them apart, is during installation. During installation of the Magna-Bulb the sleeve is compressed, causing it to fold outwards to form a bulb on the blind side. This helps to spread the load over more surface

area, providing a stronger, longer lasting connection. When a Magna-Lok is installed, the mandrel is drawn in and fills the diameter of the hole. The pin locks in the sleeve then breaks off. Magna-Lok also has a wider grip range to accommodate large variations in joint thickness. A simple, visual inspection ensures that both fasteners are installed correctly.

Again, a copy of the controlled approval document in German can be purchased directly from the DIBt official website ([www.dibt.de](http://www.dibt.de)).

Registration is necessary to ensure the purchaser is kept up to date with any changes to the approval. After entering the website use the search function to find Z-14.4-406.

After entering the website use the search function to find Z-14.4-406

## Huck Magna-Lok and Magna-Bulb DIBt Approval

APPROVAL NUMBER Z-14.4-406

Valid from 30 November 2018 to 30 November 2020

The testing and validation of test results are carried out independently of each other and the DIBt, to ensure the impartiality and integrity of the approval process.

The results of the testing have been calculated to meet the needs of both DIN EN 1993 (EURO Code 3 – Design of Steel Structures)

Magna-Lok

Magna-Bulb

### DIN EN 1993

(EURO Code 3 – Design of Steel Structures)

- Characteristic value of shear resistance ( $F_v, R_k$ )
- Characteristic value of tension resistance ( $F_t, R_k$ )

# Mechanical Values of the Huck Magna-Lok and Magna-Bulb

Fastener Type	Rivet Type	Diameter [mm]	Fv,Rk [KN]	Ft,Rk [KN]*	Head Style
Magna-Lok	MGLP-R8	6,4	12,1	5,74	Protruding
Magna-Lok	MGLP-R12	9,5	27,2	15,32	Protruding
Magna-Lok	MGLP-R16	12,7	46,7 / 39,7 <sup>1)</sup>	20,85	Protruding
Magna-Lok	MGL100-R8	6,4	11,0	5,93	Countersunk
Magna-Lok	MGL100-R12	9,5	27,0	15,32	Countersunk
Magna-Lok	MGL100-R16	12,7	46,7 / 39,7 <sup>1)</sup>	20,85	Countersunk
Magna-Bulb	MBP-R8	6,4	12,0	8,97	Protruding

**Fv,Rk** Characteristic value of shear resistance

**Ft,Rk** Characteristic value of tension

<sup>1)</sup> A characteristic shear load-bearing capacity reduced to 85% applies for thickness of structural element I < 88.00 mm  
 \* The values shown are for "Dicke Bauteil II" of 5mm

## Service and Maintenance

Once installed, the Magna-Lok and Magna-Bulb create a permanent lock making these structural fasteners. The unique locking design creates an internal lock during installation that virtually eliminates pin pushout by mechanically locking the pin to the sleeve. So Magna-Lok and Magna-Bulb fasteners lock flush into place reliably. Permanently.



Pneumatic

## Additional Information

Magna-Lok and Magna-Bulb can be installed using conventional Huck pneumatic and hydraulic tooling.

Both types of tools allow for fast installation and no special training or skill are required for operators.

Neither require a special nose-piece insert in order to be properly installed; the locking mechanism has been engineered into the fastener eliminating tooling and operator error.

A simple, visual inspection ensures the blind rivet is installed properly, 100% of the time.



Hydraulic

# Example of Co-ordination Drawings shown below:

UNCONTROLLED DOCUMENT

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MECHANICAL PROPERTIES (LBS MIN):  
 TENSILE: 1850 MIN./2200 TYP.  
 SHEAR: 2500 MIN./2750 TYP.  
 PIN RETENTION: 300 MIN./400 TYP.  
 HOLE SIZE: .261/.272  
 FINISH:  
 SLEEVE: ZINC PLATE WITH CLEAR CHROMATE. CADMIUM PLATE AVAILABLE.  
 PIN: ZINC PLATE CLEAR CHROMATE  
 REFERENCE INSTALLED PIN POSITION: FLUSH +0.020

PART NUMBER	GRIP RANGE		"L" MAX.	"F" MAX.	WEIGHT PER 1,000 PCS.	
	MIN.	MAX.			SHIPPING	INSTALLED
MGLP-R8-6	.080	.375	.560	.999	18.7 LBS.	10.0 LBS.
-7	.080	.437	.620	1.061	19.5 LBS.	10.8 LBS.
-7X	.110	.450	.622	1.061	19.76 LBS.	11.18 LBS.
-10	.350	.625	.810	1.249	22.3 LBS.	13.7 LBS.
-E	.080	.625	.810	1.434	23.13 LBS.	14.53 LBS.
-14	.580	.875	1.060	1.499	25.72 LBS.	17.02 LBS.
-18	.830	1.125	1.310	1.799	29.44 LBS.	20.79 LBS.
-22	1.080	1.375	1.560	1.999	33.26 LBS.	24.56 LBS.
-24	1.205	1.500	1.685	2.124	35.83 LBS.	26.09 LBS.

[1] DESIGN OF PIN TO SLEEVE RETENTION METHOD IS MANUFACTURER'S OPTION.

NOTES:

14	REVISED PER PCN W3592. (Ref. SPR 3244)	RLK			01/19/10
13	REVISED PIN FINISH PER PCN W3253.	JZL	JL	RK	7-1-06
REV	DESCRIPTION & PCN	DRAWN	CHECKED	APPROVED	DATE

COORDINATION DRAWING FOR: 1/4" MAGNA-LOK, STEEL

Alcoa Fastening Systems

Industrial Products  
 8001 Imperial Drive (P.O. Box 8117)  
 Waco, TX 76714-8117  
 800-388-6825 / 254-776-2000

SCALE: 15X

INDEX 9129-C1

\*This drawing, the structural design disclosed therein, and the technical data and engineering service represented thereby are the exclusive property of Huck International Inc. It is to be returned to Huck upon written request and is not to be reproduced in whole or in part or disclosed to any one else without the express written consent of Huck.\*

UNLESS OTHERWISE SPECIFIED, TOLERANCES ARE:  
 .XXX .XX  
 .010 .02

MATERIAL:  
 PIN: STEEL  
 SLEEVE: STEEL

Magna-Lok

UNCONTROLLED DOCUMENT

INDEX 9464-C

IDENTIFICATION:  
 X  
 M(J)  
 GRIP NUMBER

PIN PUSHOUT: 300 LBS.TYP.  
 HOLE SIZE: .261/.272  
 FINISH:  
 SLEEVE - ZINC PLATE WITH GOLD CHROMATE.  
 PIN - ZINC PLATE CLEAR CHROMATE  
 INSTALLED PIN POSITION: FLUSH TO .030 BELOW

2. DIMENSIONS ARE IN INCHES.  
 1. DIMENSIONING SYMBOLS: DIM IN ( ) = REF.  
 T.I. = THEORETICAL INTERSECTION.

NOTES:

PART NUMBER	GRIP RANGE		MECHANICAL PROPERTIES TYP.	"A" MAX.
	INCHES	MILLIMETERS		
MBP-R8-M2	.060 - .138	1.5 - 3.5	2000	.795
-M3	.110 - .189	2.8 - 4.8		.882
-M4	.150 - .229	3.8 - 5.8		.962
-M5	.189 - .268	4.8 - 6.8		.934
-M6	.229 - .308	5.8 - 7.8		.969
-M7	.268 - .346	6.8 - 8.8		1.008
-M8	.308 - .387	7.8 - 9.8		1.048
-M9	.346 - .425	8.8 - 10.8		1.087
-M10	.387 - .466	9.8 - 11.8		1.121
-M11	.425 - .504	10.8 - 12.8		1.166
-M12	.466 - .545	11.8 - 13.8		1.206
-M13	.504 - .583	12.8 - 14.8		1.245
-M18	.701 - .780	17.8 - 19.8		1.441
-M19	.741 - .820	18.8 - 20.8		1.452
-M32	1.252 - 1.331	31.8 - 33.8	1.994	

20	REVISED PER PCN W3984.	RLK			08-15-13
19	REVISED PIN FINISH PER PCN W3253.	JZL	JL	RK	7-1-06
REV	DESCRIPTION & PCN	DRAWN	CHECKED	APPROVED	DATE

COORDINATION DRAWING FOR: 1/4" MAGNA-BULB STEEL METRIC GRIP RANGE

Alcoa Fastening Systems

Industrial Products  
 8001 Imperial Drive (P.O. Box 8117)  
 Waco, TX 76714-8117  
 800-388-6825 / 254-776-2000

SCALE: 2X

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UNLESS OTHERWISE SPECIFIED, TOLERANCES ARE:  
 .XXX .XX  
 .010 .02

MATERIAL:  
 PIN: STEEL  
 SLEEVE: STEEL

Magna-Bulb

Drawings shown above are for illustrative purposes only

Delivery sheets will be marked with conformity mark Ü (Ü-mark) in accordance with the decrees on conformity marking of Germany.



# Coatings

## BobTail

Standard coating on the approved BobTail are J45 (Pin) /J46 (Collar) which is equivalent to C4 (typical environments Industrial and Coastal, Chemical Processing Plants) in ISO 12944 -

<http://www.international-pc.com/markets/infrastructure/Documents/iso-12944.pdf>

Whilst Howmet do not offer a specific corrosion guarantee for each of these coatings, we are able to show through extensive testing that the following figures can be expected, providing the fastener is installed correctly.

All testing was carried out by an independent 3rd party testing facility at Institut für Korrosionsschutz (Institute for Corrosion Protection) Dresden. Both are Silver-Grey in appearance.

### J45 / J46

- Corrosion resistant to 720hrs ISO9227 NSS (ISO12944 – C4) Installed
- 1440hrs Uninstalled, performance as stated by platers

### J57 / J58

- Corrosion resistant to 1440hrs ISO9227 NSS (ISO12944 – C5 M High) Installed
- 2000hrs Uninstalled, performance as stated by platers

## Magna-Lok

- Sleeve: Zinc electro plate with clear chromate
- Pin: Zinc electro plate with clear chromate

All 72 hour finishes

## Magna-Bulb

- Sleeve: Zinc electro plate with clear chromate
- Pin: Zinc electro plate with clear chromate

All 72 hour finishes

## Next Steps

- To develop a more resistant coating for Magna-Lok and Magna-Bulb
- To obtain approval extension for BobTail for up to M36
- To obtain approval for excentric loaded application



## Contact

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