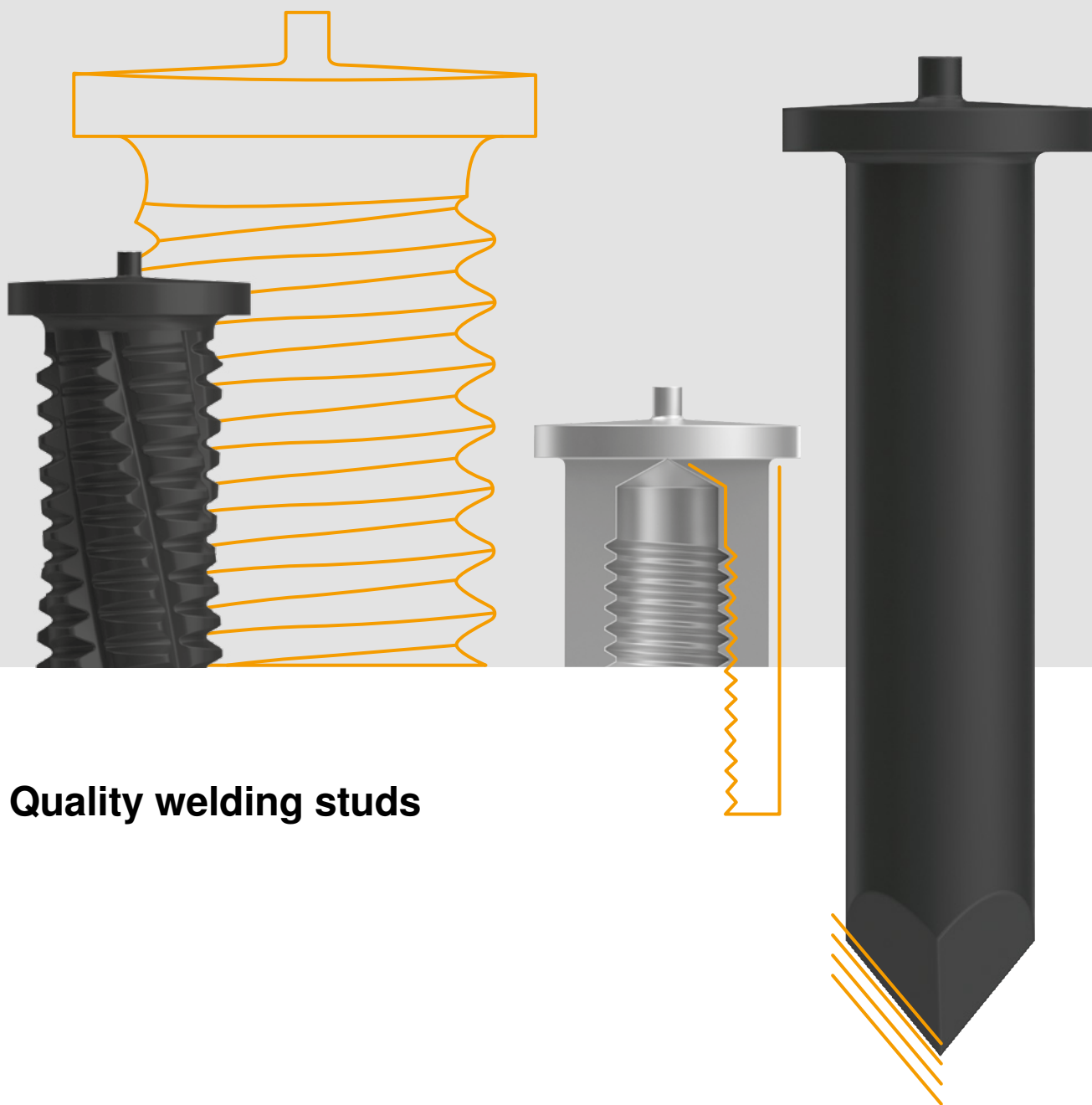




Quality welding studs



Welcome to Customer Service

Use the direct line to OBTEC Customer Service!

On the Service Hotline +49 (0)2373 89-1500, we are available every day from 7.30 a.m. to 5.00 p.m. for any questions about the OBTEC product range for electrical installations. The newly structured OBTEC Customer Service can offer you the full service:

- Competent contacts from your region
- All the information on the OBTEC product range
- Knowledgeable advice on special application topics
- Quick, direct access to all the technical data of the OBTEC products – we also want to provide the best in customer relations!

Telephone:

0 23 73 / 89-1166

Fax for requests:

0 23 73 / 89-12 38

Fax for orders:

0 23 73 / 89-12 38

E-Mail: info@obtec.eu

Internet: www.obtec.eu

Contents

	Welding stud systems	4
	PT threaded bolt for tip ignition	13
	UT pins for tip ignition	31
	IT internal threaded bolt for tip ignition	39
	ISO nails for tip ignition	45
	Flat connector for tip ignition	51
	Welding elements for short cycle	55
	Lacquer groove pin for tip ignition	61
	Directories	65

OBO high-quality welding stud



Product range

The range of welding studs is a reflection of what is required in practice. From all types of threaded bolt to the flat connector in any material and dimensions. As a brand manufacturer, we can offer you:

- Complete welding stud range containing over 2,000 articles
- Proprietary development and production facilities
- Ongoing product maintenance and further development
- Customer-specific special dimensions on request
- Special fastening

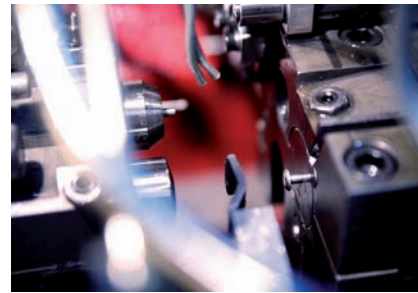
Quality

Professionals demand quality. A quality offered by all OBTEC brand products and services connected with stud welding:

- QA certification to DIN EN ISO 9001:2000
 - Tested material and manufacturing quality
- Active involvement in national and international standardisation bodies



Welding methods



Stud welding is one of the arc stud welding methods. The different methods are described in detail in DIN EN ISO 14555. The fastening elements for stud welding are described in DIN EN ISO 13918; the only applies to rotationally symmetrical components. At OBTEC, these welding studs are created on state-of-the-art multiple die presses through cold reduction. Decades of experience and continuous development of the manufacturing process guarantee the exceptional quality of OBTEC welding studs. In addition, there is a wealth of fastening elements for stud welding, which are not standardised, for example, the flat connector, also called an earthing connector. OBTEC has been producing these punched parts at the highest level of precision for many years. Modern punching tools and presses guarantee a high standard of quality for the fastening elements, as is required for high-quality welding.

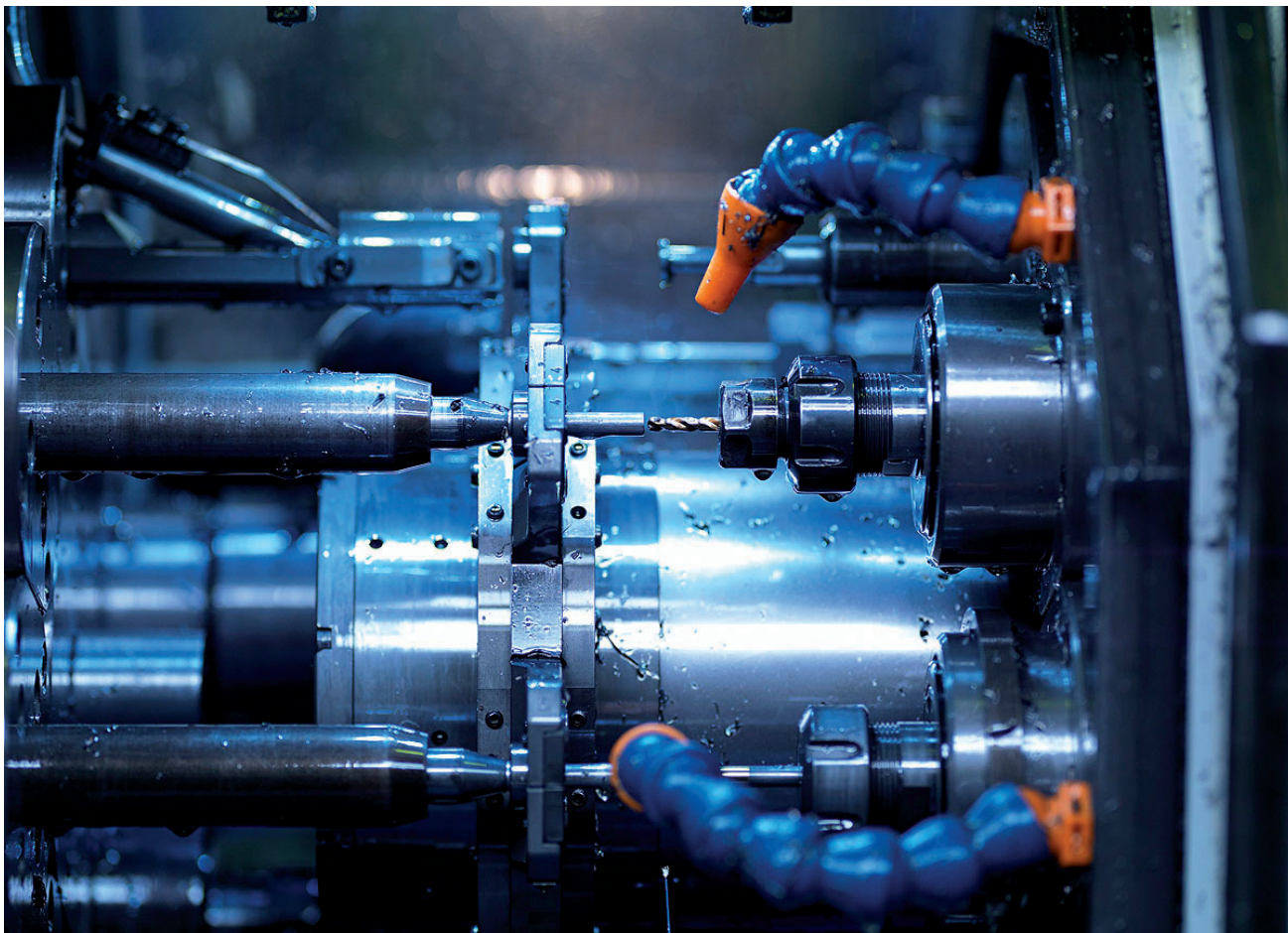
Welding methods

The welding methods are split into two main groups, which prevail in practice, according to the application:

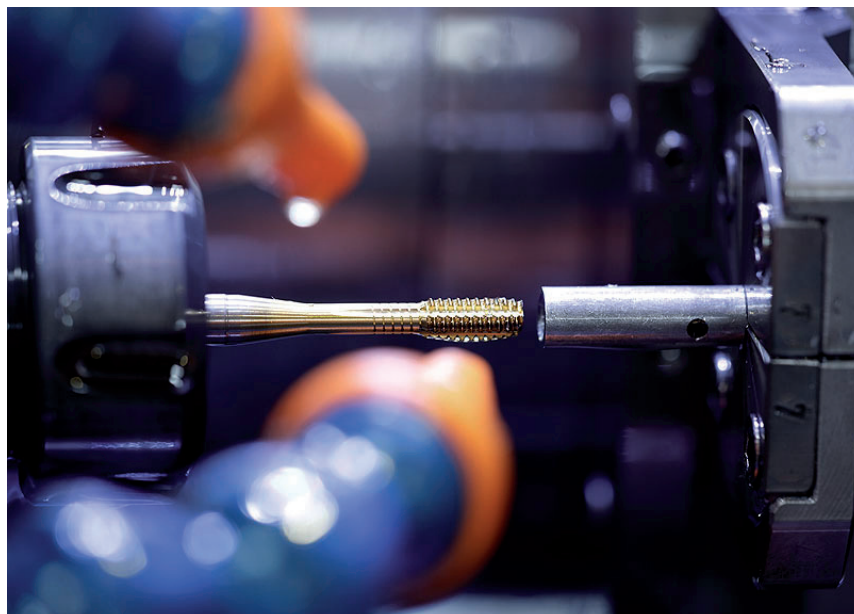
1. Capacitor discharge stud welding with tip ignition. There are two variants of this method: gap welding and contact welding.
2. Stud welding with arc ignition with the subgroup short arc ignition stud welding (short cycle).



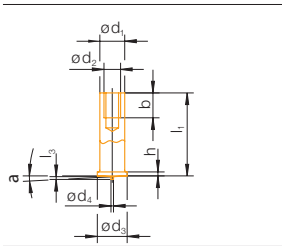
Technical informations



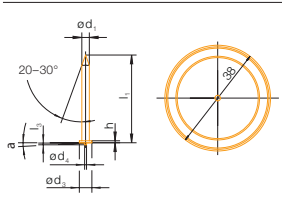
All the threads and stud flanges are created to DIN EN ISO 13918. The flange is a component part of the welding stud. Its diameter is greater than the external diameter of the stud. During welding, it prevents the arc from affecting the cylindrical section of the bolt, simultaneously increasing the welding area.



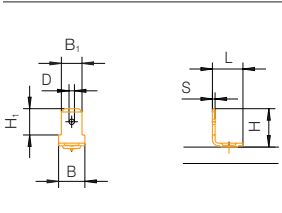
IT internal threaded bolt, DIN EN ISO 13918

	$d_1 \pm 0,1$	$l_1 + 0,6$	$b + 0,5$	$d_3 \pm 0,2$	$d_4 \pm 0,08$	$l_3 \pm 0,05$	h	$\alpha \pm 1^\circ \text{ max.}$
4			5	6,5	0,75	0,80	0,8 - 1,4	3°
5			6	7,5	0,75	0,80	0,8 - 1,4	3°
7,1			7,5	9	0,75	0,85	0,7 - 1,4	3°

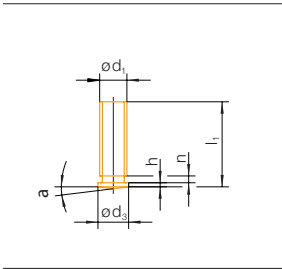
ISO nail

	$d_1 \pm 0,1$	$l_1 + 0,6$	$d_3 \pm 0,2$	$d_4 \pm 0,5$	$l_3 \pm 0,05/-0,02$	$h \pm 0,2$	$\alpha \pm 1^\circ \text{ max.}$
2,1			3,6	0,4	0,4	0,6	3°
2,6			4,5	0,5	0,5	0,7	3°
3			5,0	0,7	0,7	0,7	3°

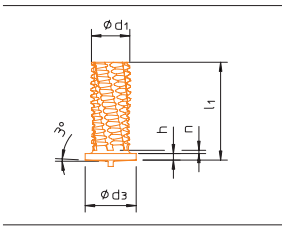
Flat connector

	$S \pm 0,03$	$H \pm 0,3$	$H_1 + 0,5$	$D + 0,2$	$B \pm 0,2$	$B_1 + 0,1$	L
	0,8	11,5	8	1,65	8	6,3	10

Short cycle threaded bolt

	d_1	$l_1 + 0,6$	$d_3 \pm 0,2$	h	$n \text{ max.}$	$\alpha \pm 1^\circ \text{ max.}$
M 3			4	0,7 - 1,4	1,5	7°
M 4			5	0,7 - 1,4	1,5	7°
M 5			6	0,8 - 1,4	2,0	7°
M 6			7	0,8 - 1,4	2,0	7°
M 8			9	0,8 - 1,4	2,0	7°
M 8			11	0,7 - 1,4	2,0	3°

Lacquer groove pin

	d_1	$l_1 + 0,6$	$d_3 \pm 0,2$	h	$n \text{ max.}$	$\alpha \pm 1^\circ \text{ max.}$
M 5			6,5	0,8 - 1,4	2,0	3°
M 6			7,5	0,8 - 1,4	2,0	3°
M 8			9,0	0,8 - 1,4	2,0	3°

Pictogram explanation

Welding method

	Tip ignition
	Short cycle

Materials

	Aluminium
	Stainless steel, grade 305
	Brass
	Steel

Thread metric

	Metric thread, 2.5 mm
	Metric thread, 3 mm
	Metric thread, 4 mm
	Metric thread, 5 mm
	Metric thread, 6 mm
	Metric thread, 8 mm
	Metric thread, 10 mm

Diameter

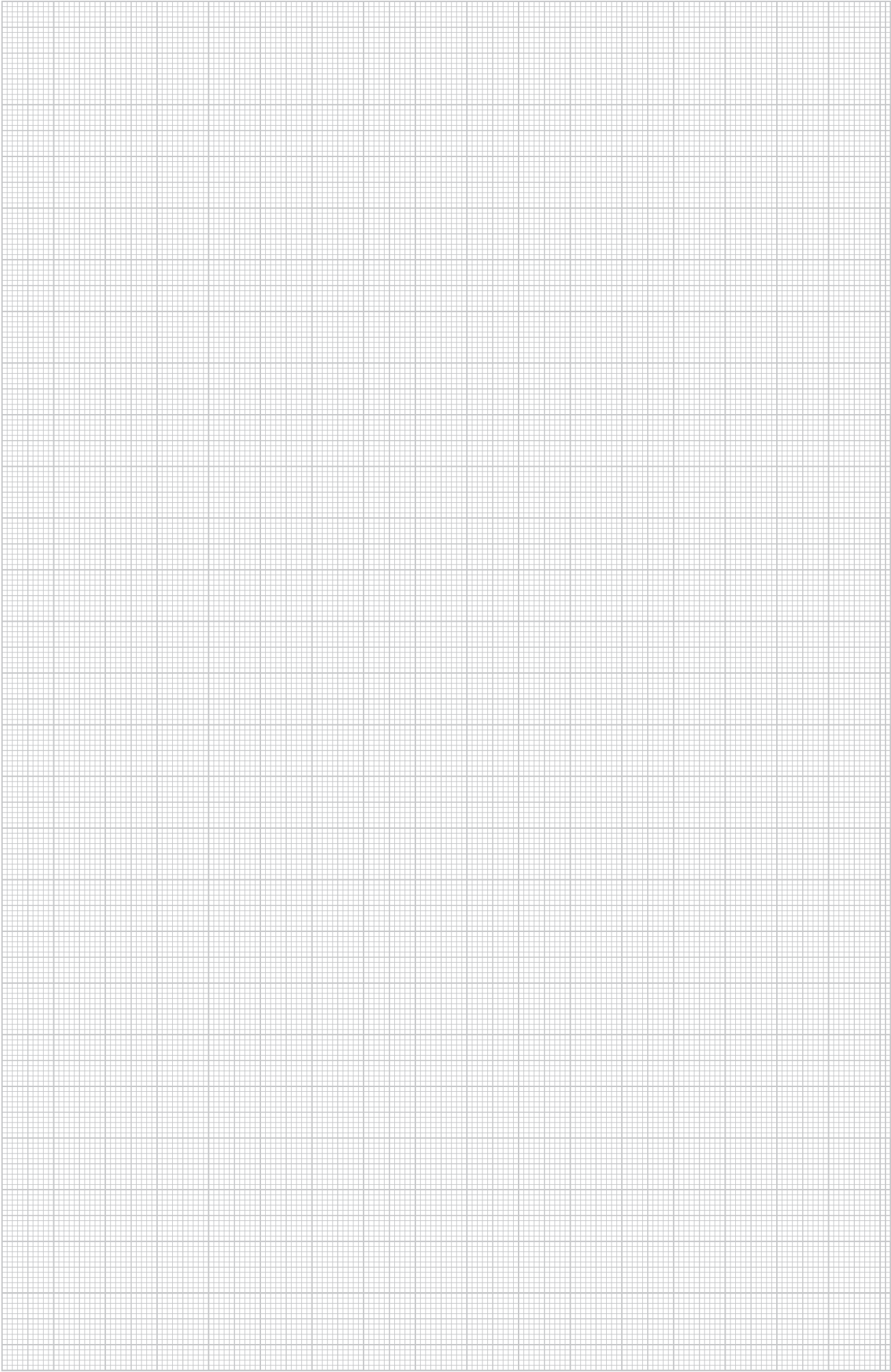
	Diameter 2.1 mm
	Diameter 2.6 mm
	Diameter 3 mm
	Diameter 4 mm
	Diameter 5 mm
	Diameter 6 mm
	Diameter 7.1 mm

Thread types

	UNC thread
	UNF thread

Materials

	Flat connector with 90° angle
	Flat connector with 135° angle



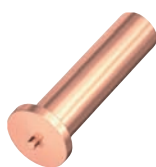


Contents

	Pins	Steel, copper-plated St 37-3	32
		Stainless steel, grade 305	33
		Aluminium, AlMg 3	35
		Brass CuZn 37	36



Pins



Pins, Steel, copper-plated St 37-3

Type	Diameter mm	Length mm	Quality	Surface	Shipping box Units	Pack Units	Weight kg/100 pc.	Item no.
1 S 3 x 6	3	6	4,8	Copper-plated	25000	1000	0,038	4040 70 8
1 S 3 x 8	3	8	4,8	Copper-plated	20000	1000	0,049	4040 71 6
1 S 3 x 10	3	10	4,8	Copper-plated	20000	1000	0,060	4040 72 4
1 S 3 x 12	3	12	4,8	Copper-plated	15000	1000	0,071	4040 73 2
1 S 3 x 20	3	20	4,8	Copper-plated	10000	1000	0,116	4040 75 9
1 S 3 x 25	3	25	4,8	Copper-plated	7000	1000	0,144	4040 76 7

St Steel

Cu Copper-plated

price/1,000 pc.



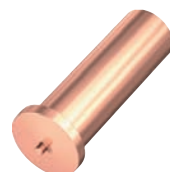
Pins, Steel, copper-plated St 37-3

Type	Diameter mm	Length mm	Quality	Surface	Shipping box Units	Pack Units	Weight kg/100 pc.	Item no.
1 S 4 x 8	4	8	4,8	Copper-plated	15000	1000	0,086	4040 80 5
1 S 4 x 10	4	10	4,8	Copper-plated	10000	1000	0,106	4040 81 3
1 S 4 x 12	4	12	4,8	Copper-plated	10000	1000	0,125	4040 82 1
1 S 4 x 16	4	16	4,8	Copper-plated	1000	1000	0,165	4041 31 3
1 S 4 x 20	4	20	4,8	Copper-plated	5000	1000	0,204	4040 85 6
1 S 4 x 30	4	30	4,8	Copper-plated	4000	1000	0,303	4040 87 2

St Steel

Cu Copper-plated

price/1,000 pc.



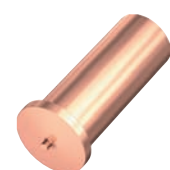
Pins, Steel, copper-plated St 37-3

Type	Diameter mm	Length mm	Quality	Surface	Shipping box Units	Pack Units	Weight kg/100 pc.	Item no.
1 S 5 x 8	5	8	4,8	Copper-plated	10000	1000	0,134	4040 90 2
1 S 5 x 10	5	10	4,8	Copper-plated	8000	1000	0,165	4040 91 0
1 S 5 x 12	5	12	4,8	Copper-plated	5000	1000	0,195	4040 92 9
1 S 5 x 15	5	15	4,8	Copper-plated	5000	1000	0,242	4040 93 7
1 S 5 x 16	5	16	4,8	Copper-plated	5000	1000	0,257	4041 32 1
1 S 5 x 20	5	20	4,8	Copper-plated	4000	1000	0,319	4040 94 5
1 S 5 x 25	5	25	4,8	Copper-plated	3000	1000	0,396	4040 95 3
1 S 5 x 30	5	30	4,8	Copper-plated	1000	1000	0,473	4040 96 1
1 S 5 x 50	5	50	4,8	Copper-plated	1000	1000	0,781	4042 20 4

St Steel

Cu Copper-plated

price/1,000 pc.



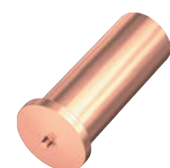
Pins, Steel, copper-plated St 37-3

Type	Diameter mm	Length mm	Quality	Surface	Shipping box Units	Pack Units	Weight kg/100 pc.	Item no.
1 S 6 x 8	6	8	4,8	Copper-plated	6000	1000	0,240	4041 35 6
1 S 6 x 10	6	10	4,8	Copper-plated	5000	1000	0,234	4041 00 3
1 S 6 x 12	6	12	4,8	Copper-plated	4000	1000	0,279	4041 01 1
1 S 6 x 15	6	15	4,8	Copper-plated	4000	1000	0,345	4041 03 8
1 S 6 x 16	6	16	4,8	Copper-plated	4000	1000	0,367	4041 34 8
1 S 6 x 20	6	20	4,8	Copper-plated	3000	1000	0,456	4041 04 6
1 S 6 x 25	6	25	4,8	Copper-plated	1000	1000	0,567	4041 05 4
1 S 6 x 30	6	30	4,8	Copper-plated	1000	1000	0,678	4041 06 2
1 S 6 x 35	6	35	4,8	Copper-plated	1000	1000	0,789	4041 07 0
1 S 6 x 40	6	40	4,8	Copper-plated	1000	1000	0,900	4041 08 9
1 S 6 x 50	6	50	4,8	Copper-plated	1000	1000	1,122	4041 10 0

St Steel

Cu Copper-plated

price/1,000 pc.



Pins, Steel, copper-plated St 37-3

Type	Diameter mm	Length mm	Quality	Surface	Shipping box Units	Pack Units	Weight kg/100 pc.	Item no.
1 S 7,1 x 10	7,1	10	4,8	Copper-plated	1000	1000	0,333	4042 36 0

St Steel

Cu Copper-plated

price/1,000 pc.

Pins, Stainless steel, grade 305



Type	Diameter	Length	Quality	Surface	Shipping box	Pack	Weight	Item no.
	mm	mm			Units	Units	kg/100 pc.	
2 S 2,1 x 20	2,1	20	1,4303	Pickled	15000	1000	0,058	4043 44 8
V2A Stainless steel, grade 305			Pickled		price/1,000 pc.			



Pins, Stainless steel, grade 305



Type	Diameter	Length	Quality	Surface	Shipping box	Pack	Weight	Item no.
	mm	mm			Units	Units	kg/100 pc.	
2 S 3 x 6	3	6	1,4303	Pickled	25000	1000	0,037	4044 46 7
2 S 3 x 10	3	10	1,4303	Pickled	20000	1000	0,060	4043 72 3
2 S 3 x 12	3	12	1,4303	Pickled	15000	1000	0,071	4043 73 1
2 S 3 x 15	3	15	1,4303	Pickled	10000	1000	0,088	4043 75 8
2 S 3 x 16	3	16	1,4303	Pickled	12000	1000	0,094	4044 30 4
2 S 3 x 20	3	20	1,4303	Pickled	10000	1000	0,116	4043 76 6
2 S 3 x 25	3	25	1,4303	Pickled	7000	1000	0,144	4043 77 4
V2A Stainless steel, grade 305			Pickled		price/1,000 pc.			



Pins, Stainless steel, grade 305



Type	Diameter	Length	Quality	Surface	Shipping box	Pack	Weight	Item no.
	mm	mm			Units	Units	kg/100 pc.	
2 S 4 x 8	4	8	1,4303	Pickled	15000	1000	0,086	4043 80 4
2 S 4 x 10	4	10	1,4303	Pickled	10000	1000	0,106	4043 81 2
2 S 4 x 12	4	12	1,4303	Pickled	10000	1000	0,125	4043 82 0
2 S 4 x 20	4	20	1,4303	Pickled	5000	1000	0,204	4043 84 7
2 S 4 x 25	4	25	1,4303	Pickled	5000	1000	0,254	4043 85 5
2 S 4 x 35	4	35	1,4303	Pickled	3000	1000	0,352	4043 87 1
V2A Stainless steel, grade 305			Pickled		price/1,000 pc.			



Pins, Stainless steel, grade 305



Type	Diameter	Length	Quality	Surface	Shipping box	Pack	Weight	Item no.
	mm	mm			Units	Units	kg/100 pc.	
2 S 5 x 6	5	6	1,4303	Pickled	12000	1000	0,103	4043 89 8
2 S 5 x 8	5	8	1,4303	Pickled	10000	1000	0,134	4043 90 1
2 S 5 x 10	5	10	1,4303	Pickled	8000	1000	0,165	4043 92 8
2 S 5 x 12	5	12	1,4303	Pickled	5000	1000	0,195	4043 93 6
2 S 5 x 16	5	16	1,4303	Pickled	5000	1000	0,257	4044 32 0
2 S 5 x 20	5	20	1,4303	Pickled	4000	1000	0,319	4043 95 2
2 S 5 x 25	5	25	1,4303	Pickled	3000	1000	0,396	4043 96 0
2 S 5 x 30	5	30	1,4303	Pickled	1000	1000	0,473	4043 97 9
V2A Stainless steel, grade 305			Pickled		price/1,000 pc.			



Pins, Stainless steel, grade 305



Type	Diameter	Length	Quality	Surface	Shipping box	Pack	Weight	Item no.
	mm	mm			Units	Units	kg/100 pc.	
2 S 6 x 8	6	8	1,4303	Pickled	6000	1000	0,240	4044 12 6
2 S 6 x 10	6	10	1,4303	Pickled	5000	1000	0,234	4044 00 2
2 S 6 x 12	6	12	1,4303	Pickled	4000	1000	0,279	4044 01 0
2 S 6 x 15	6	15	1,4303	Pickled	4000	1000	0,345	4044 02 9
2 S 6 x 16	6	16	1,4303	Pickled	4000	1000	0,367	4044 33 9
2 S 6 x 20	6	20	1,4303	Pickled	3000	1000	0,456	4044 03 7
2 S 6 x 25	6	25	1,4303	Pickled	1000	1000	0,567	4044 04 5
2 S 6 x 30	6	30	1,4303	Pickled	1000	1000	0,678	4044 05 3
2 S 6 x 35	6	35	1,4303	Pickled	1000	1000	0,789	4044 06 1
2 S 6 x 40	6	40	1,4303	Pickled	1000	1000	0,900	4044 08 8
2 S 6 x 50	6	50	1,4303	Pickled	1000	1000	1,122	4044 11 8
V2A Stainless steel, grade 305			Pickled		price/1,000 pc.			



UT pins for tip ignition





Pins



Pins, Stainless steel, grade 305

Type	Diameter	Length	Quality	Surface	Shipping box	Pack	Weight	Item no.
	mm	mm			Units	Units	kg/100 pc.	
2 S 7,1 x 15	7,1	15	1,4303	Pickled	2000	1000	0,491	4044 46 0
V2A	Stainless steel, grade 305		Pickled		price/1,000 pc.			

Pins, Aluminium, AlMg 3



Type	Diameter	Length	Quality	Surface	Shipping box	Pack	Weight	Item no.
	mm	mm			Units	Units	kg/100 pc.	
4 S 3 x 10	3	10	AlMg 3	—	20000	1000	0,021	4049 72 1
4 S 3 x 12	3	12	AlMg 3	—	15000	1000	0,025	4049 74 8
4 S 3 x 15	3	15	AlMg 3	—	10000	1000	0,030	4049 75 6
4 S 3 x 25	3	25	AlMg 3	—	7000	1000	0,049	4049 77 2

Al Aluminium

price/1,000 pc.



Pins, Aluminium, AlMg 3



Type	Diameter	Length	Quality	Surface	Shipping box	Pack	Weight	Item no.
	mm	mm			Units	Units	kg/100 pc.	
4 S 4 x 8	4	8	AlMg 3	—	15000	1000	0,030	4049 80 2
4 S 4 x 10	4	10	AlMg 3	—	10000	1000	0,036	4049 81 0
4 S 4 x 20	4	20	AlMg 3	—	5000	1000	0,070	4049 84 5
4 S 4 x 25	4	25	AlMg 3	—	5000	1000	0,087	4049 85 3
4 S 4 x 30	4	30	AlMg 3	—	4000	1000	0,104	4049 86 1

Al Aluminium

price/1,000 pc.



Pins, Aluminium, AlMg 3



Type	Diameter	Length	Quality	Surface	Shipping box	Pack	Weight	Item no.
	mm	mm			Units	Units	kg/100 pc.	
4 S 5 x 8	5	8	AlMg 3	—	10000	1000	0,046	4049 91 8
4 S 5 x 10	5	10	AlMg 3	—	8000	1000	0,057	4049 92 6
4 S 5 x 25	5	25	AlMg 3	—	3000	1000	0,136	4049 96 9
4 S 5 x 30	5	30	AlMg 3	—	1000	1000	0,163	4049 97 7
4 S 5 x 35	5	35	AlMg 3	—	1000	1000	0,189	4049 98 5

Al Aluminium

price/1,000 pc.



Pins, Aluminium, AlMg 3



Type	Diameter	Length	Quality	Surface	Shipping box	Pack	Weight	Item no.
	mm	mm			Units	Units	kg/100 pc.	
4 S 6 x 8	6	8	AlMg 3	—	6000	1000	0,065	4050 13 4
4 S 6 x 10	6	10	AlMg 3	—	5000	1000	0,081	4050 00 2
4 S 6 x 12	6	12	AlMg 3	—	4000	1000	0,096	4050 01 0
4 S 6 x 15	6	15	AlMg 3	—	4000	1000	0,119	4050 02 9
4 S 6 x 30	6	30	AlMg 3	—	1000	1000	0,233	4050 05 3
4 S 6 x 35	6	35	AlMg 3	—	1000	1000	0,271	4050 06 1
4 S 6 x 40	6	40	AlMg 3	—	1000	1000	0,309	4050 08 8
4 S 6 x 45	6	45	AlMg 3	—	1000	1000	0,348	4050 09 6
4 S 6 x 50	6	50	AlMg 3	—	1000	1000	0,386	4050 11 8

Al Aluminium

price/1,000 pc.



UT pins for tip ignition



Pins



Pins, Brass, CuZn 37

Type	Diameter mm	Length mm	Quality	Surface	Shipping box Units	Pack Units	Weight kg/100 pc.	Item no.
6 S 3 x 6	3	6	CuZn37	—	25000	1000	0,041	4055 70 5
6 S 3 x 8	3	8	CuZn37	—	20000	1000	0,053	4055 71 3
6 S 3 x 10	3	10	CuZn37	—	20000	1000	0,063	4055 72 1
6 S 3 x 12	3	12	CuZn37	—	15000	1000	0,077	4055 74 8
6 S 3 x 15	3	15	CuZn37	—	10000	1000	0,095	4055 75 6
6 S 3 x 20	3	20	CuZn37	—	10000	1000	0,125	4055 76 4
6 S 3 x 25	3	25	CuZn37	—	7000	1000	0,155	4055 77 2

CuZn Brass

price/1,000 pc.



Pins, Brass, CuZn 37

Type	Diameter mm	Length mm	Quality	Surface	Shipping box Units	Pack Units	Weight kg/100 pc.	Item no.
6 S 4 x 8	4	8	CuZn37	—	15000	1000	0,093	4055 80 2
6 S 4 x 10	4	10	CuZn37	—	10000	1000	0,114	4055 81 0
6 S 4 x 12	4	12	CuZn37	—	10000	1000	0,136	4055 82 9
6 S 4 x 15	4	15	CuZn37	—	1000	1000	0,168	4055 83 7
6 S 4 x 20	4	20	CuZn37	—	5000	1000	0,221	4055 84 5
6 S 4 x 25	4	25	CuZn37	—	5000	1000	0,275	4055 85 3
6 S 4 x 30	4	30	CuZn37	—	4000	1000	0,328	4055 86 1
6 S 4 x 35	4	35	CuZn37	—	3000	1000	0,381	4055 88 8

CuZn Brass

price/1,000 pc.



Pins, Brass, CuZn 37

Type	Diameter mm	Length mm	Quality	Surface	Shipping box Units	Pack Units	Weight kg/100 pc.	Item no.
6 S 5 x 8	5	8	CuZn37	—	10000	1000	0,145	4055 91 8
6 S 5 x 12	5	12	CuZn37	—	5000	1000	0,212	4055 93 4
6 S 5 x 15	5	15	CuZn37	—	5000	1000	0,262	4055 94 2
6 S 5 x 20	5	20	CuZn37	—	4000	1000	0,345	4055 95 0
6 S 5 x 25	5	25	CuZn37	—	3000	1000	0,429	4055 96 9
6 S 5 x 30	5	30	CuZn37	—	1000	1000	0,512	4055 97 7
6 S 5 x 35	5	35	CuZn37	—	1000	1000	0,595	4055 98 5
6 S 5 x 40	5	40	CuZn37	—	1000	1000	0,679	4055 99 3

CuZn Brass

price/1,000 pc.



Pins, Brass, CuZn 37

Type	Diameter mm	Length mm	Quality	Surface	Shipping box Units	Pack Units	Weight kg/100 pc.	Item no.
6 S 6 x 10	6	10	CuZn37	—	5000	1000	0,254	4056 00 0
6 S 6 x 12	6	12	CuZn37	—	4000	1000	0,302	4056 01 9
6 S 6 x 15	6	15	CuZn37	—	4000	1000	0,374	4056 02 7
6 S 6 x 20	6	20	CuZn37	—	3000	1000	0,494	4056 03 5
6 S 6 x 25	6	25	CuZn37	—	1000	1000	0,614	4056 04 3
6 S 6 x 30	6	30	CuZn37	—	1000	1000	0,734	4056 05 1

CuZn Brass

price/1,000 pc.



