

Welding studs

Product information



Welding studs



Threaded studs PT and PS, PD, MD, RD



PT and PS studs with custom geometry



UT pins



IT tapped boss

■ The process

The arc stud welding process in accordance with DIN EN ISO 14555 is subdivided into three groups:

1. Capacitor discharge welding process
2. Short cycle welding process
3. Drawn arc welding process

All processes are used throughout industry, e.g. automotive engineering, railway construction, shipbuilding, electrical equipment engineering and mechanical engineering, etc. In the case of over 80 % of all customer requests, we can offer cost-effective standard products, which we have permanently in stock. For fixing problems, we configure the required stud geometry, including physical properties. The sheet thickness and load strength of the weld joint are also taken into consideration when selecting the welding process.

■ Materials, strengths, welding guarantee

Schmeck studs are manufactured to DIN EN ISO 13918 from the following materials suitable for welding:

- Steel 4.8 and 5.8 to DIN EN ISO 898 T1
- Stainless steel A2-50 (1.4301/03),
- A4-50 (1.4401/1.4404) and A5-50 (1.4571) to EN ISO 3506 T1
- Brass: CuZn37 (Ms63) to ISO 426-1, ISO 1638
- Aluminium: AlMg3, AlSi12 and Al99.5 to EN 1301 T2

In special cases, studs are also produced from

- heat-treatable steel of strength category 8.8,
- steel quality 6.8 and
- A2-70.

In view of the use of special wire analyses, we provide a welding guarantee on all Schmeck products. Certification 3.1 to DIN EN 10204 can, of course, be provided on request.

■ Special materials

Studs made of 1.4401/1.4404, 1.4571, Al99,5, AlSi12 and CuZn37 are generally produced to order.

If you require studs made of these materials, please request them. Small quantities may also be available. One call is all it takes to find out what we have in stock.

■ Surface protection

Our studs are coated as standard with a galvanic copper coating 3 to 5 µm (C1E) to DIN EN ISO 4042 and protected against corrosion.

Order quantities

Delivery lots of 500 pieces right through to mass production of several million studs are routine for us.

Thread

Standard threaded studs are manufactured with a standard metric ISO thread to DIN ISO 724 with the tolerance class "6g". Other tolerance classes and thread types are, of course, possible in consultation with the customer.

Start of thread, shaft end

Standard threaded studs are produced without point (RL) to DIN EN ISO 4753. At the customer's request, however, all listed shaft end versions can be manufactured:

- Flat point (CH)
- Short dog point (SD)
- Tip (CN)
- Entry pilot, flat (PF)
- Truncated cone (FL)
- Long dog point (LD)
- Flattened tip (TC)
- Entry pilot with coned half dog point (PC)

For welding pins to DIN EN ISO 13918, shaft ends such as flat point (chamfer 30°/45°), flattened tip or even long or short dog point are also possible as custom manufacturing.

Custom production of PT, PS threaded studs, UT pins and IT tapped bosses

Intermediate lengths with modified length tolerances and/or with a miniature flange (remaining flange size = thread $\varnothing + 0,4$) can be manufactured on request according to a drawing or diagram. The thread tolerance classes for the threaded studs as custom production may be "6e", "6f" or "6g". Special threads such as lacquer groove, coarse thread or metric fine thread can be produced.

Delivery times

For our standard range of products stocked "PT threaded studs and UT pins" to DIN EN ISO 13918 made from steel, stainless steel and AlMg3, the following delivery times apply to all orders received by 11 am.

Tariff	Within Germany	Within the EU
Standard tariff	24/48 hrs	48/72 hrs
Next-day tariff	24 hrs	



PT threaded studs



US pins



IS tapped bosses



Studs with custom geometry

Welding studs – capacitor discharge welding

Capacitor discharge welding

PT threaded studs

We produce the following dimensions:

- M2.5 x 5 to 25
- M3 x 5 to 45
- M4 x 6 to 65*
- M5 x 6 to 70*
- M6 x 8 to 100*
- M8 x 10 to 100*
- M10 x 15 to 80*
- M12 x 15 to 80*

* Lengths over 63 mm have a partial thread of 60 mm

* Lengths over 75 mm have a larger flange Ø (size may need to be clarified)

UT pins

We produce the following dimensions:

- Ø 2 x 5 to 25
- Ø 3 x 5 to 40
- Ø 4 x 6 to 45
- Ø 5 x 6 to 70
- Ø 6 x 8 to 75
- Ø 7.1 x 10 to 75
- Ø 8 x 15 to 75
- Ø 10 x 15 to 75
- Ø 12 x 15 to 75

IT tapped bosses

We produce the following dimensions:

- Ø 5 x 6 to 40 (M3)
- Ø 6 x 8 to 45 (M4)
- Ø 7.1 x 10 to 40 (M5)
- Ø 8 x 12 to 45 (M6)

We produce our bosses with a standard metric ISO internal thread with the tolerance class "6G". Internal thread (in deviation from the standard) can be combined with larger diameters (Ø 6 with M3; Ø 7.1 with M4 and Ø 8 with M5).

Coarse threaded studs

Coarse threaded studs for capacitor discharge welding have a special thread with a fixed pitch of 1.6 mm. We produce these studs to order from St36-3, 1.4301, AlMg3 and AlSi12 in the following dimensions:

- S5 x 9 to 40
- S6 x 10 to 40 (quantities \geq 100,000 pieces)



PT threaded studs



PT threaded studs with custom geometry



IT tapped boss
DIN flange



IT tapped boss
Miniature flange



Coarse threaded studs with ignition tip

Welding studs – short cycle welding

Short cycle welding

PS threaded studs

We produce the following dimensions:

- M2.5 x 5 to 25
- M3 x 5 to 45
- M4 x 6 to 65*
- M5 x 6 to 70*
- M6 x 8 to 100*
- M8 x 10 to 100*
- M10 x 15 to 80*
- M12 x 15 to 80*

* Lengths over 63 mm have a partial thread of 60 mm

US pins

We produce the following dimensions:

- Ø 2 x 5 to 25
- Ø 3 x 5 to 45
- Ø 4 x 6 to 45
- Ø 5 x 6 to 70
- Ø 6 x 8 to 75
- Ø 7.1 x 10 to 75
- Ø 8 x 15 to 75
- Ø 10 x 15 to 75
- Ø 12 x 15 to 75

IS tapped bosses

These bosses have a flange with a shape similar to that of the threaded studs and pins for short cycle welding.

We produce the following dimensions:

- Ø 5 x 6 to 40 (M3)
- Ø 6 x 8 to 45 (M4)
- Ø 7.1 x 10 to 40 (M5)

Coarse threaded studs

Coarse threaded studs for short cycle welding have a special thread with a fixed pitch of 1.6 mm. We produce these studs to order from St36-3, 1.4301, AlMg3 and AlSi12 in the following dimensions:

- S5 x 9 to 40
- S6 x 10 to 40 (quantities \geq 100,000 pieces)



PS threaded studs



PS threaded studs with custom geometry



US pins



IS tapped bosses



Coarse threaded studs

Welding studs – drawn arc welding



RD



MD



UD



ID



KB

Drawn arc welding

We produce all joining elements for the drawn arc welding process with or without aluminium ball.

RD, MD, PD threaded studs

We manufacture from the following materials suitable for welding:

- St37-3
- 1.4301/1.4303
- AlMg3
- 1.4571

We produce the following dimensions:

- M6 x 12 to 90
- M10 x 15 to 80
- M16 x 25 to 60
- M8 x 10 to 90
- M12 x 20 to 80

UD pins

We manufacture from the following materials suitable for welding:

- St37-3
- 1.4301/1.4303
- AlMg3
- 1.4571

We produce the following dimensions:

- Ø 6 x 12 to 70
- Ø 10 x 20 to 70
- Ø 14 x 25 to 70
- Ø 7.1 x 15 to 70
- Ø 12 x 20 to 70
- Ø 16 x 30 to 70
- Ø 8 x 15 to 70

Pins with ID internal thread

We manufacture from the following materials suitable for welding:

- St37-3
- 1.4301/1.4303
- AlMg3
- 1.4571

We produce the following dimensions:

- Ø 7.1 x 15 to 50 (M5)
- Ø 10 x 20 to 50 (M6)
- Ø 8 x 15 to 80 (M5/M6)
- Ø 12 x 20 to 50 (M8)

KB collar studs

We use the following materials suitable for welding to produce our collar studs with a welding tip angle of 6° to 8° on one side:

- St37-3 (4.8 and 8.8)
- 1.4301/1.4303 (A2-50)
- 1.4571

We produce the following dimensions:

- M5 x 15 to 40
- M8 x 20 to 60
- M6 x 15 to 40
- M10 x 20 to 60

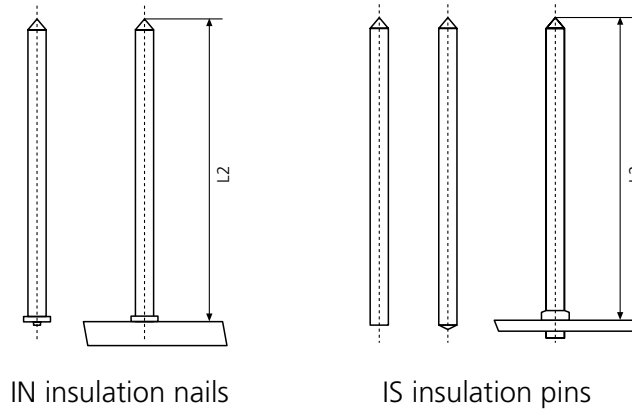
Insulation nails/pins and flat connector

IN insulation nails – capacitor discharge welding
and IS insulation pins – drawn arc welding (especially for galvanised sheets)

We produce the following dimensions:

- \varnothing 2 x 20 to 150
- \varnothing 3 x 20 to 150

Available in S235 and 1.4301.



IN insulation nails

IS insulation pins



IN for capacitor discharge welding



IS for drawn arc welding

F1 flat connectors and F2 double flat connectors

Flat connectors and Double flat connectors are made of AlMg3, CuZn37, steel and 1.4301. The relevant dimensions of both types can be found in the following table:

Type	S \pm 0.05	D \pm 0.1	H \pm 0.3	H1 \pm 0.2	B \pm 0.2	B1 + 0.2	L \pm 0.3
F1	0.8	1.8	11.5* 12*	8	8	6.3	9.5* 10.5*
F2	0.8	1.8	12	8	8	6.3	11.3

* Depending on the tool. Dimensions do not impair the weldability!



F1 flat connectors



F2 double flat connectors

KS pins – fireproof products

Boiler tube studs are processed from heat-resistant stainless steel 1.4845. Other materials on request.

We produce the following dimensions:

- \varnothing 8 x 15 to 45
- \varnothing 10 x 20 to 45
- \varnothing 12 x 25 to 45



KS



Our scope of production and delivery covers:

- Weld screws to DIN 34817,
In-house standard and various automotive standards
- Weld screws to DIN EN ISO 13918
- Friction weld screws
- Weld nuts to DIN 928 and DIN 929
- Press-fit and rivet studs
- Screw-and-washer assemblies and
double screw-and-washer assemblies
- Standard and drawing parts/cold-formed parts



*Are you looking for a fixing solution
or do you have any technical questions
about our joining elements?*

*Why not contact us.
We look forward to offering you
the right fixing option.*

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