

# WELDING STUDS.

## Welding studs for safe fastening.

There is a long tradition of welding studs in KÖCO. Since 1952 we are producing threaded studs, shear connectors, unthreaded studs, studs with internal thread, boiler tube studs and heat- and scale-resistant welding studs of diameter 3-25 mm from many different materials.



# TECHNICAL DATA FOR KÖCO-WELDING STUDS

All KÖCO welding studs are made from materials suitable for stud welding. Dimensions and design of our standard products conform to EN ISO 13918, any non-standard products supplied will be produced to correspond to the norm. If you wish to use a type of stud other than those listed, please send us your enquiry and consult our specialists about your welding task.

KÖCO welding studs are available in different materials. Upon request the properties of each can be documented by test report 2.2 or inspection certificate 3.1 or 3.2 [EN 10204].

**Non-alloy structural steel:**  
KÖCO non-alloy structural steel welding studs are manufactured from S235 according to EN 10025:2005 with more stringent requirements for carbon content, degree of purity, grain size and surface properties. This makes the material ideally suited for stud welding. Through cold forming the material's tensile strength and yield strength are enhanced and a favourable grain structure is also achieved.

For threaded studs, pins, tapped studs and similar products, we guarantee mechanical properties according to EN ISO 898-1, property class 4.8.

Tensile strength $R_m$	$\geq 420$ N/mm <sup>2</sup>
Yield strength $R_{el}$	$\geq 340$ N/mm <sup>2</sup>
Elongation $A_5$	$\geq 14\%$

We supply shear connectors manufactured from S235J2+C470 or S355 according to EN 10025:2005 with the following mechanical properties:

Tensile strength $R_m$	$\geq 470$ N/mm <sup>2</sup>
Tensile strength $R_m$ , S355	$\geq 510$ N/mm <sup>2</sup>
Yield strength $R_{el}$	$\geq 375$ N/mm <sup>2</sup>
Elongation $A_5$	$\geq 15\%$

KÖCO shear connectors exceed the requirements of EN ISO 13918. The CE-conformity with the European Technical Approval ETA-03/0039 dated May 31, 2010 by Deutsches Institut für Bautechnik (DIBT, German Institute for Building Engineering) has been demonstrated.



**Stainless steel:**  
We supply KÖCO threaded studs, pins, tapped studs and similar products made from 1.4301/03 according to DIN EN ISO 3506-1.

Tensile strength $R_m$	$\geq 500$ N/mm <sup>2</sup>
Yield point $R_{p0.2}$	$\geq 210$ N/mm <sup>2</sup>
Elongation $A_5$	$\geq 25\%$

KÖCO welding studs made from stainless and acid-resistant steels such as 1.4541, 1.4571, 1.4401, 1.4404 in various property classes are available upon request.

We supply stainless steel shear connectors made of 1.4301 in accordance with EN 10088:2005 with the following mechanical properties:

Tensile strength $R_m$	540-780 N/mm <sup>2</sup>
Yield point $R_{p0.2}$	$\geq 350$ N/mm <sup>2</sup>

The CE-conformity with the European Technical Approval ETA-03/0039 dated May 31, 2010 by Deutsches Institut für Bautechnik (DIBT, German Institute for Building Engineering) has been demonstrated.

Heat- and scale-resistant KÖCO welding studs are manufactured from 1.4713, 1.4742, 1.4762, 1.4828, 1.4841, 2.4851 or 2.4856. Other materials are available upon request.

**Stud dimensions:**

Generally, the nominal length is the length of the stud "after welding". The studs delivered are 1 to 5 mm longer than their specified nominal length (except KÖCO KKS boiler tube studs and KÖCO KHS concave pins). This enables the welding parameters to be checked by measuring the stud length after welding.

**Threads:**

The threads of KÖCO studs are cold rolled and manufactured in accordance with DIN 13-20, tolerance 6g. Non-standard threads are available upon request.

**Flux:**

KÖCO studs for welding with ceramic ferrules are provided with an aluminium tip as required by the welding process, to facilitate the ignition of the arc, to stabilize the arc and to deoxidize the welding pool. The correct amount of flux used is an essential factor in obtaining perfect welding results.

**Surface protection:**

Unless specified otherwise, KÖCO welding studs are delivered uncoated. The manufacturing process requires surface coating of the wire, which cannot be removed from the stud shank but does not impair weldability.

The codes for materials and types of surface are given in the last three digits of the article number, according to the following table (excerpt):

001	Non-alloy structural steel, uncoated
002	Stainless steel 1.4301/03
005	A4-50
008	1.4713 [Sicromal 8]
009	1.4742 [Sicromal 10]
011	1.4828
012	1.4841
053	1.4845
018	16Mo3
013	2.4851 [Inconel 601]
054	19MnB4, hardened
D62	K 800
057	2.4856 [Inconel 625]
101	4.8, A2L zinc-plated and yellow chrome-plated
100	4.8, A2K [zinc-plated] without Cr VI
103	4.8, C2E [copper-plated]
102	4.8, G2E [nickel-plated on copper-plated base]
112	4.8, flZnnc-600h without Cr VI zinc-flake coating

In the case of zinc-plated studs, the zinc coating is removed at the welding tip to prevent contamination of the welding pool.

**Ceramic Ferrules:**

The ceramic ferrules can be used only once. The ferrules required for welding are generally included in the delivery of the studs. Ceramic ferrules are not available without studs.

**Weld collar:**

In the course of stud welding a weld collar is formed where the stud is joined to the work-piece. Its dimensions depend on the welding parameters as well as the ceramic ferrule used. In this area threads, for example, cannot be utilised.

**Ordering example:**

KÖCO threaded stud PD M 20 x 100, material 4.8, weldable, uncoated: Article No. 001-0487-001, ceramic ferrule PF 20.

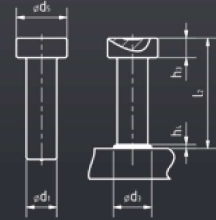
In case of other materials or surface coatings the last three digits of the article number must be changed as shown in the table above.



# KÖCO SD

## DIN EN ISO 13918/ETA-03/0039 Shearconnectors

- For steel components acc. to European Technical Approval ETA-03/0039 (except 6 and 12 mm).
- Different types (e.g. in 1.4301) upon request, many dimensions available.



$d_1$	$L_2$	$h_1^1$	$d_2$	$d_3^1$	$h_2$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
6	35	2,5	13	8,5	5	016-0005-001	1,23	UF 6	350-0056-000	355-0031-000	360-0116-000
	50					016-0001-001	1,56				
	75					016-0003-001	2,12				
	100					016-0004-001	2,67				
10	30	2,5	13	8,5	7	016-0004-001	3,12	UF 10	350-0164-000	355-0033-000	360-0117-000
	50					016-0004-001	4,36				
	70					016-0004-001	5,90				
	100					016-0004-001	7,44				
	125					016-0004-001	8,98				
	150					016-0004-001	10,52				
12	30	3	25	17	8	016-0004-001	5,26	UF 12	350-0056-000	65-09-00	NS 20: 36-01-00
	25					016-0004-001	5,11				
13	50	3	25	17	8	016-0004-001	7,72	UF 13	350-0056-000	355-0035-000	360-0118-000
	75					016-0004-001	10,32				
	100					016-0004-001	15,53				
	125					016-0004-001	18,14				
	150					016-0004-001	20,74				
	175					016-0004-001	23,35				
	200					016-0004-001	25,59				
	225					016-0004-001	28,56				
	250					016-0004-001	33,77				
	300					016-0004-001	38,98				
	350					016-0004-001	44,19				
400	016-0004-001	45,90									
16	35	4,5	32	21	8	016-0004-001	9,79	UF 16	350-0060-000	355-0036-000	360-0119-000
	50					016-0004-001	12,15				
	75					016-0004-001	16,10				
	100					016-0004-001	20,04				
	125					016-0004-001	23,99				
	150					016-0004-001	27,94				
	175					016-0004-001	31,88				
	200					016-0004-001	35,84				
	225					016-0004-001	29,77				
	525					016-0004-001	47,67				

<sup>1</sup>  $h_1$  and  $d_3$  are approximate values.

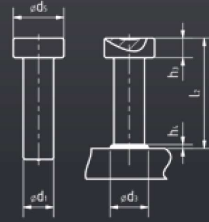




# KÖCO SD

DIN EN ISO 13918/ETA-03/0039  
Shearconnectors

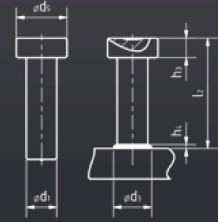
- For steel components acc. to European Technical Approval ETA-03/0039 (except 6 and 12 mm).
- Different types (e.g. in 1.4301) upon request, many dimensions available.



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DIN EN ISO 13918/ETA-03/0039  
Shearconnectors

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$d_1$	$L_2$	$h_2^1$	$d_5$	$d_3^1$	$h_3$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
19	6	32	23	10	017-0001-001	16,11	UF 19	350-0040-000	355-0036-000	360-0119-000	
					017-0002-001	18,2					
					017-0004-001	21,67					
					017-0005-001	22,7					
					017-0006-001	25,4					
					017-0007-001	27,23					
					017-0008-001	32,80					
					017-0010-001	38,36					
					017-0011-001	43,93					
					017-0012-001	49,49					
					017-0031-001	55,06					
					017-0079-001	60,62					
					017-0037-001	66,18					
					017-0079-001	71,75					
					017-0082-001	82,88					
017-0032-001	94,01										
017-0034-001	121,83										
22	6	35	29	10	017-0040-001	20	UF 22	350-0041-000	355-0037-000	360-0119-000	
					017-0042-001	28,44					
					017-0043-001	23,8					
					017-0044-001	35,90					
					017-0047-001	43,36					
					017-0048-001	50,82					
					017-0049-001	58,28					
					017-0050-001	65,74					
					017-0060-001	73,20					
					017-0058-001	80,66					
					017-0074-001	95,58					
					017-0101-001	110,50					
017-0102-001	125,42										
017-0105-001	140,34										
017-0066-001	162,72										
25	7	40	31	12	017-0081-001	38,04	UF 25	350-0042-000	355-0038-000	360-0119-000	
					017-0070-001	47,67					
					017-0071-001	57,31					

<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.



$d_1$	$L_2$	$h_2^1$	$d_5$	$d_3^1$	$h_3$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
25	7	40	31	12	017-0072-001	66,94	UF 25	350-0062-000	355-0038-000	360-0119-000	
					017-0075-001	76,57					
					017-0076-001	86,21					
					017-0104-001	95,84					
					017-0103-001	105,47					
					017-0111-001	124,74					
					017-0112-001	144,01					
					017-0113-001	163,27					
					017-0114-001	182,54					
					017-0115-001	211,44					

<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.



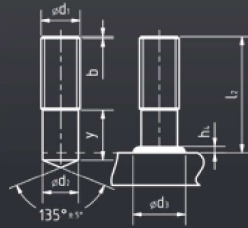


# KOCO PD

## DIN EN ISO 13918

Drawn arc threaded stud with partial thread

■ Part.no. applies to steel, grade 4.8, uncoated, many dimensions available, also in 1.4301 and K800. Other types and dimensions upon request.

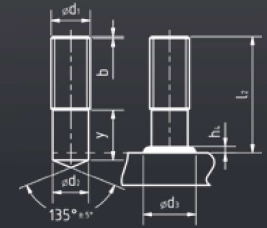


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Drawn arc threaded stud with partial thread

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d <sub>1</sub>	L <sub>2</sub>	h <sub>2</sub> <sup>1</sup>	d <sub>2</sub>	d <sub>3</sub> <sup>1</sup>	b	y	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
M6	20	3,5	5,35	8,5	20	9	001-0041-001	0,38	PF 6	350-0004-000	355-0002-000	360-0101-000 - K 360-0013-000 - SK
	25						001-0043-001	0,45				
	30						001-0046-001	0,55				
	35						001-0047-001	0,64				
	40						001-0048-001	0,73				
	50						001-0050-001	0,91				
60	001-0052-001	1,08										
M8	20	3,5	7,19	10	40	9	001-0081-001	0,69	PF 8	350-0006-000	355-0003-000	360-0101-000 - K 360-0013-000 - SK
	25						001-0085-001	0,84				
	30						001-0087-001	1,0				
	35						001-0088-001	1,16				
	40						001-0093-001	1,32				
	45						001-0096-001	1,48				
	50						001-0097-001	1,64				
	55						001-0098-001	1,8				
	60						001-0099-001	1,96				
	80						001-0104-001	2,6				
100	001-0108-001	3,18										
M10	20	4	9,03	12,5	40	9,5	001-0191-001	1,09	PF 10	350-0008-000	355-0004-000	360-0101-000 - K 360-0013-000 SK
	25						001-0192-001	1,34				
	30						001-0193-001	1,57				
	35						001-0197-001	1,84				
	40						001-0201-001	2,09				
	50						001-0207-001	2,60				
	55						001-0210-001	2,85				
	60						001-0218-001	3,08				
	70						001-0222-001	3,60				
	80						001-0224-001	4,10				
	100						001-0232-001	5,11				
	140						001-0243-001	7,12				
	150						001-0386-001	7,62				
	160						001-0261-001	8,13				
M12	25	4,5	10,86	15,5	80	11,5	001-0294-001	1,95	PF 12	350-0010-000	355-0005-000	360-0101-000 - K 360-0013-000- SK
	30						001-0296-001	2,31				
	35						001-0298-001	2,64				
	40						001-0300-001	3,04				
	45						001-0302-001	3,40				

<sup>1</sup> h<sub>2</sub> and d<sub>3</sub> are approximate values.



d <sub>1</sub>	L <sub>2</sub>	h <sub>2</sub> <sup>1</sup>	d <sub>2</sub>	d <sub>3</sub> <sup>1</sup>	b	y	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
M12	50	4,5	10,86	15,5	40	13,5	001-0305-001	3,76	PF 12	350-0011-000	355-0005-000	360-0101-000 - K 360-0013-000- SK
	60						001-0307-001	4,49				
	70						001-0310-001	5,22				
	80						001-0314-001	5,94				
	100						001-0357-001	7,40				
	120						001-0323-001	8,85				
140	001-0328-001	10,31										
150	001-0358-001	11,03										
160	001-0334-001	11,76										
M16	30	6	14,7	19,5	40	13,5	001-0391-001	4,27	PF 16	350-0016-000	355-0007-000	360-0103-000
	35						001-0392-001	4,81				
	40						001-0393-001	5,60				
	45						001-0394-001	6,26				
	50						001-0396-001	6,93				
	55						001-0397-001	7,60				
	60						001-0398-001	8,26				
	65						001-0403-001	8,93				
	70						001-0405-001	9,59				
	75						001-0406-001	10,04				
	80						001-0407-001	10,93				
	85						001-0408-001	11,59				
	90						001-0409-001	12,26				
	100						001-0411-001	13,59				
140	001-0421-001	18,92										
160	001-0427-001	21,58										
M20	40	7	18,38	24,5	35	15,5	001-0472-001	8,80	PF 20	350-0019-000	355-0007-000	360-0103-000
	45						001-0473-001	9,85				
	50						001-0474-001	10,67				
	60						001-0476-001	12,97				
	65						001-0478-001	14,01				
	70						001-0480-001	15,05				
	80						001-0483-001	17,14				
	90						001-0485-001	18,82				
	100						001-0487-001	21,30				
	115						001-0490-001	24,42				
	120						001-0491-001	25,47				
	125						001-0492-001	26,51				

<sup>1</sup> h<sub>2</sub> and d<sub>3</sub> are approximate values.

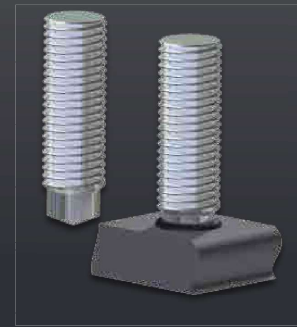
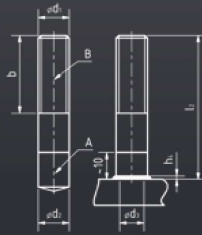




# KOCO PD DUO

Drawn arc bi-metallic threaded stud

- Material A: 4.8 weldable
- B: 1.4301 or 1.4 571
- Other types and dimensions upon request.

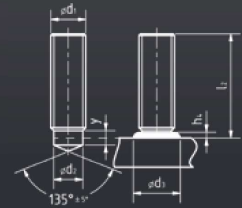


# KOCO RD

DIN EN ISO 13918

Drawn arc threaded stud with reduced shaft

- Part.no. applies to steel, grade 4.8, uncoated, many dimensions available, also in 1.4301 and K800. Other types and dimensions upon request.

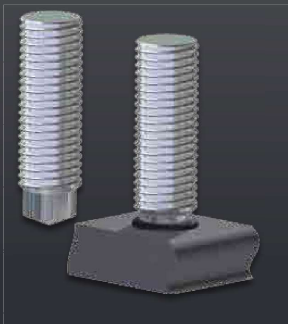


$d_1$	$L_2$	$h_2^1$	$d_2$	$d_3^1$	b	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
M8	30	3	7,1	10	15	Upon request.		PF 8	350-0007-000	355-0003-000	360-0101-000 K 360-0013-000 SK
	35										
	40										
	45										
	50										
M10	30	3	8,95	12,5	15	Upon request.		PF 10	350-0009-000	355-0004-000	360-0101-000- K 360-0013-000-SK
	35										
	40										
	45										
	50										
M12	30	4,5	10,8	14,5	15	Upon request.		PF 12	350-0011-000	355-0005-000	360-0101-000 K 360-0013-000 SK
	35										
	40										
	45										
	50										
	55										
	100										
140											

$d_1$	$L_2$	$h_2^1$	$d_2$	$d_3^1$	y	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
M6	20	2,5	4,7	7	4	003-0028-001	0,34	RF 6	350-0004-000	355-0002-000	360-0101-000 K 360-0013-000 SK
	25										
	30										
	35										
	40										
	50										
M8	35	2,5	6,2	9	4	003-0031-001	0,60	RF 8	350-0007-000	355-0003-000	360-0101-000 K 360-0013-000 SK
	40										
	50										
	60										
	20										
	25										
	30										
	35										
	45										
	55										
M10	40	3	7,9	11,5	5	003-0032-001	0,69	RF 10	350-0009-000	355-0004-000	360-0101-000 K 360-0013-000 SK
	50										
	60										
	80										
	100										
	20										
	25										
	30										
	35										
	40										
M12	45	4	9,5	13,5	6	003-0036-001	1,05	RF 12	350-0011-000	355-0005-000	360-0101-000 K 360-0013-000 SK
	55										
	60										
	25										
	30										
	35										
	40										

<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.

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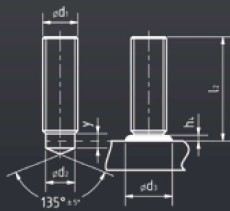


# KOCO RD

DIN EN ISO 13918

Drawn arc threaded stud with reduced shaft

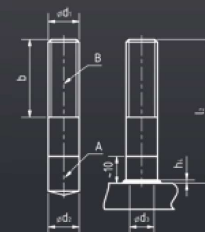
■ Part.no. applies to steel, grade 4.8, uncoated, many dimensions available, also in 1.4301 and K800. Other types and dimensions upon request.



# KOCO RD DUO

Drawn arc bi-metallic threaded stud with reduced shaft

■ Material A: 4.8 weldable  
 ■ B: 1.4301 or 1.4 571  
 ■ Other types and dimensions upon request.



$d_1$	$L_2$	$h_2^1$	$d_2$	$d_3^1$	$y_{min}$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
M12	70	4	9,5	13,5	6	003-0272-001	5,02	RF 12	350-0011-000	355-0005-000	360-0101-000 K 360-0013-000 SK
	80					5,74					
	100					7,20					
M16	30	6	13,2	18	11	003-1101-001	3,81	RF 16	350-0016-000	355-0007-000	360-0103-000
	35					4,48					
	40					5,14					
	45					5,81					
	50					6,48					
	55					7,14					
	60					7,81					
	65					8,47					
	70					9,14					
	75					9,81					
	80					10,47					
	90					11,80					
100	13,14										
M20	40	7	16,5	23	13	003-0492-001	8,00	RF 20	350-0019-000	355-0007-000	360-0103-000
	45					9,04					
	50					10,8					
	60					12,16					
	65					13,20					
	70					14,25					
	80					16,33					
	90					18,41					
M24	50	10	20	28	15	003-0504-001	20,49	RF 24	350-0023-000	355-0008-000	360-0103-000
	55					14,53					
	60					16,03					
	65					17,53					
	70					20,53					
	80					23,52					
	90					26,52					
100	29,52										

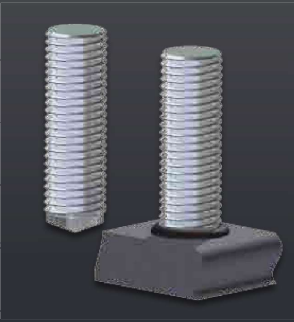
<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.



$d_1$	$L_2$	$h_2^1$	$d_2$	$d_3^1$	$y$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
M8	20	2,5	6,2	9	4	003-0073-001	0,61	RF 8	350-0007-000	355-0003-000	360-0101-000 K 360-0013-000 SK
	25					0,77					
	30					0,93					
	35					1,09					
	40					1,25					
	45					1,41					
	50					1,57					
	55					1,73					
	60					1,89					
	80					2,52					
M10	20	3	7,9	11,5	5	003-0169-001	0,96	RF 10	350-0009-000	355-0004-000	360-0101-000 K 360-0013-000 SK
	25					1,21					
	30					1,46					
	35					1,72					
	40					1,97					
	50					2,47					
	55					2,72					
	70					3,48					
	80					3,98					
	100					5,01					
M12	25	4	9,5	13,5	6	003-0262-001	1,74	RF 12	350-0011-000	355-0005-000	360-0101-000 K 360-0013-000 SK
	30					2,11					
	35					2,47					
	40					2,83					
	45					3,20					
	50					3,56					
	60					4,29					

<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.

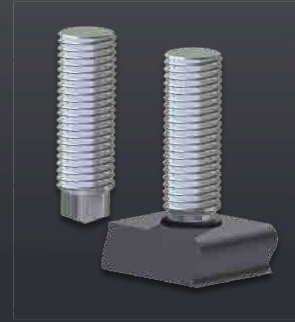
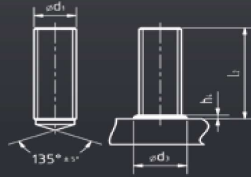




# KÖCO FD

Drawn arc threaded stud with complete thread

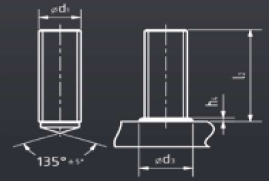
■ Part.no. applies to steel, grade 4.8, uncoated, many dimensions available, also in 1.4301 and K800. Other types and dimensions upon request.



# KÖCO FD

Drawn arc threaded stud with complete thread

■ Part.no. applies to steel, grade 4.8, uncoated, many dimensions available, also in 1.4301 and K800. Other types and dimensions upon request.



$d_1$	$l_2$	$h_2^1$	$d_3^1$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly						
M6	20	4	8,5	002-0046-001	0,38	UF 6	350-0004-000	355-0002-000	360-0101-000 K 360-0013-000 SK						
	25			002-0047-001	0,45										
	30			002-0048-001	0,55										
	35			002-0049-001	0,64										
	40			002-0050-001	0,73										
	50			002-0052-001	0,91										
	60			002-0054-001	1,08										
M8	20	4	11	002-0086-001	0,69	UF 8	350-0006-000	355-0003-000	360-0101-000 K 360-0013-000 SK						
	25			002-0089-001	0,84										
	30			002-0090-001	1,0										
	35			002-0091-001	1,16										
	40			002-0092-001	1,32										
	45			002-0093-001	1,48										
	50			002-0094-001	1,64										
	55			002-0095-001	1,8										
	60			002-0096-001	1,96										
	80			002-0100-001	2,6										
	100			002-0104-001	3,18										
M10	20	4	13	002-0176-001	1,09	UF 10	350-0008-000	355-0004-000	360-0101-000 K 360-0013-000 SK						
	25			002-0178-001	1,34										
	30			002-0179-001	1,57										
	35			002-0180-001	1,84										
	40			002-0181-001	2,09										
	50			002-0183-001	2,60										
	55			002-0184-001	2,85										
	60			002-0185-001	3,08										
	70			002-0187-001	3,60										
	80			002-0189-001	4,10										
	100			002-0193-001	5,11										
	M12			25	5		16			002-0266-001	1,95	UF 12	350-0010-000	355-0005-000	360-0101-000 K 360-0013-000 SK
				30						002-0267-001	2,31				
35		002-0268-001	2,64												
40		002-0269-001	3,04												
45		002-0270-001	3,40												
60		002-0273-001	4,49												

<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.



$d_1$	$l_2$	$h_2^1$	$d_3^1$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
M12	70	5	16	002-0275-001	5,22	UF 12	350-0011-000		
	80			002-0277-001	5,94				
	100			002-0281-001	7,40				
				002-0350-001	4,27				
M16	30	7	21	002-0350-001	4,27	UF 16	350-0015-000	355-0007-000	360-0103-000 K
	35			002-0351-001	4,81				
	40			002-0352-001	5,60				
	45			002-0353-001	6,26				
	50			002-0354-001	6,93				
	55			002-0355-001	7,60				
	60			002-0356-001	8,26				
	65			002-0357-001	8,93				
	70			002-0358-001	9,59				
	75			002-0359-001	10,04				
	80			002-0360-001	10,93				
	85			002-0361-001	11,59				
	90			002-0362-001	12,26				
100	002-0364-001	13,59							
M20	40	7	26	002-0437-001	8,80	UF 20	350-0019-000	355-0007-000	360-0103-000
	45			002-0438-001	9,85				
	50			002-0439-001	10,67				
	60			002-0441-001	12,97				
	65			002-0442-001	14,01				
	70			002-0443-001	15,05				
	80			002-0445-001	17,14				
	90			002-0447-001	18,82				
	100			002-0449-001	21,30				

<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.



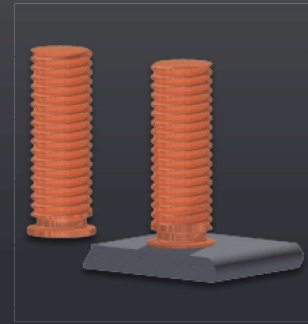
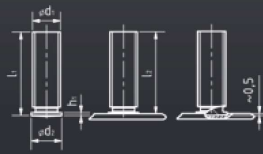


# KÖCO PS

## DIN EN ISO 13918

Short-cycle drawn arc threaded stud with flange

- Part-no. applies to steel, grade 4.8, uncoated, other types and dimensions upon request.

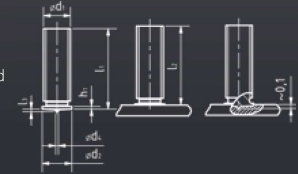


# KÖCO PT

## DIN EN ISO 13918

Threaded stud with flange and ignition tip

- Part.no. applies to steel, grade 4.8, copper plated
- Other types and dimensions upon request.
- Not a part from warehouse, minimum quantities are needed.



$d_1$	$l_1$	$d_2$	$h_1$	Part-no.	Mass kg/100	Chuck
M3	6	4	0,7 - 1,4	104-0120-103	0,031	350-0001-000
	8			104-0121-103	0,040	
	10			104-0122-103	0,046	
	12			104-0123-103	0,055	
	16			104-0124-103	0,071	
	20			104-0125-103	0,088	
M4	8	5	0,7 - 1,4	104-0130-103	0,070	350-0002-000
	10			104-0131-103	0,080	
	12			104-0132-103	0,100	
	16			104-0133-103	0,130	
	20			104-0134-103	0,160	
	25			104-0135-103	0,190	
M5	10	6	0,7 - 1,4	104-0160-103	0,130	350-0003-000
	12			104-0161-103	0,150	
	16			104-0162-103	0,200	
	20			104-0163-103	0,240	
	25			104-0164-103	0,300	
	30			104-0165-103	0,360	
M6	10	7	0,7 - 1,4	104-0200-103	0,188	350-0005-000
	12			104-0201-103	0,220	
	16			104-0202-103	0,283	
	20			104-0203-103	0,350	
	25			104-0204-103	0,435	
	30			104-0205-103	0,520	
M8	12	9	0,8 - 1,4	104-0120-103	0,380	350-0007-000
	16			104-0231-103	0,509	
	20			104-0232-103	0,632	
	25			104-0233-103	0,785	
	30			104-0234-103	0,930	
	35			104-0235-103	1,091	
M10	16	11	0,8 - 1,4	104-0260-103	0,809	350-0009-000
	20			104-0261-103	1,030	
	25			104-0262-103	1,280	
	30			104-0263-103	1,527	
	35			104-0264-103	1,774	
	40			104-0265-103	2,020	

<sup>1</sup>  $l_1$  depends on  $l_1$  and the welding energy.

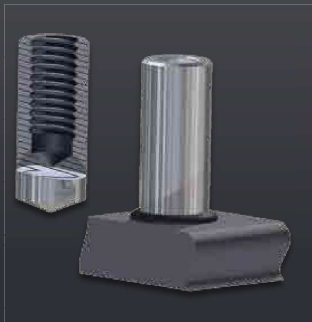


$d_1$	$l_1$	$d_2$	$d_z$	$l_3$	max. $h_2$	$h_1$	Part-no.	Mass kg/100	Chuck
M3	6	4,5	0,6	0,55	0,6	0,7 - 1,4	100-0001-103	0,031	351-7003-000
	8						100-0003-103	0,039	
	10						100-0005-103	0,047	
	12						100-0006-103	0,056	
	16						100-0008-103	0,072	
	20						100-0009-103	0,089	
M4	8	5,5	0,65	0,55	0,5	0,7 - 1,4	100-0032-103	0,067	351-7004-000
	10						100-0033-103	0,082	
	12						100-0034-103	0,097	
	16						100-0036-103	0,127	
	20						100-0038-103	0,156	
	25						100-0039-103	0,193	
M5	10	6,5	0,75	0,8	1	0,7 - 1,4	100-0067-103	0,130	351-7005-000
	12						100-0068-103	0,153	
	16						100-0071-103	0,201	
	20						100-0072-103	0,248	
	25						100-0073-103	0,307	
	30						100-0074-103	0,366	
M6	10	7,5	0,75	0,8	1	0,7 - 1,4	100-0101-103	0,186	351-7006-000
	12						100-0103-103	0,220	
	16						100-0105-103	0,287	
	20						100-0106-103	0,355	
	25						100-0108-103	0,439	
	30						100-0109-103	0,523	
M8	12	9	0,75	0,85	1,5	0,8 - 1,4	100-0136-103	0,387	351-7008-000
	16						100-0138-103	0,509	
	20						100-0139-103	0,632	
	25						100-0140-103	0,789	
	30						100-0142-103	0,938	

$l_3 \approx l_1 - 0,3 \text{ mm}$ .



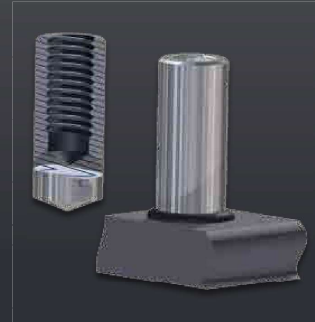
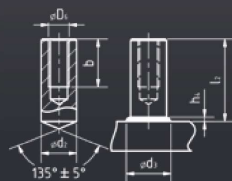




# KÖCO ID

Drawn arc tapped stud

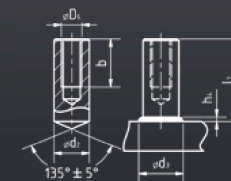
- Part-no. applies to steel, grade 4.8, uncoated.
- Other types and dimensions upon request.



# KÖCO ID

Drawn arc tapped stud

- Part-no. applies to steel, grade 4.8, uncoated.
- Other types and dimensions upon request.



D <sub>1</sub>	l <sub>2</sub>	d <sub>2</sub>	b	h <sub>4</sub> <sup>1</sup>	d <sub>3</sub> <sup>1</sup>	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
M6	15	10	9	4	13	006-0021-001	0,79	UF 10	350-0008-000	355-0002-000	360-0101-000 K 360-0013-000 SK
	20					006-0021-001	1,10				
	25					006-0024-001	1,41				
	30					006-0025-001	1,71				
	35					006-0026-001	2,02				
	40					006-0027-001	2,33				
	50					006-0030-001	2,95				
	60					006-0032-001	3,56				
M8	15	12	12	5	16	006-0061-001	0,98	UF 12	350-0011-000	355-0003-000	360-0101-000 K 360-0013-000 SK
	20					006-0064-001	1,43				
	25					006-0065-001	1,87				
	30					006-0066-001	2,32				
	35					006-0068-001	2,76				
	50					006-0071-001	4,10				
	60					006-0074-001	4,98				
	80					006-0078-001	6,76				
100	006-0082-001	8,53									
M8	22	14,6	12	6	18,5	006-0110-001	2,60	PF 16)	350-0014-000		
	25					006-0111-001	3,0				
	30					006-0123-001	3,65				
	40					006-0109-001	4,97				
M10	25	16	15	7	21	006-0233-001	3,3	UF 16	350-0016-000	355-0004-000	360-0101-000 K 360-0013-000 SK
	30					006-0234-001	4,09				
	35					006-0235-001	4,88				
	40					006-0236-001	5,66				
	50					006-0238-001	7,24				
	55					006-0240-001	8,03				
	60					006-0245-001	8,82				
	70					006-0247-001	10,4				
	80					006-0243-001	12,0				
	100					006-0244-001	15,1				
M12	25	18,2	18	7	23	006-0275-001	3,94	PF 20	350-0017-000	355-0005-000	360-0101-000 K 360-0013-000 SK
	30					006-0269-001	4,96				
	35					006-0268-001	5,98				
	40					006-0309-001	7,0				

<sup>1</sup> h<sub>4</sub> and d<sub>3</sub> are approximate values.



D <sub>1</sub>	l <sub>2</sub>	d <sub>2</sub>	b	h <sub>4</sub> <sup>1</sup>	d <sub>3</sub> <sup>1</sup>	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
M12	45	18,2	18	7	21	006-0326-001	8,02	PF 20	350-0017-000	355-0005-000	360-0101-000 K 360-0013-000 SK
	50					006-0272-001	9,05				
	60					006-0273-001	11,09				
	70					006-0285-001	13,13				
	80					006-0286-001	15,17				
	100					006-0284-001	19,26				

<sup>1</sup> h<sub>4</sub> and d<sub>3</sub> are approximate values.



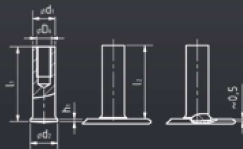


# KÖCO IS

## DIN EN ISO 13918

Short-cycle drawn arc tapped stud with flange

- Type, material and surface coating upon request

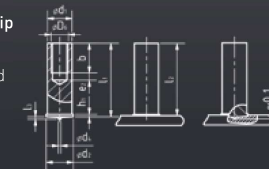


# KÖCO IT

## DIN EN ISO 13918

Flanged stud with internal thread and ignition tip

- Part.no. applies to steel, grade 4.8, copper plated
  - Other types and dimensions upon request.
- Not a part from warehouse, minimum quantities are needed.



$d_1$	$l_1$	$h_2$	$h_1$	Part-no.	Mass kg/100	Chuck
3	4	8	0,7 - 1,4	Upon request.		350-0001-000
		10				
		12				
		16				
		20				
4	5	8	0,7 - 1,4	Upon request.		350-0002-000
		10				
		12				
		16				
		20				
5	6	8	0,7 - 1,4	Upon request.		350-0003-000
		10				
		12				
		16				
		20				
6	7	8	0,7 - 1,4	Upon request.		350-0005-000
		10				
		12				
		16				
		20				
7,1	9	16	0,8 - 1,4	Upon request.		350-0006-000
		20				
		25				
8	9	16	0,8 - 1,4	Upon request.		350-0007-000
		20				
		25				
		30				
		35				
40						

$d_1$	$D_6$	$l_1$	$b$	$d_2$	$d_4$	$l_3$	$h_1$	Part-no.	Mass kg/100	Ceramic ferrule
5	M3	10	5	6,5	0,75	0,8	0,7 - 1,4	102-0001-103	0,134	351-7051-000
		12						102-0002-103	0,164	
		16						102-0003-103	0,226	
		20						102-0004-103	0,288	
		25						102-0005-103	0,365	
6	M4	10	6	7,5	0,75	0,8	0,7 - 1,4	102-0030-103	0,181	351-7052-000
		12						102-0031-103	0,218	
		16						102-0032-103	0,307	
		20						102-0033-103	0,396	
		25						102-0034-103	0,507	
7,1	M5	10	7,5	9	0,75	0,85	0,8 - 1,4	102-0058-103	0,233	351-7053-000
		12						102-0060-103	0,270	
		16						102-0061-103	0,387	
		20						102-0062-103	0,513	
		25						102-0063-103	0,670	

$l_3$  depends on  $l_1$  and the welding energy.



$l_3 \approx l_1 - 0,3 \text{ mm.}$



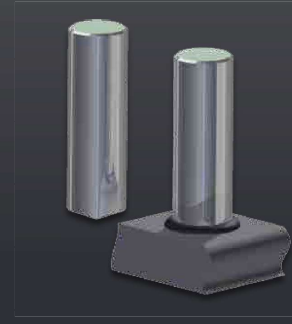
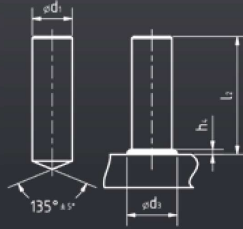


# KÖCO UD

## DIN EN ISO 13918

Drawn arc unthreaded stud

- Part-no. applies to steel, grade 4.8, uncoated, Other types and dimensions upon request.

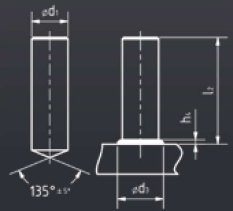


# KÖCO UD

## DIN EN ISO 13918

Drawn arc unthreaded stud

- Part-no. applies to steel, grade 4.8, uncoated, Other types and dimensions upon request.



$d_1$	$l_2$	$h_2^1$	$d_3^1$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
6	15	4	8,5	005-0001-001	0,37	UF 6	350-0004-000	355-0002-000	360-0101-000 K 360-0013-000 SK
	20			005-0002-001	0,48				
	25			005-0003-001	0,59				
	30			005-0004-001	0,70				
	35			005-0005-001	0,81				
	40			005-0006-001	0,92				
	50			005-0008-001	1,14				
	60			005-0010-001	1,37				
8	15	4	11	005-0040-001	0,66	UF 8	350-0006-000	355-0003-000	360-0101-000 K 360-0013-000 SK
	20			005-0041-001	0,85				
	25			005-0043-001	1,05				
	30			005-0044-001	1,25				
	35			005-0045-001	1,45				
	40			005-0047-001	1,64				
	50			005-0049-001	2,04				
	60			005-0052-001	2,43				
	80			005-0056-001	3,22				
	100			005-0060-001	4,01				
10	20	4	13	005-0110-001	1,34	UF 10	350-0008-000	355-0004-000	360-0101-000 K 360-0013-000 SK
	25			005-0111-001	1,65				
	30			005-0112-001	1,96				
	35			005-0113-001	2,27				
	40			005-0114-001	2,58				
	50			005-0116-001	3,19				
	55			005-0117-001	3,26				
	60			005-0118-001	3,81				
	70			005-0120-001	4,42				
	80			005-0122-001	5,04				
100	005-0126-001	6,28							
12	25	5	16	005-0173-001	2,39	UF 12	350-0010-000	355-0005-000	360-0101-000 K 360-0013-000 SK
	30			005-0174-001	2,84				
	35			005-0175-001	3,28				
	40			005-0176-001	3,72				
	45			005-0177-001	4,17				
	50			005-0178-001	4,61				

<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.



$d_1$	$l_2$	$h_2^1$	$d_3^1$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
12	60	5	16	005-0180-001	5,50	UF 12	350-0011-000	355-0005-000	360-0101-000 K 360-0013-000 SK
	70			005-0182-001	6,39				
	80			005-0184-001	7,27				
	100			005-0188-001	9,05				
	14,6			$\geq 20$ $\leq 100$	6				
16	$\geq 20$ $\leq 100$	7	21			UF 16	350-0016-000	355-0007-000	360-0103-000

<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.

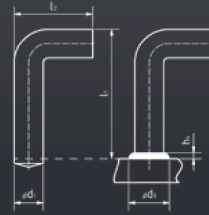




# KOCO KWS

Drawn arc unthreaded stud

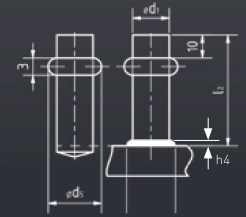
- Material steel, grade 4.8, uncoated.
- Other material and dimensions upon request.



# KOCO KKRБ

Drawn arc collar stud

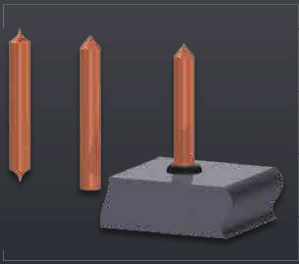
- Material steel, grade 4.8, uncoated.
- Other material and dimensions upon request.



$d_1$	$l_2$	$l_3$	$d_3$	$h_4$	Part-no.	Mass kg/100	Ceramic ferrule	Ferrule Grip
6	30	17	8.5	4	Upon request.		UF 6	Upon request.
	40							
	50							
	60							
8	30	20	11	4	Upon request.		UF 8	Upon request.
	40							
	50							
	60							
10	40	25	13	4	Upon request.		UF 10	Upon request.
	50							
	60							
	70							
	80							
12	40	35	16	5	Upon request.		UF 12	Upon request.
	50							
	60							
	70							
	80							

$d_1$	$l_2$	$d_3$	$h_4$	Part-no.	Mass kg/100	Ceramic ferrule
8	30	14,5	4	Upon request.		UF 8
	35					
	40					
	45					
	50					
	55					
	60					
	65					
10	30	15,5	4	Upon request.		UF 10
	35					
	40					
	45					
	50					
	55					
	60					
	65					

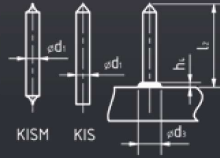
<sup>1</sup>  $h_4$  and  $d_3$  are approximate values.



# KÖCO KIS + KISM

Drawn arc insulation pin

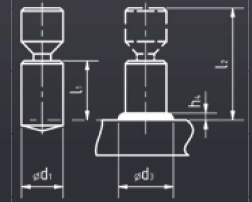
- Other types and dimensions upon request.
- Insulation clips, e.g. D=38mm upon request.



# KÖCO KAS + KAGB

Drawn arc break-off stud

- Material steel, grade 4.8, uncoated.
- Other types and dimensions upon request.



$d_1$	$l_2$	$h_2^1$	$d_3^1$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Foot Assembly
3	30	2,5	6	Upon request.		-	350-0086-000	360-0103-000 K 360-0012-000 sk
	35							
	40							
	45							
	50							
	55							
	60							
	65							
	70							
	75							
	80							
	85							
	90							
	95							
	100							
	↓							
300								
4	30	3,5	6	Upon request.		SN 4	350-0088-000	360-0103-000 K 360-0012-000 sk
	35							
	40							
	45							
	50							
	55							
	60							
	65							
	70							
	75							
	80							
	85							
	90							
	95							
	100							
	↓							
300								

$d_1$	$l_1$	$l_2$	$d_3$	$h_2$	Part-no.	Mass kg/100	Ceramic ferrule
6	5	20	8,5	4	Upon request.		UF 6
	8						
	10						
	12						
	15						
8	5	20	11	4	Upon request.		UF 8
	8						
	10						
	12						
10	5	20	13	4	Upon request.		UF 10
	8						
	10						
	12						
12	5	20	16	5	Upon request.		UF 12
	8						
	10						
	12						
14,6	9		16	5	008-0061-001		PF 16

■ KAGB - Drawn arc break-off threaded studs upon request in different dimensions producible.

<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.

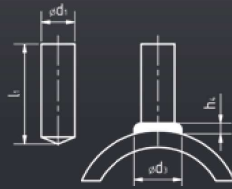
<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.



# KÖCO KKS

Boiler tube stud

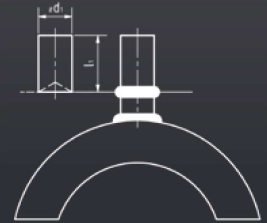
- Other types and dimensions upon request.
- Part-no. applies to Sicromal 10



# KÖCO KHS

Concave boiler stud

- Material 1.4713
- Part-no. applies to material 1.4713
- Other types and dimensions upon request.



d <sub>1</sub>	l <sub>1</sub>	h <sub>2</sub> <sup>1</sup>	d <sub>3</sub> <sup>1</sup>	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
8	4	11	11	019-0040-009	0,509	K 8	350-0072-000	355-0101-000	360-0108-000
				019-0045-009	0,746				
				019-0047-009	0,943				
				019-0049-009	1,140				
				019-0052-009	1,535				
				019-0053-009	1,732				
				019-0054-009	1,929				
				019-0069-009	0,655				
10	4	13	13	019-0080-009	0,655	K 10S	350-0073-000	355-0152-000	360-0108-000
				019-0082-009	0,778				
				019-0084-009	0,840				
				019-0085-009	0,901				
				019-0090-009	1,148				
				019-0094-009	1,456				
				019-0096-009	1,764				
				019-0098-009	2,073				
				019-0099-009	2,381				
				019-0101-009	2,689				
							350-0367-000		

d <sub>1</sub>	l <sub>1</sub>	Part-no.	Mass kg/100	Ceramic ferrule
10	10,8	020-0001-009	0,554	350-0073-000
	12	020-0002-009	0,678	
	15	020-0003-009	0,858	
	20	020-0004-009	1,24	
	30	020-0006-009	1,798	

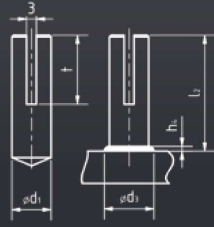
<sup>1</sup> h<sub>2</sub> and d<sub>3</sub> are approximate values.



# KÖCO KSST

Drawn arc slotted stud

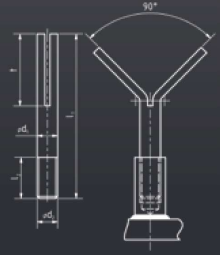
- Part-no. applies to material 1.4841
- Other types and dimensions upon request.



# KÖCO KSST/G

Drawn arc slotted stud with thread

- Other types and dimensions upon request.

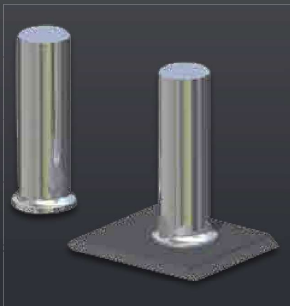


$d_1$	$l_2$	t	$h_1^1$	$d_3$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Ferrule Grip	Foot Assembly
10	30	15	4	13	021-0002-012	1,67	UF 10	350-0009-000	355-0004-000	360-0101-000
	40	20			021-0004-012	2,18				
	50	30			021-0008-012	2,58				
	65	35			021-0014-012	3,40				
	70	40			021-0015-012	3,60				
	75				021-0018-012	3,91				
	90				021-0021-012	4,84				
	100	50			021-0023-012	5,24				
	120				021-0025-012	6,47				
	250				021-0041-012	14,49				

$d_1$	$l_2$	t	$d_2$	$l_3^1$	Part-no.	Mass kg/100	Ceramic ferrule
10	50	15	M10	10	Upon request.		Depends on type of tapped stud.
	75	40					
	100	50					
	140						
	170						
	200						
	12	50					
75							
100							
140							
170							
200							

<sup>1</sup>  $h_1$  and  $d_3$  are approximate values.

<sup>1</sup>  $h_1$ ,  $s_1$  and  $d_3$  are approximate values.

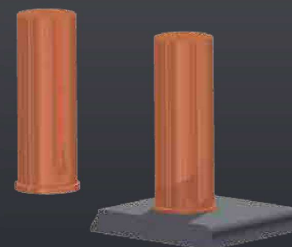


# KÖCO US

## DIN EN ISO 13918

Short-cycle drawn arc unthreaded stud with flange

- Type, material and surface coating upon request



# KÖCO UT

## DIN EN ISO 13918

Unthreaded stud with flange and ignition tip

- Part.no. applies to steel, grade 4.8, copper plated
- Other types and dimensions upon request. Not a part from warehouse, minimum quantities are needed.



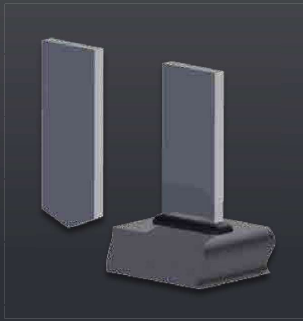
$d_1$	$l_1$	$d_2$	$h_1$	Part-no.	Mass kg/100	Chuck
3	8	4	0,7 - 1,4	Upon request.		350-0001-000
	10					
	12					
	16					
	20					
4	8	5	0,7 - 1,4	Upon request.		350-0002-000
	10					
	12					
	16					
	20					
5	8	6	0,7 - 1,4	Upon request.		350-0003-000
	10					
	12					
	16					
	20					
6	8	7	0,7 - 1,4	Upon request.		350-0005-000
	10					
	12					
	16					
	20					
7,1	16	9	0,8 - 1,4	Upon request.		350-0006-000
	20					
	25					
8	16	9	0,8 - 1,4	Upon request.		350-0007-000
	20					
	25					
	30					
	35					
40						

$d_1$	$l_1$	$d_2$	$d_4$	$l_3$	$h_1$	Part-no.	Mass kg/100	Chuck
3	8	4,5	0,6	0,55	0,7 - 1,4	101-0021-103	0,049	351-7003-000
	10							
	12							
	16							
	20							
4	8	5,5	0,65	0,55	0,7 - 1,4	101-0051-103	0,086	351-7004-000
	10							
	12							
	16							
	20							
5	12	6,5	0,75	0,8	0,7 - 1,4	102-0086-103	0,197	351-7005-000
	16							
	20							
	25							
6	12	7,5	0,75	0,8	0,7 - 1,4	102-0091-103	0,396	351-7006-000
	16							
	20							
	25							
7,1	16	9	0,75	0,85	0,8 - 1,4	101-0118-103	0,279	351-7008-000
	20							
	25							

$l_2$  depends on  $l_1$  and the welding energy.

$l_2 = l_1 - 0,3$  mm.

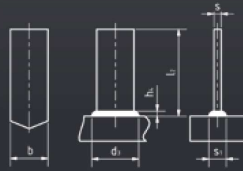




# KÖCO KFS/A

Rectangular stud type A

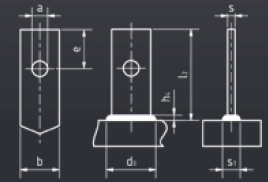
- Part-no. applies to steel, grade 4.8, uncoated
- Other types and dimensions upon request.



# KÖCO KFS/B

Rectangular stud type B

- Part-no. applies to steel, grade 4.8, uncoated
- Other types and dimensions upon request.



b x s	L <sub>2</sub>	h <sub>2</sub> <sup>1</sup>	d <sub>3</sub> <sup>1</sup>	s <sub>1</sub> <sup>1</sup>	Part-no.	Mass kg/100	Ceramic ferrule	Set of grips
15 x 3	20	4	18	6	011-0001-001	0,80	SF 15 x 3	350-6045-000 + 350-0324-000
	25				011-0002-001	0,98		
	30				011-0003-001	1,16		
	35				011-0004-001	1,33		
	40				011-0005-001	1,51		
	45				011-0006-001	1,69		
	50				011-0007-001	1,86		
	55				011-0008-001	2,04		
	60				011-0008-001	3,63		
	15 x 5				20	4		
25		011-0036-001	1,63					
30		011-0037-001	1,93					
35		011-0038-001	2,22					
40		011-0039-001	2,52					
45		011-0040-001	2,81					
50		011-0041-001	3,10					
55		011-0042-001	3,40					
60	011-0043-001	6,05						
25 x 3	25	4	28	6	011-0065-001	1,68	SF 25 x 3	350-6044-000 + 350-0324-000
	30				011-0066-001	1,97		
	35				011-0067-001	2,27		
	40				011-0068-001	2,56		
	45				011-0069-001	2,86		
	50				011-0070-001	3,15		
	55				011-0071-001	3,45		
	60				011-0072-001	6,10		

■ Type 25x5 producable upon request.

<sup>1</sup> h<sub>2</sub>, s<sub>1</sub> and d<sub>3</sub> are approximate values.

b x s	L <sub>2</sub>	h <sub>2</sub> <sup>1</sup>	d <sub>3</sub> <sup>1</sup>	s <sub>1</sub> <sup>1</sup>	a	e	Part-no.	Mass kg/100	Ceramic ferrule	Set of grips								
15 x 3	25	4	18	6	6	15	012-0002-001	0,91	SF 15 x 3	350-6045-000 + 350-0324-000								
	30						012-0003-001	1,09										
	35						012-0004-001	1,27										
	40						012-0005-001	1,44										
	45						012-0006-001	1,62										
	50						012-0007-001	1,80										
	55						012-0008-001	2,00										
	60						012-0009-001	3,56										
	15 x 5						25	4			20	10	8	15	012-0036-001	1,44	SF 15 x 5	350-6050-000 + 350-0225-000
							30								012-0037-001	1,73		
35		012-0038-001	2,02															
40		012-0039-001	2,32															
45		012-0040-001	2,61															
50		012-0041-001	2,91															
55		012-0042-001	3,20															
60		012-0043-001	5,85															
25 x 3	25	4	28	6	8	15	012-0065-001	1,56	SF 25 x 3	350-6044-000 + 350-0324-000								
	30						012-0066-001	1,86										
	35						012-0067-001	2,15										
	40						012-0068-001	2,45										
	45						012-0069-001	2,74										
	50						012-0070-001	3,03										
	55						012-0071-001	3,33										
	60						012-0072-001	5,98										

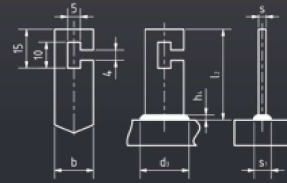
<sup>1</sup> h<sub>2</sub>, s<sub>1</sub> and d<sub>3</sub> are approximate values.



# KÖCO KFS/C

Rectangular stud type C

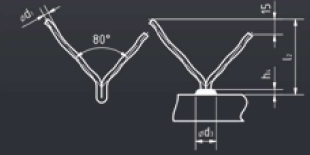
- Part-no. applies to steel, grade 4.8, uncoated
- Other types and dimensions upon request.



# KÖCO KWA

Refractory Y-anchor

- Attention: Up to  $l_2 = 45$  mm both legs have the same length.
- Part-no. applies to material 1.4841.
- Other types and dimensions upon request.

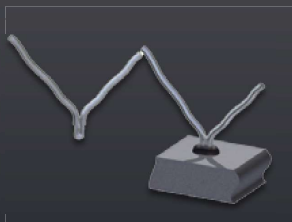


b x s	$l_2$	$h_2^1$	$d_3^1$	$s_1^1$	Part-no.	Mass kg/100	Ceramic ferrule	Set of grips
15 x 3	25	4	18	6	013-0011-001	0,74	SF 15 x 3	350-6045-000 + 350-0324-000
	30				013-0012-001	0,91		
	35				013-0013-001	1,09		
	40				013-0014-001	1,27		
	45				013-0015-001	1,44		
	50				013-0016-001	1,62		
	55				013-0017-001	1,80		
	60				013-0018-001	2,00		
15 x 5	25	4	20	10	Upon request..	SF 15 x 5	350-6050-000 + 350-0225-000	
	30							
	35							
	40							
	45							
	50							
25 x 3	25	4	28	6	Upon request.	SF 25 x 3	350-6044-000 + 350-0324-000	
	30							
	35							
	40							
	45							
	50							

$d_1$	$l_2$	b	$h_2^1$	$d^1$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck
6	35	18	4	14	023-0002-012	1,8	SNW	350-6121-000
	40				023-0003-012	2,1		
	50				023-0004-012	2,3		
	55				023-0005-012			
	60				023-0006-012	2,9		
	75				023-0009-012	3,7		
	100				023-0014-012	5,1		
	125				023-0019-012	6,4		
	250				023-0039-012			
	8				250	22		
20		023-0310-012	6,6					
25		023-0312-012	9,1					
45		023-0311-012	11,1					

<sup>1</sup>  $h_2$ ,  $s_1$  and  $d_3$  are approximate values.

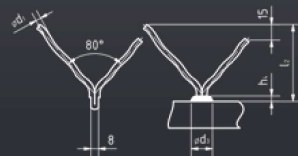
<sup>1</sup>  $h_2$  and b are approximate values.



# KÖCO KWA/R

Refractory Y-anchor, reduced

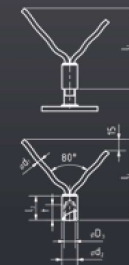
- Attention: Up to  $l_2 = 45$  mm both legs have the same length.
  - Part-no. applies to material 1.4841.
- Other types and dimensions upon request.



# KÖCO KWA/B

Refractory Y-anchor

- Threaded studs Typ PD see page 62/63.
  - Other types, materials and dimensions upon request.
- Combination:**  
of refractory Y-anchor welded on tapped stud M 10, incl. threaded stud M 10 Type PD.



$d_1$	$l_2$	b	$h_2^1$	$b^1$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck
6	35	18	4	11	023-0104-011	1,7	K 8 spez.	350-0365-000
	40				023-0105-011	2,0		
	45				023-0103-011	2,3		
	50				023-0100-011	2,,1		
	55				023-0107-011	2,5		
	60				023-0106-011	2,8		
	65				023-0116-011	3,2		
	70				023-0108-011	3,5		
	75				023-0101-012	3,8		
	85				023-0114-011	4,1		
	100				023-0111-011	5,3		
	125				023-0112-011	6,6		

$d_1$	$l_1$	$d_2$	$l_2$	$D_3$	t	Part-no.
6	50	16	20	M10	12	Upon request.
	75					
	100					
	125					
	150					
	175					
	200					
	225					
	250					
	275					

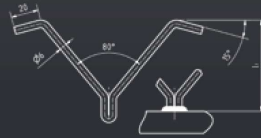
<sup>1</sup>  $h_2$  and b are approximate values.



# KÖCO KVA/A

Special refractory V-anchor

- Material 1.4301
- Other types, materials and dimensions upon request.



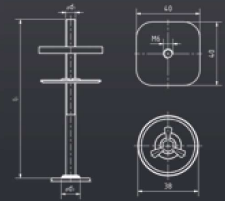
d	l <sub>1</sub>	b	Part-no.	Mass kg/100
6	50	18		Upon request.
	60			
	65			
	70			
	75			
	80			
	85			
	90			
	100			



# KÖCO KHB

Stud

- Material A: 4.8, uncoated
- Other types, materials and dimensions upon request.



d <sub>1</sub>	l <sub>2</sub>	b	h <sub>2</sub> <sup>1</sup>	h <sub>4</sub>	Part-no.	Mass kg/100	Ceramic ferrule	Chuck	Washer	Insulation clips
M6	30	15	8,5	3	Upon request.		UF 6	350-0100-000	40 x 40 x 4	R 6
	40									
	50									
	60									
	70									
	80									
	100									
	125									
	150									
	200									
	↓									
	300									



# KÖCO KFF

Faserfix stud

- Insulation clips D 38, D 60
  - Part-no. applies to material 1.4841.
- Other types and dimensions upon request.

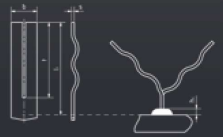


# KÖCO KFA/W

DIN EN ISO 13918/ETA-03/0039

Rectangular two tine stud "W"

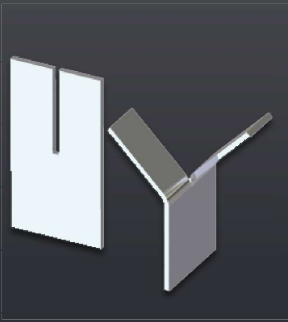
- Material A: 4.8, uncoated
- Other types, materials and dimensions upon request.



$d_1$	$l_2$	$h_2^1$	$d_3^1$	Part-no.	Mass kg/100	Ceramic ferrule	Chuck
5	3,5	8		029-0002-012	1,2	SN 5	350-0100-000
				029-0004-012	1,5		
				029-0005-012	1,9		
				029-0006-012	2,3		
				029-0008-012	2,7		
				029-0010-012	3,1		
				029-0012-012	3,5		
				029-0013-012	3,9		
				029-0014-012	4,3		
				029-0015-012	4,6		

b	s	$l_1$	t	Part-no.	Mass kg/100
15	3	80	60		Upon request.
		100	70		
		120	75		
		130	75		
		150	70		
25	3	150	70		Upon request.
		160	70		
		170	70		
		180	70		
		190	70		
		200	70		

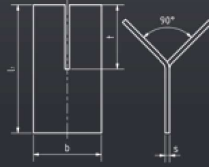
<sup>1</sup>  $h_2$  and  $d_3$  are approximate values.



# KÖCO KHF-E

Rectangular slotted anchors for manual arc welding

- Material A: 4.8, uncoated
- Other types, materials and dimensions upon request.



b	s	l <sub>1</sub>	t	Part-no.	Mass kg/100
30	3	50	20		Upon request.
		60	30		
		70	35		
		80	40		
		100	50		
		↓	50		
		250	50		
40	4	50	20		Upon request.
		60	30		
		70	35		
		80	40		
		100	50		
		↓	50		
		250	50		

# EQUIPMENT & SPARE PARTS.

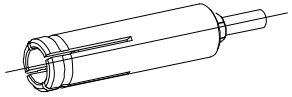
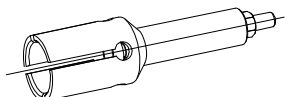
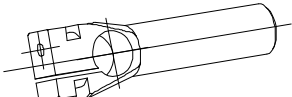

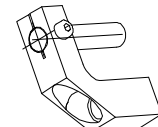
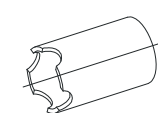


## Equipment & spare parts.

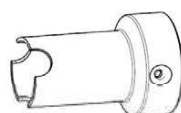
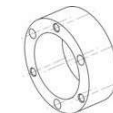
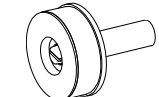
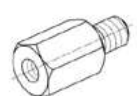
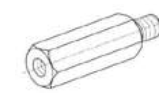
The quality of service is very important for us. Here you find an overview about the spare parts for stud welding guns, so that you get the perfect configuration for all applications.

Köco is using high-quality materials, to give a long availability in your production process.

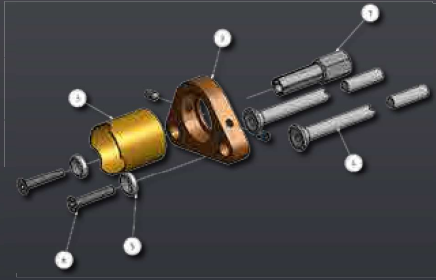
# GUN ACCESSORIES FOR GUN SERIES ESP 1 S AND ESP 1 K

Designation / Application	Part No.	Illustration
10 mm $\emptyset$ chuck for threaded studs, smooth pins, tapped studs (ID = external diameter of the stud)	D = 3 mm: 351-7003-000 D = 4 mm: 351-7004-000 D = 5 mm: 351-7005-000 D = 6 mm: 351-7006-000 D = 7,1 mm: 351-7053-000 D = 8 mm: 351-7008-000	
$\emptyset$ 12/10 mm chuck for M 10 threaded studs	D = 10 mm: 351-7010-000	
chuck for 6.3 mm blade terminal	351-7050-000	
chuck for insulating pins (ID = diameter of the insulating pin)	D = 2 mm: 351-7002-000 D = 3 mm: 351-7001-000	
angle cantilever for welding at restricted places, near to edges, shaft $\emptyset$ 10 mm, for 10 mm $\emptyset$ chucks	351-0044-000	
positioning tube ( $\emptyset$ = 30 mm)	370-0335-000	

# GUN ACCESSORIES FOR GUN SERIES ESP 1 S AND ESP 1 K

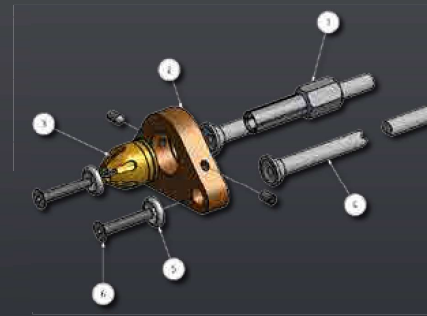
Designation / Application	Part No.	Illustration
Supporting tube (ID = 30 mm)	326-0034-000	
spacer ring (height = 16 mm)	351-0051-000	
chuck for 38 mm $\emptyset$ pin, with copper plate part-no. 320-0048-000	351-6162-000	
Set of spacer bolts 10 mm long (3 pieces)	326-0026-000	
Set of spacer bolts 20 mm long (3 pieces)	326-0024-000	





# GUN ACCESSORIES FOR STUD WELDING GUNS SK 14 TO SK15

Gun accessories for short cycle stud welding without shielding gas



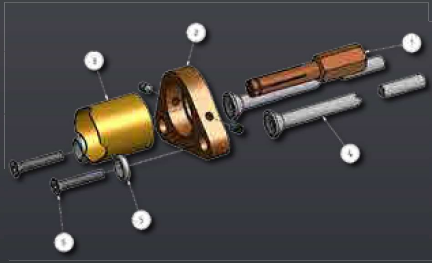
# GUN ACCESSORIES FOR STUD WELDING GUNS SK 14 TO SK15

Gun accessories for threaded studs and plain pins

Stud diameter d	Chuck pos. 1	Foot Assembly pos. 2	Säule Pos. 4	Stützrohr pos. 3
Ø 3 x > 8	350-0001-00	360-0012-000	370-0240-000	360-0335-000
Ø 4 x > 8	350-0002-00			
Ø 5 x > 10	350-0003-00			
Ø 6 x > 10	350-0005-000			
Ø 8 x > 10	350-0006-000			
Ø 8 x > 15	350-0007-00			
Ø 10 x > 10	350-0008-00			
Ø 10 x > 15	350-0009-000			
Ø 12 x > 10	350-0010-00			
Ø 12 x > 16	350-0011-00			
<b>Washer pos. 5</b>			370-0055-000	
<b>Screw with hexagon socket pos. 6</b>			322-0372-000	

For studs with lengths L > app. 6 x diameter chucks with deeper grip length are recommended.  
Further information upon request.

Typ PD	Typ DD	Typ RD	Chuck pos. 1	Ferrule Grip pos. 3	Foot Assembly pos. 2
M 4 x > 16	M 4 x > 16		350-0002-000	355-0001-000	360-0013-000
M 5 x > 16	M 5 x > 16		350-0003-000	355-0002-000	
M 6 x > 16	M 6 x > 16	M 6 x > 16	350-0004-000	355-0002-000	
M 6 x > 20	M 6 x > 20	M 6 x > 20	350-0005-000	355-0002-000	
M 8 x > 16	M 8 x > 16	M 8 x > 16	350-0006-000	355-0003-000	
M 8 x > 20	M 8 x > 20	M 8 x > 20	350-0007-000	355-0003-000	
M 10 x > 16	M 10 x > 20	M 10 x > 20	350-0008-000	355-0004-000	
M 10 x > 20	M 10 x > 25	M 10 x > 25	350-0009-000	355-0004-000	
M 12 x > 16	M 12 x > 20	M 12 x > 20	350-0010-000	355-0005-000	
M 12 x > 25	M 12 x > 25	M 12 x > 30	350-0011-000	355-0005-000	
<b>Leg pos. 5</b>			370-0240-000		
<b>Washer pos. 10</b>			370-0055-000		
<b>Screw with hexagon socket pos. 6</b>			322-0372-000		



# GUN ACCESSORIES FOR STUD WELDING GUNS SK 14 AND SK 15

Gun accessories for insulation pins



# GUN ACCESSORIES FOR STUD WELDING GUNS K 22 TO K 26

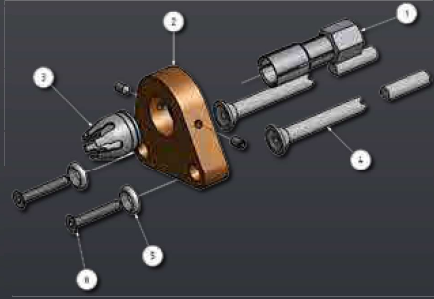
Gun accessories for shear connectors from 50 mm length

Stud dimension	Chuck pos. 1	Foot Assembly pos. 2	Supporting tube pos. 3
from 3 x 35	350-0086-000 (steel) 350-0087-000 (copper)	360-0012-000	360-0335-000
from 4 x 35	350-0088-000 (steel)		
from 5 x 35	350-0089-000 (steel)		

Stud length up to (mm)	Required length of legs (mm)	Part-No. pos. 4
140	240	370-0240-000
200	300	370-0300-000
300	400	370-0400-000
400	500	370-0500-000
500	600	370-0322-000
600	700	370-0323-000
<b>Washer pos. 5</b>		370-0055-000
<b>Screw with hexagon socket pos. 6</b>		322-0372-000

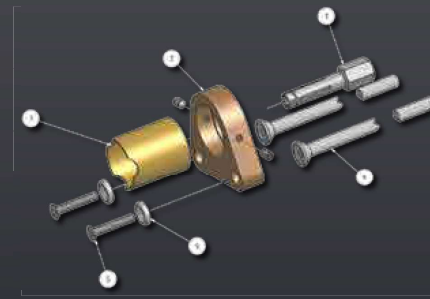
Stud diameter	Chuck pos. 1	Foot Assembly pos. 2	Ferrule Grip pos. 3
6	350-0056-000	360-0116-000	355-0031-000
10	350-0164-000	360-0117-000	355-0033-000
13	350-0059-000	360-0118-000 360-0119-000 (Type for 2 columns)	355-0035-000
16	350-0060-000		355-0036-000
19	350-0060-000		355-0036-000
22	350-0061-000		355-0037-000
25	350-0062-000		355-0038-000
<b>Stud length up to (mm)</b>		360-0149-000 (Type for 3 columns)	

K 22   K 22-D	K 24	K 26	Required length of legs (mm)	Part-No. pos. 4
140	90	70	240	370-0240-000
200	150	130	300	370-0300-000
300	250	230	400	370-0400-000
400	350	330	500	370-0500-000
500	450	430	600	370-0322-000
600	550	530	700	70-0323-000
<b>Washer pos. 5</b>		370-0055-000		
<b>Screw with hexagon socket pos. 6</b>		322-0372-000		



# GUN ACCESSORIES FOR STUD WELDING GUNS K 22 TO K26

Gun accessories for threaded studs, tapped studs and plain pins



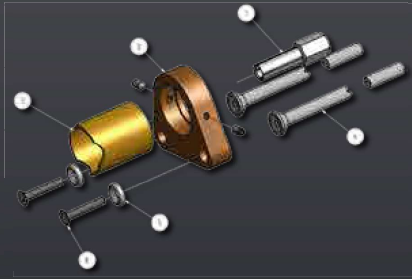
# GUN ACCESSORIES FOR STUD WELDING GUNS K 22 TO K26

Gun accessories for Insulation pins

Typ PD	Typ DD	Typ RD	Chuck pos. 1	Ferrule Grip pos. 3	Foot Assembly pos. 2	
M 4 x > 20	M 4 x > 20		350-0002-000	355-0001-000	360-0101-000	
M 5 x > 20	M 5 x > 20		350-0003-000	355-0002-000		
M 6 x > 16	M 6 x > 16	M 6 x > 16	350-0004-000	355-0002-000		
M 6 x > 20	M 6 x > 20	M 6 x > 20	350-0005-000	355-0002-000		
M 8 x > 16	M 8 x > 16	M 8 x > 16	350-0006-000	355-0003-000		
M 8 x > 20	M 8 x > 20	M 8 x > 20	350-0007-000	355-0003-000		
M 10 x > 16	M 10 x > 20	M 10 x > 20	350-0008-000	355-0004-000		
M 10 x > 20	M 10 x > 25	M 10 x > 25	350-0009-000	355-0004-000		
M 12 x > 16	M 12 x > 20	M 12 x > 20	350-0010-000	355-0005-000		
M 12 x > 25	M 12 x > 25	M 12 x > 30	350-0011-000	355-0005-000		
M 16 x > 20			350-0015-000	355-0006-000		360-0102-000
	M 16 x > 25	M 16 x > 20	350-0015-000	355-0007-000		360-0103-000
M 16 x > 30			350-0016-000	355-0006-000		360-0102-000
	M 16 x > 30	M 16 x > 25	350-0016-000	355-0007-000		360-0103-000
	M 20 x > 25	M 20 x > 20	350-0018-000	355-0007-000		
M 20 x > 25			350-0018-000	355-0008-000		
	M 20 x > 30	M 20 x > 25	350-0019-000	355-0007-000		
M 20 x > 30			350-0019-000	355-0008-000		
M 24 x > 35		M 24 x > 30	350-0023-000	355-0008-000		

Stud diameter	Chuck pos. 1	Foot Assembly pos. 2	Supporting tube pos. 3
from 3 x 35	350-0086-000 (steel) 350-0087-000 (copper)	370-0103-000	370-0167-000
from 4 x 35	350-0088-000 (steel)		
from 5 x 35	350-0089-000 (steel)		

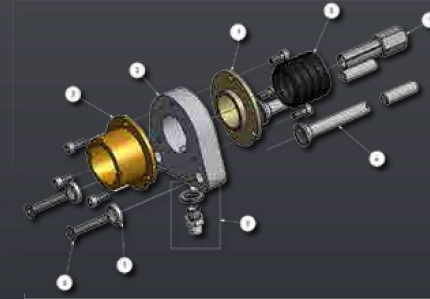
Stud length up to (mm)	Required length of legs (mm)	Part-No. pos. 4
<b>Gun K 22</b>		
140	240	370-0240-000
200	300	370-0300-000
300	400	370-0400-000
400	500	370-0500-000
500	600	370-0322-000
600	700	370-0323-000
<b>Washer pos. 5</b>		370-0055-000
<b>Screw with hexagon socket pos. 6</b>		322-0372-000



# GUN ACCESSORIES FOR STUD WELDING GUNS K 22 TO K26

Gun accessories for short cycle stud welding without shielding gas

Stud diameter d	Chuck pos. 1	Foot Assembly pos. 2	Leg pos. 4	Supporting tube pos. 3
3	350-0001-000	360-0103-000	370-0240-000	370-0167-000
4	350-0002-000			
5	350-0003-000			
6	350-0005-000			
8	350-0007-000			
10	350-0009-000			
<b>Washer pos. 5</b>			370-0055-000	
<b>Screw with hexagon socket pos. 6</b>			322-0372-000	



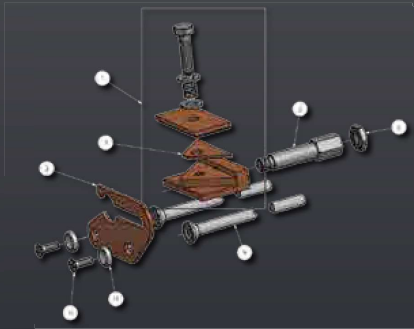
# GUN ACCESSORIES FOR STUD WELDING GUNS K 22 TO K26

Gun accessories for stud welding with shielding gas (Gun K 22)

Stud diameter d	Chuck pos. 1	Foot Assembly <sup>1</sup> pos. 2	Leg pos. 4	Supporting tube <sup>2</sup> pos. 3
5	350-0003-000	322-0011-000	370-0240-000	322-0225-000
6	350-0005-000			
8	350-0007-000			
10	350-0009-000			
12	350-0011-000			
<b>Washer pos. 5</b>				
<b>Screw with hexagon socket pos. 6</b>			322-0372-000	
<b>Circlip ring with 3 socket head cap screw M 4 x 1 0 pos. 7</b>			324-0042-000	
<b>Bellows pos. 8</b>			322-0098-000	
<b>Gas plug with seal pos. 9</b>			323-0017-000	
<b>Set of shielding gas hoses, completely assembled, 7 m with clip-on connectors at both sides and 3 m with clipon</b>			323-6012-000	
<b>See above, but 12 m and 3 m</b>			323-6013-000	
<b>Shielding gas equipment complete (pos. 2 to pos. 9)</b>			324-6024-000	

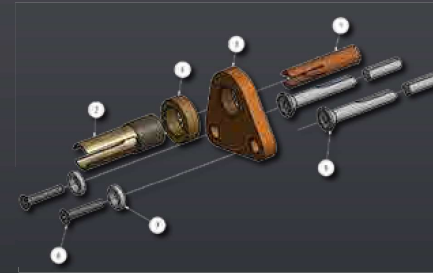
Other lengths of shielding gas hoses upon request. For studs with lengths  $L > \text{app. } 6 \times \text{diameter}$  chucks with deeper grip length are recommended. Further information upon request.

<sup>1</sup> Foot Assembly with 3 socket head cap screw M 4 x 10 Pos. 2 <sup>2</sup> Supporting tube with 3 socket head cap screw M 4 x 10 Pos. 3 |



# GUN ACCESSORIES FOR STUD WELDING GUNS K 22 TO K26

Gun accessories for Y-anchors



# GUN ACCESSORIES FOR STUD WELDING GUNS K 22 TO K26

Gun accessories for reduced Y-anchors

Dimension	Set of grips pos. 1	Foot Assembly pos. 2	Chuck extension pos.3	Counter nut pos. 4 (M 10 flat)	Compensation piece pos. 7
6 x 80°	350-6121-000	360-0122-000	350-0075-000	322-0378-000	-
8 x 80°		360-0123-00			350-0327-000
<b>Leg pos. 5</b>			370-0240-000		
<b>Washer pos. 10</b>			370-0055-000		
<b>Screw with hexagon socket pos. 11</b>			322-0379-000		

Chuck pos. 1	Ferrule Grip pos. 2	Foot Assembly pos. 3	Knurled nut pos. 4
350-0365-000	355-0272-000	360-0108-000	355-0250-000
<b>Leg pos. 5</b>		370-0240-000	
<b>Washer pos. 10</b>		322-0372-000	
<b>Screw with hexagon socket pos. 11</b>		370-0055-000	



