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China Iking Industrial Co.,Ltd.
中国艾科实业有限公司



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ABOUT IKING GROUP

IKING GROUP is one of the most professional manufacturer and exporter of stud welding products. We have a shear stud and Bolt& Nuts factory in Tianjin city. We can provide various high quality ARC studs, CD studs and ARC welding machines&guns. We also can manufacture according to customer's special requirements.

IKING products are strictly implement quality standards , both domestically and internationally such as ENISO13918.AWS D1.1. JIS B1198 and so on.IKING quality control department is working strictly to make sure no one unqualified of products get out of our factory.

After 27 years development ,now we totally have 15 sets of machines and can reach 4000tons per month producing capacity. By our always continuous innovation on production technology and harsh control on products quality , IKING have had got the CE, ISO, SGS certificates and have become reliable supplier and good partners for our customers.

Now IKING have established long-term trade relationships with more than 50 countries from Russia, UK, USA, German, Poland, Kuwait, Saudi Arabia, Bangladesh, UAE, Vietnam, South Africa and so on .

Sincerely thanks for you choosing “ IKING GROUP” , We will strive to exceed your expectations and be your best partners in China.



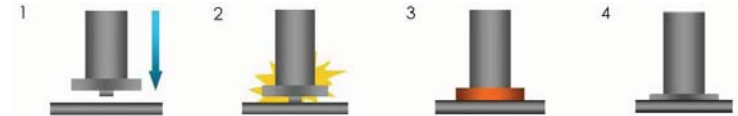
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1. What is stud welding?

Stud Welding is versatile, quickly and one step fastening system, since it was invented more than 60 years ago, the stud welding technology have constantly innovated and improved, now, it's widely used in construction, industrial and automotive circle. With the help of the electric arc as heat source the welding studs are welded on the metal surfaces. There are two different types of stud welding methods for fixing welding studs: The Capacitor Discharge (here after called CD) welding process and the Drawn Arc (here after called DA) welding process, see following:

Capacitor Discharge



The fastener is placed against the workpiece. A spring in the interior of the welding gun presses the stud on the workpiece.

The weld gun is activated and stored energy is discharged through the fastener melting the full diameter of its base and a portion of the parent material.

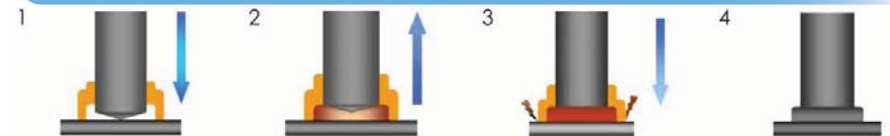
Spring-loading forces the fastener into the molten metal.

The fastener is held in the place as the molten metal solidifies and instantly creates a high quality fusion weld.

2 different welding process

Advantages	
Capacitor Discharge	Drawn Arc
* Welding range upto $\varnothing 8$	* Welding range up to $\varnothing 25$
* Very appropriate of welding on very thin plates from 0.5mm thickness	* Application on sheet metals with a minimum thickness of 2mm
* Extremely low penetration depth approx. 0.1mm	* Penetration depth from approx. 1mm to 3mm

Drawn Arc



A fastener and ceramic ferrule are firmly placed against the work surface under spring tension.

Upon triggering, the weld gun automatically lifts the fastener from the base metal and initiates a controlled electric arc which melts the end of the fastener and a portion of the base metal.

A ceramic arc shield concentrates the heat and retains the molten material in the weld area from maximum weld strength and reliability.

At the precise moment the fastener and the parent metal become molten, the fastener is automatically plunged into the work surface. The metal solidifies and a high quality fusion weld is completed.

2. Technical Information

2.1 For drawn arc stud welding

Dimensions

IKING shear connector and DA welding studs correspond to standard of BS EN ISO 13918. For studs dimensions please refer to the enclosed dimension tables. The length of shear connectors are stated as Length Before Welding, since the burn off length after welding are very different on various welding methods, such as shear connectors welding to bare metal, welding through metal deck, etc. The length of other DA type welding studs are stated as Length After Welding.

Stud Material

IKING Shear connectors are made of quality low carbon steel, other type of welding studs are made of strength class 4.8 steel or stainless steel A2-50/70, they have the following mechanical properties:

Stud types	Symbol	Material	Mechanical Properties
DA Studs	PD RD FD UD ID PS US IS	Mild steel 4.8 (weldable)	Yield point (ReH) min 340N/mm ² Tensile strength (Rm) min 420N/mm ² Elongation (A5) min 14%
		Stainless steel A2- 50/70 (weldable)	Yield point (ReH) min 210N/mm ² Tensile strength (Rm) min 500N/mm ² Elongation (A5) min 25%
	SD	Low carbon steel	Yield point(ReH) min 350N/mm ² Tensile strength (Rm) min 450N/mm ² Elongation (A5) min 15%

Welding Positions

Variant	Drawn arc with ceramic ferrule	Short-cycle drawn arc welding
Welding positions	Stud diameter	
↓	≤25mm	≤12mm
→	≤16mm	≤10mm
↑	≤20mm	≤10mm

Surface Treatment

Usually our DA welding stud will be supplied in plan condition, our appropriate package can provide basic anti-rust requirement, phosphate plating is available for shear connectors upon request

2. Technical Information

2.1 For drawn arc stud welding

Thread

The threads of welding studs are cold rolled with tolerance limit 6g.

Flux

All IKING shear connectors and drawn arc welding studs M8 and greater have a solid flux load-appropriate aluminum ball insert into the center of the studs tips. The appropriate high quality flux is an essential factor for obtaining consistent welding quality.

Package

Our multi-package can provide good production demand for transportation and storage . quality corrugated cartons with internal plastic bags, packed in the quality plywood pallets. For special very long time storage demand, barrels(metal cans)+ pallets are available for shear connectors.

Ordering information

For inquiring and ordering, please give us the following details:

Product name + stud type + material + specification + quantity + special request (if any), for example:

Shear connectors. Type SD. Low carbon steel, 19x100, 60,000 Pieces complete with standard UE ceramic ferrules.

2. Technical Information

2.2 For capacitor discharge stud welding

Dimensions

IKING CD welding studs correspond to standard of BS EN ISO 13918. For studs dimensions please refer to the enclosed dimensional tables. Special welding elements which are not described in the catalogue are available upon request. The length of CD welding studs are stated as Length After Welding.

Stud Material

IKING CD welding studs are made of strength class 4.8 steel, Al-Mg alloy or stainless steel A2-50/70, they have the following mechanical properties:

Stud types	Symbol	Material	Mchanical Properties
CD Studs	PT UT IT IN	Mild steel 4.8 (weldable)	Yield point (ReH) min 340N/mm ² Tensile strength (Rm) min 420N/mm ² Elongation (A5) min 14%
	PT UT IT	Stainless steel A2-50/70 (weldable)	Yield point (ReH) min 2 10N/mm ² Tensile strength (Rm) min 500N/mm ² Elongation (A5) min 25%
	PT UT IT	Al-Mg Alloy	Tensile strength (Rm) min 1 8N/mm ²

Surface Treatment

Usually our CD 4.8 welding studs will be supplied in copper plating , other special surface treatments are available upon request. The stainless steel and Al-Mg alloy CD welding studs are plain condition.

Thread

The non-coating threads of welding studs are cold rolled with tolerance limit 6g. For surface treated welding studs the threads tolerance limit 6h can be reached.

Stud flange

CD welding studs have a cold formed flange with greater diameter 1.0 to 1.5mm than the welding studs. The flange prevents the electric arc to flash over to the cylindrical part of the welding studs, allows automatic stud feeding for increased production speeds, and increases stress area welded to the base material.

2. Technical Information

2.2 For capacitor discharge stud welding

Welding tip

The CD welding studs have a cold formed calibrated welding tip with strictly controlled length and diameter tolerance.

At the welding tip the capacitor discharge stud welding process initiated and it determines the welding time.

Therefore the exact dimensions of the welding tip are decisive for proper welding results.

Package

Our multi-package can provide good production demand for transportation and storage - quality corrugated cartons with internal plastic bags, packed in the quality plywood pallets.

Ordering information

For inquiring and ordering, please give us the following details:

Product name + stud type + material + specification + quantity + special request (if any), for example:

Capacitor discharge threaded stud, Type PT 4. 8. M6x30, 5, 000Pieces.

IKING® Shear Studs

3. Drawn Arc Welding Studs

3.1 Shear Connectors (Type SD acc. To ISO 13918)



Shear connectors are typically used in composite steel construction to tie the concrete to steel members and resist shear forces between the concrete slab and steel members. They are widely used in steel building, bridges, etc. Welding Through Metal Deck are available for this stud, for this option, special ceramic ferrule type UFT are recommended.

Dimensions(in mm)							Item Number		Ceramic Ferrule
D1	L1	D5	h3	D3*	h*	L1 Burn OFF*	Low Carbon Steel		
10	30-50	19	7	13	2.5	3	SD-10-XXX	UF10	
13	40-165	25	8	17	3	3	SD-13-XXX	UF13	
16	40-305	32	8	21	4.5	4	SD-16-XXX	UF16	
19	40-500	32	10	23	6	4	SD-19-XXX	UF19	
								UFT19	
22	50-500	35	10	29	6	4	SD-22-XXX	UF22	
25	85-500	41	12	31	7	6	SD-25-XXX	UF25	

*For special conditions, e.g. Through deck stud welding, the dimensions and the tolerances are not applicable.

*D3 and h are approximate values.

Not listed dimensions available upon request.

Material & Surface treatment

IKING shear connectors are made of quality low carbon steel grade SWRCH15A, the mechanical properties meet the standard ISO 13918 and AWS D1.1 type B, please refer to Chapter 2.1 clause "Material". Surface treatment of phosphate plating is available upon request.

Flux

All IKING shear connectors have a solid flux load - appropriate aluminum ball insert into the center of the studs tips.

Other technical information can be found in chapter 2.1

IKING® Shear Studs



3. Drawn Arc Welding Studs

3.2 Threaded Stud (Type PD acc. To ISO 13918)



The PD type studs are recommended to be used for weld to heavy gauge base materials to get full fastener strength. They have unthreaded weld base corresponds to the pitch diameter of the thread, the maximum load is identical to the load of a 4.8 screw.

Dimensions(in mm)							Item Number			Ceramic Ferrule
D1	L2	ymin	b	D2	D3	h	4.8 Steel	SS304	SS316	
M6	15≤L2<35 35≤L2≤40	9 -	- 20	5.35	8.5	3.5	PD4.8-M6-XXX	PD304-M6-XXX	PD316-M6-XXX	PF6
M8	20≤L2<45 45≤L2≤50	9 -	- 40	7.19	10	3.5	PD4.8-M8-XXX	PD304-M8-XXX	PD316-M8-XXX	PF8
M10	20≤L2<45 45≤L2≤50	9.5 -	- 40	9.03	12.5	4	PD4.8-M10-XXX	PD304-M10-XXX	PD316-M10-XXX	PF10
M12	25≤L2<45 45≤L2≤60	11.5 -	- 40	10.86	15.5	4.5	PD4.8-M12-XXX	PD304-M12-XXX	PD316-M12-XXX	PF12
M16	30≤L2<55	13.5	-	14.6	19.5	6	PD4.8-M16-XXX	PD304-M16-XXX	PD316-M16-XXX	PF16
	55≤L2<100 100≤L2<160	- 80	- 40							
M20	35≤L2<50	15.5	-	18.38	24.5	7	PD4.8-M20-XXX	PD304-M20-XXX	PD316-M20-XXX	PF20
	50≤L2<55 55≤L2<70	- 40	35 40							

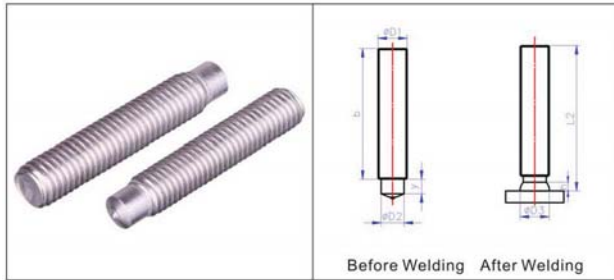
D3 and h are approximate values.

Not listed dimensions available upon request.

Other technical information can be found in chapter 2.1

3. Drawn Arc Welding Studs

3.3 Threaded Stud with Reduced Shaft (Type RD acc. To ISO 13918)



The RD type studs have a reduced weld base diameter. Thus they can produce a smaller weld collar diameter than other DA type studs. The smaller weld collar allows it to be used on smaller clearance holes application. But the strength of the assembly is determined by the reduced weld base.

Dimensions(in mm)						Item Number			Ceramic Ferrule
D1	L2	ymin	D2	D3	h*	4.8 Steel	SS304	SS316	
M6	15-30	4	4.7	7	2.5	RD4.8-M6-XXX	RD304-M6-XXX	RD316-M6-XXX	RF6
M8	20-50	4	6.2	9	2.5	RD4.8-M8-XXX	RD304-M8-XXX	RD316-M8-XXX	RF8
M10	20-50	5	7.9	11.5	3	RD4.8-M6-XXX	RD304-M6-XXX	RD316-M6-XXX	RF10
M12	25-60	6	9.5	13.5	4	RD4.8-M6-XXX	RD304-M6-XXX	RD316-M6-XXX	RF12
M16	30-60	7.5	13.2	18	5	RD4.8-M6-XXX	RD304-M6-XXX	RD316-M6-XXX	RF16
M20	35-70	9	16.5	23	6	RD4.8-M6-XXX	RD304-M6-XXX	RD316-M6-XXX	RF20

*D3 and h are approximate values.

Not listed dimensions available upon request.

Other technical information can be found in chapter 2.1

Material & Surface treatment

RD type studs are available in Low Carbon Mild Steel Grade 1008A, Stainless Steel Grade SS304 or SS316, all materials RD studs will be supplied in plain condition.

Thread

Standard RD studs are cold rolled with tolerance limit 6g.

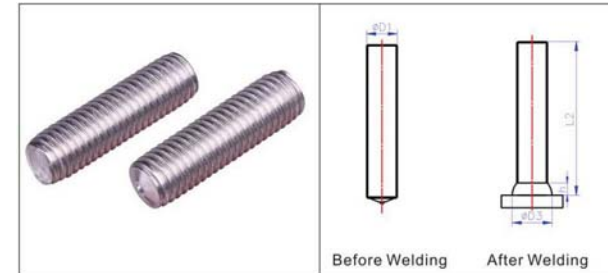
Flux

All RD type studs M8 and grater have a aluminum balls solid flux load.

Other technical information can be found in chapter 2.1

3. Drawn Arc Welding Studs

3.4 Full Threaded Stud (Type FD)



The FD type studs are threaded almost to the top of the welding tip. Thus after welding the studs are threaded up to the weld collar, they are recommended to be used in whenever full fastener length needed.

Dimensions(in mm)				Item Number			Ceramic Ferrule
D1	L2	D3	h*	4.8 Steel	SS304	SS316	
M6	15-30	8.5	4	FD4.8-M6-XXX	FD304-M6-XXX	FD316-M6-XXX	RF6
M8	20-50	11	4	FD4.8-M8-XXX	FD304-M8-XXX	FD316-M8-XXX	RF8
M10	20-50	13	4	FD4.8-M10-XXX	FD304-M10-XXX	FD316-M10-XXX	RF10
M12	25-60	16	5	FD4.8-M12-XXX	FD304-M12-XXX	FD316-M12-XXX	RF12
M16	30-60	21	7	FD4.8-M16-XXX	FD304-M16-XXX	FD316-M16-XXX	RF16
M20	35-70	26	7	FD4.8-M20-XXX	FD304-M20-XXX	FD316-M20-XXX	RF20

* D3 and h are approximate values.

Not listed dimensions available upon request.

Material & Surface treatment

FD type studs are available in Low Carbon Mild Steel Grade 1008A, Stainless Steel Grade SS304 or SS316, all materials FD studs will be supplied in plain condition.

Thread

Standard FD studs are cold rolled with tolerance limit 6g.

Flux

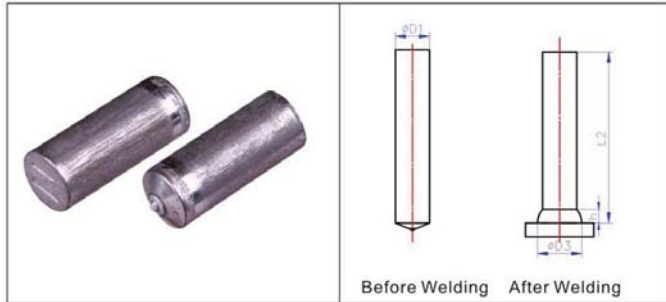
All FD type studs M8 and grater have a aluminum balls solid flux load.

Other technical information can be found in chapter 2.1

IKING® Shear Studs

3. Drawn Arc Welding Studs

3.5 Unthreaded Stud (Type UD acc. To ISO 13918)



The UD type studs are designed to be used in power generation industry, forging applications and locator pins, stops, etc.

Dimensions(in mm)				Item Number			Ceramic Ferrule
D1	L2	D3	h*	4.8 Steel	SS304	SS316	
6	15-30	8.5	4	UD4.8-06-XXX	UD304-06-XXX	UD316-06-XXX	UF6
8	20-50	11	4	UD4.8-08-XXX	UD304-08-XXX	UD316-08-XXX	UF8
10	20-50	13	4	UD4.8-10-XXX	UD304-10-XXX	UD316-10-XXX	UF10
12	25-60	16	5	UD4.8-12-XXX	UD304-12-XXX	UD316-12-XXX	UF12
14.6	30-100	18.5	6	UD4.8-14.6-XXX	UD304-14.6-XXX	UD316-14.6-XXX	RF16
16	35-100	21	7	UD4.8-16-XXX	UD304-16-XXX	UD316-16-XXX	UF16

* D3 and h are approximate values.
Not listed dimensions available upon request.

Material & Surface treatment

UD type studs are available in Low Carbon Mild Steel Grade 1008A, Stainless Steel Grade SS304 or SS316, all materials UD studs will be supplied in plain condition. Other special materials are available upon request.

Flux

All UD type studs 8 and grater have a aluminum balls solid flux load.

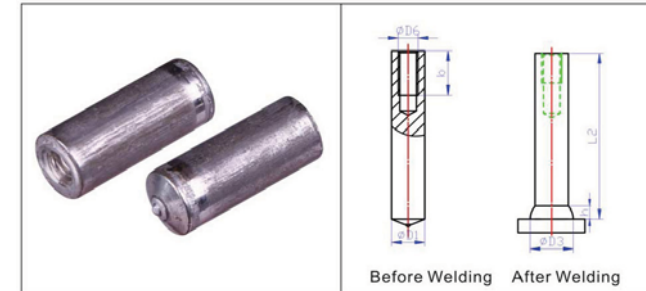
Other technical information can be found in chapter 2.1

IKING® Shear Studs



3. Drawn Arc Welding Studs

3.6 Stud with Internal Thread (Type ID acc. To ISO 13918)



The ID type studs are also called DA Tapped Studs, they have an internal thread to serve as means of attaching or anchoring components to structures.

Dimensions(in mm)						Item Number			Ceramic Ferrule
D1	D6	L2	b	D3*	h*	4.8 Steel	SS304	SS316	
10	M5	15-30	7	13	4	ID4.8-M5-10-XXX	ID304-M5-10-XXX	ID316-M5-10-XXX	UF10
10	M6	20-50	9	13	4	ID4.8-M6-10-XXX	ID304-M6-10-XXX	ID316-M6-10-XXX	UF10
12	M8	20-50	9.5	16	5	ID4.8-M8-12-XXX	ID304-M8-12-XXX	ID316-M8-12-XXX	UF12
14.6	M8	25-60	15	18.5	6	ID4.8-M8-14.6-XXX	ID304-M8-14.6-XXX	ID316-M8-14.6-XXX	PF16
14.6	M10	30-100	15	18.5	6	ID4.8-M10-14.6-XXX	ID304-M10-14.6-XXX	ID316-M10-14.6-XXX	PF16
16	M10	35-100	15	21	7	ID4.8-M10-16-XXX	ID304-M10-16-XXX	ID316-M10-16-XXX	UF16
18	M12	35-100	18	23	7	ID4.8-M12-18-XXX	ID304-M12-18-XXX	ID316-M12-18-XXX	UF19

* D3 and h are approximate values.
Not listed dimensions available upon request.

Material & Surface treatment:

ID type studs are available in Low Carbon Mild Steel Grade 1008A, Stainless Steel Grade SS304 or SS316, all ID studs will be supplied in plain condition. Other special materials available upon request.

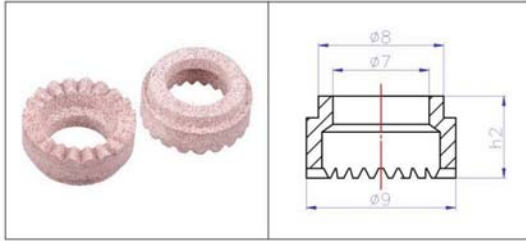
Flux

All ID type studs D1 dimension 8mm and grater have a aluminum balls solid flux load.
Other technical information can be found in chapter 2.1

IKING[®] Shear Studs

4. Ceramic Ferrules for Drawn Arc Stud Welding

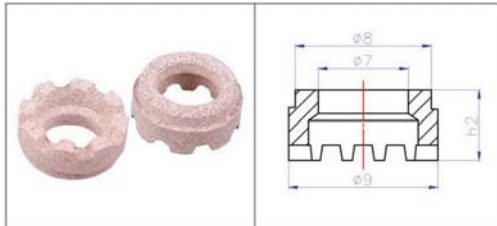
4.1. Ceramic Ferrules for Shear Connectors (Type UF acc. To ISO 13918)



Specification	Dimensions				Item Number
	D7+0.5/-0	D8±1	D9±1	h2≈	
UF10	10.2	15	17.8	10	UF-10
UF13	13.1	20	22.2	11	UF-13
UF16	16.3	26	30	13	UF-16
UF19	19.4	26	30.8	16.7	UF-19
UF22	22.8	30.7	38.5	18.5	UF-22
UF25	26.0	35.5	41	21	UF-25

Not listed dimensions available upon request.

4.2 Ceramic Ferrules for Shear Connectors Weld Through Metal Deck (Type UFT)



Special Ceramic Ferrules for shear connectors welding through metal deck (mostly zinc-plated deck sheets on the steel beams). As there are high amounts of degasification through zinc evaporation when weld shear connectors through zinc-plated deck sheets, the type of UFT ceramic ferrules with larger combustion chamber and larger vents can considerably improve the welding results.

Specification	Dimensions				Item Number
	D7+0.5/-0	D8±1	D9±1	h2≈	
UF19T	19.4	26	30.8	16.7	UFT-19

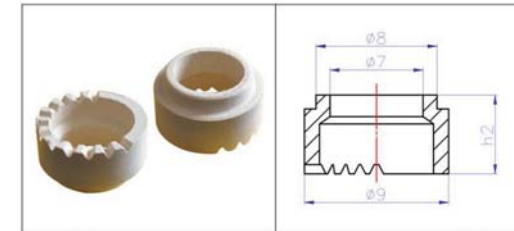
Not listed dimensions available upon request.

IKING[®] Shear Studs



4. Ceramic Ferrules for Drawn Arc Stud Welding

4.3 Ceramic Ferrules for Shear Connectors Welding to Vertical Surface (Type UFV)

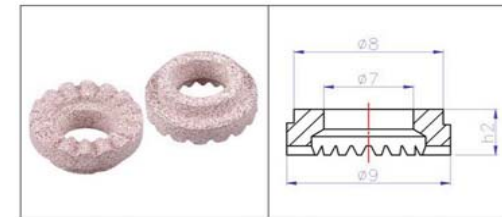


Special Ceramic Ferrules for shear connectors welding to vertical surface, they have blocked vents at the bottom of the ferrule cavity to prevent weld metal loss, and deposit more of the weld collar at the top of the weld. Thus we can get the 360° weld collar on weld shear connectors to vertical surface.

Specification	Dimensions				Item Number
	D7+0.5/-0	D8±1	D9±1	h2≈	
UF19V	20.5	30.8	33.8	15.2	UFV-19

Not listed dimensions available upon request.

4.4. Ceramic Ferrules for PD type studs (Type PF acc. To Iso 13918)



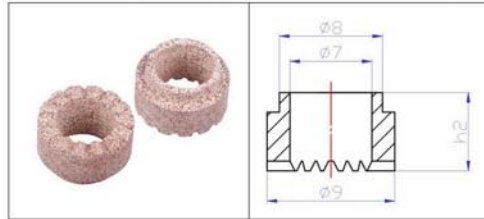
Specification	Dimensions				Item Number
	D7+0.5/-0	D8±1	D9±1	h2≈	
PF6	5.6	9.5	11.5	6.5	PF-06
PF8	7.4	11.5	15	6.5	PF-08
PF10	9.2	15	16.5	6.5	PF-10
PF12	11.1	16.5	20	9	PF-12
PF16	15.0	20	26	11	PF-16
PF20	18.6	30.7	33.8	10	PF-20

Not listed dimensions available upon request.

IKING® Shear Studs

4. Ceramic Ferrules for Drawn Arc Stud Welding

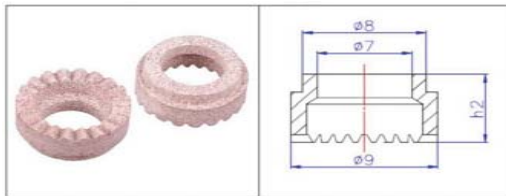
4.5 Ceramic Ferrules for RD type studs (Type RF acc.To ISO 13918)



Specification	Dimensions				Item Number
	D7+0.5/-0	D8±1	D9±1	h2≈	
RF6	6.2	9.5	12.2	10	RF-06
RF8	8.2	12	15.3	9	RF-08
RF10	10.2	15	18.5	11.5	RF-10
RF12	12.2	17	20	13	RF-12
RF16	16.3	20.5	26.5	15.3	RF-16
RF20	20.3	26.2	32	22	RF-20

Not listed dimensions available upon request.

4.6 Ceramic Ferrules for FD, ID and UD studs (Type UF acc. To ISO 13918)



Specification	Dimensions				Item Number
	D7+0.5/-0	D8±1	D9±1	h2≈	
UF6	6.2	9.5	11.5	8.7	UF-06
UF8	8.2	11	15	8.7	UF-08
UF10	10.2	15	17.8	10	UF-10
UF12	12.2	16.5	20	10.7	UF-12
UF16	16.3	26	30	13	UF-16

Not listed dimensions available upon request.

IKING® Shear Studs



5. Shorty-Cycle Welding Studs

5.1 Threaded Stud with Flange (Type PS acc. To ISO 13918)



The PS type studs have a flange, it allows the PS studs be suitable for automatic stud feeding systems to increase production speeds.

Dimensions						Item Number		
D1	L2	D2	h5 max	h1	α	4.8 Steel	SS304	SS316
M3	8-25	4	0.6	0.7-1.4	7°	PS4.8-M3-XX	PS304-M3-XX	PS316-M3-XX
M4	10-30	5	0.6	0.7-1.4	7°	PS4.8-M4-XX	PS304-M4-XX	PS316-M4-XX
M5	10-30	6	1.0	0.7-1.4	7°	PS4.8-M5-XX	PS304-M5-XX	PS316-M5-XX
M6	12-30	7	1.0	0.7-1.4	7°	PS4.8-M6-XX	PS304-M6-XX	PS316-M6-XX
M8	12-35	9	1.5	0.8-1.4	7°	PS4.8-M8-XX	PS304-M8-XX	PS316-M8-XX
M10	12-40	11	2.0	0.8-1.4	7°	PS4.8-M10-XX	PS304-M10-XX	PS316-M10-XX

Not listed dimensions available upon request.

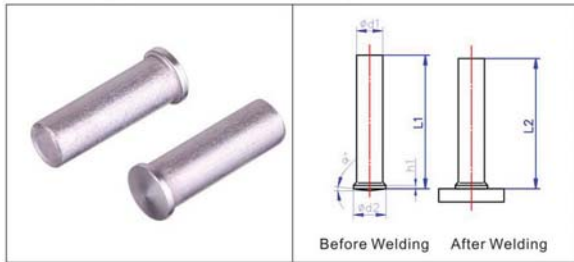
Material & Surface treatment

PS type studs are available in Low Carbon Mild Steel Grade 1008A with copper plated, Stainless Steel Grade SS304 or SS316. Other special materials are available upon request. Other technical information can be found in chapter 2.1

IKING[®] Shear Studs

5. Shorty-Cycle Welding Studs

5.2 Unthreaded Stud (Type US acc. To ISO 13918)



The U5 type studs are designed to be used as locator or stop points, they have a flange, it allows the US studs be suitable for automatic stud feeding systems to increased production speeds.

Dimensions(in mm)					Item Number		
D1	L2	D2	h1	α	4.8 Steel	SS304	SS316
3	8-25	4	0.7-1.4	7°	US4.8-03-XX	US304-03-XX	US316-03-XX
4	10-30	5	0.7-1.4	7°	US4.8-04-XX	US304-04-XX	US316-04-XX
5	10-30	6	0.7-1.4	7°	US4.8-05-XX	US304-05-XX	US316-05-XX
6	12-30	7	0.7-1.4	7°	US4.8-06-XX	US304-06-XX	US316-06-XX
7.1	12-35	9	0.8-1.4	7°	US4.8-7.1-XX	US304-7.1-XX	US316-7.1-XX
8	12-40	9	0.8-1.4	7°	US4.8-08-XX	US304-08-XX	US316-08-XX

Not listed dimensions available upon request.

Material & Surface treatment

US type studs are available in Low Carbon Mild Steel Grade 1008A with copper plated, Stainless Steel Grade SS304 or SS316. Other special materials are available upon request.

Other technical information can be found in chapter 2.1

IKING[®] Shear Studs



5. Shorty-Cycle Welding Studs

5.3 Internal Threaded Stud (Type IS acc. To ISO 13918)



The IS type studs have a internal thread and a flange, the flange allows the IS studs suitable for automatic stud feeding systems to increase production speeds.

Dimensions(in mm)							Item Number		
D1	L2	D6	b min.	d2	h1	α	4.8 Steel	SS304	SS316
5	6-30	M3	5	6.0	0.7-1.4	7°	IS4.8-M3-05-XX	IS304-M3-05-XX	IS316-M3-05-XX
6	8-40	M4	5	7.0	0.7-1.4	7°	IS4.8-M4-06-XX	IS304-M4-06-XX	IS316-M4-06-XX
7.1	10-40	M5	6	9.0	0.8-1.4	7°	IS4.8-M5-7.1-XX	IS304-M5-7.1-XX	IS316-M5-7.1-XX
8	15-40	M6	10	9.0	0.8-1.4	7°	IS4.8-M6-08-XX	IS304-M6-08-XX	IS316-M6-08-XX

Not listed dimensions available upon request.

Material & Surface treatment

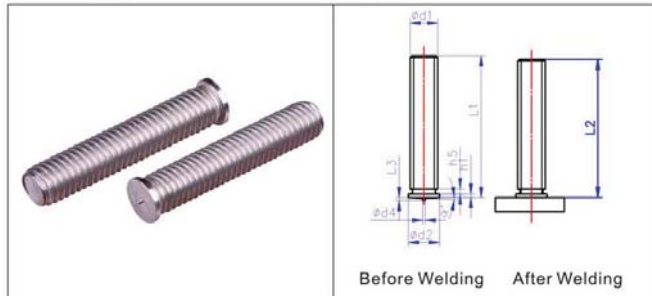
IS type studs are available in Low Carbon Mild Steel Grade 1008A with copper plated, Stainless Steel Grade SS304 or SS316. Other special materials are available upon request.

Other technical information can be found in chapter 2.1

IKING[®] Shear Studs

6. Capacitor Discharge Welding Studs

6.1 Threaded Stud (Type PT acc.To ISO 13918)



The PT type studs have a cold formed flange with greater diameter 1.0 to 1.5mm than the welding studs, it allows the PT studs suitable for automatic stud feeding systems to increase production speeds. They have a cold formed calibrated weld tip with strictly controlled length and diameter tolerance. At the welding tip the capacitor discharge stud welding process initiated and it determines the welding time.

Dimensions(in mm)								Item Number			
d1	L2	d2	d4	L3	h5 max	h1	α	4.5 Steel	SS304	SS316	Al-Mg3.5
M3	6-30	4.5	0.6	0.55	0.6	0.7-1.4	3°	PT4.5-M3-XX	PT304-M3-XX	PT316-M3-XX	PT3.5-M3-XX
M4	6-40	5.5	0.65	0.55	0.6	0.7-1.4	3°	PT4.5-M4-XX	PT304-M4-XX	PT316-M4-XX	PT3.5-M4-XX
M5	8-40	6.5	0.75	0.8	1.0	0.7-1.4	3°	PT4.5-M5-XX	PT304-M5-XX	PT316-M5-XX	PT3.5-M5-XX
M6	8-40	7.5	0.75	0.8	1.0	0.7-1.4	3°	PT4.5-M6-XX	PT304-M6-XX	PT316-M6-XX	PT3.5-M6-XX
M8	10-40	9	0.75	0.85	1.5	0.8-1.4	3°	PT4.5-M8-XX	PT304-M8-XX	PT316-M8-XX	PT3.5-M8-XX

Not listed dimensions available upon request.

Material & Surface treatment

PT type studs are available in Low Carbon Mild Steel Grade 1 008A with copper plated, Al-Mg Alloy, Stainless Steel Grade SS304 or SS316. Other special materials are available upon request.

Thread

The non-coating threads of PT type studs are cold rolled with tolerance limit 6g. For copper plated welding studs the threads tolerance limit 6h can be reached.

Other technical information can be found in chapter 2.2.

IKING[®] Shear Studs



6. Capacitor Discharge Welding Studs

6.2 Unthreaded Stud (Type UT acc. To ISO 13918)



The UT type studs are generally used as locator or stop points, have a cold formed flange with greater diameter 1.0 to 1.5mm than the welding studs, it allows the UT studs suitable for automatic stud feeding systems to increase production speeds. They have a cold formed calibrated weld tip with strictly controlled length and diameter tolerance. At the welding tip the capacitor discharge stud welding process initiated and it determines the welding time.

Dimensions(in mm)							Item Number			
d1	L2	d2	d4	L3	h1	α	4.8 Steel	SS304	SS316	Al-Mg3.5
3	6-30	4.5	0.6	0.55	0.7-1.4	3°	UT4.8-03-XX	UT304-03-XX	UT316-03-XX	UT3.5-03-XX
4	6-40	5.5	0.65	0.55	0.7-1.4	3°	UT4.8-04-XX	UT304-04-XX	UT316-04-XX	UT3.5-04-XX
5	8-40	6.5	0.75	0.8	0.7-1.4	3°	UT4.8-05-XX	UT304-05-XX	UT316-05-XX	UT3.5-05-XX
6	8-40	7.5	0.75	0.8	0.7-1.4	3°	UT4.8-06-XX	UT304-06-XX	UT316-06-XX	UT3.5-06-XX
7.1	10-40	9	0.75	0.85	0.8-1.4	3°	UT4.8-7.1-XX	UT304-7.1-XX	UT316-7.1-XX	UT3.5-7.1-XX

Not listed dimensions available upon request.

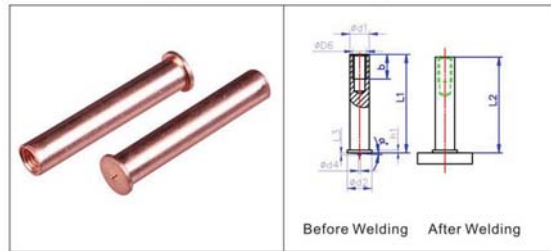
Material & Surface treatment

UT type studs are available in Low Carbon Mild Steel Grade 1008A with copper plated, Al-Mg Alloy, Stainless Steel Grade SS304 or SS316. Other special materials are available upon request.

Other technical information can be found in chapter 2.2.

6. Capacitor Discharge Welding Studs

6.3 Internal Threaded Stud (Type IT acc. To ISO 13918)



The IT type studs have an internal thread, and they have a cold formed flange with greater diameter 1.0 to 1.5mm than the welding studs, it allows the UT studs suitable for automatic stud feeding systems to increase production speeds. They have a cold formed calibrated weld tip with strictly controlled length and diameter tolerance. At the welding tip the capacitor discharge stud welding process initiated and it determines the welding time.

Dimensions(in mm)									Item Number			
d1	L2	D6	b	d2	d4	L3	h1	α	4.8 Steel	SS304	SS316	Al-Mg3.5
5	6-30	M3	5	6.5	0.75	0.8	0.7-1.4	3°	IT4.8-03-XX	IT304-03-XX	IT316-03-XX	IT3.5-03-XX
6	8-40	M4	6	7.5	0.75	0.8	0.7-1.4	3°	IT4.8-04-XX	IT304-04-XX	IT316-04-XX	IT3.5-04-XX
7.1	10-40	M5	7.5	9	0.75	0.85	0.8-1.4	3°	IT4.8-05-XX	IT304-05-XX	IT316-05-XX	IT3.5-05-XX

Not listed dimensions available upon request.

Material & Surface treatment

IT type studs are available in Low Carbon Mild Steel Grade 1008A with copper plated, Al-Mg Alloy, Stainless Steel ?
Grade SS304 or SS316. Other special materials are available upon request.

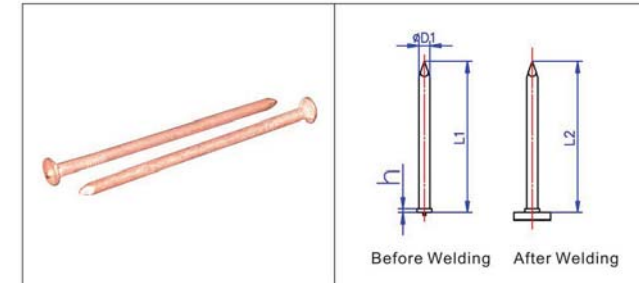
Thread

The non-coating threads of IT type studs are cold rolled with tolerance limit 6g. For copper plated welding studs the threads tolerance limit 6h can be reached.

Other technical information can be found in chapter 2.2.

6. Capacitor Discharge Welding Studs

6.4 Insulation Nail (Type IN)



The IN type studs are designed as welded fasteners to secure insulated blanket or board to metal heating and air conditioning duct, ovens, tanks or other hot and cold equipments. The insulation may be fiberglass, rock wool or other insulated material. They are used in combination with the special Clip for Insulation Nail type CIN to be a simple system of securing insulation material to metal members, it is cheap and efficient method. They have a cold formed calibrated weld tip with strictly controlled length and diameter tolerances. At the welding tip the capacitor discharge stud welding process initiated and it determines the welding time.

Dimensions(in mm)		Item Number		
d1	L2	4.8 Steel	SS304	SS316
2	20-150	IN4.8-02-XXX	IN304-02-XXX	IN316-02-XXX
3	20-150	IN4.8-03-XXX	IN304-03-XXX	IN316-03-XXX

Not listed dimensions available upon request.

Material & Surface treatment

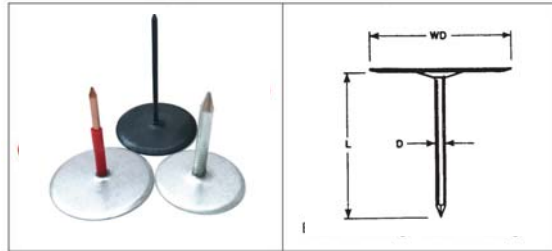
IT type studs are available in Low Carbon Mild Steel Grade 1008A with copper plated, Stainless Steel Grade SS304 or SS316. Other special materials are available upon request.

Other technical information can be found in chapter 2.2.

IKING® Shear Studs

6. Capacitor Discharge Welding Studs

6.5 Cup Head Weld Pin



Type	D	WD	Min. L	Max. L
CS12	0.105	1.187	3/8	16"
CS14	0.080	1.187	3/8	16"
CL12	0.105	1.500	3/8	16"

Materials

Low Carbon Steel - Pin / Washer

C - 0.23% max. P - 0.04% max.
Mn - 0.90% max. S - 0.05% max.

Mechanical Properties

Low Carbon Steel - Pin / Washer

Values available upon request.

Stainless Steel

Not standard, but available by special order.

Plating

Galvanized is standard. Copper plating is available upon special request.
Standard Washer is galvanized.

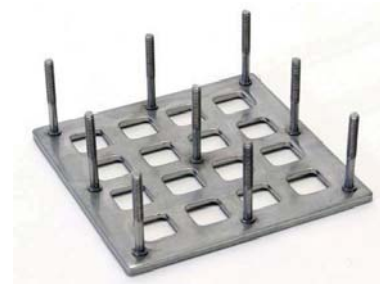
Bevel

Washer edge is beveled to prevent cutting of insulation material.

Paper Insulating Washers

Available for welding through foil faced insulation.
Paper insulating washers can be ordered separately or factory installed.

IKING® Shear Studs





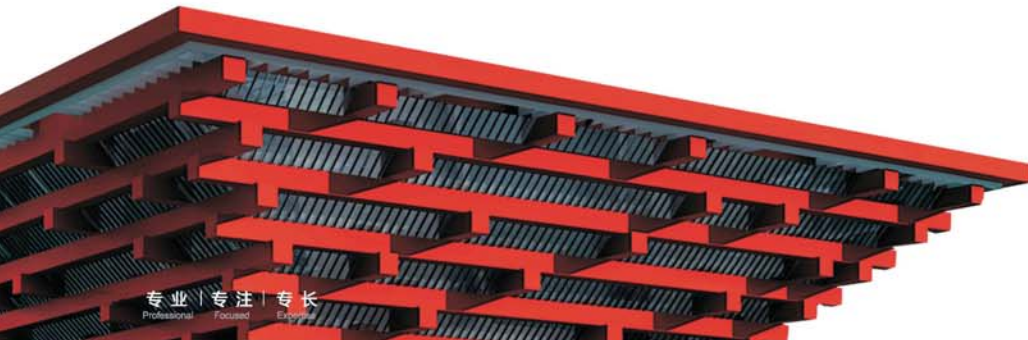
Cooperation Case

Cooperation Case

National Stadium "Bird's Nest"
CCTV Headquarters Building
Shanghai World Expo Venue
Shanghai World Financial Center
Beijing-Tianjin-Tangshan Railway
Beijing-Shanghai High-speed Railway
Wuhan Passenger Transport Station
Beijing-Shanghai High Speed Railway
Shanghai Hongqiao Hub Station
Dubai Maidan Racecourse
Shenzhen University City
Inter base
Hudong Zhonghua Shipbuilding Group
Mustang car
Jiangnan Shipyard, etc.
Beijing Flower Expo Construction Project;
Luogang Railway Construction Project;
Suzhou Singapore Industrial Park
Construction Project, etc.

Cooperation Client

China Construction Steel Structure Co., Ltd.
Wuhan China Construction Third Engineering
Bureau Metal Structure Engineering Company
Seiko Steel Structure Group Co., Ltd. and its
subsidiaries
Hangxiao Steel Structure Group Co., Ltd. and its
branch company Shanghai Baoye Steel Structure
Corporation
China Metallurgical Group Beijing Building
Research Institute
Shanghai Guandal Steel Structure Co., Ltd.
Zhejiang Southeast Network Group Co., Ltd.
Chaofeng Steel Structure Group Co., Ltd. and
its subsidiaries
Hangzhou Dadi Net Manufacturing Co., Ltd.
Anhui Wuhu Hengda Steel Structure Co., Ltd.
Shanghai Guangjie Steel Structure Manufacturing
Co., Ltd.
Shaanxi Northwest Electric Power Construction
Company
Shaanxi Provincial Institute of Architectural
Research
China Water Resources and Hydropower Seventh
Engineering Bureau
Shanghai Marton Steel Structure Co., Ltd.
Zhejiang Zhonghong Steel Structure Co., Ltd.
Zhejiang Dingtian Steel Structure Co., Ltd.
Jiaxing Yidu Grid Steel Structure Co., Ltd.
Sichuan Hengsheng Steel Structure Co., Ltd.
Sichuan Huiyuan Steel Structure Co., Ltd.
Henan Liujian Tianfeng Steel Structure
Manufacturing Co., Ltd.



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IKING GROUP Will Continue Improving And Enhancing Our Weld Studs Quality And Service, Strive To Exceed Your Expectations And Be Your Best Partners In China.