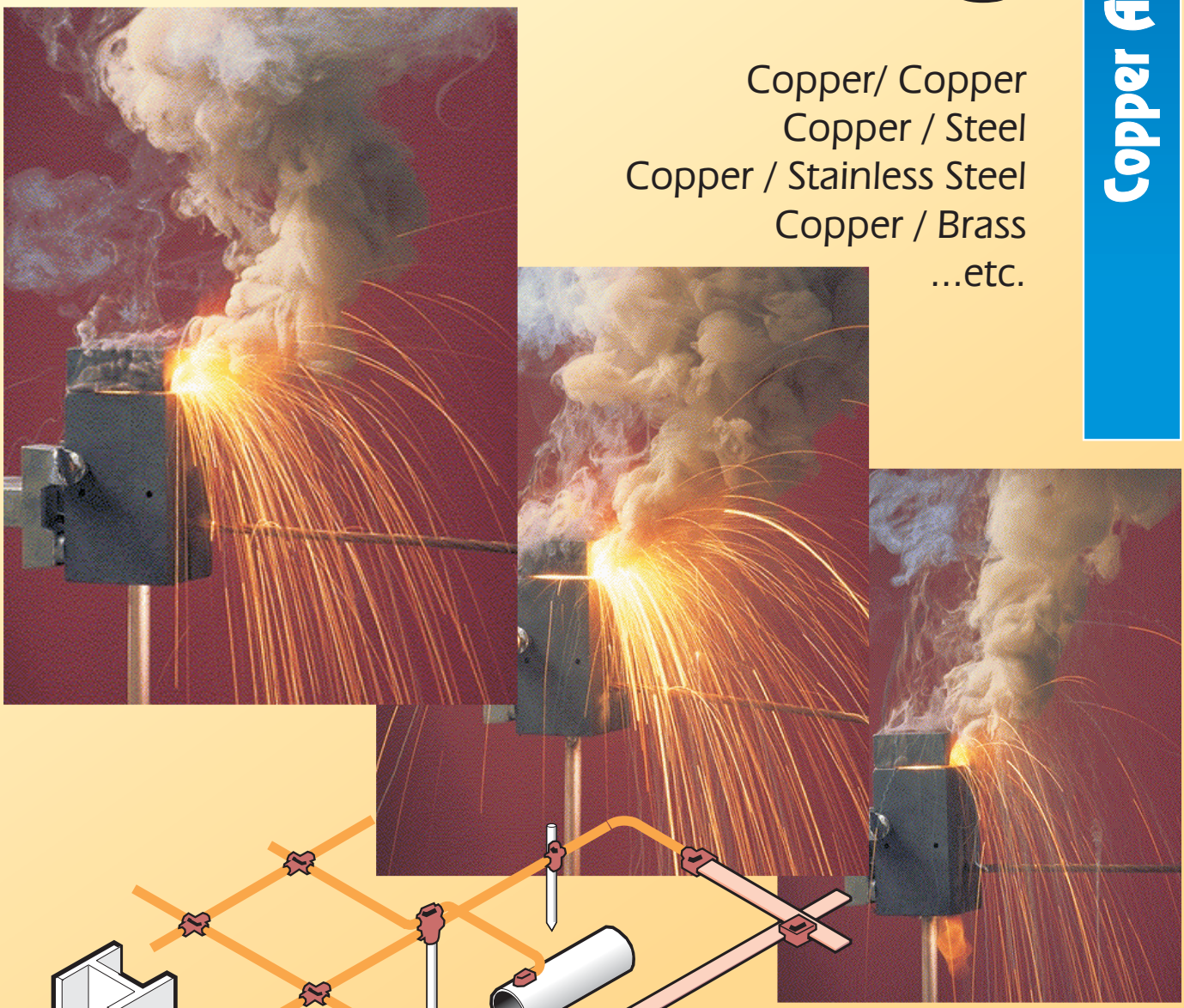
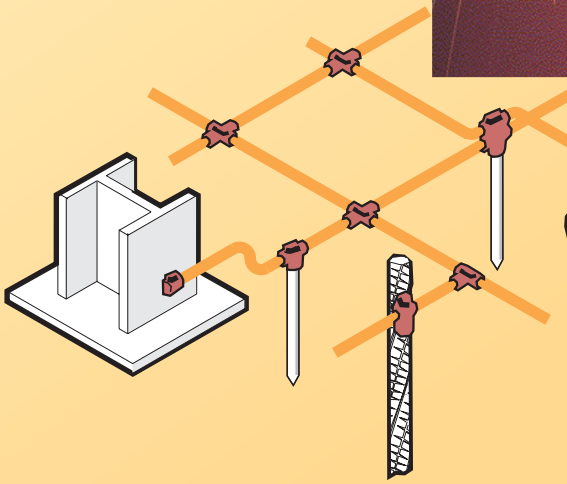
KLK SOLDAL

Copper Aluminothermic Welding

Copper/ Copper
Copper / Steel
Copper / Stainless Steel
Copper / Brass
...etc.





Copper Aluminothermic Welding

C-SOL/100

SUMMARY

KLK-SOLDAL Process

The KLK-SOLDAL process utilizes the high temperature of the reaction between copper oxide and aluminium. The reaction takes place in a graphite mould-crucible, into which has been introduced the pieces to be welded, molted metal from the aluminothermic reaction flows over the pieces, causing them to be melted and fused into a solid homogeneous mass.

The reaction is so quick that the pieces to be welded get a lower temperature, on the zone around the welding point, than that arising when using other process. This is an important fact for protecting insulated cables or physical characteristics of the pieces to be welded.

The KLK-SOLDAL process may also be used in addition to welding copper to copper, Eg. connections between copper and the following materials:

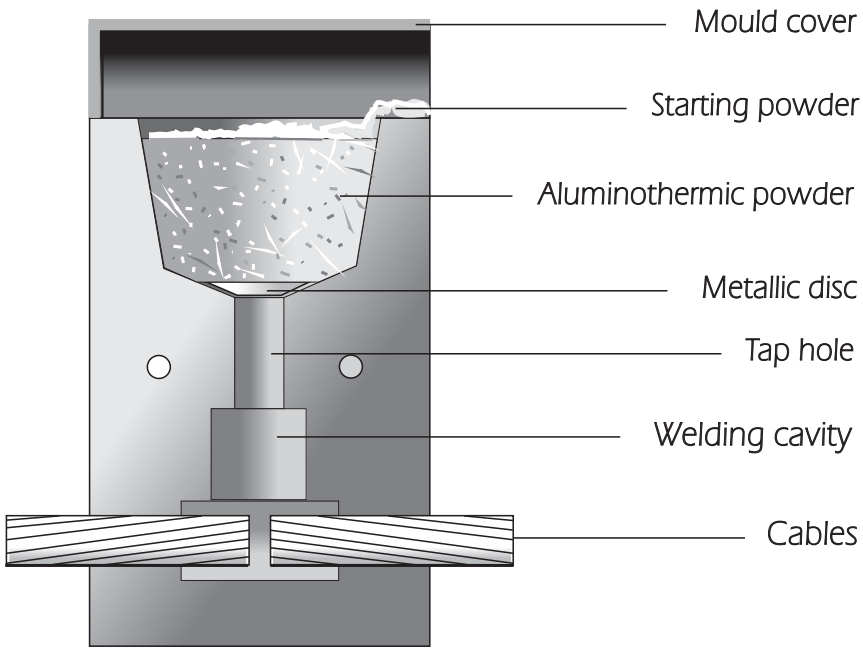
Common stell	Brass
Stainless steel	Bronze
Steel rail	Nicrome V
Copper clad steel	Durium
Galvanized steel	Monel
...etc.	

KLK-SOLDAL Connection

The KLK-SOLDAL connection is a perfect molecular weld:

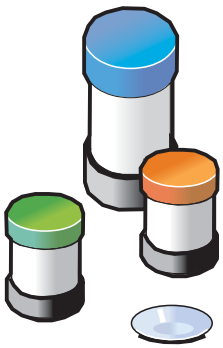
- ❑ Connections are not affected by high current surges. Tests have shown that the electrical conductors will melt before the connection when subjected to high short-circuit current.
- ❑ Connection conductivity is at least equal or greater than the conductors welded.
- ❑ There is not possibility of corrosion at the point of the weld, since conductors become an integral part of the connection.

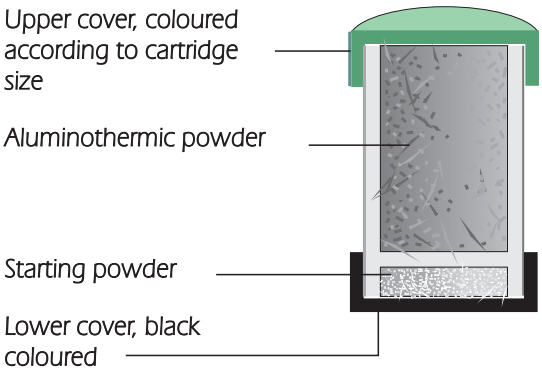
KLK-SOLDAL mould



KLK-SOLDAL cartridges and discs

Each plastic container holds the aluminothermic powder at one end (coloured cover) and the starting powder at the other one (black cover). Close the tap hole with the metallic disc before to dump the aluminothermic powder into the crucible.

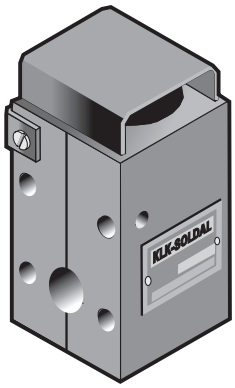


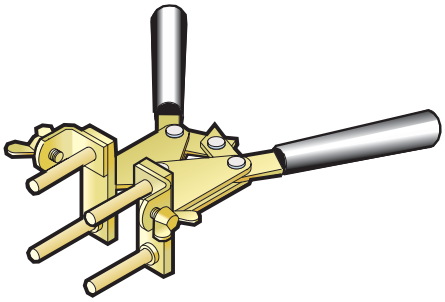


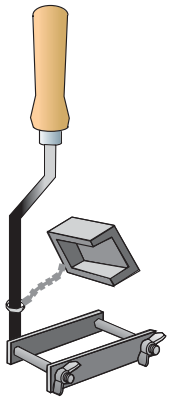
CARTRIDGE TYPE	C-15	C-25	C-32	C-45	C-65	C-90	C-115	C-150	C-200	C-250
COLOUR	LIGHT GRAY	DARK GRAY	VIOLET	WHITE	YELLOW	ORANGE	RED	BROWN	BLUE	GREEN
UNITS/BOX	20	20	20	20	10	10	10	10	10	10

KLK-SOLDAL Equipment

The KLK-SOLDAL equipment is light and portable and requires no outside power source, thus being useful for field use. It requires very little time or skill to get top quality connections.







MOULS:

Moulds are manufactured from a heat-reistant material (graphite) block that lasts for an average of 70-100 connections under normal conditions of use.

The metallic cover protects from the reaction projections.

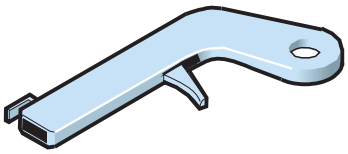
HANDLE CLAMPS TSC:

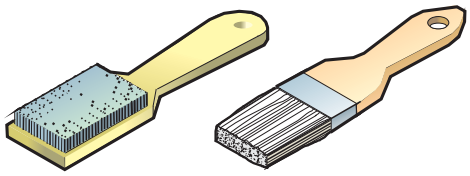
They are designed to handle the moulds allowing to open and close them safely.

There are two types of handle clamps depending on the mould size: TSC- 80 and TSC-100.

HANDLE CLAMP MS:

ilt is designed to fit moulds manufactured from a solid piece of graphite, specially those used to weld cables on steel pipes.





FLINT IGNITER:

It is used for easy ignition of the starting powder.

Standard replacement flints are suitables.

CARDCLOTHBRUSH:

It is used for cleaning the conductors before making the weld.

MOULD BRUSH:

It is recommended to safely cleaning the inner part of the mould after every weld.

MOULD SCRAPERS:

its shape fits the crucible to easy remove the slag and to check tap hole clearance after making every weld.

Cables, bus bars, steel re-bars and earth rods

COPPER CONDUCTORS (UNE 21012)

Size mm^2	No.of wires x dia.	Overall dia. mm.
10	7 x 1.35	4.05
16	7 x 1.70	5.10
25	7 x 2.14	6.42
35	7 x 2.52	7.56
50	19 x 1.83	9.15
70	19 x 2.17	10.85
95	19 x 2.52	12.60
120	19 x 2.85	14.25
150	37 x 2.25	15.75
185	37 x 2.52	17.64
235	37 x 2.85	19.95
300	61 x 2.62	22.68
400	61 x 2.85	25.65

Moulds are cut to fit the type and size of copper conductors, concrete steel re-bars and earth rods shown in these tables. For any other type and/or size, it is necessary to confirm the **actual overall diametre**.

COPPER CLAD EARTH RODS

EARTH ROD Type	Overall dia mm.
J - 58	14.3
J - 34	17.3
....NU 146	14.6
....NU 183	18.3
....ST 143	14.3

CONCRETE STEEL RE-BARS

Nominal size	Overall dia. mm.
6	7.2
8	9.6
10	12
12	14.4
14	16.8
16	19.2
20	24
25	30
32	38.4

Instructions for making connections

PREPARATION OF CONDUCTORS

Conductors must be clean, dry and well fitting to get a perfect weld.

Cables treated with oil or grease must be cleaned with a degreaser (preferably a quick drying and non residual solvent). In extreme cases heat the conductor with a welding torch to remove grease and oil completely.

Rusty conductors must be polished with a cardclothbrush.

A moist or muddy conductor will cause a porous weld and molten metal outside the mould. Conductors must be dried with a welding torch and then all mud removed.

Badly cutted or ill-fitted conductors will prevent closing the mould properly, causing molten metal to run away. To avoid deformation of cable ends, use a properly cable cutter.

PREPARATION OF THE EARTH RODS

Earth rod end on which the weld is to be done must be perfectly clean, dry and without any deformation.

PREPARATION OF THE STEEL SURFACES

Steel surface must be rust free and perfectly clean and flat.

Rust film, paint, grease or dust must be cleaned off with a grinder.

Remove moisture with a welding torch.

Galvanized surfaces may be cleaned without needing to remove the zinc coating.

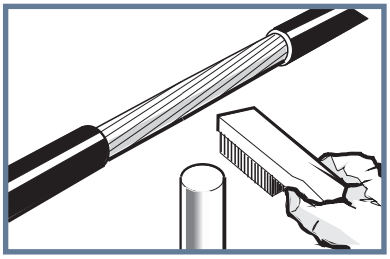
PREPARATION OF THE GRAPHITE MOULD

Moisture in moulds will cause a porous weld. Moulds must be perfectly dry before making a weld.

For making proper connections, warm the mould before starting the first weld with a welding torch or ignite a cartridge to get the mould over 100° C. When using a cartridge be careful to avoid handle clamp damage due to molten metal leaking.

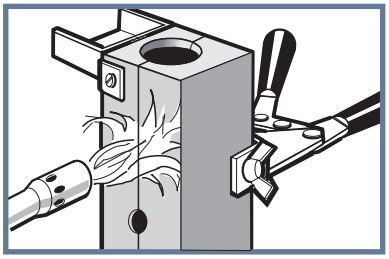
Generated heat will maintain the mould at the appropriate temperature for the next weld. If delays among welds cause temperature to fall the mould drying process must be started again.

KLK-SOLDAL Welding Procedure



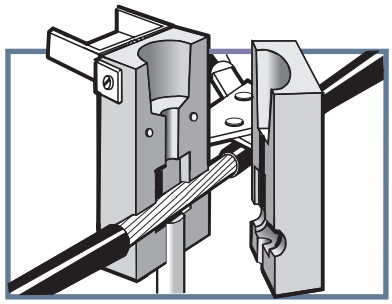
Remove the isolation of the conductor on a length of 15 cm when using insulated cable.

Using the cardclothbrush brush the cable and the rod end to remove all dust and oxydes.



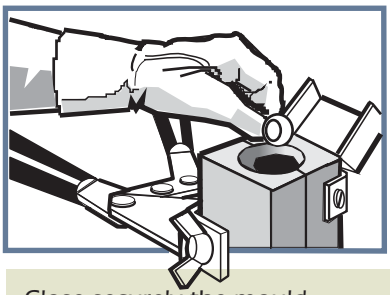
Before starting the first weld pre-heat the graphite mould with a welding torch during at least 5 minutes.

This operation is very important because moisture in moulds will cause a porous weld.



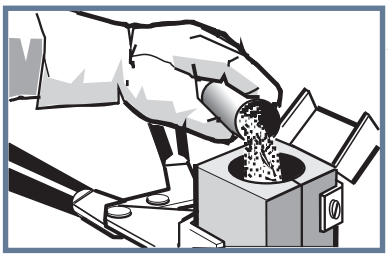
Open the mould by separating the two arms of the handle clamp.

Cable must sit on top of rod. Support mould to keep it from sliding down the rod when welding. Use lock pliers or clamp on rod below mould.

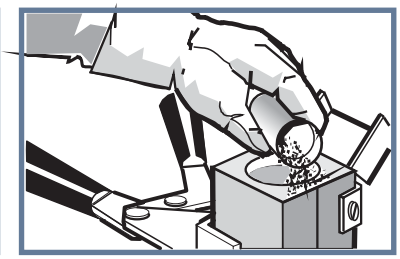


Close securely the mould with the handle clamp to avoid molten metal losses.

Place the metallic disc, conical side to bottom, on tap hole.



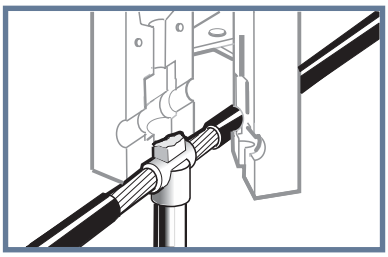
Open coloured cover of the cartridge size shown on the mould tag and pour the aluminothermic powder into the crucible.



Open black cover of the cartridge and spread all the starting powder on the welding powder and on the top edge of the mould, under open cover, for easy ignition.

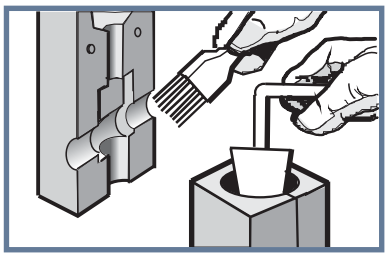
Close the mould cover and placing the flint ignitor from aside ignite the starting powder.

It is advisable, once the ignition takes place, to pull iaway the flint igniter quickly to avoid its damage.



Wait one minute and open completely the mould handle clamp to remove the welded connection.

During this operation take care of your graphite mould.

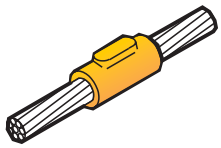


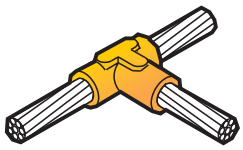
Remove slag from the crucible and tap hole with the mould scraper. Remove dust from the weld cavity, tap hole, crucible and mould cover with the mould brush.

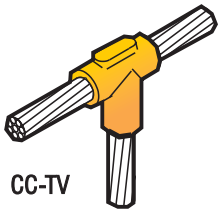
If the mould is still warm, you can go on the welding process without pre-heating it again.

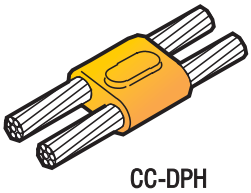
Standard connections

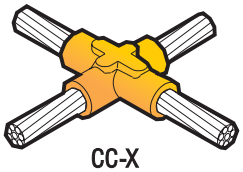
CABLE / CABLE

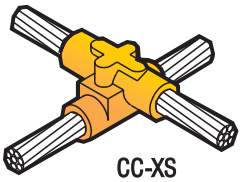

CC-L


CC-TH


CC-TV

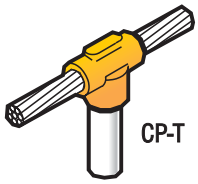

CC-DPH


CC-X


CC-XS

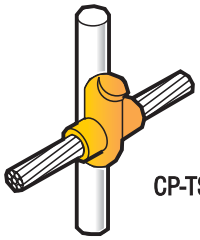
CABLE / EARTH ROD


CP-AR


CP-T


CP-V

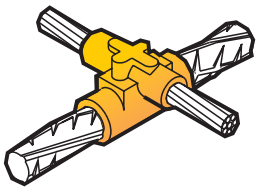

CP-VS

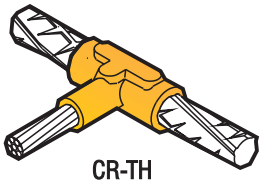

CP-TS

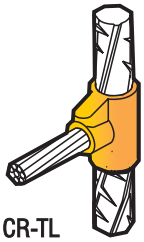
EARTH ROD / EARTH ROD

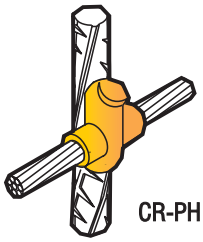

PP-V

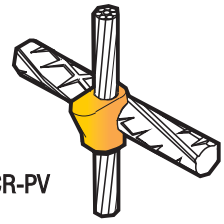
CABLE / CONCRETE STEEL RE-BAR

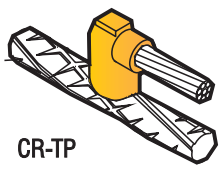

CR-XS


CR-TH


CR-TL

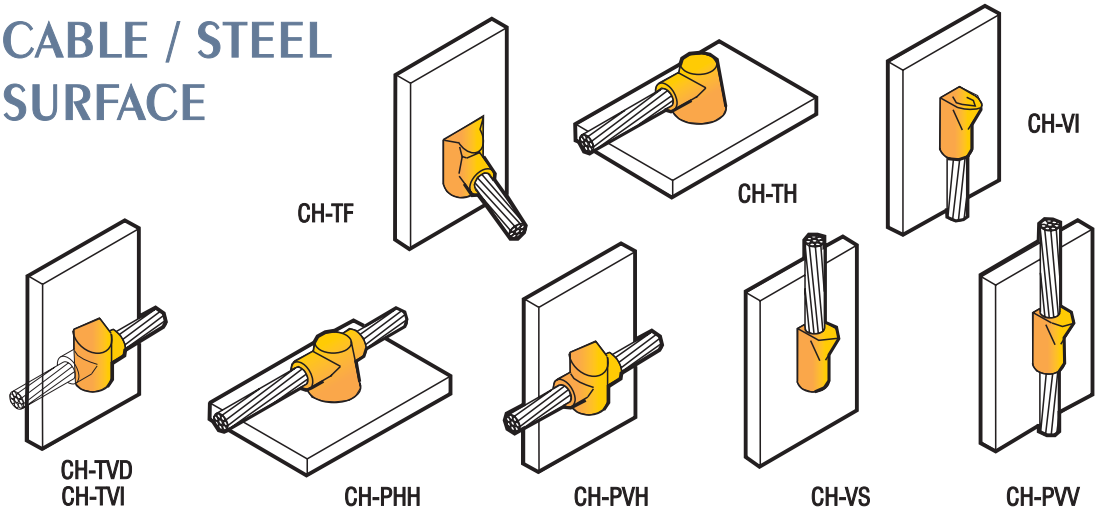

CR-PH


CR-PV

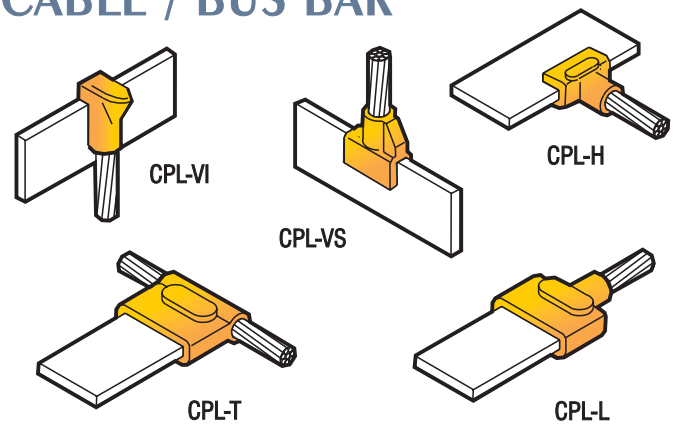

CR-TP

Standard connections

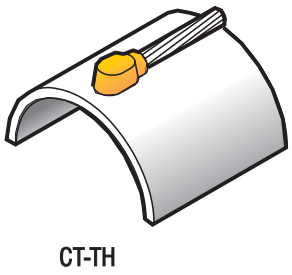
CABLE / STEEL SURFACE



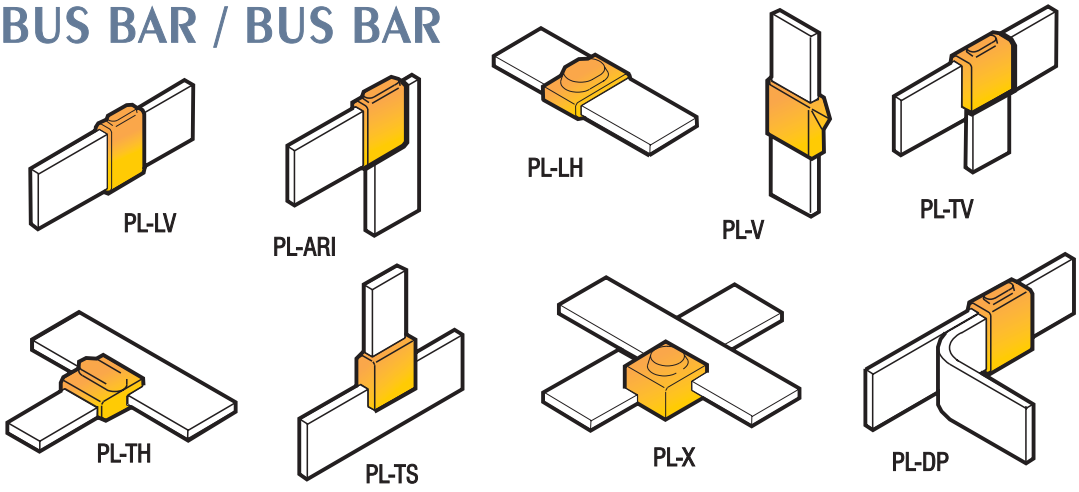
CABLE / BUS BAR



CABLE / STEEL PIPE



BUS BAR / BUS BAR



Instructions for using cartridges' selection charts

In the following sheets we will find the type of aluminthermic welding cartridge for all the Standard connections shown before, depending on the specific connection and type/size of the conductor to be welded as well as the suitable mould handle clamp and mould scraper.

To avoid mistakes when using the charts, it is advisable to follow the steps set out below.

Supposing we want to guess the cartridge type suitable for the connection:

CC-TH 185/50

1st.- Choose the appropriate column from the connections row.

3rd.- Choose the tap cable size from the chart upper right side.

CABLE / ... Connections

CC-L	CC-TH CC-TV	CC-DPH	CC-X	CC-XS	25	35	50	70	95	
25					C-32					
35					C-45	C-45				
50	25				C-45	C-45	C-45			
70	35				C-45	C-45	C-65	C-65		
95	50				C-65	C-65	C-90	C-90	C-90	
120	70	25	25		C-65	C-65	C-90	C-90	C-90	
150	95	35	35		C-90	C-90	C-90	C-90	C-115	
185	120	50	50		C-90	C-90	C-90	C-90	C-115	
240	150	70	70	25	C-90	C-115	C-115	C-115	C-150	
	185	95	95	35	C-115	C-115	C-115	C-150	C-150	
	240	120	120	50	C-115	C-115	C-150	C-150	C-200	
		150	150	70		C-150	C-200	C-200	C-200	
		185	185	95		C-200	C-250	C-250	C-250	
		240	240	120			C-200	C-250	2xC-150	
				150			C-250	2xC-150	2xC-150	

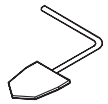
2nd.- Go down through the column until to find the run cable size.

4th.- The cell where the run cable row and the tap one column come together, shows the cartridge type needed to carry out the connection.

KLK reserves the right to make, without previous notice, changes in size and quantitiy of cartridges needed to make a weld. The correct size and quantity of cartridges will be always those shown in the mould tag.

CABLE / CABLE Connections

CC-L	CC-TH CC-TV	CC-DPH	CC-X	CC-XS	25	35	50	70	95	120	150	185	240
25					C-32								
35					C-45	C-45							
50	25				C-45	C-45	C-45						
70	35				C-45	C-45	C-65	C-65					
95	50				C-65	C-65	C-90	C-90	C-90				
120	70	25	25		C-65	C-65	C-90	C-90	C-90	C-115			
150	95	35	35		C-90	C-90	C-90	C-90	C-115	C-115	C-115		
185	120	50	50		C-90	C-90	C-90	C-90	C-115	C-150	C-150	C-150	
240	150	70	70	25	C-90	C-115	C-115	C-115	C-150	C-150	C-200	C-200	C-200
	185	95	95	35	C-115	C-115	C-115	C-150	C-150	C-200	C-200	C-200	C-250
	240	120	120	50	C-115	C-115	C-150	C-150	C-200	C-200	C-200	C-250	2xC-150
		150	150	70		C-150	C-200	C-200	C-200	C-250	C-250	2xC-150	2xC-200
		185	185	95		C-200	C-250	C-250	C-250	C-250	C-250	C-250	2xC-150
		240	240	120			C-200	C-250	2xC-150	2xC-150	2xC-200	2xC-200	2xC-250
				150			C-250	2xC-150	2xC-150	2xC-200	2xC-200	2xC-200	2xC-250
				185				2xC-200	2xC-200	2xC-250	2xC-250	2xC-250	



Mould scraper R-45
(For C-45 & C-65)

Mould scraper R-90
For C-90 & C-115)

Mould scraper R-150
(For C-150 to C-250)

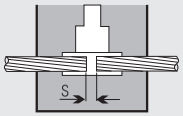
Mould scraper R-750
(2xC-150 to 3xC-250 and Clamp TSC-100)

Clamp **TSC 80**

Clamp **TSC 100**

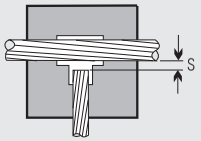
For any other cable size, please ask factory for further information.

Operating instructions



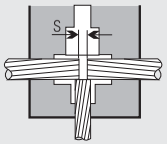
CC-L

For 240 mm² and larger gap cables (S) 5-6 mm. under the centre of the tap hole.



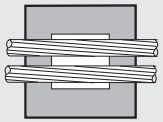
CC-TH

For 240 mm² and larger gap tap cable (S) 5-6 mm. from the run cable.



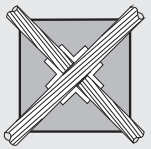
CC-TV

Cut run cable and gap it (S) 5-6 mm. under the centre of the tap hole. But tap cable against run cable.



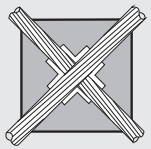
CC-DPH

Place cables according to the sketch above.



CC-X

Cut the larger cable and but the ends against the samaller one.



CC-XS

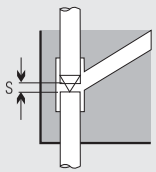
Samaller cable must be placed over the larger one.

CABLE / ROD and ROD / ROD Connections

CP-AR	CP-T	CP-TS	CP-V	CP-VS	25	35	50	70	95	120	150	185	240
143			143		C-65	C-65	C-90	C-90	C-90	C-90	C-115	C-115	C-150
146			146		C-65	C-65	C-90	C-90	C-90	C-90	C-115	C-115	C-150
58			58		C-65	C-65	C-90	C-90	C-90	C-90	C-115	C-115	C-150
183			183		C-90	C-90	C-90	C-90	C-90	C-90	C-115	C-115	C-150
34			34		C-90	C-90	C-90	C-90	C-90	C-90	C-115	C-115	C-150
	143				C-90	C-90	C-90	C-115	C-115	C-150	C-200	C-200	C-250
	146				C-90	C-90	C-90	C-115	C-115	C-150	C-200	C-200	C-250
	58				C-90	C-90	C-90	C-115	C-115	C-150	C-200	C-200	C-250
	183				C-90	C-90	C-115	C-115	C-115	C-150	C-200	C-200	C-250
	34				C-90	C-90	C-115	C-115	C-115	C-150	C-200	C-200	C-250
		143			C-90	C-90	C-115	C-115	C-115	C-150	C-150	C-250	2xC-200
		146			C-90	C-90	C-115	C-115	C-115	C-150	C-150	C-250	2xC-200
		58			C-90	C-90	C-115	C-115	C-115	C-150	C-150	C-250	2xC-200
		183		143	C-90	C-90	C-115	C-150	C-150	C-200	C-250	2xC-150	2xC-250
		34		146	C-90	C-90	C-115	C-150	C-150	C-200	C-250	2xC-150	2xC-250
				58	C-90	C-90	C-115	C-150	C-200	C-200	C-250	2xC-150	2xC-200
				183	C-90	C-90	C-115	C-150	C-200	C-200	C-250	2xC-150	2xC-200
				34	C-90	C-90	C-115	C-150	C-200	C-200	C-250	2xC-150	2xC-200

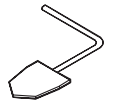
For any other rod and/or cable size, please ask factory for further information.

PP-V	
143	C-200
146	C-200
58	C-200
183	2xC-150
34	2xC-150



PP-V

Upper pointed rod is butted against lower rod and blunt rod is gapped (S) 10 mm. at the axis of the tap hole. Use a clamp on lower rod below mould.



Mould scraper R-45
(For C-45 & C-65)

Mould scraper R-90
For C-90 & C-115)

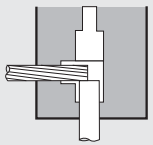
Mould scraper R-150
(For C-150 to C-250)

Mould scraper R-750
(2xC-150 to 3xC-250 and Clamp TSC-100)

Clamp **TSC 80**

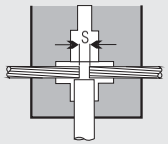
Clamp **TSC 100**

Operating instructions



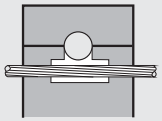
CP-AR

Place end of cable at the axis of the tap hole and rod butted against the cable. Use a clamp on rod below mould.



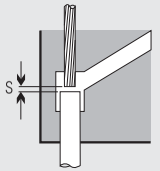
CP-T

For 120 mm² and larger cut run cable and gap it (S) 5-6 mm under centre of tap hole. Use a clamp on rod below mould.



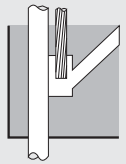
CP-TS

Insert cable into the mould and secure it to rod with backing plate attacment. Use another clamp on rod below mould.



CP-V

Gap rod and cable (S) 5-6 mm. at the axis of the tap hole. Use a clamp on rod below mould.



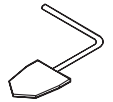
CP-VS

Insert cable until the axis of the tap hole. Use a clamp on rod below mould.

CABLE / CONCRETE STEEL RE-BAR Connections

CR-XS	CR-TH	CR-TL	CR-PV	CR-PH	CR-TP	25	35	50	70	95	120	150	185	240
	10			10	10	C-90	C-90	C-115	C-115	C-150				
10			10			C-90	C-90	C-115	C-150	C-150				
		10		16	16	C-90	C-90	C-115	C-115	C-150	C-150	C-200		
					20	C-90	C-90	C-115	C-115	C-150	C-150	C-200	C-250	C-250
				20		C-90	C-90	C-115	C-115	C-150	C-150	C-200	C-250	2xC-200
			16			C-115	C-115	C-150	C-150	C-200	C-200	C-200		
			20			C-115	C-115	C-150	C-150	C-200	C-200	C-250	C-250	2xC-150
	16	16				C-150	C-150	C-150	C-150	C-200	C-200	C-250		
	20					C-150	C-150	C-200	C-200	C-200	C-250	C-250	2xC-150	2xC-200
16						C-115	C-115	C-150	C-150	C-200	C-200	C-200		
20						C-115	C-115	C-150	C-150	C-200	C-200	C-250	C-250	2xC-150
		20				C-150	C-150	C-200	C-200	C-200	C-250	C-250	2xC-150	2xC-200

For any other re-bar and/or cable size, please ask factory for further information.



Mould scraper R-45
(For C-45 & C-65)

Mould scraper R-90
For C-90 & C-115)

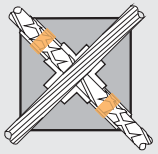
Mould scraper R-150
(For C-150 to C-250)

Mould scraper R-750
(2xC-150 to 3xC-250 and Clamp TSC-100)

Clamp **TSC 80**

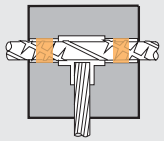
Clamp **TSC 100**

Operating instructions



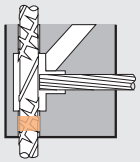
CR-XS

Wrap around steel re-bar with mastic, leaving space between the mastic larger than weld cavity. Place cable over top of re-bar.



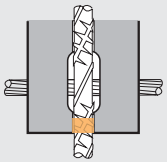
CR-TH

Wrap around steel re-bar with mastic, leaving space between the mastic larger than weld cavity. Butt tap cable against re-bar.



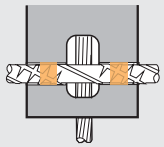
CR-TL

Wrap around steel re-bar with mastic, below the weld cavity. Butt tap cable against re-bar. Use a clamp on re-bar below mould.



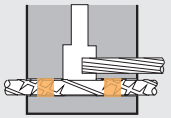
CR-PH

Wrap around steel re-bar with mastic, below the weld cavity. Insert cable into the mould and secure it to re-bar with backing plate attachment. Use a clamp on re-bar below mould.



CR-PV

Wrap around steel re-bar with mastic, leaving space between the mastic larger than weld cavity. Insert cable into the mould aand secure it to re-bar with backing plate attachment. Use a clamp on cable below mould.



CR-TP

Wrap around steel re-bar with mastic, leaving space between the mastic larger than weld cavity. Place cable end at centre of tap hole.

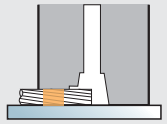
CABLE / STEEL SURFACE Connections

	CH-TF	CH-TH	CH-VI	CH-TVD CH-TVI	CH-PHH	CH-PVH	CH-VS	CH-PVV
25	C-45	C-45	C-45	C-45	C-65	C-65	C-65	C-90
35	C-45	C-65	C-65	C-65	C-90	C-90	C-90	C-115
50	C-90	C-90	C-90	C-90	C-90	C-115	C-115	C-150
70	C-90	C-90	C-90	C-90	C-115	C-115	C-150	C-200
95	C-115	C-115	C-115	C-115	C-115	C-150	C-200	C-250
120	C-115	C-115	C-115	C-115	C-150	C-150	C-200	C-250
150	C-150	C-150	C-150	C-150	C-200	C-200	C-250	2xC-150
185	C-200	C-200	C-150	C-200	C-250	C-250	2xC-150	2xC-150
240	C-200	C-200	C-200	C-200	2xC-150	2xC-150	2xC-150	2xC-200

For any other cable size, please ask factory for further information.

CABLE / STEEL PIPE Connections

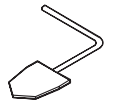
CT-TH	
10	C-15
16	C-15
25	C-25
35	C-32
50	C-45
70	C-65



CT-TH

Place cable end at centre of tap hole. Fill the gap between cable and steel with mastic outside the weld cavity. Hold down on mold cover to prevent mould from tipping.

NOTE: Mould must fit pipe shape so when order state overall diametre of the steel pipe.



Mould scraper R-45
(For C-45 & C-65)

Mould scraper R-90
For C-90 & C-115)

Mould scraper R-150
(For C-150 to C-250)

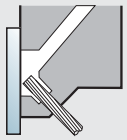
Mould scraper R-750
(2xC-150 to 3xC-250 and Clamp TSC-100)

Clamp **TSC 80**

Clamp **TSC 100**

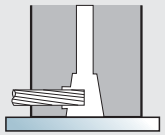
Clamp **MS**

Operating instructions



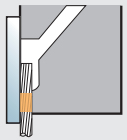
CH-TF

Cable end must be butted against the steel surface. Secure mould to the steel surface with a clamp, if possible.



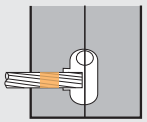
CH-TH

Place cable end at centre of tap hole. Hold down on mould cover to prevent mould from tipping.



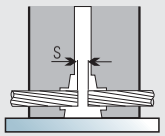
CH-VI

Cable end must be positioned as shown above. Fill the gap between cable and steel with mastic below the weld cavity. Secure mould to the steel surface with a clamp, if possible.



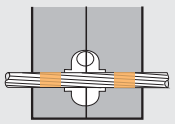
CH-TVD / CH-TVI

Place cable end at centre of tap hole. Fill the gap between cable and steel with mastic outside the weld cavity. Secure mould to the steel surface with a clamp, if possible.



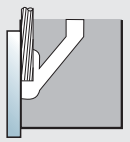
CH-PHH

Cut cable and gap it (S) 3-4 mm under centre of tap hole. Hold down on mould cover to prevent mould from tipping.



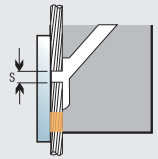
CH-PVH

Fill the gap between cable and steel with mastic outside the weld cavity. Secure mould to the steel surface with a clamp, if possible.



CH-VS

Cable end must be positioned as shown above. Secure mould to the steel surface with a clamp, if possible.

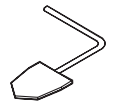


CH-PVV

Cut cable and gap it (S) 5-6 mm as shown above. Fill the gap between cable and steel with mastic below the weld cavity. Secure mould to the steel surface with a clamp, if possible.

CABLE / BUS BAR Connections

CPL-VI	CPL-VS	CPL-H	CPL-T	CPL-L	20x2	20x3	20x5	25x3	25x5	30x3	30x5	40x3	40x5	50x5	60x5
		25		25	C-32	C-45									
		35	25	35	C-45	C-45	C-45	C-45							
		50	35	50	C-45	C-45	C-65	C-65							
	25	70	50	70	C-45	C-65	C-65	C-90	C-90						
25	35	95	70	95	C-65	C-90	C-90	C-90	C-115	C-115					
35	50	120		120		C-115	C-115	C-115	C-115	C-115	C-115	C-115	C-115		
50	70	150		150		C-115	C-115	C-115	C-115	C-115	C-115	C-115	C-115	C-150	
70	95	185	95	185		C-115	C-150	C-150	C-150	C-150	C-150	C-150	C-150	C-200	
95	120	240	120	240		C-150	C-150	C-150	C-150	C-200	C-200	C-200	C-200	C-250	2xC-150
120	150		150				C-200	C-200	C-200	C-200	C-200	C-250	C-250	2xC-150	2xC-150
150	185		185						C-200	C-200	C-200	C-250	C-250	2xC-150	2xC-150
185	240		240						C-250	C-250	C-250	2xC-150	2xC-150	2xC-150	2xC-200
240									C-250	C-250	C-250	2xC-150	2xC-150	2xC-150	2xC-200



Mould scraper R-45
(For C-45 & C-65)

Mould scraper R-90
For C-90 & C-115)

Mould scraper R-150
(For C-150 to C-250)

Mould scraper R-750
(2xC-150 to 3xC-250 and Clamp TSC-100)

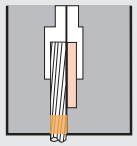
Clamp **TSC 80**

Clamp **TSC 100**

For moulds CPL-VS and CPL-VI suitable cartridge shall be which correspond to the less wide bus bar among those of the same thickness.

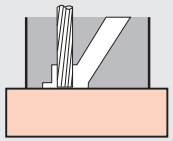
For any other cable and/or bus-bar size, please ask factory for further information.

Operating instructions



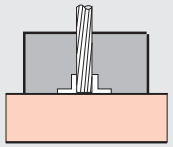
CPL-VI

Insert end of tap cable even with upper edge of run bus bar. Fill the gap between cable and mould with mastic below weld cavity.



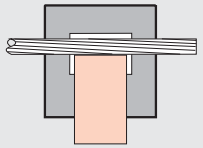
CPL-VS

Run bus bar is inserted to seat in mould. Butt tap cable against upper edge of run bus bar.



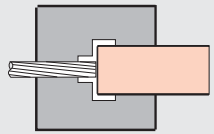
CPL-H

Run bus bar is inserted to seat in mould. Butt tap cable against upper edge of run bus bar.



CPL-T

Butt tap bus bar against side of run cable.



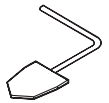
CPL-L

Butt ends of cable and bus bar under centre of tap hole

BUS BAR / BUS BAR Connections

	PL-LV	PL-ARI	PL-TV	PL-V	PL-TS	PL-DP	PL-LH	PL-TH	PL-X
20x2	C-45	C-45	C-45	C-65	C-115	C-90	C-45	C-45	C-45
20x3	C-45	C-45	C-65	C-65	C-115	C-90	C-45	C-45	C-65
20x5	C-65	C-65	C-65	C-90	C-150	C-90	C-65	C-65	C-65
25x3	C-65	C-65	C-90	C-90	C-150	C-90	C-65	C-65	C-65
25x5	C-90	C-90	C-90	C-115	C-200	C-90	C-90	C-90	C-90
30x3	C-90	C-90	C-90	C-115	C-200	C-115	C-90	C-90	C-90
30x5	C-115	C-115	C-115	C-150	C-250	C-115	C-115	C-115	C-115
40x3	C-115	C-115	C-115	C-150	C-250	C-115	C-150	C-150	C-115
40x5	C-150	C-150	C-150	C-200	2xC-150	C-200	C-150	C-150	C-150
50x5	C-200	C-200	C-200	C-250	2xC-200	C-200	C-200	C-200	C-200
60x5	2xC-150	2xC-150	2xC-150	2xC-150	2xC-250	2xC-200	2xC-150	2xC-150	C-250

For any other bus bar size, please ask factory for further information.



Mould scraper R-45
(For C-45 & C-65)

Mould scraper R-90
For C-90 & C-115)

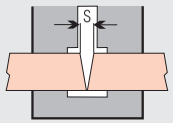
Mould scraper R-150
(For C-150 to C-250)

Mould scraper R-750
(2xC-150 to 3xC-250 and Clamp TSC-100)

Clamp **TSC 80**

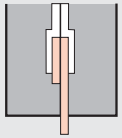
Clamp **TSC 100**

Operating instructions



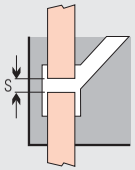
PL-LV / PL-ARI

Ens of bus bar less than 30 mm wide must be cut as shown above under centre tap hole (S) 5-6 mm. Bus bar wider than 30 mm (S) 10-12 mm.



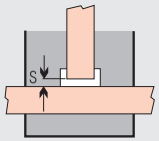
PL-TV

Insert end of tap bus bar even with upper edge of run bus bar.



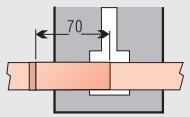
PL-V

End of bus bar 6 mm thick and thinner are gapped as shown above under centre of tap hole (S) 5-6 mm. Bus bar thicker than 6 mm (S) 10-12 mm.



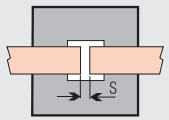
PL-TS

Tap bus bar is gapped (S) 5-6 mm from the upper edge of the run bus bar. Secure them with backing plate attachement.



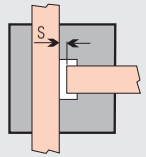
PL-DP

Insert end of tap bus bar until centre of tap hole. Tap bus bar must be at least 70 mm parallel to the run bus bar.



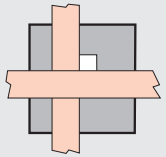
PL-LH

Bus bar 3 mm thick and thinner is gapped (S) 3 mm under centre of tap hole. Bus bar thicker than 3 mm is gapped (S) 5-6 mm.



PL-TH

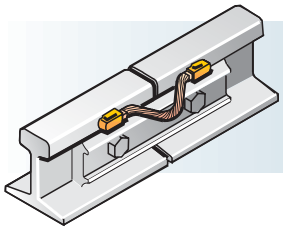
Tap bus bar 6 mm thick and thinner is gapped (S) 5-6 mm from the edge of the run bus bar. Bus bar thicker than 6 mm is gapped (S) 10 mm.



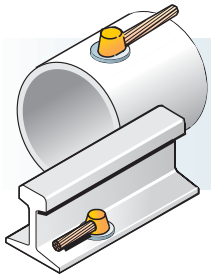
PL-X

Place bus bar in the mould slots.

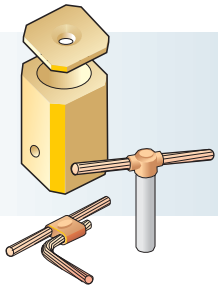
Other KLK-SOLDAL Aluminothermic Welding dedicated uses



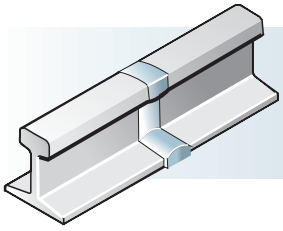
KLK-SOLDAL Aluminothermic Welding for rail track return power current and signalling circuits.



KLK-SOLDAL Aluminothermic Welding process for soft welding connections to high grade rails and steel pipes.



KLK-SOLDAL Aluminothermic Welding for earthing connections Cable / Cable and Cable / Earth rod using disposable moulds WON 1 WELD



KLK-SOLDAL Rail Aluminothermic Welding.

For further information, ask factory for dedicated catalogs.

Copper Aluminothermic Welding

Electro Materiales, s.a.

La Juveria - Tremañes - P.O. Box 333 - 33280 GIJON - SPAIN - Tel. + 34 - 985 32 18 50 - Fax + 34 - 985 31 28 20 - E-mail: comercial@klk.es