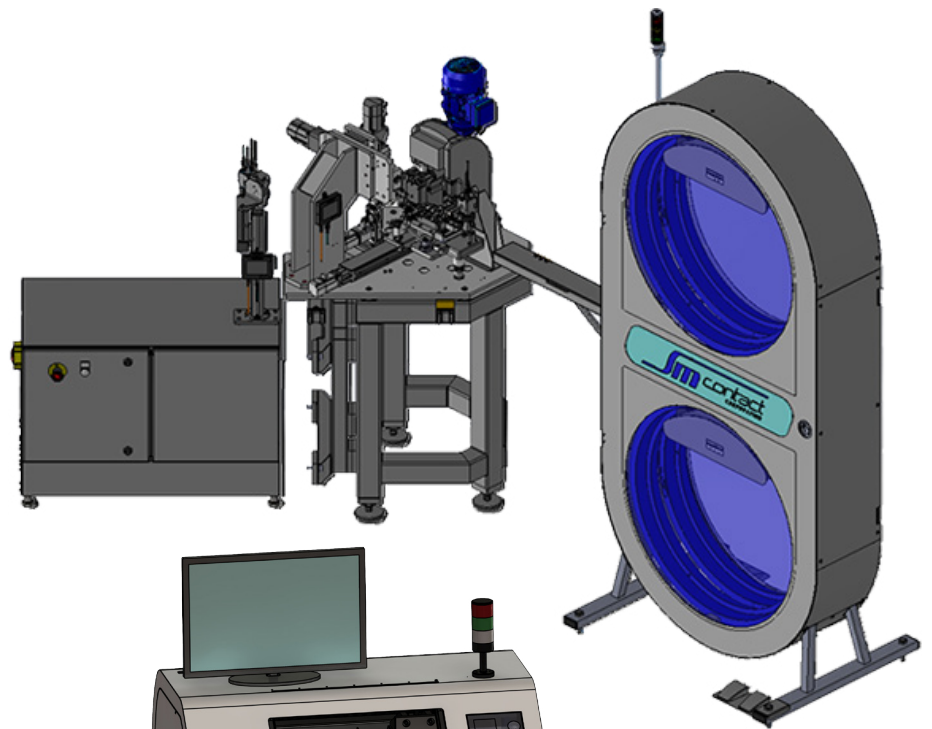
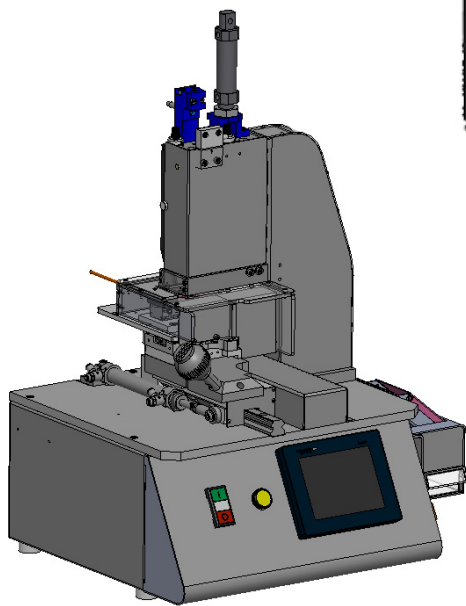


Pininsert

2100 - SMALL & MEDIUM QUANTITIES
2200 - HIGH-VOLUME PRODUCTION
2500 - CUTTING, BENDING & INSERTION

• PRESSFIT
TECHNOLOGY

• UP TO 15.000 PINS/
HOUR



Pressfit technology

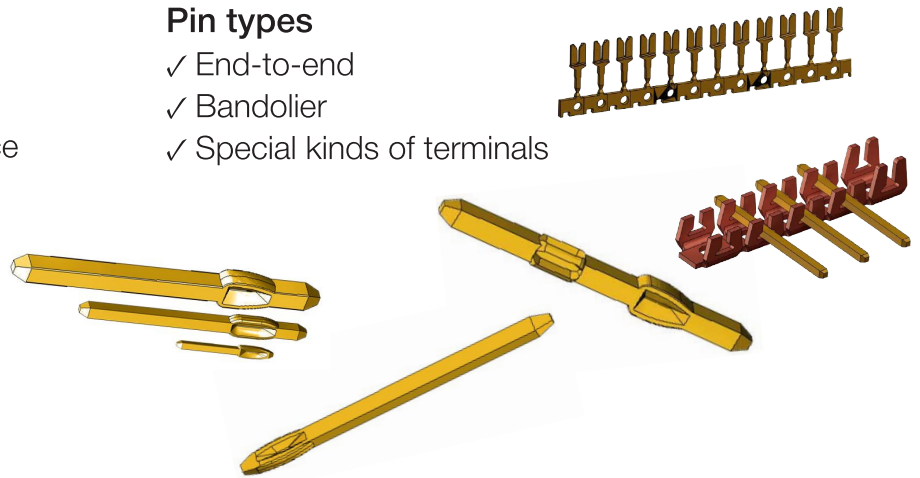
Pressfit technology is the most up-to-date solution for solderless interconnections. Size difference between PCB hole and pressfit zone leads to pressfit deformation during insertion. Compression of a pin guarantees highly-reliable connection, which is widely applied in **automotive industry**.

Advantages

- ✓ Solderless
- ✓ Low insertion force
- ✓ Wide hole tolerances compliance
- ✓ Cost-effective assembly
- ✓ Seamless
- ✓ Well suits automotive industry

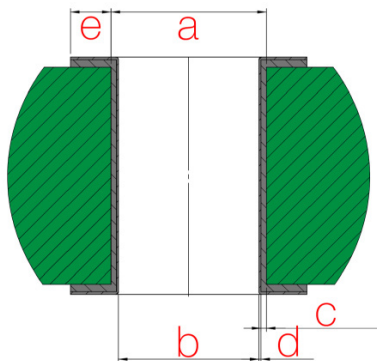
Pin types

- ✓ End-to-end
- ✓ Bandolier
- ✓ Special kinds of terminals



Qualification

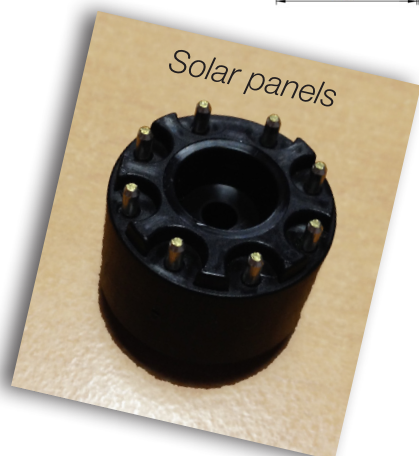
All pressfit pins configurations have been successfully tested and qualified according to IEC 60352-5. Deformations of the pressfit zones coating are within the limits and do not cause PCB damage.



Glossary of Terms

- A - Diameter of finish plated through hole
- B - Diameter of drilled hole
- C - Inner coating (min.)

- D - Coating
- E - Restring width
- F_{in} - Press-in force
- F_{out} - Push-out force

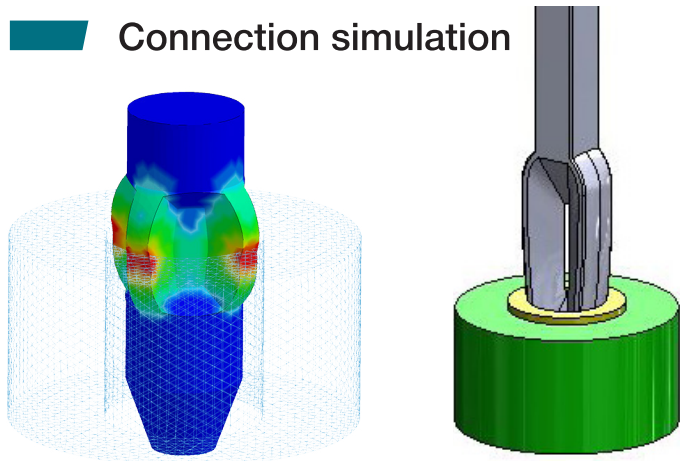


	0.50x0.40 mm	0.60x1.00 mm	0.64x0.64 mm	
A [mm]	0.675 ±0.025	1.325 ±0.025	1.13 ±0.02	
B [mm]	0.60 ±0.05	1.25 ±0.05	1 -0/+0.1	
C	25µm Cu	25µmCu	25-50µm Cu	
D	Sn	Sn	0.8-1.2µm Sn	
E [mm]	0.05 min	0.05 min	0.05 min	
Material	Cu Ni Si	Cu Sn6	CuSn6	Cu Ni Si
F_{in} [N]	74.4-91.1	66.2-134.6	<100	<100
F_{out} [N]	54.4-72.9	145.3-235.0	>20	>50

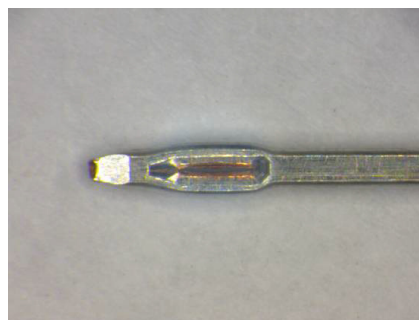
*Technical reports can be presented on request

Defining the pin connection

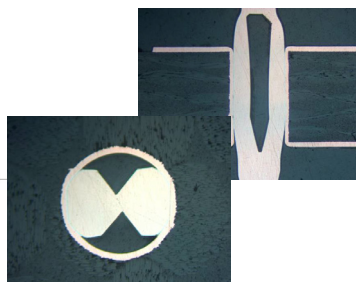
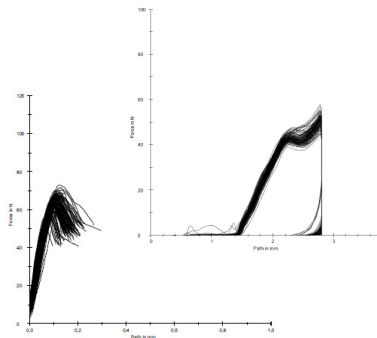
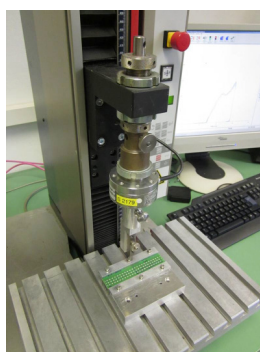
Connection simulation



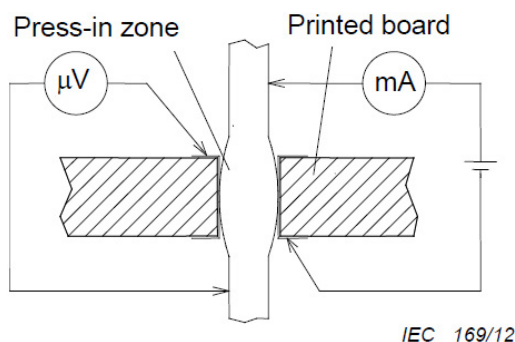
Samples production



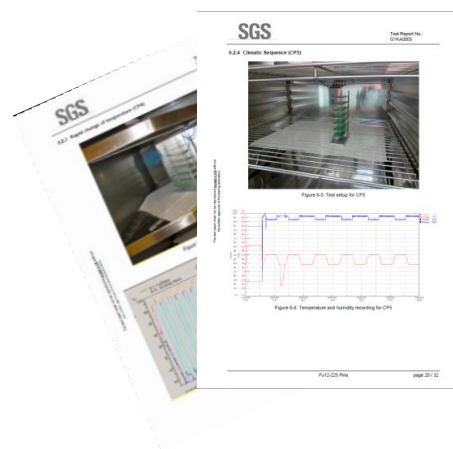
Press-in and pull-out force measurement



Contact resistance test



Technical report



Pininsert advantages *

- Compatibility with various pin types: end-to-end, right angle, U-band pin line, special kind of terminals (2100/2200)
- Quickly interchangeable insertion tooling
- Camera control for position evaluation of two pins on each extremity of the PCB & all insertion points offset
- Indexation system of pins to be cut
- Feeding grippers for an advance pin line movement by gripping and displacement
- CNC system with brushless servomotor and Mitsubishi absolute encoder
- User-friendly intuitive programming
- Force data archiving to Excel format
- 0.1-1 sec/pin depending on machine
- Pins free of tin wastes - machine contamination prevention
- Poka Yoke (optional)
- Pin laser control to monitor the presence of the pin (optional)
- Insertion force control (optional)
- Working table with lighting & safety beams (optional)
- Barcode reader (optional)
- TUV Certificate



*Depending on a model

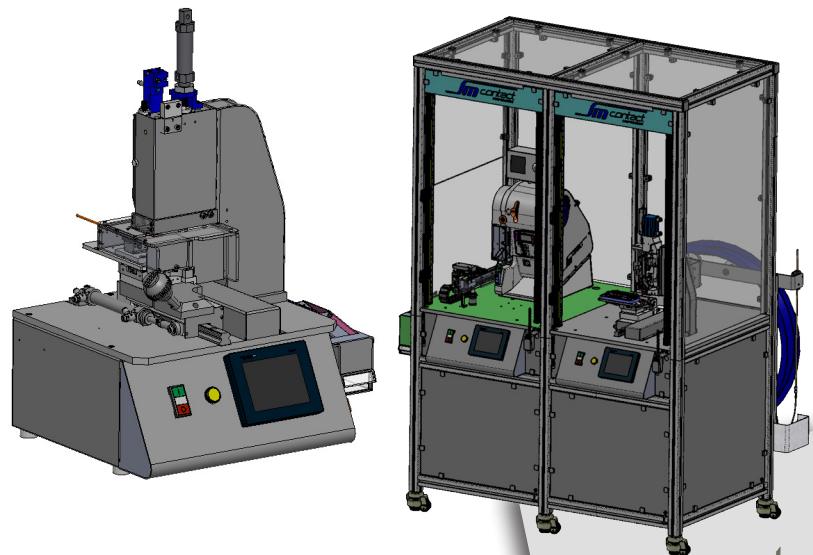
Pininsert 2100 with automatic X/XY table

Designed for small and medium quantities (up to 3 600 pins per hour), the **Pininsert 2100** model can be equipped with a pneumatic or servomotor insertion head.

Its manually-adjustable working table allows pins to be inserted one at a time. Pininsert 2100 can be provided either with **X table (70 mm)** or **XY table (70*70 mm)**.

Equipment has two operation modes : step-by-step and manual.

A laser control assure the correct positioning of the pin after insertion.



Stand-alone or inline installation
with SM Crimp machine

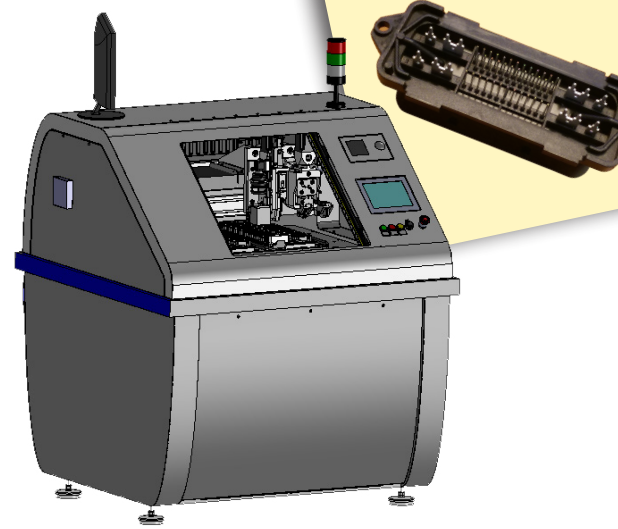
Gearbox (shift knob)
lighting

Pininsert 2200

Perfect for high-volume production, the **Pininsert 2200** model is equipped with high-precision guide systems controlled by servomotors. Equipment can produce **up to 8 000 pins** per hour with a single head insertion tooling and **up to 15 000 pins** with a double head.

Supervised by PC and having fully programmable insertion height, it can be integrated into a production line or operated as a stand-alone unit.

Pininsert 2200 can be optionally equipped either with an **universal fixture for PCB** with maximum size of 400x400 mm including anvil 10/20 mm stroke or with **Y table for adapting fixtures** (for plastic connectors).



Pininsert 2200 with double-head insertion tooling

Pininsert 2500

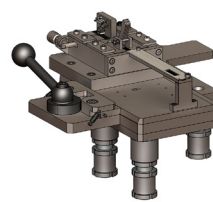
Pininsert 2500 is a connectors assembly equipment for cutting, bending & simultaneous insertion **up to 10 pins** into the PCB or plastic parts.

Units:

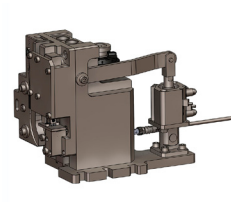
- Pin selector and feeding unit
- Cutting and bending unit
- Pin transfer
- Insertion manipulator
- Unreeler

Features:

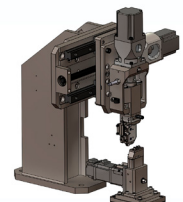
- 2 to 10 pins bending & insertion
- From 2 to 10 pin line system
- Cameras for feeding & insertion unit
- Bending & insertion force control



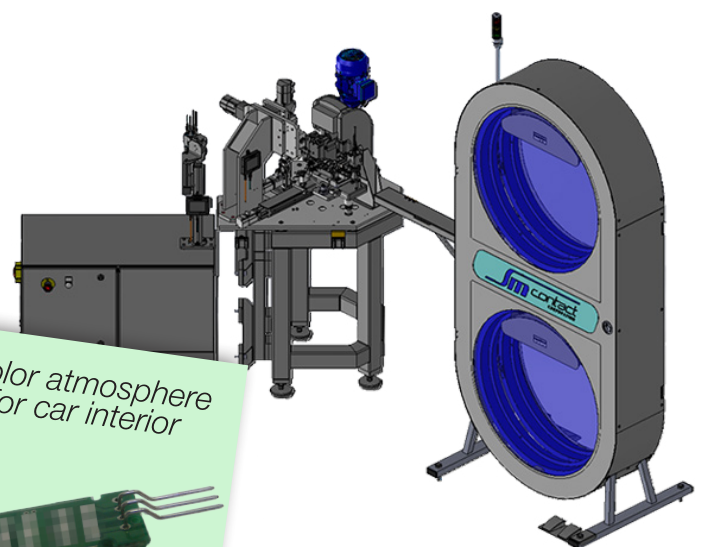
Feeding unit



Bending unit

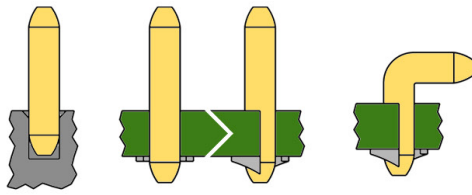


Insertion unit



Pin types

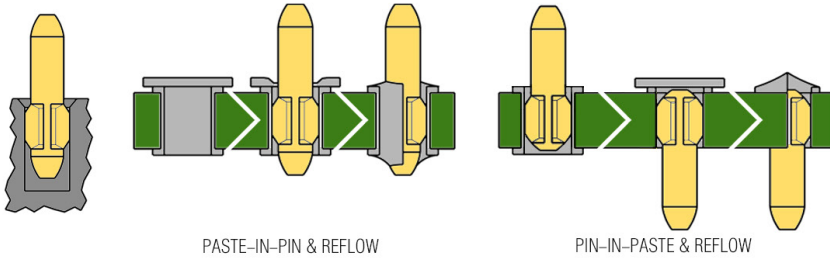
Smooth



Application

Ex.: coil frame, printed circuits without metalized holes, over-molding.

Star

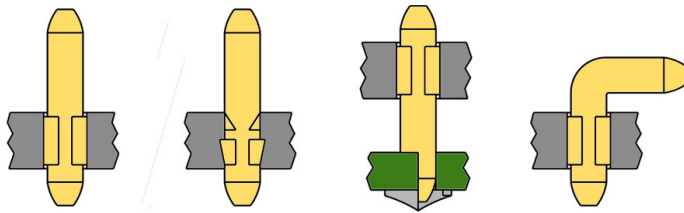


PASTE-IN-PIN & REFLOW

PIN-IN-PASTE & REFLOW

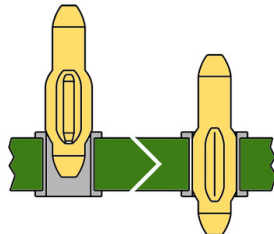
Ex.: single- or double-sided printed circuit, coil frame.

Wings – Harpoon



Ex.: plastic connector, insertion in stages.

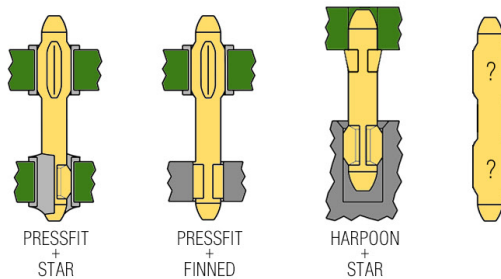
PressFit



Ex.: double-sided printed circuit.

PARTICULARLY FOR AUTOMOTIVE INDUSTRY

Dual Impression



PRESSFIT + STAR

PRESSFIT + FINNED

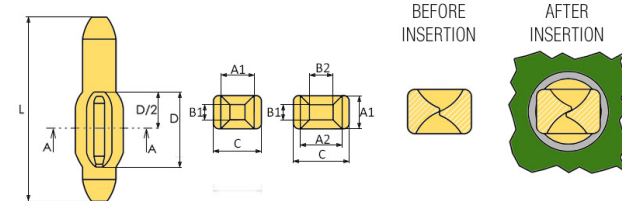
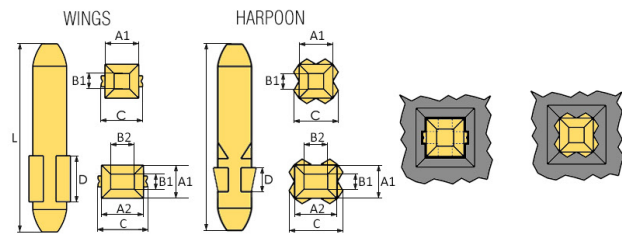
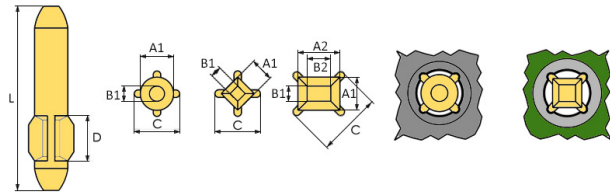
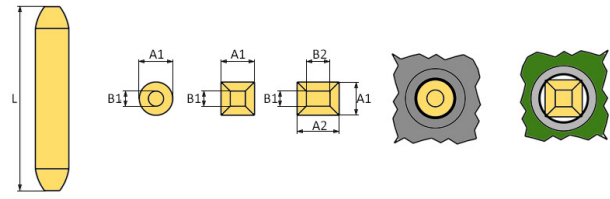
HARPOON + STAR

Ex.: stacking of printed circuits.

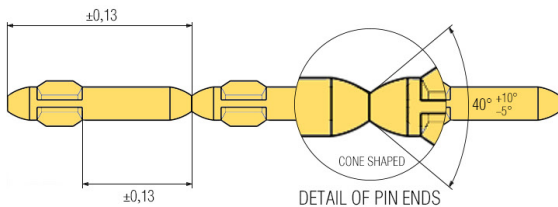
Varied pins section, length & impression

- TO SUIT SPECIFICALLY YOUR APPLICATION

Shapes



GENERAL CHARACTERISTICS



Smooth

WIRE SHAPE	Square			Round			Square			Round	Square
A1	0.3	0.4	0.46	0.5	0.63	0.71	0.91	1	1	1.14	1.14
A2	-	-	-	-	-	-	-	-	-	-	-
C	-	-	-	-	-	-	-	-	-	-	-
D	-	-	-	-	-	-	-	-	-	-	-
B1	0.2	0.25	0.25	0.25	0.3	0.3	0.35	0.45	0.55	0.4	0.6
B2	-	-	-	-	-	-	-	-	-	-	-

Star

WIRE SHAPE	Square						Round		Square		
A1	0.3	0.3	0.4	0.4	0.46	0.46	0.5	0.5	0.5	0.63	0.63
A2	-	-	-	-	-	-	-	-	-	-	-
C	0.5	0.55*	0.63	0.7*	0.73	0.8*	0.78	0.84*	0.66	0.7*	1.07*
D	1.1	1.1	1.1	1.1	1.5	1.5	1.5	1.5	0.8	0.8	1.5
B1	0.2	0.2	0.25	0.25	0.25	0.25	0.25	0.25	0.3	0.3	0.3
B2	-	-	-	-	-	-	-	-	-	-	-

WIRE SHAPE	Rect.	Square				Round		Square			
A1	0.63	0.71	0.71	0.91	0.91	1	1	1.14	1.14		
A2	1	-	-	-	-	-	-	-	-		
C	1.27	1.17	1.24*	1.5	1.55*	1.73	1.8*	1.32	1.4*	1.93	2*
D	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
B1	0.3	0.35	0.35	0.55	0.55	0.55	0.55	0.4	0.4	0.6	0.6
B2	0.5	-	-	-	-	-	-	-	-	-	-

WIRE SHAPE	Round		
A1	1.5	1.5	1.5
A2	-	-	-
C	1.78	1.78	1.78
D	1.5	1.5	1.5
B1	0.7	0.8	0.9
B2	-	-	-

* Reinforced star

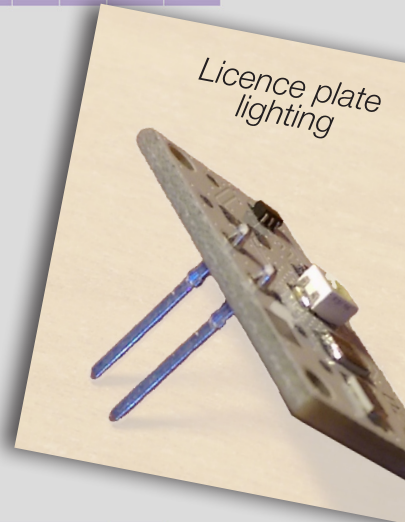
WIRE SHAPE	Square		WIRE SHAPE	Square
A1	0.63	0.63	A1	0.63
A2	-	-	A2	-
C	0.93	0.84	C	0.85
D	1	1	D	0.65
B1	0.3	0.3	B1	0.3
B2	-	-	B2	-

Wings – Harpoon

PressFit

WIRE SHAPE	Rect.	Rect.	Square						Rect.	
A1	0.4	0.6	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63
A2	0.5	1	-	-	-	-	-	-	-	0.8
C	0.7	1.34	1.12	1.12	1.12	1.12	1.12	1.12	1.1	1.15
D**	1.8	3	1.8	1.8	2.66	2.66	3	3	3	3
B1	0.2	0.27	0.25	0.3	0.25	0.3	0.25	0.3	0.3	0.24
B2	0.25	0.5	-	-	-	-	-	-	-	0.45

**D=1.8 - pressfit short D=2.66 - pressfit medium D=3 - pressfit long



Materials & Coating

- Bronze (CuSn0,3, CuSn4, CuSn5, CuSn 6, CuSn8)
- Brass (CuZn15, CuZn30, CuZn33, CuZn36, CuZn37)
- CuFe2p
- CuMg0.1
- CuNi3Si1Mg
- CuNiSi
- Staku30

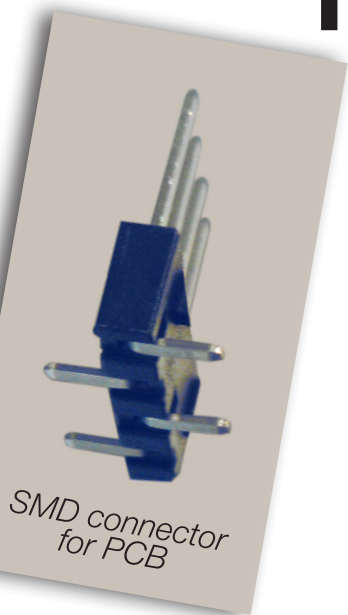
Various Ni-based coatings 1.3-3 μ:
Ag, Au, Sn.



Pin interconnections

www.smcontact.eu

Pininsert on YouTube



SEE MORE
SMCONTACT.EU



SM CONTACT CORPORATION
77860 Quincy-Voisins • France
20-22 Voie Gallo Romaine
Tel.: +33 (0)1 64 63 66 66
Fax: +33 (0)1 64 63 67 22
smcontact@smcontact.fr

SM CONTACT GMBH
D-66113 Saarbrücken
Germany
Lebacher Str. 4
Tel.: +49 (0) 681 99 63 279
sales_de@smcontact.eu

SM CONTACT ENGINEERING
196191 Saint Petersburg
Russia
Basseynaya Str. 21 lit. A
Tel.: +7 812 980 97 93
info@smcontact.ru

SM CONTACT ASIA
511400 Guangzhou • China
205 Exchange Center, Tian An Hi-tech
Ecological park, 555 Panyu RD
Tel.: +86 (0)20 2288 3182
info@smcontact.cn