

Terminals & Hardware



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HARWIN

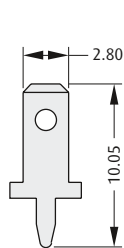
PCB Terminals

Blade Terminals

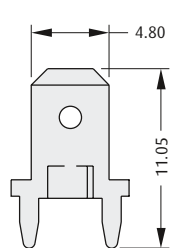
- Available in vertical or horizontal configurations.
- Terminals packaged loose or on reels for efficient machine insertion with automatic and semi automatic insertion machines.
- Order codes shown are for reeled components. Contact Sales for loose order codes and availability.
- Contact technical@harwin.com for custom terminals.
- Anti-rocking feature on S405 and S409 terminals.



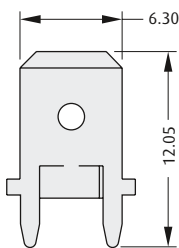
VERTICAL



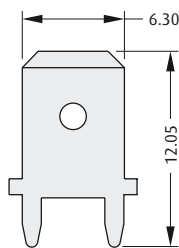
S401-XX



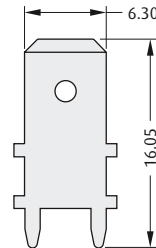
S405-XX



S409-XX

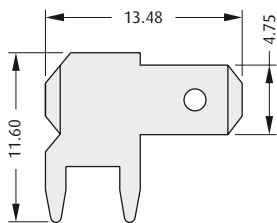


S411-XX

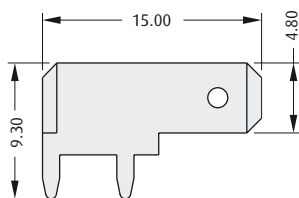


S420-XX

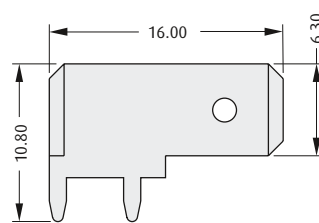
HORIZONTAL



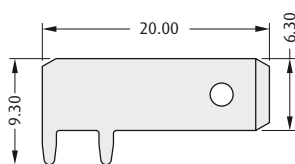
S490-XX



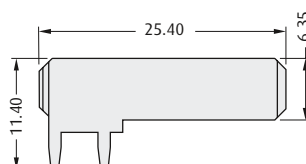
S505-XX



S509-XX



S523-XX



S526-XX

RECOMMENDED PCB THICKNESS

S490-XX, S526-XX	2.4mm
Others	1.6mm

RECOMMENDED PCB HOLE SIZE

S490-XX	Ø1.44mm
Others	Ø1.25mm

HOW TO ORDER

S XXX - XX

SERIES CODE

TYPE (See table above)

FINISH

06	Tin/Lead	
46	Tin	

All dimensions in mm.

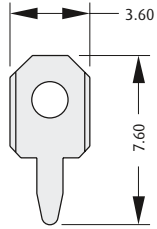
www.harwin.com



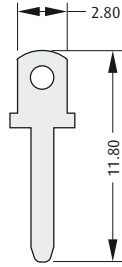
PCB Terminals

Blade Terminals

TEST POINT

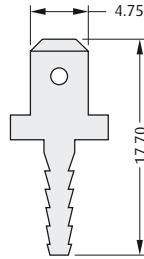


S424-XX

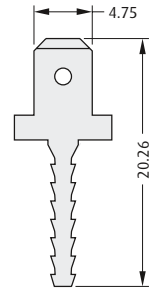


S440-XX

BOBBIN

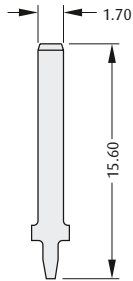


S485-XX

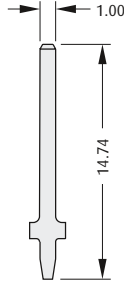


S486-XX

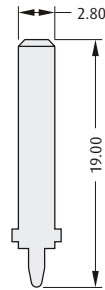
AUTOMOTIVE



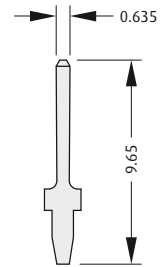
S418-XX



S419-XX

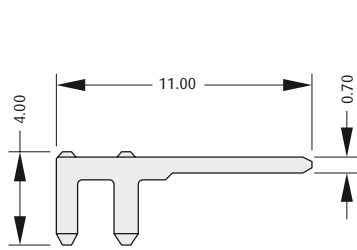


S423-XX

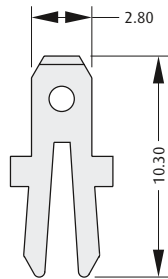


S470-XX

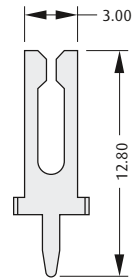
SPECIAL APPLICATIONS



S481-XX



S417-XX



S422-XX

RECOMMENDED PCB THICKNESS

S440-XX	6mm Max	S417-XX	2.4mm Max
Others	1.6mm	S422-XX	2.4mm Max

RECOMMENDED PCB HOLE SIZE

S424-XX	Ø1.25mm	S440-XX	Ø1.35mm
S481-XX	1.00mm	S417-XX	2.80 x 1.00mm
S485-XX	2.40mm	Others	1.02mm
S486-XX	2.40mm		

HOW TO ORDER

S XXX - XX

SERIES CODE

TYPE (See table above)

FINISH

06	Tin/Lead	
46	Tin	

www.harwin.com

All dimensions in mm.



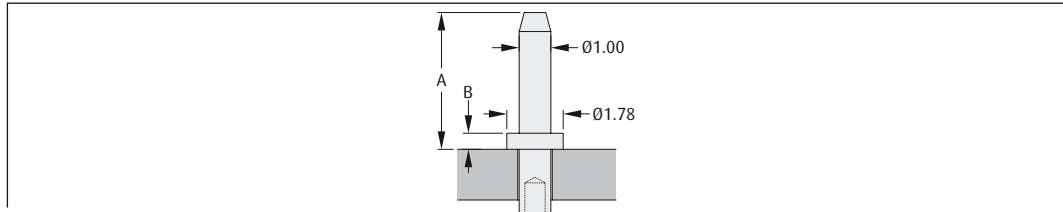
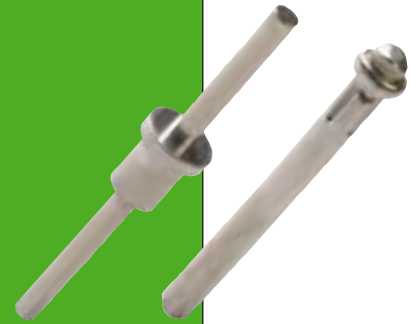
HARWIN

PCB TERMINALS

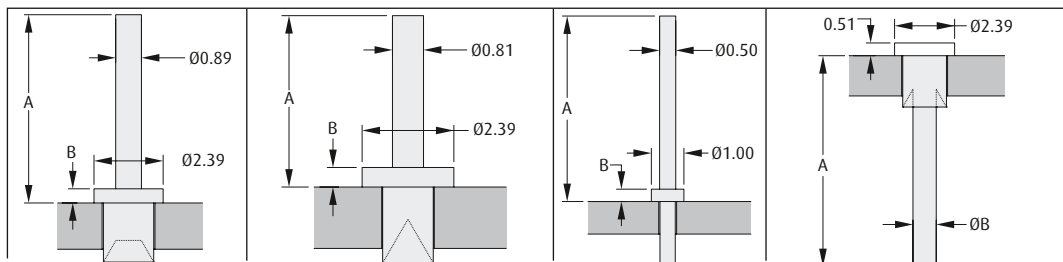
PCB Terminals

Turned Terminals

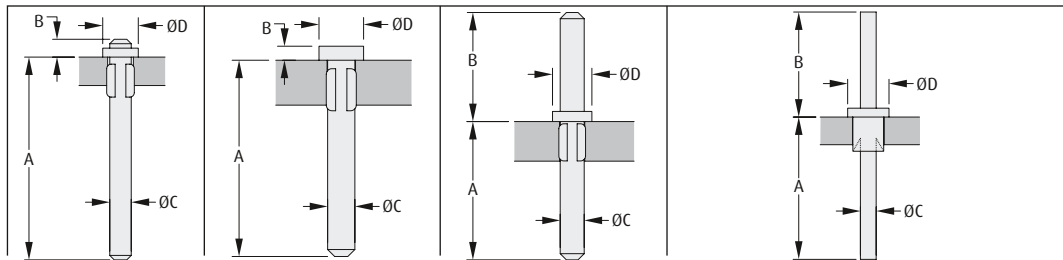
- Material: brass with tin plating.
- For swaging tool change order code to prefix Z and suffix 00 (example Z2174-00).
- Contact technical@harwin.com for alternative finishes and custom designs.



ORDER CODE	H2174-01	H2175-01	H2173-01	H2176-01	H2170-01
A	4.32mm	4.90mm	8.13mm	9.53mm	13.21mm
B	0.51mm	0.35mm	0.51mm	0.51mm	0.51mm
PANEL THICKNESS	1.6mm	1.6mm	1.6mm	1.6mm	1.6mm
MOUNTING HOLE Ø	Ø1.04-1.14mm	Ø1.04-1.14mm	Ø1.04-1.14mm	Ø1.04-1.14mm	Ø1.04-1.14mm



ORDER CODE	H2101A01	H2105A01	H2106A01	H3108-01	H2101B01	H2105B01
A	6.53mm	4.11mm	4.11mm	5.70mm	8.39mm	6.30mm
B	0.51mm	0.51mm	0.51mm	0.38mm	Ø0.93mm	Ø0.81mm
PANEL THICKNESS	1.6mm	1.6mm	2.4mm	1.0mm	1.6mm	1.6mm
MOUNTING HOLE Ø	Ø1.79-1.87mm	Ø1.33-1.41mm	Ø1.33-1.41mm	Ø0.50-0.55mm	Ø1.79-1.87mm	Ø1.33-1.41mm



ORDER CODE	H2157-01	H3150-01	H3151-01	H2101-01	H2105-01
A	11.40mm	7.00mm	5.59mm	8.23mm	5.05mm
B	1.00mm	0.50mm	4.41mm	6.07mm	4.48mm
C	Ø1.21mm	Ø0.97mm	Ø0.97mm	Ø0.91mm	Ø0.81mm
D	Ø2.00mm	Ø1.59mm	Ø1.59mm	Ø2.39mm	Ø2.39mm
PANEL THICKNESS	1.6mm	1.6mm	1.6mm	1.6mm	1.6mm
MOUNTING HOLE Ø	Ø1.40-1.50mm	Ø0.99-1.04mm	Ø0.99-1.04mm	Ø1.79-1.87mm	Ø1.33-1.41mm

All dimensions in mm.

www.harwin.com

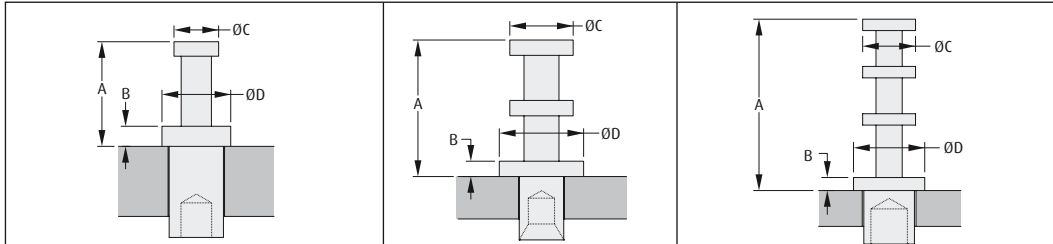




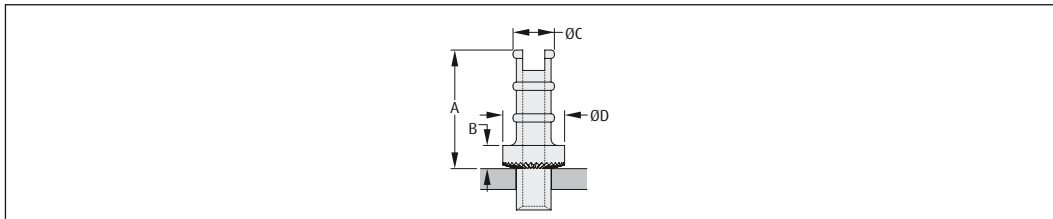
PCB Terminals

Turned Terminals

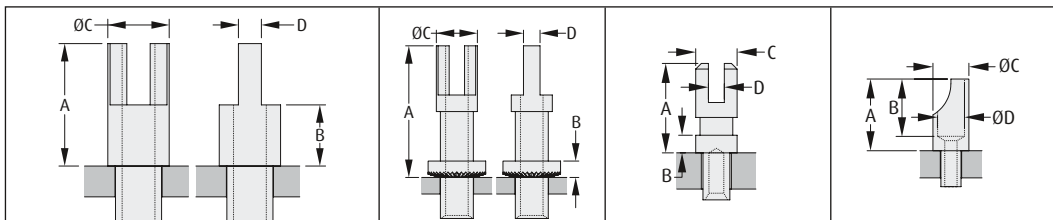
- ❖ Material: brass with tin plating.
- ❖ For swaging tool change order code to prefix Z and suffix 00 (example Z2174-00).
- ❖ Contact technical@harwin.com for alternative finishes and custom designs.



Pb	ORDER CODE	H9001-01	H9004-01	H2121-01	H9020-01	H9021-01
	A	2.39mm	4.74mm	5.15mm	7.65mm	7.65mm
B	0.46mm	1.19mm	0.58mm	0.58mm	0.58mm	
C	Ø1.02mm	Ø1.91mm	Ø2.39mm	Ø2.36mm	Ø2.36mm	
D	Ø1.57mm	Ø3.18mm	Ø3.18mm	Ø3.18mm	Ø3.18mm	
PANEL THICKNESS	1.6mm	1.6mm	1.6mm	1.6mm	2.4mm	
MOUNTING HOLE Ø	Ø1.25-1.33mm	Ø2.01-2.09mm	Ø1.69-1.74mm	Ø2.35-2.45mm	Ø2.35-2.45mm	



Pb	ORDER CODE	H2071Z01	H2072-01	H2072Z01	H2072ZL1	H2073Z01	H2074Z01
	A	9.12mm	6.35mm	6.52mm	6.52mm	9.12mm	8.74mm
B	1.78mm	1.07mm	1.24mm	1.24mm	1.78mm	1.60mm	
C	Ø3.18mm	Ø3.25mm	Ø2.54mm	Ø2.54mm	Ø3.18mm	Ø4.57mm	
D	Ø4.75mm	Ø3.96mm	Ø3.96mm	Ø3.96mm	Ø4.75mm	Ø6.35mm	
PANEL THICKNESS	2.4mm	1.6mm	1.6mm	2.4mm	3.2mm	3.2mm	
MOUNTING HOLE Ø	Ø2.68-2.78mm	Ø2.17-2.27mm	Ø2.01-2.11mm	Ø2.01-2.11mm	Ø2.68-2.78mm	Ø3.93-4.03mm	



Pb	ORDER CODE	H2051-01	H2055-01	H2039-01	H9023-01	H9026-01
	A	4.78mm	6.35mm	12.71mm	3.96mm	6.35mm
B	2.39mm	3.17mm	1.58mm	0.78mm	5.08mm	
C	Ø3.18mm	Ø3.18mm	Ø3.96mm	Ø1.83mm	Ø3.18mm	
D	0.79mm	1.19mm	1.60mm	0.71mm	Ø2.39mm	
THROUGH HOLE Ø	Ø1.02mm	Ø1.70mm	Ø2.18mm	n/a	Ø1.09mm	
PANEL THICKNESS	1.6mm	2.4mm	3.2mm	1.6mm	2.4mm	
MOUNTING HOLE Ø	Ø1.60-1.68mm	Ø2.40-2.48mm	Ø3.19-3.27mm	Ø1.28-1.38mm	Ø1.84-1.94mm	

www.harwin.com

All dimensions in mm.



HARWIN

PCB TERMINALS

A range of 4-beam and 6-beam sockets, designed for robustness and reliability, and based on the same design as the Datamate four finger Beryllium Copper Contact.

The socket design is a two-part construction comprising of a contact clip retained in a precision-turned outer shell. Options for the shell include closed or open-ended, with or without a knurled section for added board retention.

- ❖ **High Reliability contacts.**
- ❖ **Proven history in High End Industrial and Mil/Aero applications**
- ❖ **Gives the added flexibility of custom board layouts.**
- ❖ **Suited for use in environments where high vibration, shock and extremes of temperature are a consideration.**
- ❖ **Contact technical@harwin.com for customised shell variations.**

❖ Materials

Outer Shell:	Brass
Inner Contact:	Beryllium Copper
Finish:	See Order Code

❖ Electrical

Current Rating (single contact):	
Ø0.50mm	2A max
Ø0.80mm	10A max
Ø1.00mm	10A max
Ø2.00mm	20A max
Contact resistance:	5 milliohms max

❖ Environmental

Operating Temperature:	-55°C to +125°C
Solderability:	235°C for 5 seconds
Soldering heat resistance:	260°C for 10 seconds

❖ Mechanical

Durability:	
Ø0.50mm	500 operations
Ø0.80mm	1000 operations
Ø1.00mm	1000 operations
Ø2.00mm	500 operations
Insertion force (max):	
Ø0.50mm	6.0N
Ø0.80mm	5.0N
Ø1.00mm	9.0N
Ø2.00mm	6.0N
Withdrawal force (min):	
Ø0.50mm	0.5N
Ø0.80mm	1.0N
Ø1.00mm	1.0N
Ø2.00mm	1.0N
Vibration sensitivity:	
10 – 2000Hz, 0.75mm, 98mm/s ² (10G), 6 hours duration	

All preferred sizes of this range are held in stock. Check www.harwin.com for availability.

All dimensions in mm.

www.harwin.com



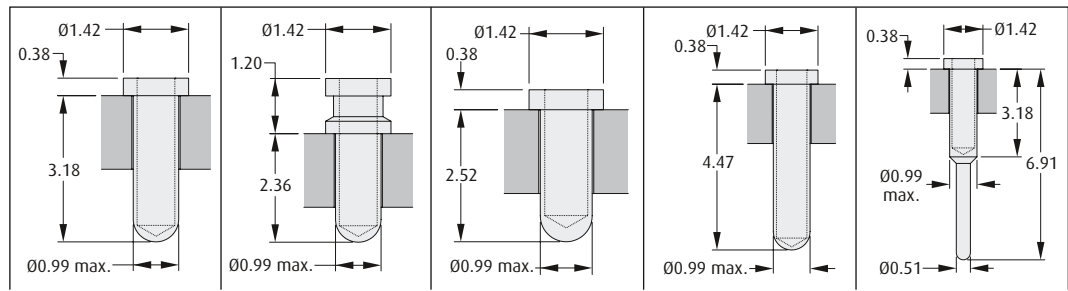


PC Board Sockets

Sub-Miniature – Ø0.50mm mating pin

- ❖ Compatible with Ø0.50mm mating pins – see table below.
- ❖ Suitable for a variety of mating pin lengths.
- ❖ Customised shell designs available on request – contact technical@harwin.com.
- ❖ Utilises the Datamate four finger Beryllium Copper contact clip – see page 2.

SPECIFICATION



ORDER CODE	H3153-XX	H3155-XX	H3190-XX	H3191-XX	H3192-XX
Contact Depth	2.30mm	2.30mm	2.30mm	2.30mm	2.30mm
Max. Pin Length	3.15mm	3.15mm	2.40mm	4.70mm	3.15mm
Mounting Hole	Ø1.00-1.10mm	Ø1.00-1.10mm	Ø1.00-1.10mm	Ø1.00-1.10mm	Ø1.00-1.10mm
Mating Pin Size	Ø0.46-0.51mm	Ø0.46-0.51mm	Ø0.46-0.51mm	Ø0.46-0.51mm	Ø0.46-0.51mm

HOW TO ORDER

H31 XX - XX

SERIES CODE
SEE TABLE ABOVE

FINISH	
01	Gold contact, tin shell
05	Gold contact, gold shell

www.harwin.com

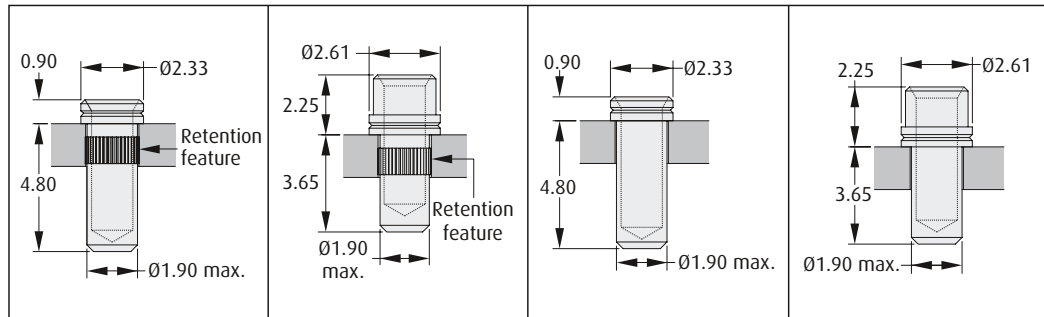
All dimensions in mm.



PC Board Sockets

Ø0.80mm Mating pin

- ❖ Compatible with Ø0.80mm mating pins – see table below.
- ❖ Knurled option available for added board retention.
- ❖ Customised shell designs available on request – contact technical@harwin.com.
- ❖ See the next page for sockets compatible with Ø1.00mm mating pins, and page 174 for sockets compatible with Ø2.00mm mating pins.



ORDER CODE	H8501-XX	H8502-XX	H8504-XX	H8505-XX
Contact Depth	3.30mm	3.30mm	3.30mm	3.30mm
Max. Pin Length	4.65mm	4.85mm	4.65mm	4.85mm
Mounting Hole	Ø1.91-1.96mm	Ø1.91-1.96mm	Ø1.91-2.01mm	Ø1.91-2.01mm
Mating Pin Size	Ø0.60-0.85mm	Ø0.60-0.85mm	Ø0.60-0.85mm	Ø0.60-0.85mm

HOW TO ORDER

H85 XX - XX

SERIES CODE

SEE TABLE ABOVE

FINISH

01	Gold contact, tin shell	
05	Gold contact, gold shell	

All dimensions in mm.

www.harwin.com



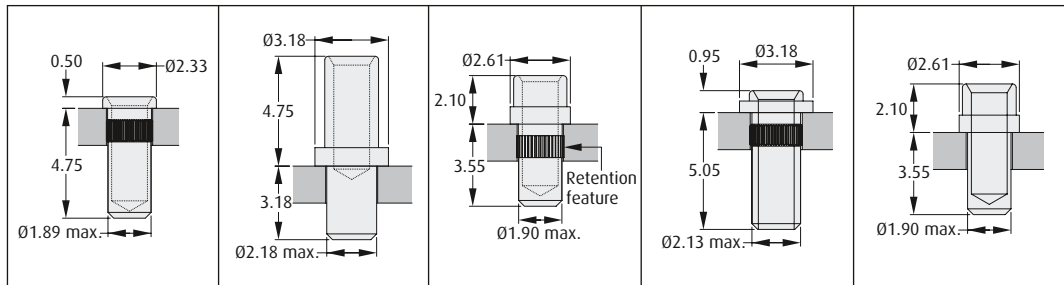


PC Board Sockets

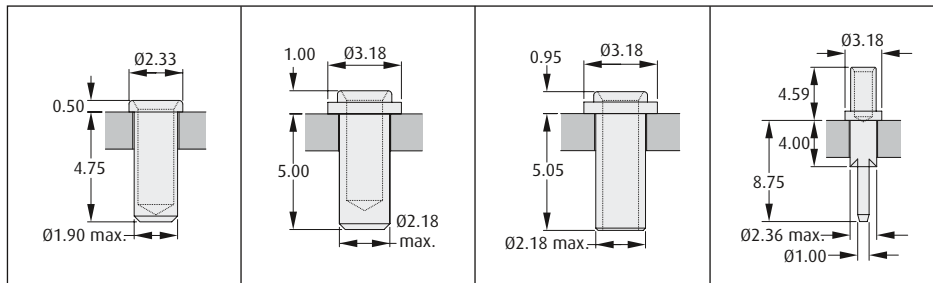
Ø1.00mm Mating pin

- Compatible with Ø1.00mm mating pins – see table below.
- Knurled option available for added pin retention.
- Customised shell designs available on request – contact technical@harwin.com.

SPECIFICATION



ORDER CODE	H3161-XX	H3163-XX	H3165-XX	H3169-XX	H3182-XX
Contact Depth	3.55mm	3.55mm	3.55mm	3.55mm	3.55mm
Max. Pin Length	4.60mm	5.00mm	4.85mm	Through Hole	4.85mm
Mounting Hole	Ø1.91-1.96mm	Ø2.19-2.29mm	Ø1.91-1.96mm	Ø2.19-2.24mm	Ø1.91-2.01mm
Mating Pin Size	Ø0.90-1.05mm	Ø0.90-1.05mm	Ø0.90-1.05mm	Ø0.90-1.05mm	Ø0.90-1.05mm



ORDER CODE	H3183-XX	H3184-XX	H3185-XX	H3194-XX
Contact Depth	3.55mm	3.90mm	3.55mm	3.55mm
Max. Pin Length	4.70mm	5.29mm	Through Hole	4.50mm
Mounting Hole	Ø1.91-2.01mm	Ø2.19-2.24mm	Ø2.19-2.29mm	Ø2.37-2.47mm
Mating Pin Size	Ø0.90-1.05mm	Ø0.90-1.05mm	Ø0.90-1.05mm	Ø0.90-1.05mm

Panel thickness = 3.2mm

HOW TO ORDER

H31 XX - XX

SERIES CODE

SEE TABLE ABOVE

FINISH

01	Gold contact, tin shell	PG
05	Gold contact, gold shell	PG

www.harwin.com

All dimensions in mm.



HARWIN

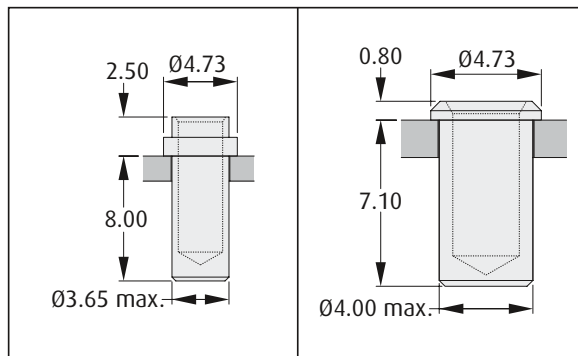
SOCKETS

173

PC Board Sockets

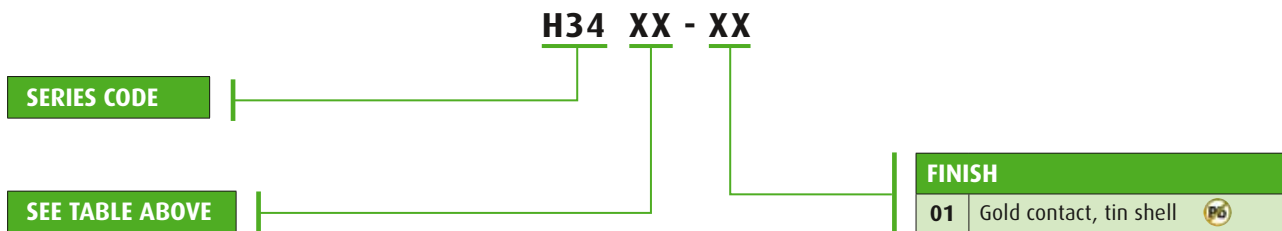
Ø2.00mm Mating pin

- Compatible with Ø2.00mm mating pins – see table below.
- Customised shell designs available on request – contact technical@harwin.com.



ORDER CODE	H3490-XX	H3492-XX
Contact Depth	4.10mm	4.10mm
Max. Pin Length	8.50mm	6.30mm
Mounting Hole	Ø3.67-3.77mm	Ø4.02-4.12mm
Mating Pin Size	Ø1.90-2.30mm	Ø1.90-2.30mm

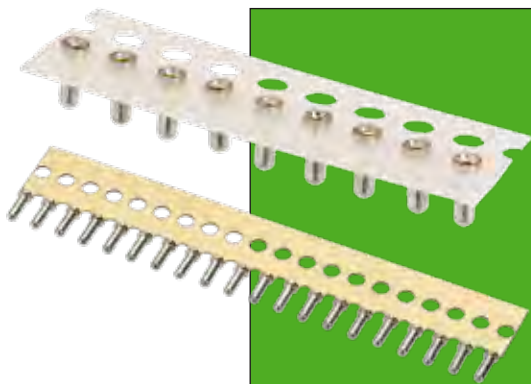
HOW TO ORDER



All dimensions in mm.

www.harwin.com



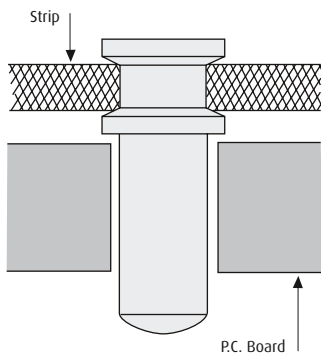


PC Board Sockets

Socket Strips for Ø0.5mm pins

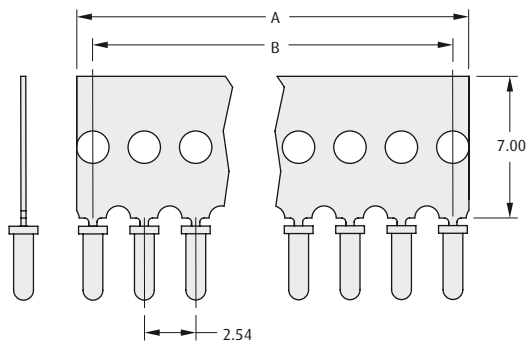
- ❖ Sub-miniature sockets using the four finger Beryllium Copper Contact, mounted on carrier strips for ease of production use.
- ❖ Choice of carrier styles available.
- ❖ See page 171 for information on the individual sockets.

FLAT POLYESTER STRIP



- ❖ 100 Contacts on a polyester strip, packed in a tube, ideal for multiple loading.
- ❖ Strip can be easily cut into any length and left in place, or removed after soldering.

SINGLE-IN-LINE SOCKET CARRIERS



- ❖ Brass carriers are supplied fitted with the sub-miniature socket shown in the tables below.
- ❖ Stocked in standard lengths.

CALCULATION

A	$B + 1.8$
B	$2.54 \times (\text{No of sockets} - 1)$

HOW TO ORDER

D01 - XXX XX 01

SERIES CODE

CONNECTOR TYPE

602	100 contact polyester strip of H3155-01
979	Single-in-line Socket Carrier with H3192-01
982	Single-in-line Socket Carrier with H3191-01
984	Single-in-line Socket Carrier with H3155-01
990	Single-in-line Socket Carrier with H3153-01

FINISH

01 Gold + Tin

NO. OF CONTACTS PER STRIP

100 contacts (D01-602 only)	00
04 to 10, 12, 14, 16, 20, 32	All except D01-602

www.harwin.com

All dimensions in mm.



HARWIN

SOCKETS

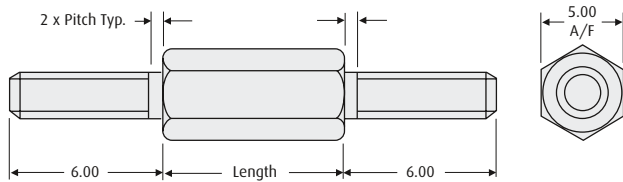
Metric Spacers

Brass Hexagonal Pillars

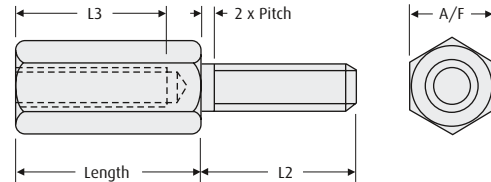
- ❖ Special body lengths can be specified, by modifying the order code. For example, R30-400xx02, xx denotes body length in mm.
- ❖ Please contact technical@harwin.com for further information.
- ❖ Base material is free-machining brass, with nickel plating.



MALE/MALE



MALE/FEMALE



CALCULATION OF L3 (min)

Series	Length mm											
	4	5	6	7	8	9	10	11	12	13	14+	
R30-300	2.5	3.0	3.0	5.0	5.5	6.0	6.0	6.0	6.0	6.0	6.0	
R30-301	2.5	3.0	3.0	5.0	5.5	6.0	7.0	8.0	8.0	8.0	8.0	
R40-300	x	x	2.5	3.0	4.5	5.5	6.5	8.0	8.0	8.0	8.0	
R50-300	x	x	x	x	4.0	5.0	6.0	7.5	8.0	10.0	10.0	
R60-300	x	x	x	x	x	x	5.0	7.0	7.0	8.0	10.0	

HOW TO ORDER

R XX - XXX XX 02

SERIES CODE

THREAD SIZE & STYLE

R30-300	M3 Male/Female, 5.0mm A/F, L2 = 6mm
R30-301	M3 Male/Female, 5.0mm A/F, L2 = 8mm
R30-400	M3 Male/Male
R40-300	M4 Male/Female, 7.0mm A/F, L2 = 8mm
R50-300	M5 Male/Female, 8.0mm A/F, L2 = 10mm
R60-300	M6 Male/Female, 10.0mm A/F, L2 = 10mm

FINISH

02 Nickel 

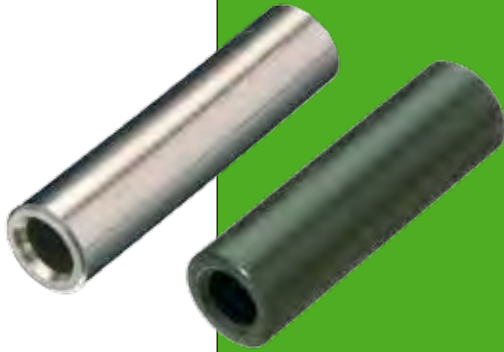
LENGTH (mm)

04-16, 18, 20, 25, 30, 35, 40	R30
06-16, 18, 20, 25, 30, 35	R40
08-16, 18, 20, 25, 30, 35, 40	R50
10-16, 18, 20, 25, 30, 40	R60

All dimensions in mm.

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Metric Spacers

Clearance spacers

- ❖ Special body lengths can be specified, by modifying the order code. For example, R30-601xx02, xx denotes body length in mm.
- ❖ Please contact technical@harwin.com for further information.
- ❖ Brass spacers: base material is free-machining brass, with nickel plating.
- ❖ Aluminium spacers: supplied with a chromate conversion protective coating.

CLEARANCE SPACERS



Brass, circular



Aluminium, circular



Plastic, circular

HOW TO ORDER

R XX - XXX XX XX

SERIES CODE

	THREAD SIZE	MATERIAL	OUTSIDE DIA.
R30-601	M3 Clearance	Brass	Ø4.75mm
R30-620	M3 Clearance	Aluminium	Ø5mm
R30-670	M3 Clearance	Plastic	Ø5mm
R40-600	M4 Clearance	Brass	Ø6.35mm
R40-661	M4 Clearance	Plastic	Ø8mm
R40-671	M4 Clearance	Plastic	Ø6.3mm

MATERIAL/FINISH

00	Plastic (R40-661)	
02	Brass/Nickel	
14	Aluminium/Chromate	
94	Plastic (R30-670, R40-671)	

LENGTH (mm)

03 to 16, 18, 20, 25, 30

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All dimensions in mm.



Metric & Imperial Spacers

Threaded Female Spacers

- ❖ Special body lengths can be specified, by modifying the order code. For example, R30-100xx02, xx denotes body length in mm.
- ❖ Please contact technical@harwin.com for further information.
- ❖ Brass spacers: base material is free-machining brass, with nickel plating.



THREADED SPACERS



R25-100

Brass, Hexagonal
M2.5, 5.0mm A/F



R30-100

Brass, Hexagonal
M3, 5.0mm A/F



R30-101

Brass, Hexagonal
M3, 5.5mm A/F



R30-161

Plastic, Hexagonal
M3, 5.5mm A/F



R30-500

Brass, Circular
M3, Ø4.76mm O/D



R40-100

Brass, Hexagonal
M4, 7.0mm A/F



R44-100

Brass, Hexagonal
4-40 UNC, 5.0mm A/F

HOW TO ORDER

RXX - XXX XX XX

SERIES CODE

See pictures above

LENGTH (mm)

Length Range	Applicable Models
04 to 16, 18, 20, 25	Other
06 to 16, 18, 20, 25	R30-161, R40-100
06, 09, 10, 12, 13, 15, 16, 19, 22, 23, 25, 30, 35, 45, 50	R44-100

MATERIAL/FINISH

00	Plastic	
02	Brass/Nickel	

All dimensions in mm.

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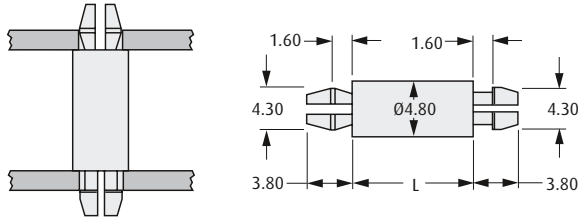


Spacers

Locking Spacers

LOW PROFILE SELF-LOCK SPACERS

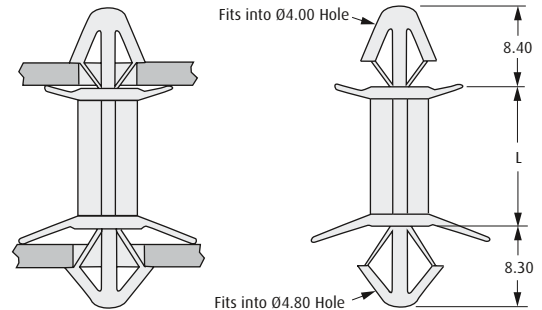
- Material: Nylon 6/6 UL94V-2.
- Spacer design uses minimum board area.
- Suitable for 1.6mm thick pc board.
- Recommended Hole Size Ø4.0mm.



ORDER CODE	L	ORDER CODE	L
R6003-00	3.2	R6009-00	9.5
R6006-00	6.3	R6010-00	10.5
R6008-00	8.0	R6013-00	12.7

RIGID SELF-LOCK SPACERS

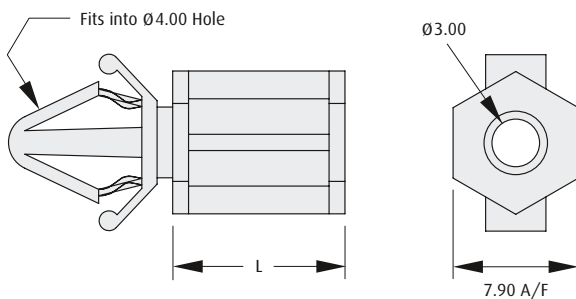
- Material: Nylon 6/6 UL94V-2.
- Spacers have wide ribs with locking fingers to provide a secure, rigid fit with extra stability.



ORDER CODE	L	ORDER CODE	L
R6405-00	4.8	R6419-00	19.1
R6406-00	6.4	R6422-00	22.2
R6410-00	9.6	R6425-00	25.4
R6413-00	12.7	R6428-00	28.5
R6416-00	15.9	R6435-00	35.0

SELF-LOCK SPACER

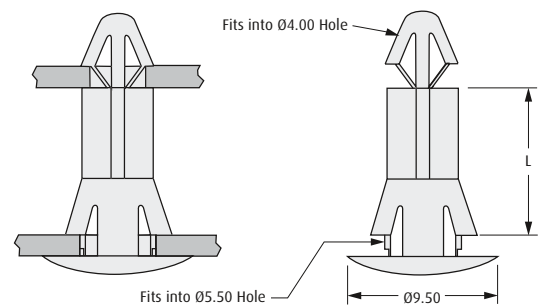
- Material: Nylon 6/6 UL94V-2.
- Fit spacer to underside of upper board, then attach lower board to bottom of spacer with No. 6 (1/8") screw.
- Recommended Hole sizes: Ø4.00mm (upper board), Ø3.00mm (lower board).



ORDER CODE	L	ORDER CODE	L
R6505-00	5.5	R6519-00	19.1
R6510-00	9.5	R6528-00	28.5
R6513-00	12.8	R6535-00	35.0

REVERSE LOCK SPACERS

- Material: Nylon 6/6 UL94V-2.
- Fit spacers from underside of board.
- Recommended PC Board Thickness 0.5 - 1.8mm.



ORDER CODE	L	ORDER CODE	L
R6706-00	6.0	R6712-00	12.0
R6708-00	8.0	R6714-00	14.0
R6710-00	9.6	R6718-00	18.0

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All dimensions in mm.



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