Hold Down Pegs

Unique System Holds Connectors On PCB Prior To Soldering

CINCINNATI, OHIO SALES BULLETIN SB-1000

Benefits Of The System

Crane's unique **PEGGING SYSTEM** provides an easy, cost effective way to secure its pin strip headers to the PC board prior to soldering. Crane's system helps to eliminate rework problems caused by misalignment of pin strip headers on the printed circuit board during the solder process. These misalignments can occur for several reasons, including:

- Parts **RIDING UP** on the "wave" during the solder process (thru-hole)
- Parts **TILTING** during the solder process (loss of perpendicularity)
- Parts **DRIFTING** during the reflow solder process (surface mount)
- **INCORRECT PLACEMENT** on pads prior to soldering (surface mount)

All of the above can lead to poor solder joints, or even shorting. The problem is particularly pronounced on headers with a low number of positions.

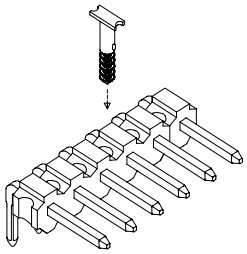
Why not just kink the tails?

Kinking – mechanically altering the profile of the header tail by displacing material – does provide a retention option for thru-hole parts. Kinking, however, is not as effective as Crane's **PEGGING SYSTEM**. Some kinking liabilities include:

1. Does not hold headers as snugly to the board
2. Tight plated-thru hole tolerances are required for kinks to be effective.
3. Placing parts with kinked tails on the PC board risks possible damage to plated-thru holes

Crane's system is superior to the kinked option since it eliminates these concerns.

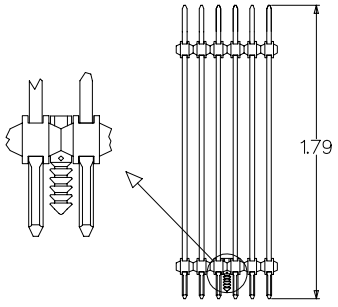
How The System Works



The Crane **PEGGING SYSTEM** consists of small plastic pegs and pin strip header insulators with special peg holes between the terminal posts. The pegs – available in Top or Bottom Entry options -- are inserted into the "peg holes" in the top of the insulator before the part is placed on the PC board (see reverse side for more detail). Pegs can be installed by Crane prior to shipment, or purchased separately for insertion by the end-user.

Sample Application

A manufacturer of set top boxes for cable TV recently asked Crane for a solution to a board stacking problem. Since their application required a very tall part, they were having trouble keeping it in **VERTICAL PLANE** during the solder process. Although kinked tails kept the part from "floating" on the solder wave, they did not prevent the part from tilting out of plane.

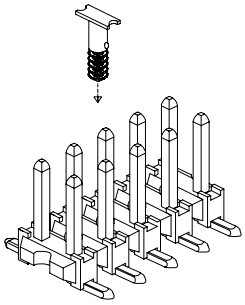


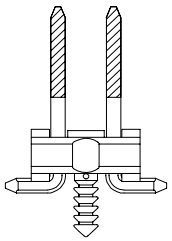
Top Entry Peg Inserted Into A Crane MPEG Header

To solve the problem, Crane produced the header with its unique pegging option. By installing two TOP ENTRY PEGS, Crane was able to "snug" the header to the PC board. This served to keep it straight during the solder process.

Sample Application

A Crane customer was concerned about the possibility his surface mount headers would "drift" (misalign themselves) during the reflow solder process. Since the part was only a ten position (2x5) header, the answer lay in using a single TOP ENTRY PEG to hold the part on the board.



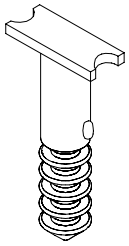


NOTE: Longer parts may require more than one peg.

A 0.040" +/- 0.002" diameter non-plated thru hole was added to the PC board design. The part was ordered from Crane with the peg installed, so the only thing the customer had to do was place the part on the board. The "ridges" (see illustration at left) on the peg tip snugged the part to the board preventing movement during the solder process.

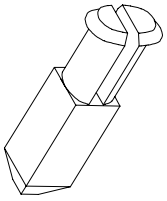
NOTE: Crane's PEGGING SYSTEM is primarily for alignment purposes. Only the Top Entry version provides a degree of retention. The peg adds no substantial mechanical strength to the part, and "draws up" into the PCB hole during the solder process.

Top/Bottom Entry Available



Top Entry Peg

Crane's **PEGGING SYSTEM** is available in both Top and Bottom Entry versions (entry refers to the orientation of the peg to the header body prior to insertion). The Top Entry Peg (left), which provides alignment and retention, is the most commonly chosen option. Slight pressure needs to be placed on the tops of the Top Entry Pegs when placing the header on the PC board.



Bottom Entry Peg

Crane's Bottom Entry Peg (right) is used solely for alignment and requires a non-plated thru hole size of 0.062" +/- 0.002" in diameter. By being inserted from the bottom, no "back up" pressure is required to place the part on the PC board.

How To Order

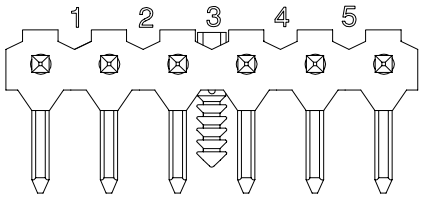
Crane's unique **PEGGING SYSTEM** is available as a standard option on most of our 0.100" pin strip headers. In particular, the system is available on the following:

PEG	0.100" Pin Strip Header
GPEG	0.100" Pin Strip Header
MPEG	0.100" Pin Strip Header
FMPEG	0.100" Pin Strip Header
GMPEG	0.100" Pin Strip Header
LPEG	0.100" Pin Strip Header

NOTE: The Pegging System is not available on triple row parts.

To order parts with the peg installed, orient the part – or drawing -- so that the mating portion of the pin is facing you (see illustration below). With the mating portion of the part facing you and the PC tails pointing down, count peg holes left to right. Designate peg hole "XX" (you determine) to receive the peg by adding "**P**XX" (for Top Entry) or "**B**XX" (for Bottom Entry) to the end of the part number. For example, the part number below would be:

PEG06SR-TBR/P03



The part number above calls for a single row, right angle header with six terminal posts. The terminal posts will have tin plating, a mating length of 0.230" and a tail length of 0.125". A Top Entry Peg will be installed in the third hole of the insulator for alignment and retention. Please reference pages 22-23 in our C57 Catalog for details on the above referenced part; see pages 100-102 for more information on Crane's **PEGGING SYSTEM.**

Recommended PCB Hole Sizes	
Non-Plated Hole Diameter (TOP ENTRY)	0.040" +/- 0.002"
Non-Plated Hole Diameter (BOTTOM ENTRY)	0.062" +/- 0.002"
MATERIAL: Non-Conductive Thermoplastic	