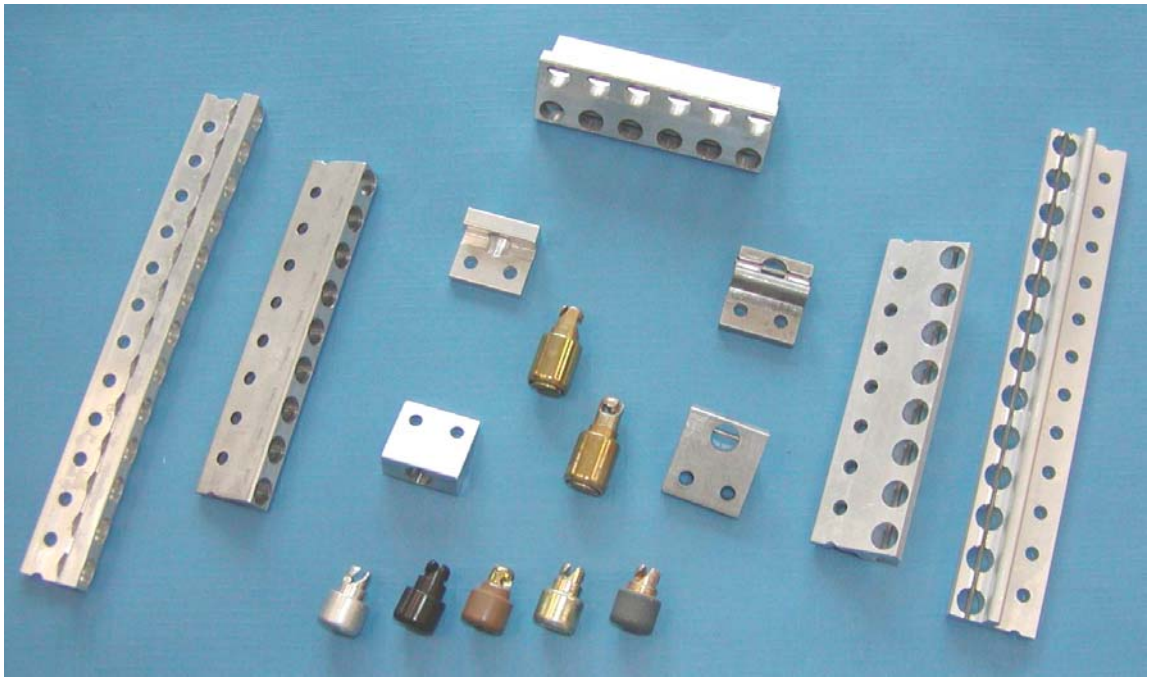
Solutions Inc.

PA-3500 Line

Captive Quarter-turn Fasteners
Continuous Receptacle Strip

MIL-F-25173A* APPROVED



The DFCI PA-3500 Line of fasteners combine the operating convenience, predictable clamping force, and locked vibration resistance of the DFCI quarter-turn fastener with the versatility of continuous and closely spaced panel fastening points, and ease of flare-in stud installation.

The DFCI PA-3500 Line features:

- Stud assemblies that are flared into the panel holes.
- Receptacle strips with both stud and rivet holes on .375” (9.53 mm) centers.

The stud assemblies are offered in a range of neck lengths for flare-installation into the panels.

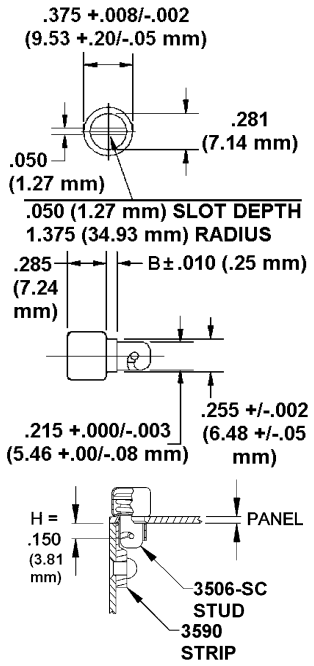
The receptacle strips frame out the console opening and serve as offset supports for the stud panel. Stud holes and installation rivet holes are continuous for the length of the receptacle strip and are spaced every .375” (9.53 mm).

* Meets the design, physical and performance requirements of MIL-F-25173. However, full mechanical properties testing may not be performed on each production lot.

PA-3500 Line

Solutions Inc.

3506-SC Stud Assembly



MATERIALS

Stud: Heat treated carbon steel
Spring: Spring temper music wire
Cup: Mild steel

The **3506-SC** assembly contains a stud and coil spring captive in a steel cup. Flaring the end of the cup neck into a countersunk panel hole installs the assembly. When locked on the rigid wire in the receptacle, the spring is compressed and exerts a clamping force on the fastened parts.

MIL-F-25173A* approved.

PARTS SELECTION*

PANEL THICKNESS in. (mm)	STUD ASSEMBLY	CUP DIM B in. (mm)
.050 - .059 (1.27 – 1.50)	3506-SC37A-C3C	.070 (1.78)
.060 - .069 (1.50 – 1.75)	3506-SC38A-C3C	.080 (2.03)
.070 - .079 (1.75 – 2.01)	3506-SC39A-C3C	.090 (2.29)
.080 - .089 (2.01 – 2.26)	3506-SC40A-C3C	.100 (2.54)
.090 - .099 (2.26 – 2.51)	3506-SC41A-C3C	.110 (2.79)
.100 - .109 (2.51 – 2.77)	3506-SC42A-C3C	.120 (3.05)
.110 - .119 (2.77 – 3.02)	3506-SC43A-C3C	.130 (3.30)
.120 - .129 (3.02 – 3.28)	3506-SC44A-C3C	.140 (3.56)

*This table is based on the locked stud panel being in contact with a DFCI receptacle strip having a wire depth (DIM. H) of .150" (3.81 mm). (See the drawing to the left.)

SPECIFICATIONS

Locking tension: 15 lb.
Rated tensile and shear: 200 lb. when used with DFCI receptacles
Max. sheet separation under tensile overload: 3/64" (1.19 mm)
Wear endurance: 5000 use cycles

FINISHES

The basic PFSC finish is cadmium plate per QQ-P-416, Type I, Class 2. Other standard finishes are available as described below **(C3C)**

Optional Black Finishes for PFSC and PVS Assemblies

Black Oxide Over Copper
Copper plate .0005" thick, with dull black oxide conversion, and clear acrylic dip.

This finish is available on all listed 3506-SC and 3522-S assemblies. Change the finish suffix from **C3C** to **BOC**.

Zinc Plate
Zinc Plate .0003" thick, ASTM-B-633, Type II, Class 2, with black chromate finish. Change the finish suffix from **C3C** to **Z3B**.

Black Epoxy Paint Over Cadmium
Cadmium plate per QQ-P-416, Type II, Class 2 plus black epoxy primer, .0006" thick min., and dull black epoxy enamel, .0003" thick min. Only the surfaces visible when the assembly is installed are painted. This finish is available on 3506-SC assemblies in 38, 41, and 44 lengths. Others sizes are available on special order. Change the finish suffix from **C3C** to **EEB**.

* Meets the design, physical and performance requirements of MIL-F-25173. However, full mechanical properties testing may not be performed on each production lot.

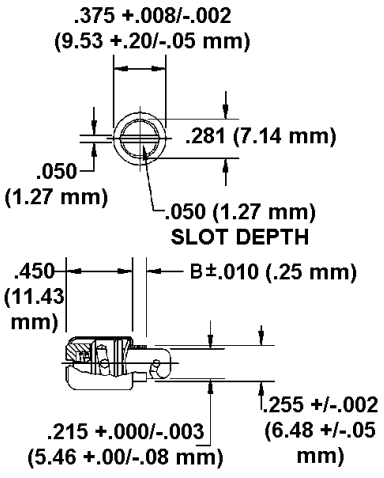
3522-S Stud Assembly

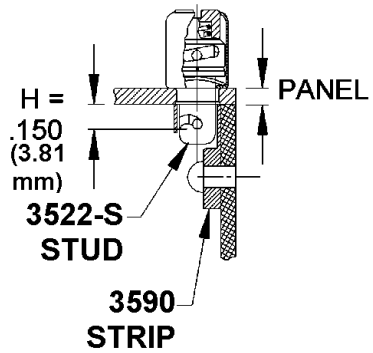
The **3522-S** assembly provides a nearly solid lock without allowing the sheet separation that can occur with the 3506-SC assembly. With the **3522-S** assembly, the stud is quarter-turned onto the receptacle wire under tension supplied by a curved washer. Further locking rotation turns the fastener head around a stud cross pin. The head is moved downward as it turns compressing a coil spring that is stronger than the curved washer, and finally compressing the curved washer flat. When fully locked, the assembly has no remaining spring movement achievable by tensile overload.

3522-S assemblies are not MIL-F-25173A approved.

CAUTION

Anything that prevents the stud from initially locking onto the receptacle wire could allow the fastener head to rotate first. This could give the impression that the stud is locked while it has **not** locked onto the receptacle wire. Anyone using this special purpose fastener must be trained to recognize proper stud cam locking.





PARTS SELECTION*

PANEL THICKNESS in. (mm)	STUD ASSEMBLY	CUP DIM. B in. (mm)
.050 - .059 (1.27 – 1.50)	3522-S37-C3C	.070 (1.78)
.060 - .069 (1.50 – 1.75)	3522-S38-C3C	.080 (2.03)
.070 - .079 (1.75 – 2.01)	3522-S39-C3C	.090 (2.29)
.080 - .089 (2.01 – 2.26)	3522-S40-C3C	.100 (2.54)
.090 - .099 (2.26 – 2.51)	3522-S41-C3C	.110 (2.79)
.100 - .109 (2.51 – 2.77)	3522-S42-C3C	.120 (3.05)
.110 - .119 (2.77 – 3.02)	3522-S43-C3C	.130 (3.30)
.120 - .129 (3.02 – 3.28)	3522-S44-C3C	.140 (3.56)

*This table is based on the locked stud panel being in contact with a DFCI receptacle strip having a wire depth (DIM H) of .150" (3.81 mm). (See the drawing to the left.)

SPECIFICATIONS

Locking tension: variable up to 200 lb.
Rated tensile and shear: 200 lb. when used with DFCI receptacles

MATERIALS

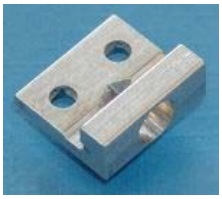
The cup is mild steel. All other components are heat-treated carbon steel.

FINISHES

The basic PVS finish as called out by the tabulated part number is cadmium plate per QQ-P-416, Type I, Class 2 **(C3C)**. Other standard finishes are available as described on the bottom of the previous page.

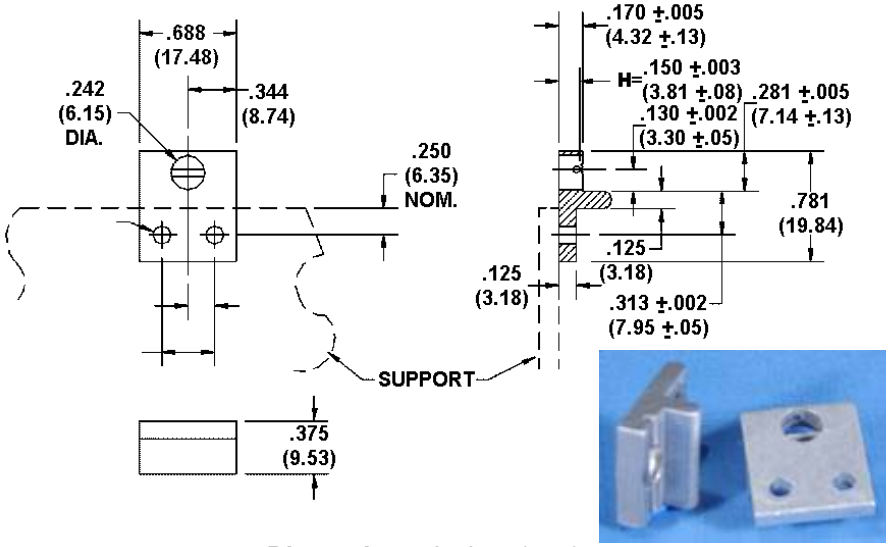
SINGLE HOLE RECEPTACLES

Part Number: 3518-B



Weight: .0053 lb.
Material: Same as those for the 3590 strip.

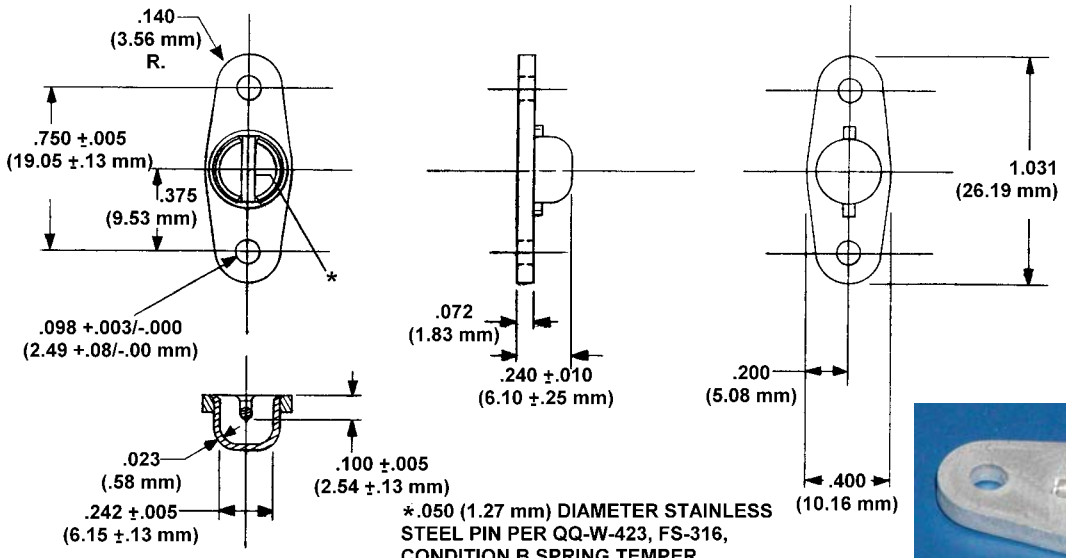
Part Number: 3518-C



Dimensions: inches (mm)
Weight: .0084 lb.
Materials: Same as those for 3595 strip.

SINGLE HOLE RECEPTACLES

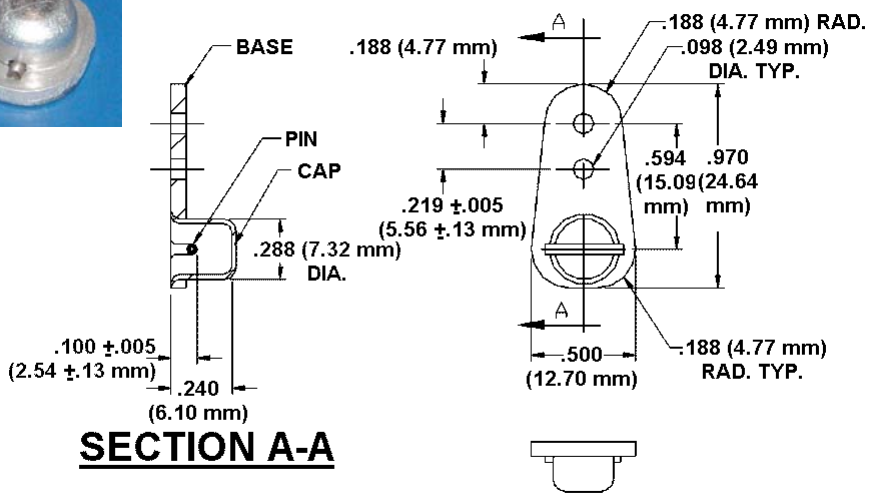
Part Number: 3518-G



Weight: .00223 lb.

Material: Cap and base made of 6061-T6 aluminum, Wire made of Stainless Steel

Part Number: 3518-F



SECTION A-A

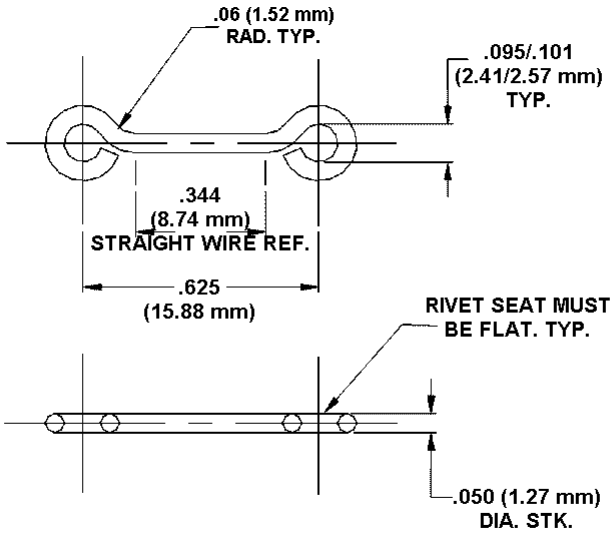
Weight: .00278 lb.

Material: Base and Cap 6061-T6 aluminum, Wire Stainless Steel

Solutions Inc.

SINGLE HOLE RECEPTACLES

Part Number: 3502-SS



Weight: .0007 lb.
Materials: Stainless Steel

Standard Receptacle Strips

The PA-3500 Line receptacle strip is installed as a supporting frame for the panels or removable parts to be fastened. The PA-3500 Line receptacle strip has continuous holes for stud engagement and rivet mounting on .375" (9.53 mm) centers. The PA-3500 Line receptacle strip is riveted to a support member and the stud panel rests against the strip face having the stud holes. The strips are aluminum alloy with a continuous rigid stainless steel wire staked across the underside of the stud holes. The fastened panel rests on the strip and its captive **3506-SC** or **3522-S** studs engage the rigid wire.

STANDARD STRIP CUSTOM CUT TO LENGTH

Custom cut lengths of 3590-H320 and 3595-H320 may be specially ordered. The specification for cut lengths assumes standard hole spacing (.375" (9.53 mm)) and that the holes at each end are located the standard distance from the end.

Cut length callout with standard hole spacing and ends: Change the number of holes in the part number from 320 to the desired number of holes. For example, a 3590-H320 receptacle strip cut to a 25 hole length would be **3590-H25**.

Special stud hole spacing is also available.

PA-3500 Line

Solutions Inc.

Standard Receptacle Strips

RIGHT-ANGLE STRIP 3590-H320

The Right-Angle Receptacle Strip (3590-H320) is designed for mounting against a support member at a right angle to the fastened panel or removable part. The standard strip length is 10 feet (320 Holes).

We also have in approximate lengths 3 Ft. (3590-S3), 5 Ft. (3590-S5), 7 Ft. (3590-S7), and 9 Ft. (3590-S9) strips.

Materials: The strip extrusion is Aluminum Alloy 6061-T6. The wire is Type 316 Stainless Steel condition B, spring temper.

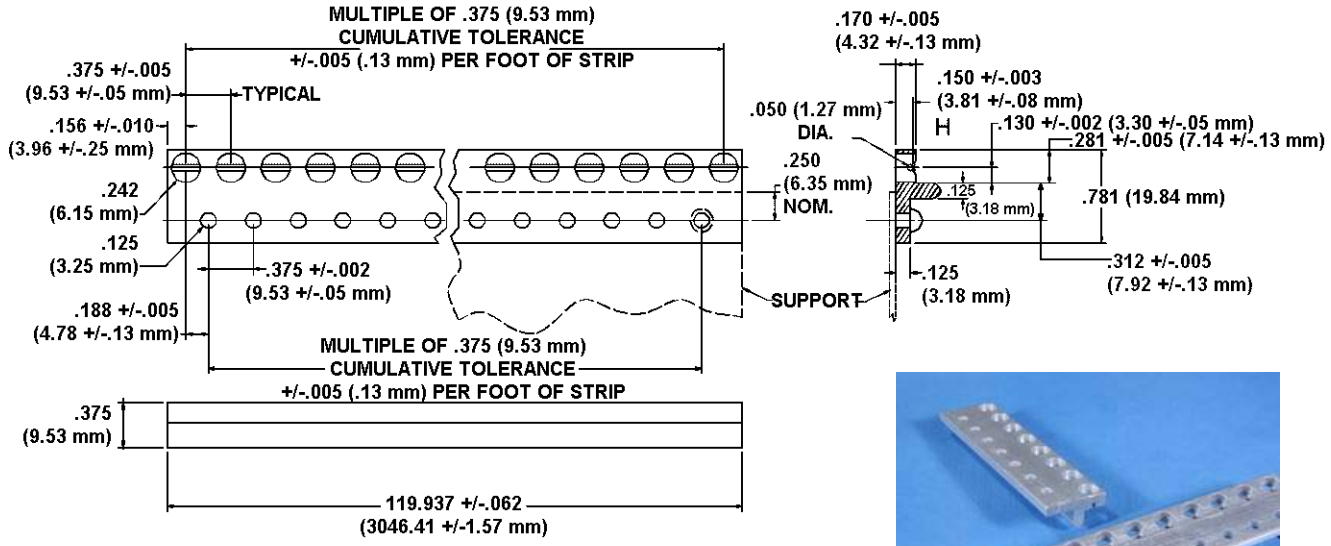
Standard Receptacle Strips

FLAT STRIP 3595-H320

The Flat Receptacle Strip (3595-H320) is designed for mounting against a support member in plane with the fastened panel or removable part. The standard strip length is 10 feet (320 Holes).

We also have in approximate lengths 3Ft. (3595-S3), 5Ft. (3595-S5), 7Ft. (3595-S7), and 9Ft. (3595-S9) strips.

Materials: The strip Extrusion is aluminum alloy 6061-T6. The wire is Type 316 Stainless Steel condition B, spring temper



PA-3500 Line

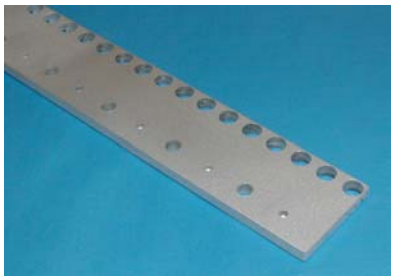
Solutions Inc.

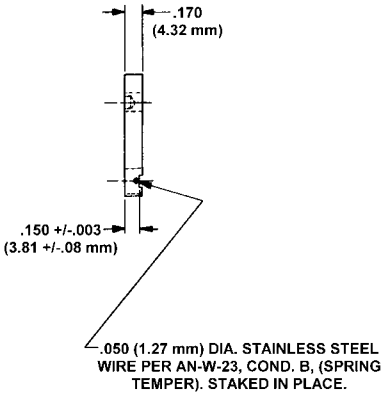
Special Receptacle Strips

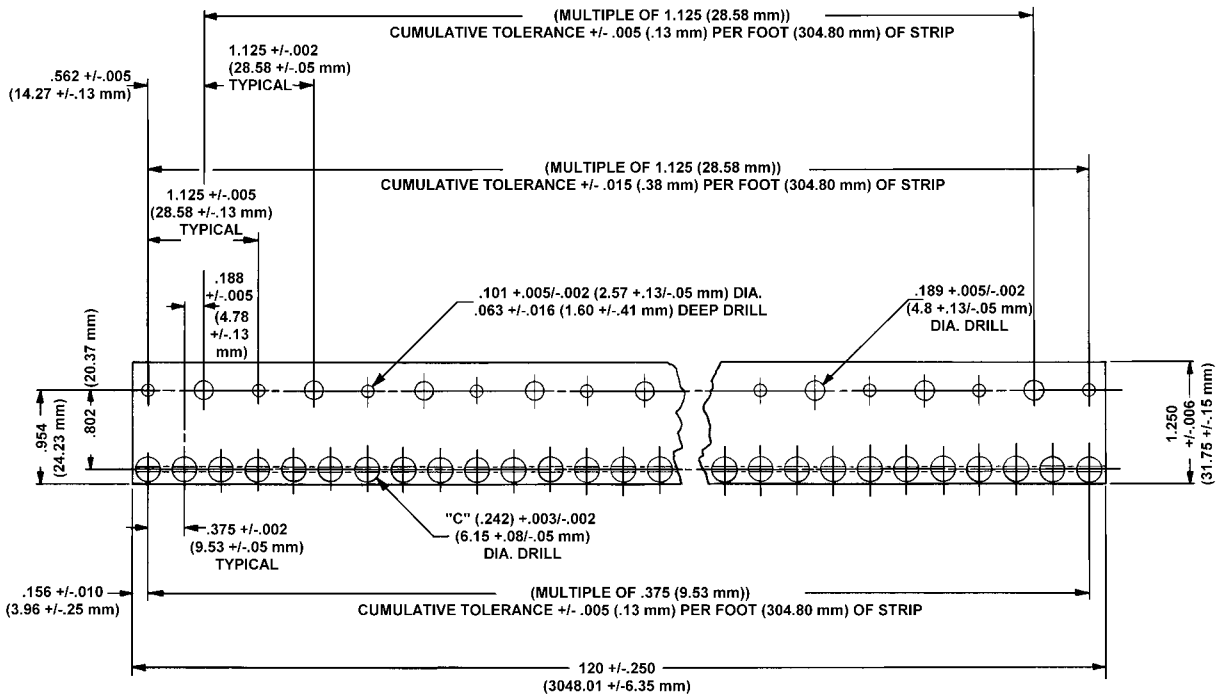
Subject to Minimum Orders

All special strip configurations use the standard stud hole size and “H” dimension (depth of stud engagement wire in stud hole) for compatibility with the standard PA-3500 line stud assemblies.

3590-24714





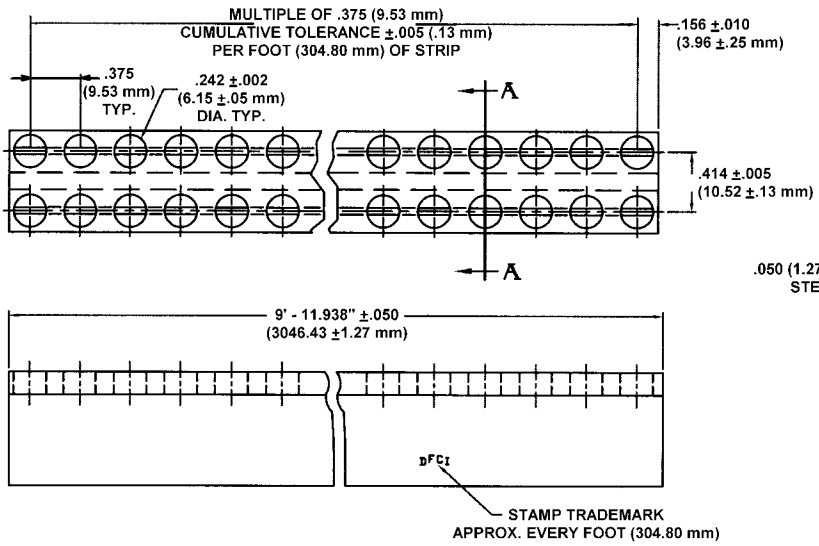


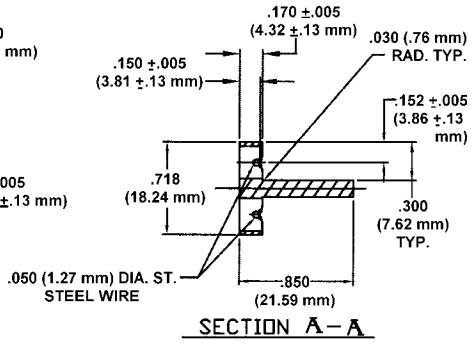
Special Receptacle Strips

Subject to Minimum Orders

All special strip configurations use the standard stud hole size and “H” dimension (depth of stud engagement wire in stud hole) for compatibility with the standard PA-3500 line stud assemblies.

3590-24865





PA-3500 Line

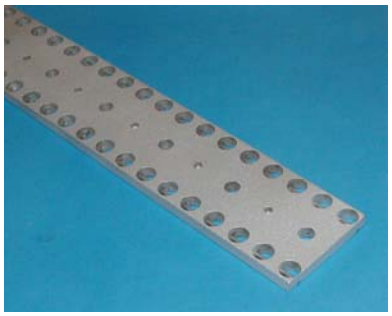
Solutions Inc.

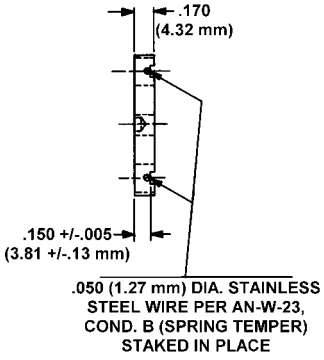
Special Receptacle Strips

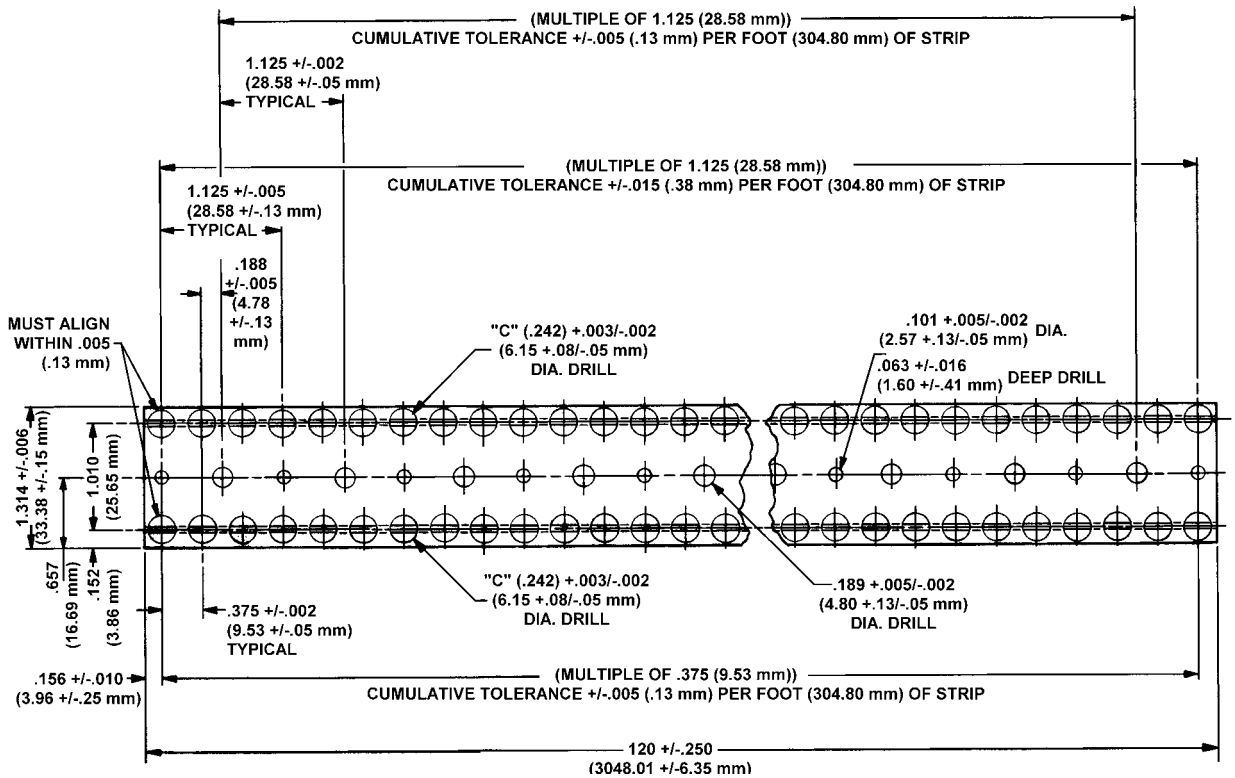
Subject to Minimum Orders

All special strip configurations use the standard stud hole size and “H” dimension (depth of stud engagement wire in stud hole) for compatibility with the standard PA-3500 line stud assemblies.

3590-24715





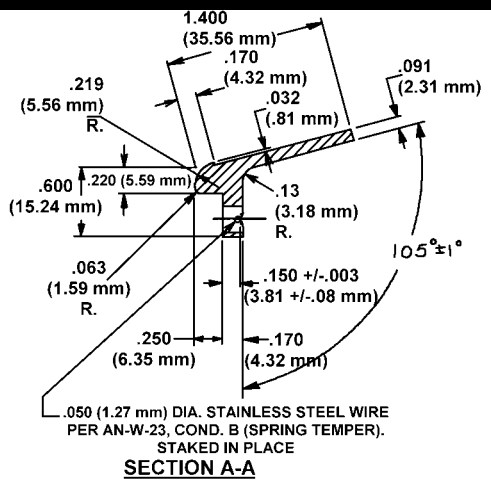


Special Receptacle Strips

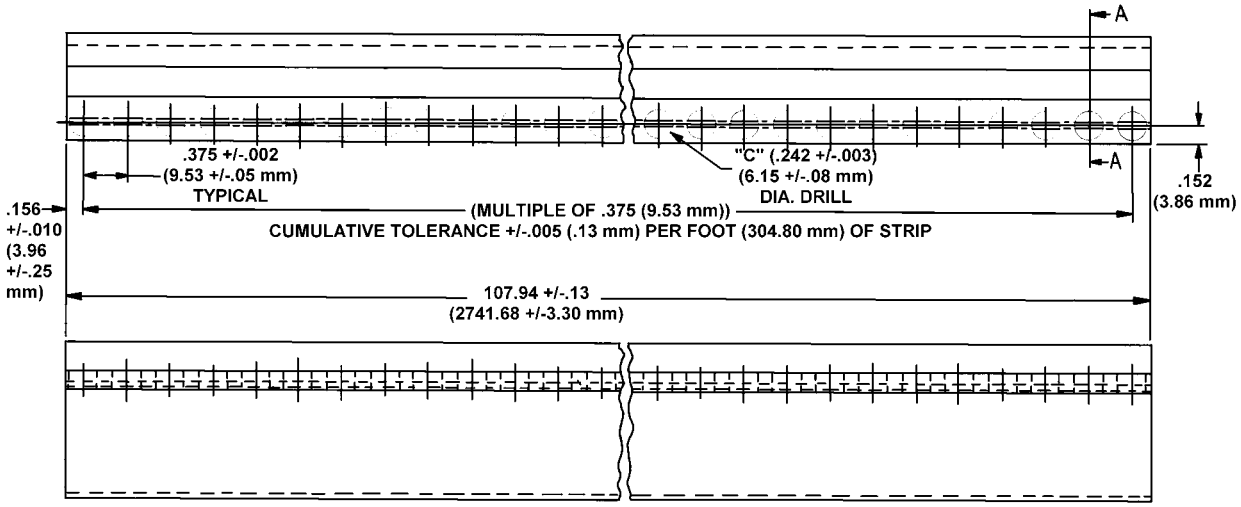
Subject to Minimum Orders

All special strip configurations use the standard stud hole size and “H” dimension (depth of stud engagement wire in stud hole) for compatibility with the standard PA-3500 line stud assemblies.

3590-24773



SECTION A-A



PA-3500 Line

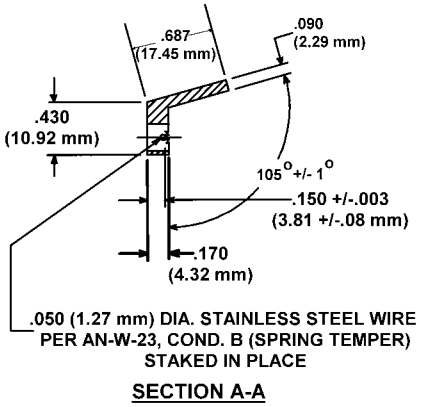
Solutions Inc.

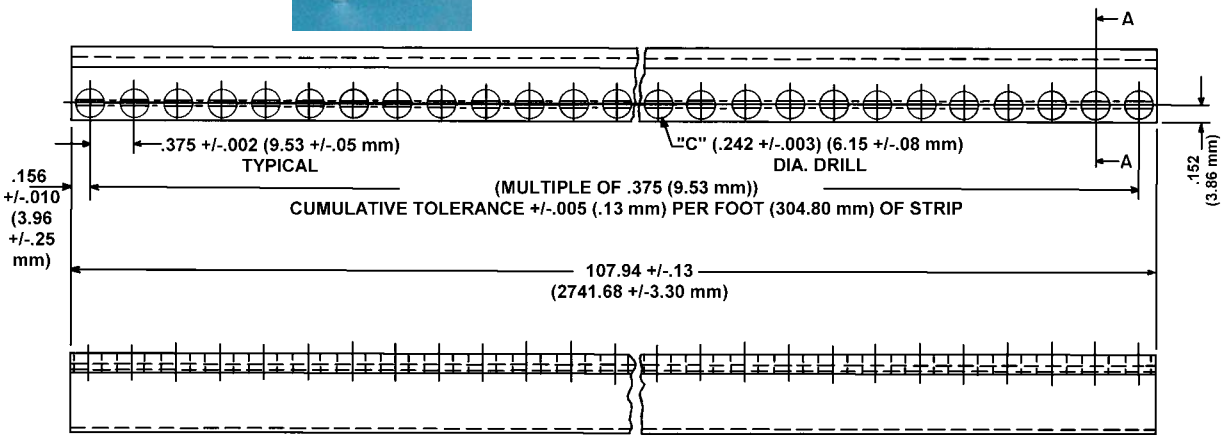
Special Receptacle Strips

Subject to Minimum Orders

All special strip configurations use the standard stud hole size and “H” dimension (depth of stud engagement wire in stud hole) for compatibility with the standard PA-3500 line stud assemblies.

3590-24780



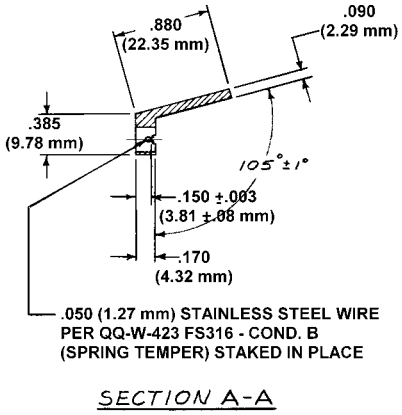


Special Receptacle Strips

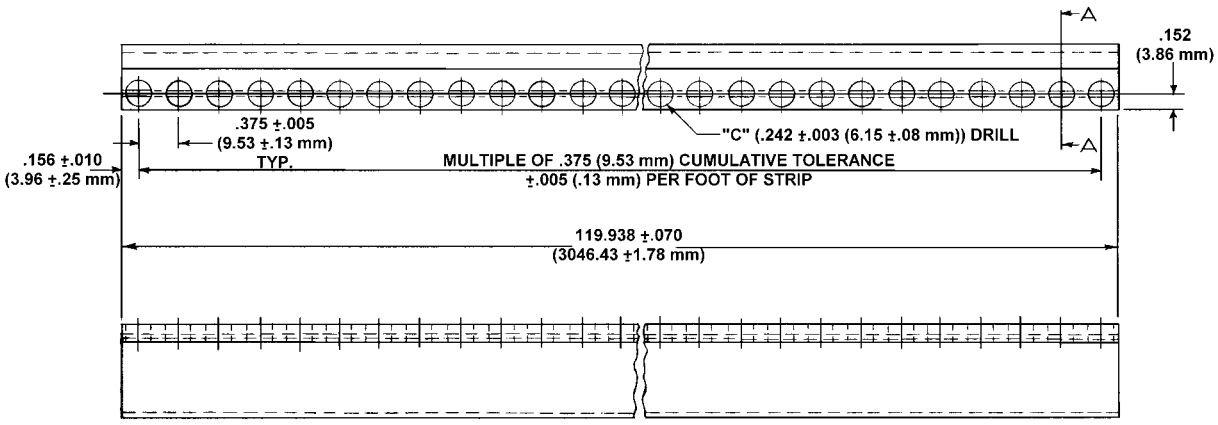
Subject to Minimum Orders

All special strip configurations use the standard stud hole size and “H” dimension (depth of stud engagement wire in stud hole) for compatibility with the standard PA-3500 line stud assemblies.

3590-24913



SECTION A-A



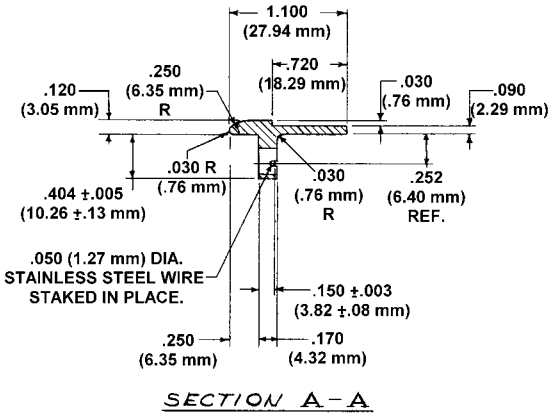
Solutions Inc.

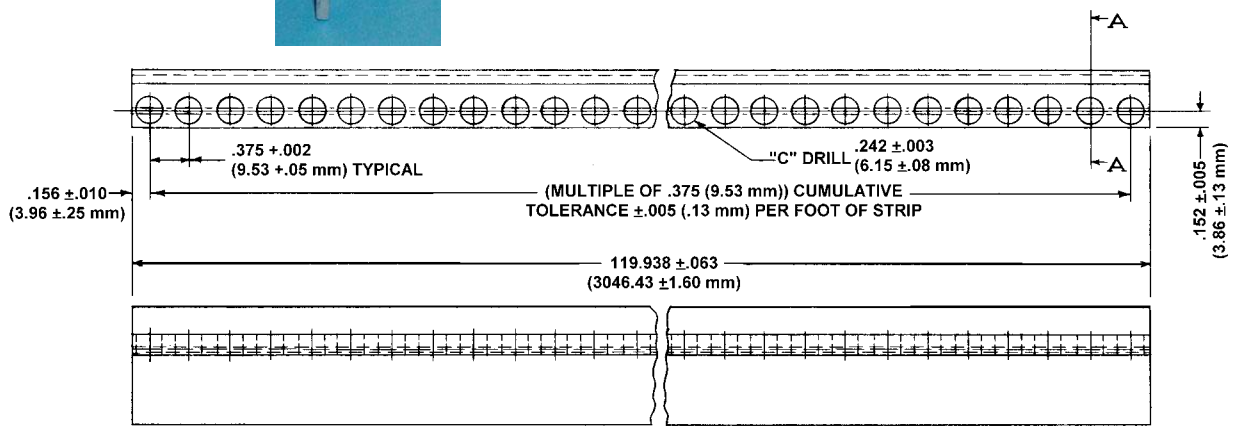
Special Receptacle Strips

Subject to Minimum Orders

All special strip configurations use the standard stud hole size and “H” dimension (depth of stud engagement wire in stud hole) for compatibility with the standard PA-3500 line stud assemblies.

3590-24864





Special Receptacle Strips

Subject to Minimum Orders

All special strip configurations use the standard stud hole size and “H” dimension (depth of stud engagement wire in stud hole) for compatibility with the standard PA-3500 line stud assemblies.

3590-24858

PA-3500 Line

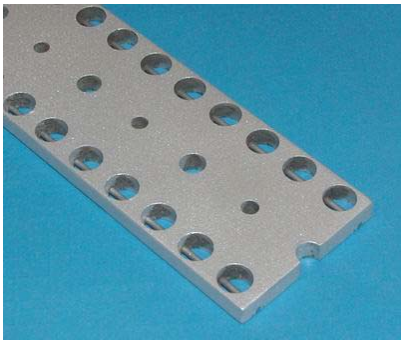
Solutions Inc.

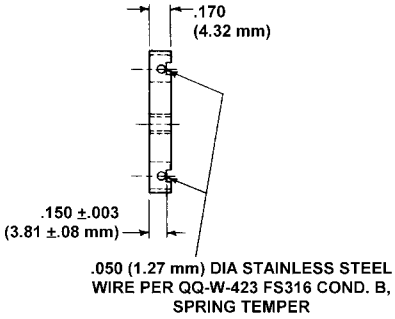
Special Receptacle Strips

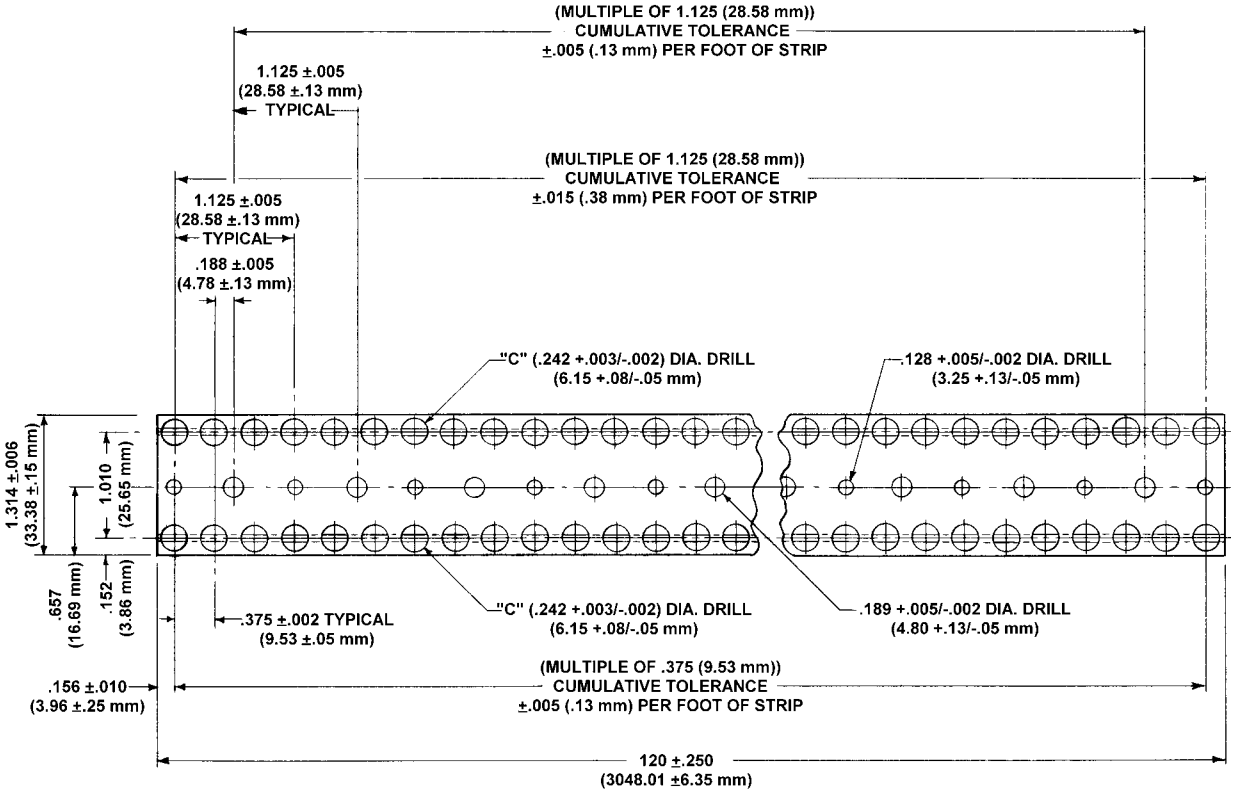
Subject to Minimum Orders

All special strip configurations use the standard stud hole size and “H” dimension (depth of stud engagement wire in stud hole) for compatibility with the standard PA-3500 line stud assemblies.

3590-24856





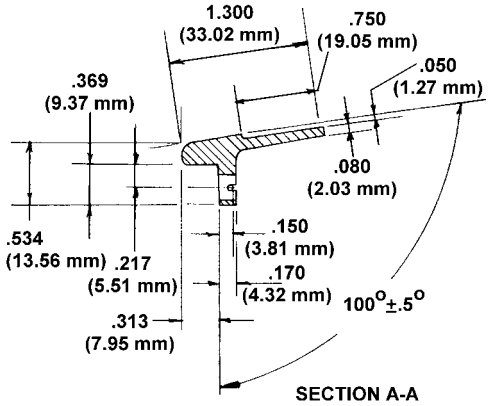


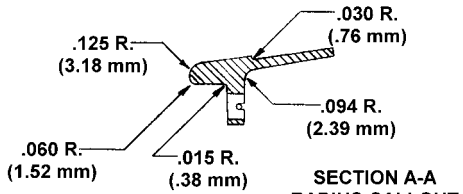
Special Receptacle Strips

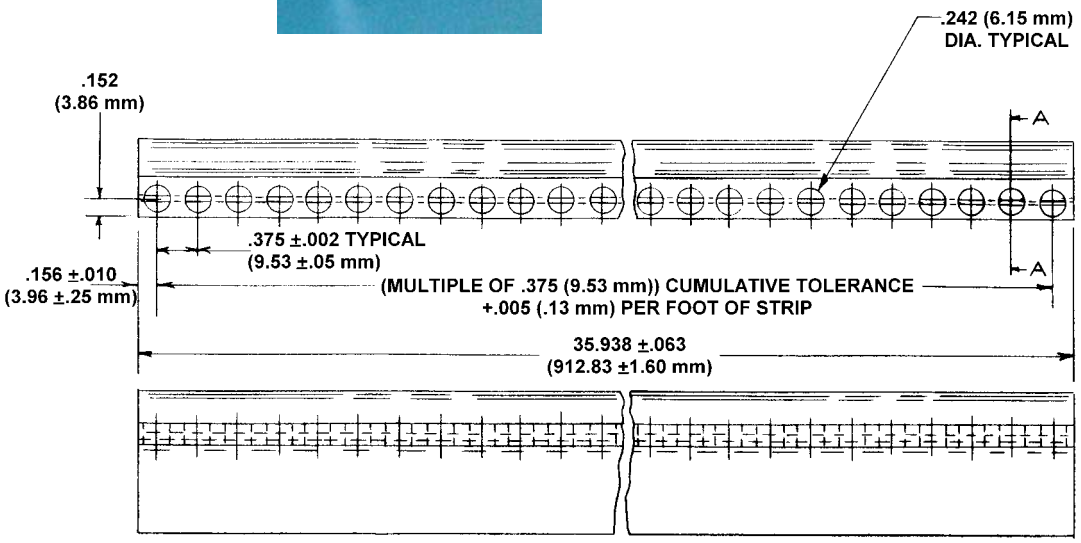
Subject to Minimum Orders

All special strip configurations use the standard stud hole size and “H” dimension (depth of stud engagement wire in stud hole) for compatibility with the standard PA-3500 line stud assemblies.

3590-241704





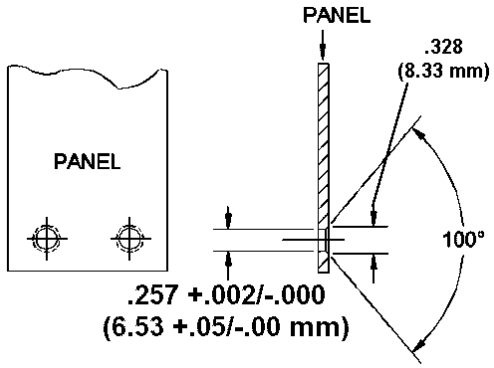


Solutions Inc.

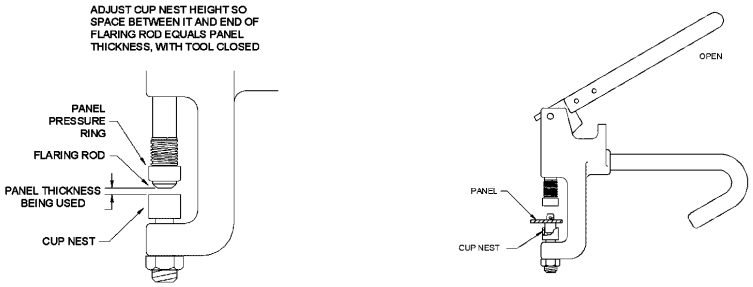
3506-SC and 3522-S Stud Installation
with Hand Squeeze Tool

Fastener	Tool Part Number
3506-SC	9916-35-AHT
3522-S	9916-35-VSHT

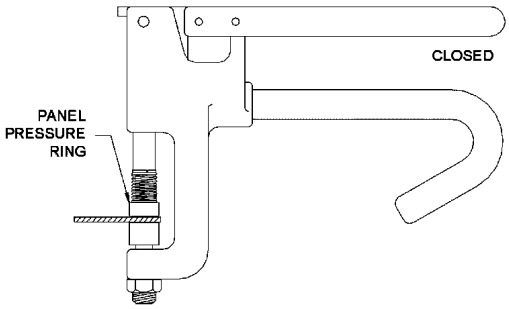
1. Drill and countersink hole for stud panel preparation.



2. Insert fastener in cup nest and place panel over stud.



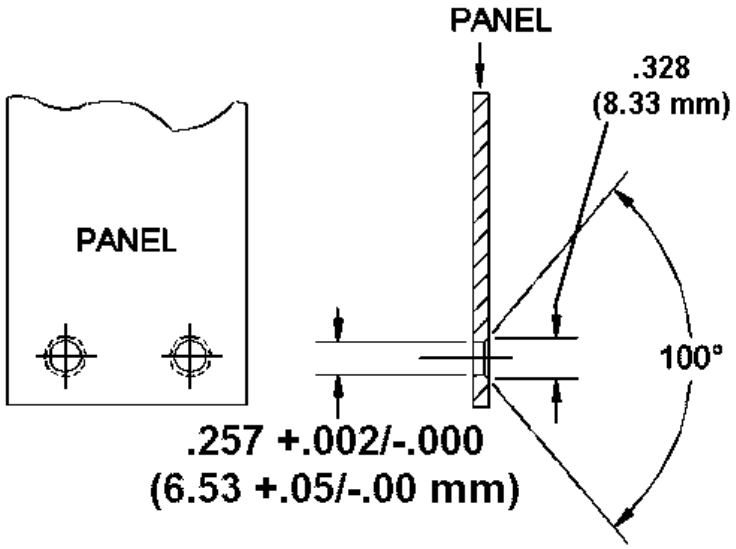
3. Ensure panel is firmly against cup shoulder and then squeeze handles to flare cup.



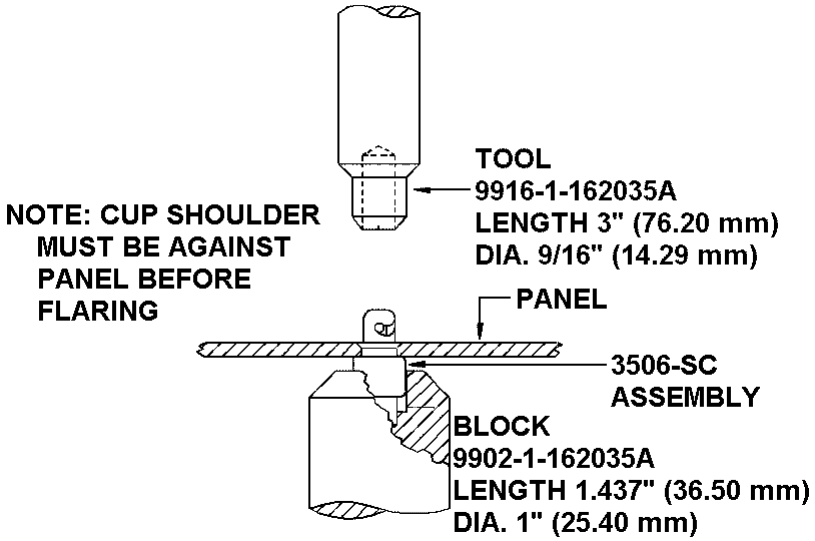
3506-SC and 3522-S Stud Installation

with Power-Driven Tools

1. Drill and countersink hole for stud panel preparation.



2. Insert fastener in block, place panel over stud, ensure cup shoulder is firmly against panel and flare with tool.



To Order 3506-SC Power Driven Tool and Block as a Set Use Part Number:

9920-1620-35-1

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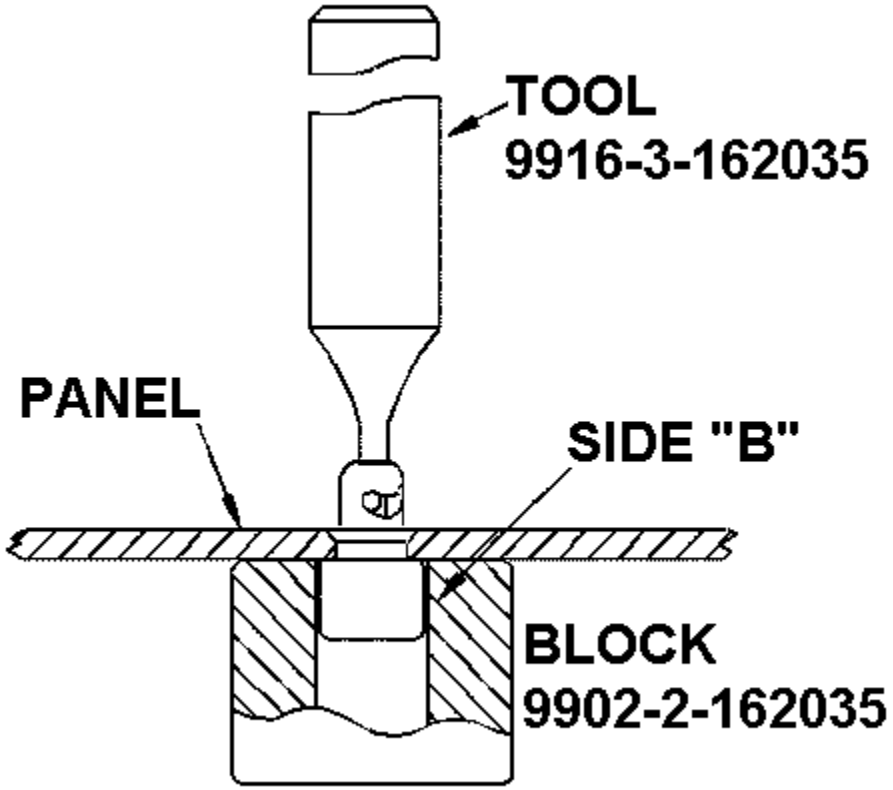
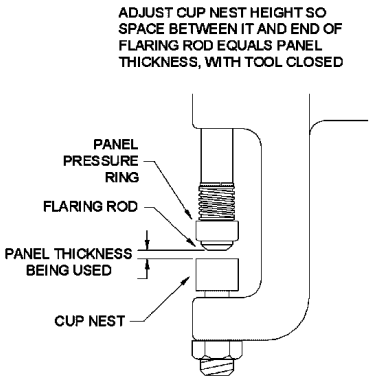
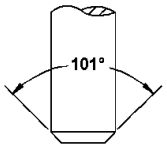
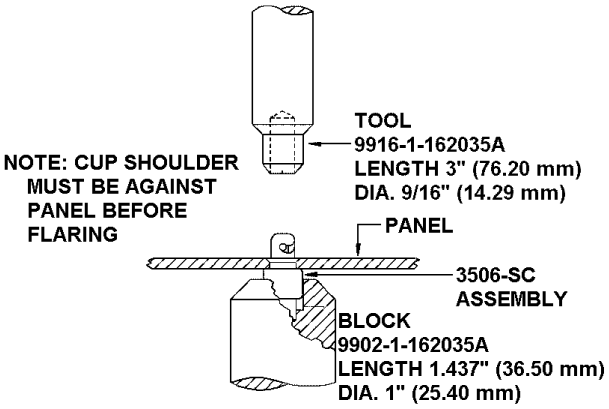
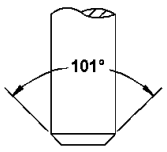
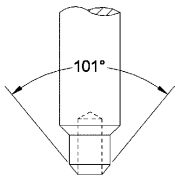
3506-SC and 3522-S Removal

Fastener Removal
(for 3506-SC and 3522-S stud)



3506-SC and 3522-S Installation

Troubleshooting

Hand Squeeze Tooling	Power-Driven Tooling
Problem: Cup neck caves into cup shoulder instead of flaring into countersunk hole.	
Probable Cause: (A) Vertical travel of panel pressure ring is restricted or is its spring pressure is reduced.  (B) Flaring rod is dull.  	**Probable Cause:** Cup shoulder not in firm contact with panel prior to flaring. 
Problem: Cup rotates in panel after flaring. **Note: Does not affect fastener operation.**	
Probable Cause: (A) Incorrect panel hole diameter or countersink angle (Step 1). **(B)** Position of cup nest not properly adjusted for panel thickness.	
Problem: Flared cup neck is split or uneven.	
Probable Cause: (A) Flaring rod is dull (See Figure 1 for sharpening guide).  *Figure 1:* Flaring Rod	**Probable Cause:** (A) Punch is dull. (See Figure 1 for sharpening guide).  Figure 1: Flaring End
	Problem: Cup neck drawn thin by flaring.
	Probable Cause: Excessive installation pressure.

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