

CAPABILITY SPOTLIGHT

PENCOM Builds Anodizing and Passivating Facility

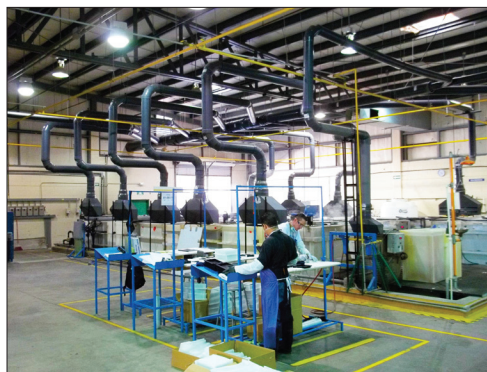
PENCOM has recently opened a new anodizing and passivating facility at its Nogales, Mexico manufacturing location. The 11,280 s.f. plant is outfitted with the latest equipment and materials to apply aluminum anodizing and chemical conversion coatings, and stainless steel passivation in accordance with the following specifications:

- Aluminum anodization per MIL-A-8625F Types II and III, Class 1 (Clear) and Class 2 (Black)
- Aluminum chemical conversion coatings per MIL-D-5541F, Types I and II, Class 1A and 3
- Stainless steel passivation per ASTM A 967



PENCOM's anodizing and passivating facility

The facility is preparing for **Nadcap** (a quality standards program for the aerospace industry) certification in early 2012. The new addition to PENCOM's manufacturing capabilities will allow the company to control and improve finish quality, offer customers favorable labor and material rates, and reduce delivery times due to its close proximity to PENCOM's manufacturing branch and the United States.



State-of-the-art coating and passivating equipment

SUPPLY FOCUS

PENCOM Adds Value with Kitting and Assembly Services

For years PENCOM has been providing kitting and assembly services saving customers the time and expense of ordering, receiving, handling and tracking the same multiple parts over and over again. By ordering pre-counted and labeled packages, customers achieve lean manufacturing and cost reduction objectives while consolidating vendors and relieving procurement personnel from the logistical burden of managing multiple individual components.

Some of the service benefits include:

- Custom labels with bar codes, shelf locations, parts list, etc.
- Sourcing or manufacturing of parts by PENCOM
- Multi-level assemblies
- Invoicing by kit or project number
- A variety of packaging options

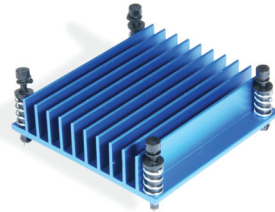
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SUPPLY FOCUS

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Kits and assemblies are produced in PENCOM's own facilities for use on assembly lines or moved on to the next user. ISO-registered quality systems ensure the accuracy customers demand.

Case Example 1 In this illustration PENCOM supplies an assembly consisting of a heat sink manufactured by PENCOM, thermal pad and four attachment pins. The customer simply installs the unit on their production line and saves approximately 8% of the total cost in inventory and labor reductions.

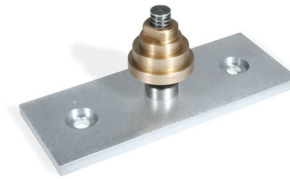


Case Example 2 A kit provided to a manufacturer of accessories for heavy construction equipment consists of M10 and M20 hex caps screws, mild steel washers, hardened steel washers, and laser-cut steel shims packaged in a drawstring cloth bag. The bagged components are supplied along with the attachments for



installation by the end user to their equipment.

Case Example 3 This subassembly is manufactured in PENCOM's Nogales, Mexico facility and also highlights the company's machining capabilities as exemplified by the twin-lead acme threads, variety of materials and tight tolerances. The customer, a manufacturer of medical equipment, not only realizes the advantages of managing a single component but the cost benefit of production in a low-cost region as well.

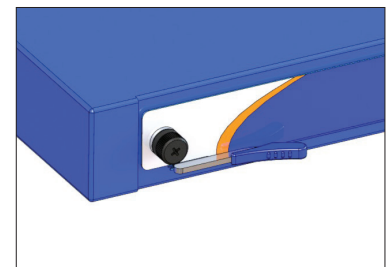


These examples describe just a few of the options PENCOM routinely provides. To join the list of satisfied customers who have found kitting and assembly services produced significant savings through less inventory and labor while reducing time spent managing orders contact a PENCOM Account Representative.

DESIGN REVIEW

Ejector Meets Comfort, Performance, and Aesthetic Requirements

Ejectors facilitate the installation of rack-mounted components by increasing normal finger pressure via leverage against the host chassis to create the necessary installation forces to join the mating connectors. A provider of network devices was nearly complete on the design of a new unit but was not satisfied with the ejector that was designed in-house. The handle was painful for technicians' fingers when installing or removing the unit, flimsy and easily bent, and the utilitarian design lacked a contemporary appearance. Additionally, the customer suspected that the hardware used to assemble the ejector sometimes resulted in the assembly being too loose while other times too tight after installation.



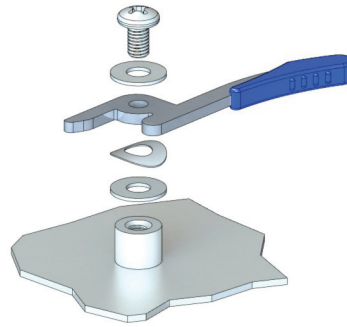
Ejector designed and manufactured by PENCOM compliments network device's appearance

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DESIGN REVIEW

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PENCOM Engineers were challenged to create a more comfortable and robust ejector that also complimented the unit's graphic scheme. PENCOM designed and manufactured a stamped metal ejector with a plastic over-molded handle that increased finger contact area while matching the network device both in color and theme. Additionally, improvements were incorporated in the mating hardware to ensure smooth operation and reliable assembly. In the end PENCOM supplied the ejector and mating hardware as a kit thereby saving the customer both time and money.



Exploded diagram of ejector kit

To learn more about the benefits of kitting see the article "PENCOM Adds Value with Kitting and Assembly Services" in the **SUPPLY FOCUS** section of this newsletter.

PRODUCT ANNOUNCEMENTS

Updated BS/BSC Ball Studs and Clips



Ball studs and clips create a convenient spring catch fastener for cabinet doors, inspection panels, etc. requiring repeated disengagement. Since there is no direct contact between panel surfaces, damage to panel finishes is eliminated. Different panel thicknesses are accommodated by varying ball stud lengths and the pull-out tension modified by using different clip material thicknesses. PENCOM's updated flier now includes ball studs with metric threads and two new self-clinching and swage-in installation styles, as well as, a selection guide and detailed installation instructions. Download the flier at http://www.pencomsf.com/pdf/ball_studs/ball_studs_and_clips.pdf

TECHNICAL UPDATE

Installation of Self-Clinching Fasteners in Thick Sheets

Punching and laser cutting are two popular methods of creating holes in thick sheets for the installation of self-clinching fasteners. However, these techniques can violate the principles necessary for proper fastener installation. PENCOM's latest technical bulletin explains these problems and provides recommendations for satisfactory installation. Download the bulletin at www.pencomsf.com/pdf/tb_thick_sheets_061711.pdf

TECHNICAL BULLETIN

Installation of Self-clinching Fasteners in Thick Sheets

Introduction Self-clinching fasteners are pressed into holes in ductile metal sheets to create a permanent union with the host material and replace one or more pieces of traditional loose hardware or extruded/tapped holes in panels and brackets, **Figure 1**. A portion of the fastener is pressed into and displaces the sheet material around the hole causing the transposed material to cold flow into and around specially designed annular recesses and knurled or grooved rings, **Figure 2**. Two important considerations in the design of self-clinching fasteners is that their material must be significantly harder than the sheet material otherwise the fastener will deform instead of causing the necessary base material displacement, and the hole in the sheet must have a diameter just slightly larger (usually only a couple thousandths of an inch) than the portion of the fastener being inserted in the sheet. The two most common self-clinching fastener materials are heat-treated low carbon steel and AISI 300-series stainless steel for installation in aluminum and low-carbon steel sheets. Creating holes in thick sheets by punching or laser-cutting can violate these two fundamentals and prevent proper installation leading to poorly secured fasteners unless additional steps are taken.

Figure 1. Self-clinching fasteners from left to right: standoff, nut, guide pin, stud and captive screw.

Figure 2. (Left) Self-clinching standoff inserted through sheet and into an anvil prior to compression with a punch. (Center) Displaced material flows into recess creating a permanent self-clinching union. (Right) Self-clinching standoffs are used to precisely space and mount adjacent panels.

If you have a technical question that you would like to see addressed in future bulletins, please send your request to Gregg Summers, Director of Product Development at gregg@pencomsf.com or speak with a PENCOM Account Representative.