



METAL STAMPINGS

Our highly trained tool and die makers use the latest state of the art equipment to produce dies of exacting measurements. Our engineering staff provides exact drawings and specifications for tool construction. Statistical Process Control is used extensively on high volume programs while the more traditional inspection procedures are used for small jobs. Often, same day delivery is possible and new dies can be built with rapid turnaround.

➤ **Solder Alloys**

SPM produces a wide variety of solder alloys, melting point less than 425 degrees C. These range from more costly gold alloys to less costly alloys of lead. All are alloyed, cast, rolled and stamped in our Armonk, New York plant under the strictest quality guidelines. Many large fragile parts are individually packaged to ensure perfection upon delivery. Gold tin (80/20), the most commonly used gold solder, is available in thickness ranging upwards from .0005 inches through to .125. Stampings as small as .005 x .005 and as large as 4.000 x 4.000 are continuously produced at SPM.

➤ **Braze Alloys**

High temperature joining materials, most commonly silver and copper based, are produced by SPM. These braze materials can be rolled and stamped into various shapes including discs, frames, rectangles, squares, washers or your custom specification.

➤ **Bond Pads and Clad Materials**

Multi-layer materials that can be wire bonded on one side and soldered on the other, as well as other clad materials, are produced at SPM. Copper parts with solder on both sides or one side are used as connectors or bridges. Many combinations of materials are available to be stamped into various sizes and shapes.

➤ **Heat Sinks**

Materials such as copper/invar/copper, Silvar™, nickel clad or plated moly, copper and other alloys are stamped to provide heat sinks for various size dies. Materials may be selected to match the thermal co-efficient of expansion of the die material whether it be silicon or gallium arsenide. There are numerous shapes and sizes of heat sink parts that are routinely produced.

➤ **Lead Frames**

Lead frame strips for die mounting and/or wire bonding are stamped from a large variety of materials using either our progressive die or compound die technology. With your specifications in hand we will produce your custom designed lead frame parts.



TOOLING/ STAMPING EQUIPMENT & CAPABILITIES



COMMON MATERIALS

Gold • Gold Alloys • Silver • Copper/Silver(BT) • Silvar™ • Silvar-K™
Kovar™ • Alloy 42 • Copper • Beryllium Copper • Moly • Aluminum
Niobium • Brass • Steel • Numerous Other Solder Alloys

PLATED ITEMS

Silver/Plated • Au/Plated
Ni/Plated • Solder/Plated

CLAD ITEMS

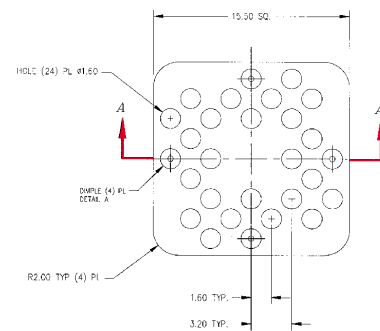
Moly Clads • Kovar™ Clads
BT Clads • Copper Clads

STAMPED PART RANGES

| Thickness | Small Parts | Large Parts | Press Tonnage |
|--------------|-------------|---------------|------------------|
| .0005 - .125 | .005 x .005 | 4.000 x 4.000 | 3 tons - 65 tons |

► Typical Example:

SPM takes your custom drawing requests and turns them into a high quality and reliable stamped product. We are not limited to items such as heat sinks, frames and bridges. Our portfolio of parts covers numerous industries and quite a wide array of configurations. SPM will also provide technical consultation for your specific application. We honor our customer's proprietary processes and items, however, when it comes to stampings we offer years of tried and tested experience.



TOOLING EQUIPMENT

Lathes • Milling Machines • Jig Borer • Vertical Bandsaw • Horizontal Bandsaw
Drill Presses • Micro Drill Presses • CNC Milling Machine • Surface Grinders
Wire EDM • Plunge EDM • Hole Drilling EDM • Buffing/Polishing Machine
Bead Blaster • Hardening Oven • Tempering Oven

FINISHING EQUIPMENT

Small Lot/ Batch Ultrasonic Cleaners • Large High Efficiency Ultrasonic Cleaner
Vibratory Bowl Tumblers • Batch Tumblers