Precision Metal Stamping of Bandoliered Components – Applications, Benefits, and Options

Written by Rick Pollick
Mgr., Strategic Marketing – Penn United Technologies, Inc.
March 24, 2010

The process of bandoliering involves the use of a delivery member (a "band", or "carrier") that conveys components from one point to another. In the precision metal stamping arena, bandoliering has been used extensively for manufacturing components such as pins assembled into electronic connectors. Bandoliered components are formed by a special type of precision metal stamping die (referred to as a progressive bandolier die), which is operated in a mechanical press (typically 60 ton, or greater). Raw material in the form of wire (ferrous or non-ferrous) is fed into the die to be formed (stamped) into the final desired component, and raw material in the form of strip is introduced into the die to be formed into the carrier (bandolier) for the final component. This article expounds on the use of the bandoliering technique for manufacturing various types of precision metal components. Specifically, the following will be discussed: (1) the benefits of bandoliered components, (2) examples of various applications that can employ bandoliering, and (3) various manufacturing options that can be incorporated in this process.

First, the benefits of producing a precision metal component in a bandoliered configuration (mainly for high volume applications) are threefold: (a) reduced unit cost, (b) repeatable quality, and (c) in-line post-processing. Unit cost can be reduced due to the fact that the stamping operation is performed in a progressive precision metal stamping die, and also because of the fact that the bandoliering process allows for timesaving secondary operations (such as assembly), which reduce overall unit cost. Quality is inherently repeatable in a progressive stamping die. The most significant benefit of the bandoliering process is related to the fact that the stamped components all exit the die in an "ordered" configuration, ready for an assembly process (either manual or automated) or for secondary operations while still on the band (carrier). Related to this benefit is the fact that this process also lends itself to other manufacturing operations that can be performed inside the die (discussed later).

Second, the types of applications for which bandoliering may be employed are numerous. The following are examples of various industries that could employ this process: Medical devices (e.g., surgical components), Orthopedic components (e.g., pins), Electronic connectors (e.g., connector pins), Military components, as well as many other industries/applications.

Lastly, a bandoliered process can provide for various manufacturing operations to be performed either inside the precision metal stamping die, or outside of the stamping die (while the components are still located on the bandolier). Some examples of in-die operations that can be performed include: coining, sharpening, machining, assembly, and welding. Examples of secondary operations performed outside of the die (while the precision formed components are still on the band) include: cleaning, coating, heat-treating, and automated assembly.

High volume applications for stamped metal components should be evaluated to see if a bandoliered application could be used, especially if the need is present for secondary operations such as assembly, or other operations as discussed above.

Penn United serves the following markets: Energy, Medical, Defense, and other markets requiring precision components. At Penn United, precision metal stamping is one of our offerings that allows us to stand by our slogan…"Manufacturing Solutions. Absolute Integrity." Visit our web site at www.PennUnited.com or call us at (724) 352-1507.

Manufacturing Solutions, Absolute Integrity