MATERIAL:
Acero inoxidable fabricado por Roldan

FUENTE / *SOURCE*:
TORBESA
Roldan, S.A.
www.cedinox.es

Screws produced by cold stamping

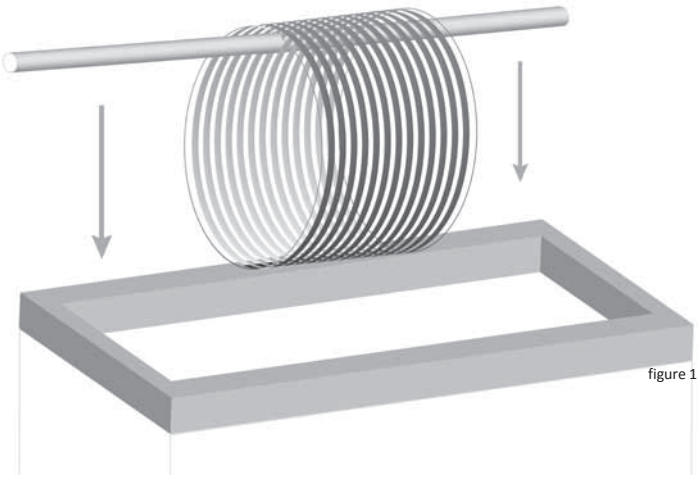

figure 1

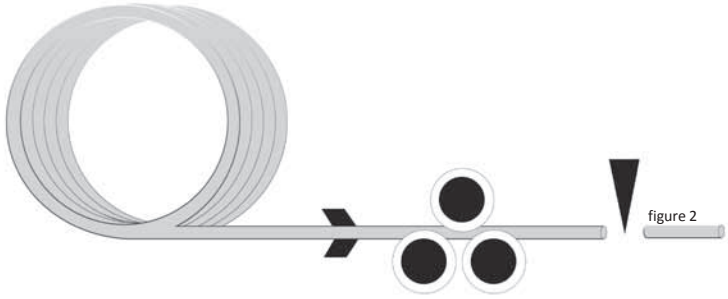

figure 2

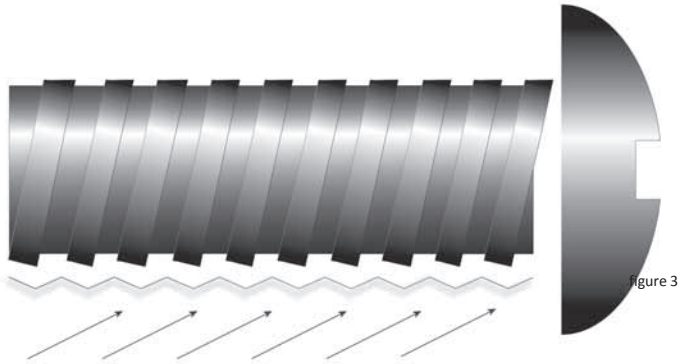

figure 3

In industrial design reducing or even eliminating maintenance is increasingly important.

In case a screw connection needs replacing its corrosion resistance is essential, since such corrosion can complicate the replacement of the part. For this reason, it is logical to conclude that the cost of removing rusty bolts and replacing them with new ones is unproductive and the loss of production time is longer than stainless steel screw connections had been used from the start.

Basically there are two basic manufacturing methods of screw connections by machining and cold stamping and both apply to stainless steels.

The first and oldest, mechanization is specified in batch production of small and large diameters, but it has a major disadvantage which is that breaks the passage of metal grain and creates planes of weakness in the critical area of the head. The result is a loss of load carrying capacity, a drastic reduction in fatigue strength and loss of material by at least 65% scrap.

Cold stamping process shown in the illustrations and photographs of this article is basically consisting in the cold metal processing by successive strokes on a piece inserted in a matrix or die. This process has great advantages:

- Saving material: it is one of the forming methods that wastes less material, 10 or 20%.

- Increased production: since the machine once set, it works automatically and at high speed.

- Improvement of the physical properties of the material: cold forming increases the tensile strength, yield strength and hardness of stainless, especially in the 300 series steels, which enables the designer to reduce the size of the part without reducing its strength, or increase the strength when matching same measures.

- Surface finish: in most cases, once finished manufacturing process, the parts are ready for use.

Text based on the publications "Screw connections of stainless steel. Advice for selection" and "Applications of stainless steel long products", by Pedro Moratilla, Roldan, S.A. The photographs were taken at the premises of Torbesa, Tornillería del Besos, S.A. by CEDINOX.

Torbesa, Tornillería del Besos, S.A., specializes in the design and manufacture of fasteners in stainless steel and special pieces, with more than 50 years of experience.

The manufacturing process of bolts by cold stamping in Torbesa begins with dipping coils of stainless steel wire rod in a lubricant bath (Figure 1), drawing the material to the required diameter through a die (Figure 2) and cold stamping in die. Then the threading (Figure 3) by rolling of the piece and finally, the cleaning and degreasing for packaging and final product delivery.