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Metal Stamping

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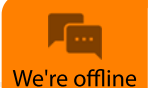
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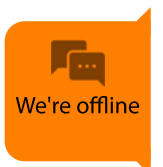
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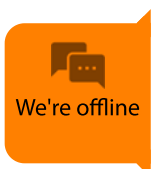
Ming Xiao Manufacturing Co., Ltd is specialize in Metal Stamping Parts (<https://www.mxmparts.com/metal-stamping-parts/>) custom services more than 15 years, we custom produce all kinds of metal stamping parts, such as metal stamping brackets (<https://www.mxmparts.com/metal-stamping-bracket/>), metal casing,metal frame,metal housing,metal clamp,metal clip,metal washer,metal base-plate,electric contacting terminal,etc.



China metal stamping Factory

Stamping ([https://en.wikipedia.org/wiki/Stamping_\(metalworking\)](https://en.wikipedia.org/wiki/Stamping_(metalworking))) is the forming process of the workpiece (stamping part) by applying external force to the plate, strip, pipe and profile by press and die to produce plastic deformation or separation. Stamping and forging belong to forming processing (or pressure machining). The stamping materials are mainly hot rolled and cold-rolled steel plates and steel strips.

Stamping is the production technology of product parts with a certain shape, size and performance by using the power of conventional or special stamping equipment to make the sheet metal directly deformed and deformed in the mold. Sheet metal, mold and equipment are the three elements of stamping process. According to the stamping temperature, it can be divided into hot stamping and cold stamping. The former is suitable for sheet metal processing with high deformation resistance and poor plasticity, while the latter is carried out at room temperature, which is a common stamping method for thin plates. It is one of the main methods of metal plastic processing (or pressure machining), and also belongs to material forming engineering technology.





Sheet Metal Stamping China

The die used for stamping is called stamping die, or die. Punching die is a special tool for batch processing material (metal or non-metal) into the required stamping parts. Punching die is very important in stamping. Without the punching die that meets the requirements, mass stamping is difficult to carry out. Without advanced die, the advanced stamping process can not be realized. Stamping process and die, stamping equipment and stamping materials constitute the three elements of stamping process, only if they combine each other to get stamping parts.

Stamping is mainly classified according to technology, which can be divided into two categories: separation process and forming process. The separation process, also known as blanking, aims at separating the stamping parts along the contour line and ensuring the quality requirements of the separation section. The purpose of forming process is to make the sheet metal plastic deformation without breaking the blank, and make the workpiece with the required shape and size. In actual production, many kinds of processes are usually applied to a workpiece. Blanking, bending, shearing, stretching, bulging, spinning and straightening are the main stamping processes.

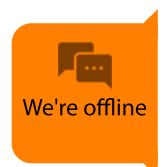
Separation process

(blanking)

It is a basic stamping process using die separation material. It can be directly made into flat parts or for other stamping processes such as bending, drawing, forming and so on. It can also be cut and trimming on the formed stamping parts. Blanking is widely used in automotive, household electrical appliances, electronics, instrumentation, machinery, railway, communications, chemical industry, light industry, textile and aerospace and other industrial sectors. Punching process accounts for about 50% to 60% of the whole stamping process.

Forming process

Bending: plastic forming method for bending metal plates, fittings and profiles into a certain angle, curvature and shape. Bending is one of the main processes widely used in stamping parts production. The bending of metal material is essentially an elastic-plastic deformation process. After unloading, the workpiece will produce elastic recovery and deformation, which is called springback. Springback affects the accuracy of workpiece, which is the key technology that must be considered in the bending process.





Deep Drawing Service

Deep drawing: drawing, also known as drawing or calendering, is a stamping process using moulds to make flat billets into blanks after punching. The deep drawing process can be used to make cylindrical, stepped, tapered, spherical, box shaped and other irregular shaped thin-walled parts. If combined with other stamping processes, parts with extremely complex shapes can also be manufactured.

In the stamping production, there are many kinds of drawing parts. Because of its different geometric features, the position of the deformation zone, the nature of the deformation, the distribution of the deformation, and the stress state and distribution of each part of the blank are quite, even the essential difference. Therefore, the determination of process parameters, procedure number and sequence, and the design principles and methods of mold design are different. According to the characteristics of deformation mechanics, all kinds of deep drawing parts can be divided into four types: straight wall rotary body (cylindrical part), straight wall non revolving body (box body), surface slewing body (surface shape part) and surface non revolving body.

The tensile force is applied to the sheet material by the drawing die to produce uneven tensile stress and tensile strain, and the bonding surface of the plate and the drawing die gradually expands until it is completely fitted to the drawing model. The main object of the drawing is the hyperbolic skin with a certain plastic, large surface area, smooth and smooth curvature, and high quality (accurate shape, smooth streamline and stable quality). Because the process equipment and equipment are relatively simple, the drawing cost is low and flexible, but the material utilization and productivity are low.

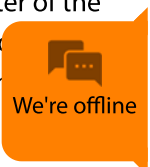
Spinning is a metal rotary processing technology. In the process of processing, the billets are actively rotated with the spinning die or spinning head around the billet and the spinning die actively, and the spinning head is fed by the core die and the blank. The blank revolving parts are obtained by the continuous partial deformation of the blank.

Plastic is the two trimming of the shape of the product using the shape of the tool. It is mainly reflected in the pressure plane, the bullet and so on. In view of the elasticity of some materials, it is impossible to guarantee the quality of the forming.

Bulging is the processing method of obtaining parts by using die to make sheet metal thinning and increasing surface area. It is commonly used in the form of undulation, bulging of cylindrical (or tubular) blanks and stretching of flat blanks. Bulging can be realized by different methods, such as bulging, rigid bulging and hydraulic bulging.

Flanging is a plastic processing method to bend the material in the narrow strip area of the edge of the blank or the edge of the blank on the curve or straight line. The flanging is mainly used to strengthen the edge of the parts, remove the cutting edges and make the parts assembled and connected with other parts on the parts or the three-dimensional parts with complex specific shape and reasonable space, and improve the stiffness of the parts. In large sheet metal forming, it can also be used as a means to control breakage or crease. So it is widely used in automobile, aviation, aerospace, electronics and household appliances.







Necking is a stamping method that reduces the diameter of the flanged hollow part or the open end diameter of the tube blank. The change of the end diameter of the workpiece before and after the necking should not be too large, otherwise the end material will wrinkle because of the severe compression deformation. Therefore, it is often necessary to shrink the necks from smaller diameters with larger diameters.



previous: Progressive Die Stamping (<https://www.mxmparts.com/video/progressive-die-stamping/>)

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