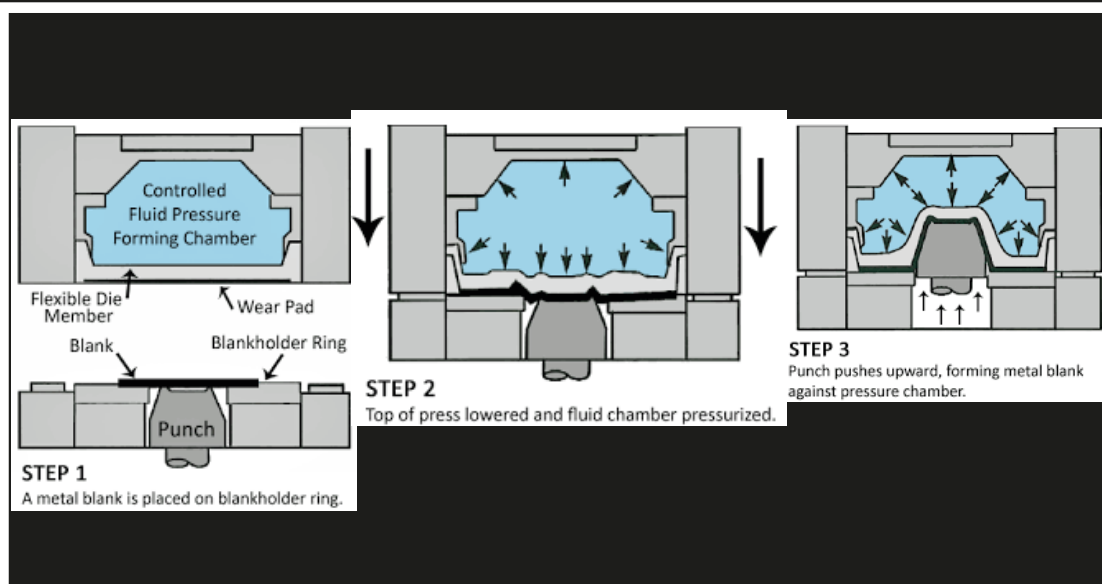


Hydroforming

Hydroforming is a metal fabricating and forming process which allows the shaping of metals. it is a specialized type of die moulding that utilizes highly pressurized fluid to form the metal. there are two classifications of hydroforming, these

are sheet hydroforming and tube hydroforming.

Hydroforming is mostly used by automotive manufactures as it is cheap and easy.



Post Processing

There's very little post processing required with this type of process as hydroforming leaves very high quality surfaces without any blemishes. this means that all that needs doing in post process is to sand and grind down the welded edges and then apply a finish or a coating to the metal.

Time

Setting up the initial equipment for the hydroforming machine takes a lot of time. once it is up and running however it can take up to a couple of hours to create a hydroformed part but after its done theres no need for a lot of post production to be done so it is time effective. the machine itself can operate for 40 years or longer if looked after properly.

Volumes of production

Hydroforming has a very low volume of production as the die moulds are limited to a certain size, after much research i couldn't find an exact output of material volume but hydroforming outputs volumes of psi of up to 15000 which is 100 Mpa when the pressure is created in the chamber. this is a massive force that enables the forming of parts.

Cost

Machine equipment for Hydroforming ranges from 10,600 to 35,000 for top of the range machines. this is an expensive investment but the machine will be able to pay for itself in a couple of years and also has thousands of replacement parts which can keep it running for 40 or more years. the materials are relatively low cost too when bought in bulk.

Materials used

- Steel
High tensile strength and strong
- Stainless steel
Anti-corrosion and quite strong
- Copper
Electrical and heat conductor very easy to work with
- Aluminum
Heat conductor and great strength to weight ratio
- Brass
strong and wear-resistance

All of these materials can be used in both the sheet hydroforming process and the tube hydroforming process. The materials used depends purely on the type of product being made, i.e car parts will typically be made out of aluminum.

Suppliers

- Jones Metal Products Company
877-526-7234
- The MuShield Company
03108-5045
- California hydroforming
888-789-5912
- Nemesis Metals
888-842-1395
- Tech Tube
610-491-8000