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Part ReDesign Consideration Tips

Reduce time spent manufacturing
and assembling parts



Material Type

Understand exactly why the material specification is there. Many times there is a specification for a certain material type, but the design is old and the material type is no longer required. Review raw material specifications and study to determine if a standard or cheaper material can be used.



Material Thickness

Similar to the material type, material thickness may have been specified long ago for a part that is no longer being made. Review the existing part designs as if they are new and reestablish the material thickness requirements. Perhaps a lighter gauge (less thickness, less weight, less cost) could be used.



Standardization

Customers in various industries manufacture in their product range various different models or units. Many times we see that parts with a very similar function (e.g. sidepanel) are designed differently on different models. We recommend to use one design for one function and use that as a standard design for as many models as possible.



Pre-painted/Coated

PrePainted/Coated material is traditionally more expensive per ton or pound, but it can provide a significant savings by removing powder coating or wet painting steps in final product finish.

We recommend designers investigate such raw material for their product and use it where it makes sense. Salvagnini Panel Benders can handle prepainted materials, so be sure your production means can handle prepainted materials too.



Parametrics

Understand there is a difference between a completely new part and a different feature on an existing part. We recommend to set all these features to parametrics:

e.g. from size A - size D feature is not there
from size E - size J feature is there

And the parametrics can handle X and Y coordinates to even define the position of the feature. Information obtained in parametric database can be elaborated automatically by integrated production systems.



Bottleneck

Find out what the bottleneck is in the downstream process and work from there. This speaks directly to reducing labor...the most expensive part of manufacturing.



Integration Of Parts

Part Integration can be a key value-add. Try to create a one piece design to integrate parts which would otherwise be additional manufacturing. This reduces the demand on downstream resources to weld/rivet/bolt the pieces together into an assembly.

Look into integration of handles, pulls, hinges, etc. into parts -- reducing the number of purchased parts required. Also try integration of forming features that assist in assembly.



Think 3D

Good designers think or conceptualize parts in 3D. Spend time at the machine watching as many unique parts run as possible. It is key to understand the 3D envelope a part must fit within. Make sure to see and understand the blankholder profile, motion and auto setup; blade profiles and motion; counterblade profile; manipulator clamp size and function; machine options; typical bend sequence; etc.



Embossings

Try to replace embossings, if they are used for final assembly purposes with standard assembly components such as nut-insert, bridge clamps, lock bolts etc. Embossing can cost extra in the punching process. Consider punching embosses that aid in alignment or punching embosses that lock components together. There are so many of those available and the cost for a single piece is sometimes less than a cent.



Beyond The Part

Make an effort to understand the capabilities of the bending machine. Many parts aren't very complex so designers aren't exposed to the potential of the machine. For Salvagnini Panel Bending machines you can include sophisticated sample parts such as Condzio or Fabtech parts (just ask Salvagnini for them) as part of the machine installation and startup. Programs could then be recalled and run at anytime. It's a resource to show designers and others in the company what's possible.