

## Customer

Power Equipment Manufacturer

## Part

Breather Cover

## Manufacturing Issue

Find a way to pierce the part's four small holes without damaging the progressive stamping die or the actual part.

Meeting increasing quantity demands from year to year.

## Customer's Goals

Minimize the risk of damaging the breather cover and the tooling die during metal stamping.

Deliver the part to match its design print.

Continuously meet production quantities that are predicted to increase from year to year.

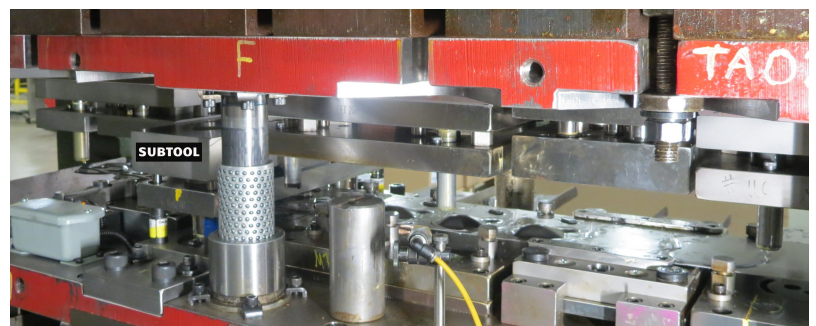
## Manufacturing Process

The four small pierced holes labeled in the image are smaller than the actual material thickness. This presents a problem because the continued force of the punch going through the material creates a higher probability of the punch breaking off or becoming off-target. And three of these four holes are on non-flat surfaces which also makes the piercing operation more challenging.

Design and build a subtool for this piercing operation in the progressive stamping die. This design presents two key benefits.

1. The subtool in the stamping die keeps the piercing operation separate; localizing the force of the punch to this specified area. Then the remaining stations on the tooling die strip aren't at risk of damage during production. This also helps keep the entire die strip aligned in the correct position from operation to operation during production.
2. This provides our Toolmakers the ability to efficiently remove the subtool if needed to perform adjustments or repairs in Die Maintenance. And the subtool can easily be placed back in the correct location on the progressive stamping die.

After the piercing operation is completed, a bubble of material is created and then formed to match the other designed features of the breather cover.



## Customer Outcome

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Within the first month of production, we were meeting production demands at 2,000 parts per hour without removing the subtool for repairs or adjustments.

The holes of the breather cover are checked with a customized gauge to verify their placement and inside diameters.

[View this innovative stamping operation in action at our 200-ton press.](#)