FLASH REDUCTION
AND
PRODUCTION OPTIMIZATION
USING SIMULATION SOFTWARE

Presented By:-
Punjab customer

CASE STUDY:-

- PART NAME :- Hinge
- PART No:

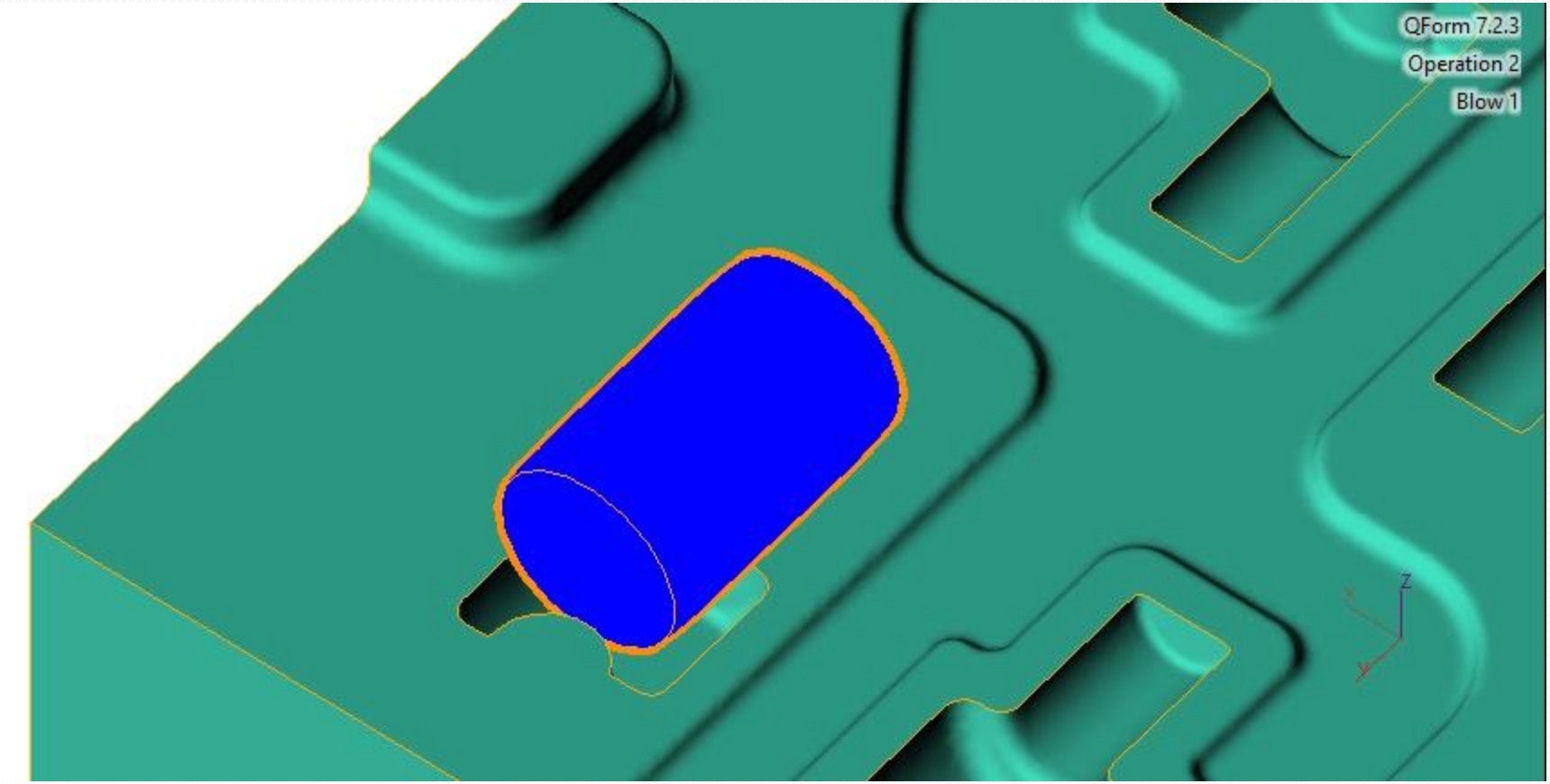
Study of current process with Hinge:-

- Open rolling
- Block impression
- Final impression
- Cut weight - 910 grams/per pc's
- Net weight – 530 grams
- Burning loss allowance -100 gm approx
- Flash weight -280 grams

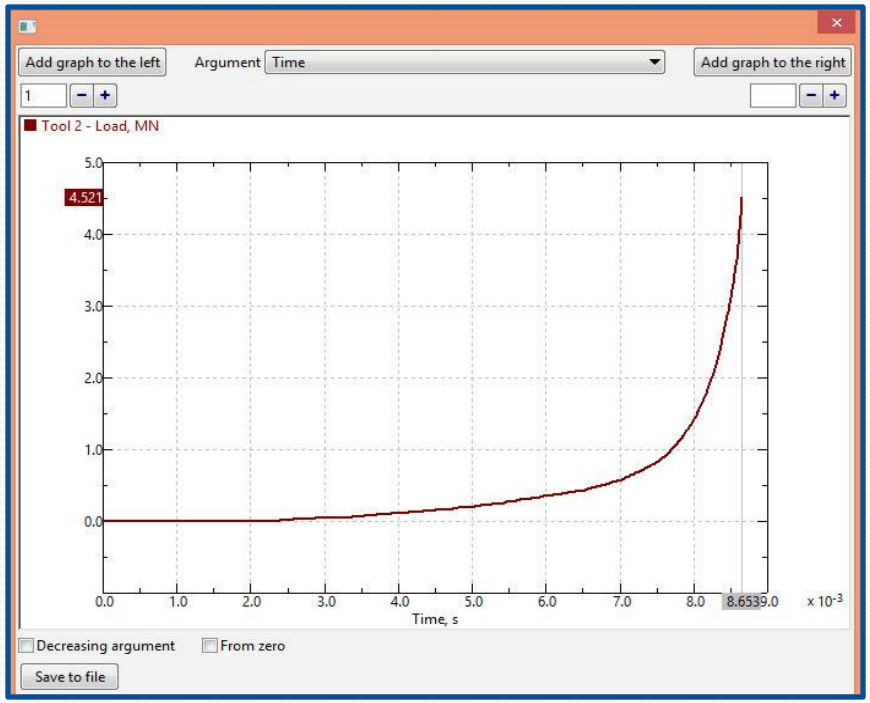
Nature of metal flow:-

- More flash on less consumption area detected.

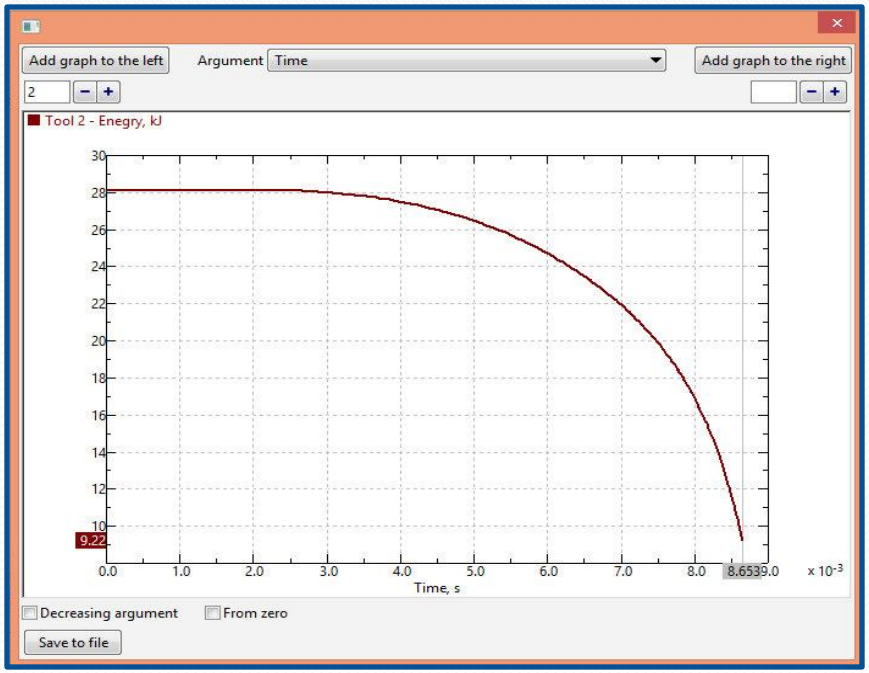
Simulations before modification:-



Graphs



Time v/s Load

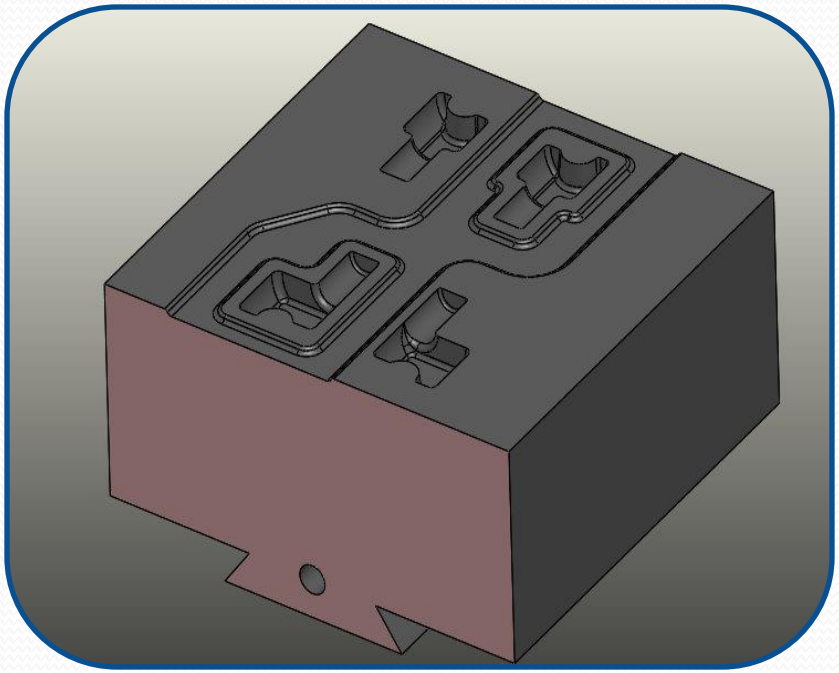


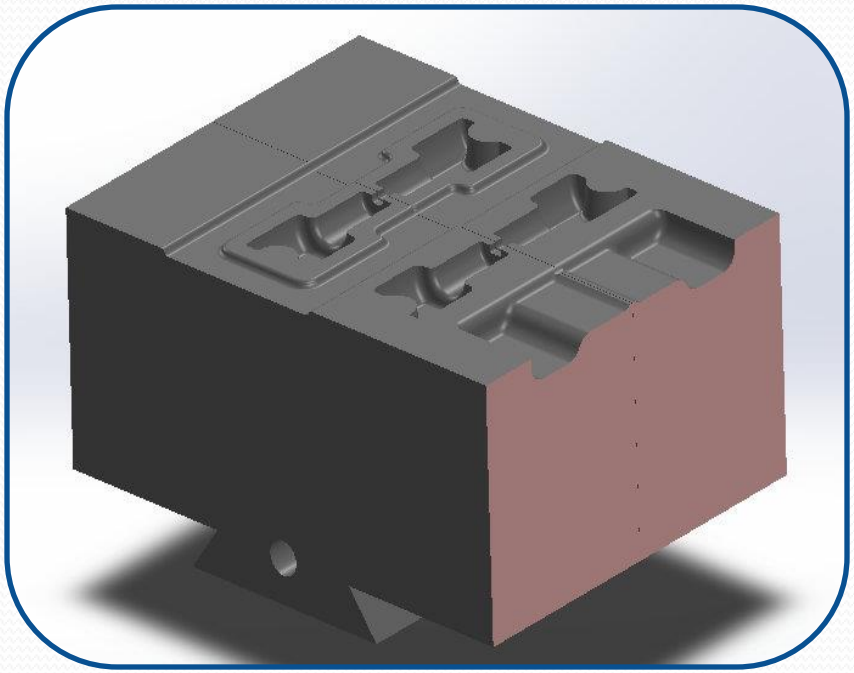
Time v/s energy

After Brainstorming we find out:-

- Flash can easily be reduced by using preform rolling impression.
- Nature of metal flow have to be changed.
- Two components can be easily made in time of single piece current process

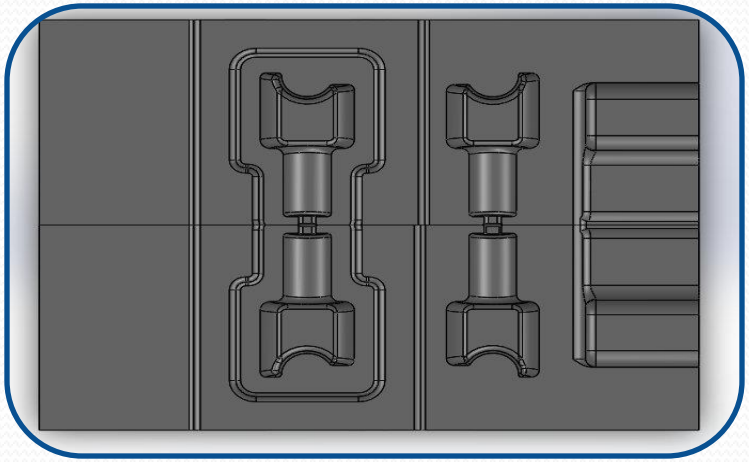
Die modification:-

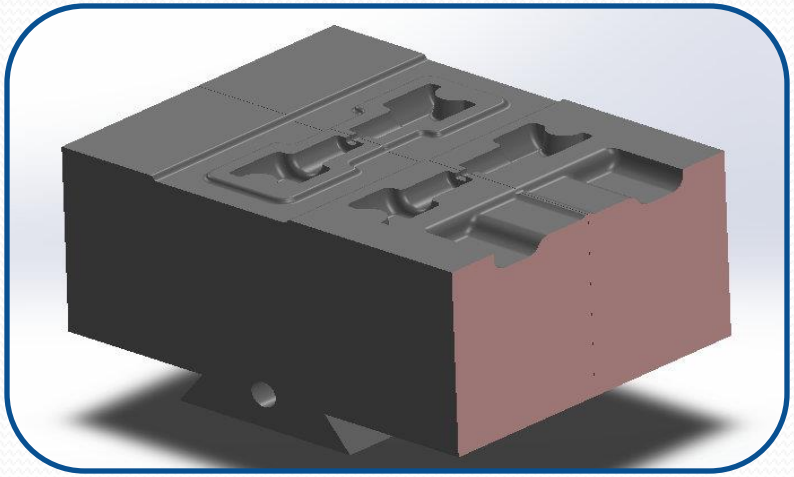


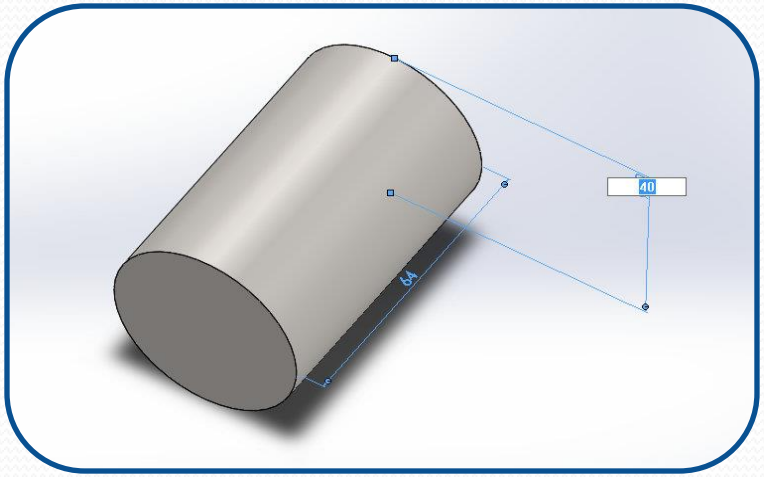


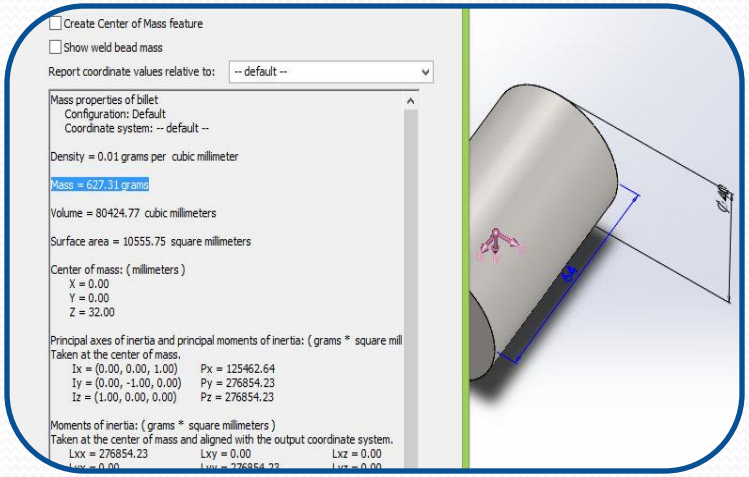
Before v/s After

Where the modifications are done:-

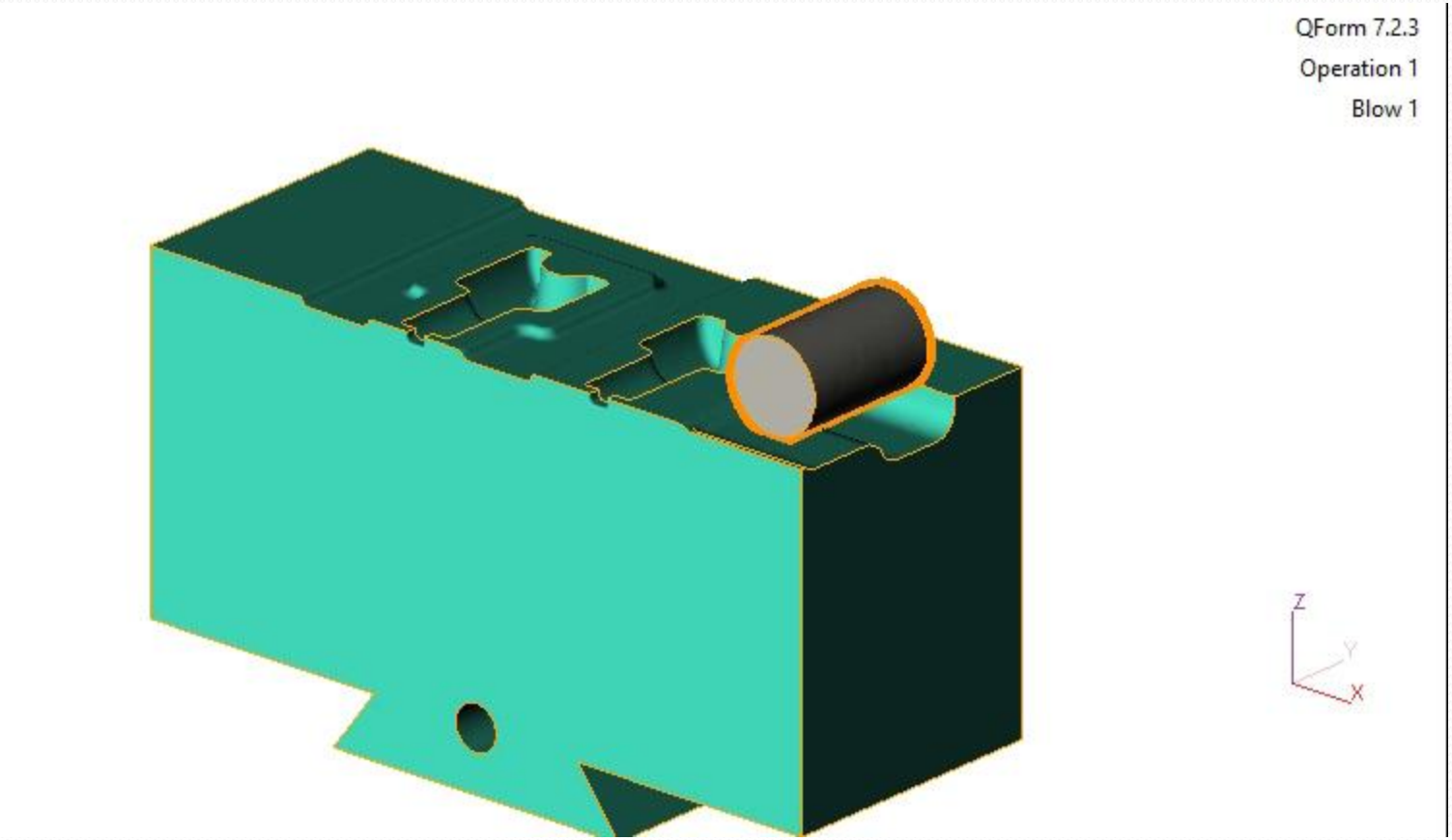


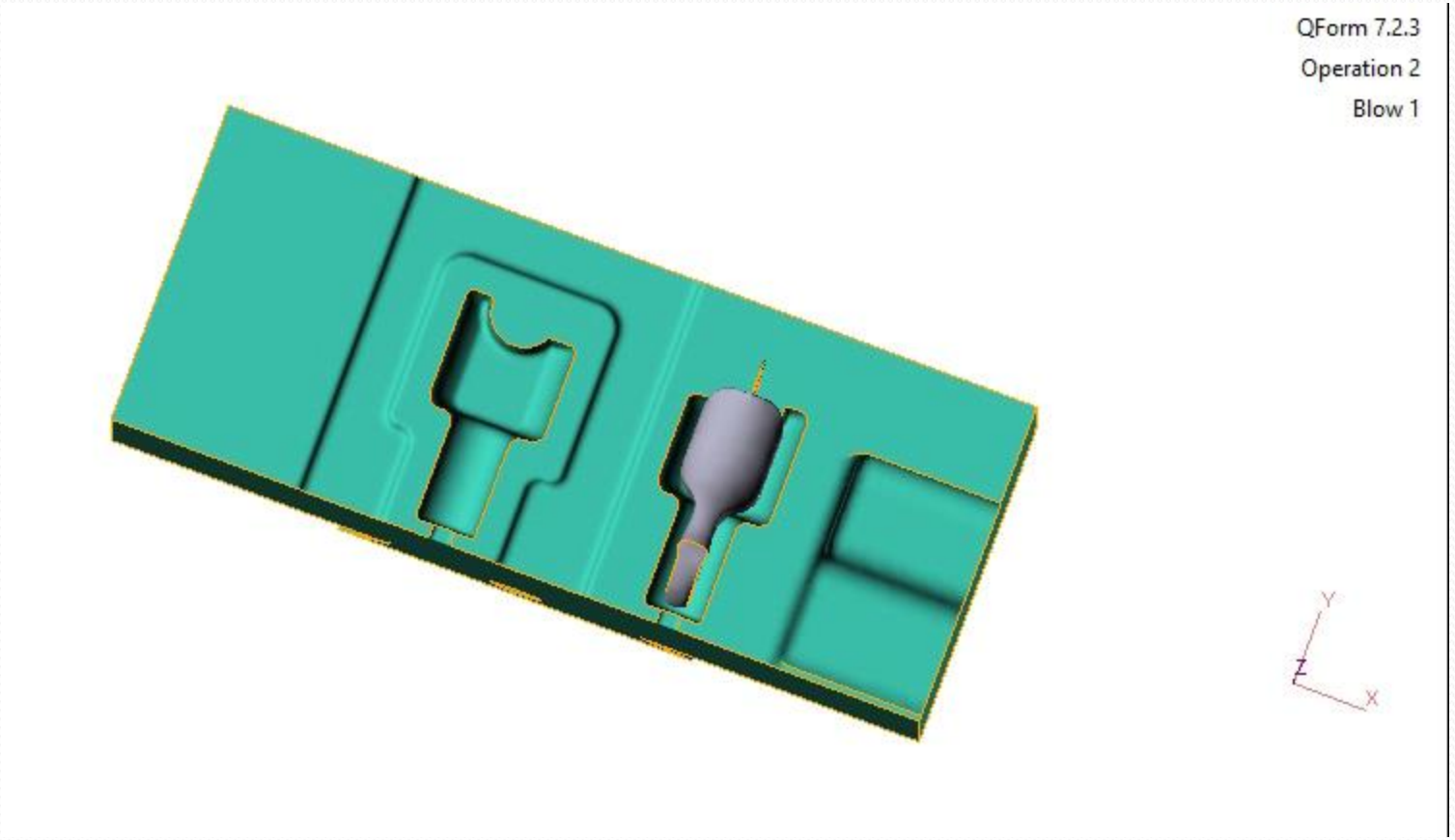


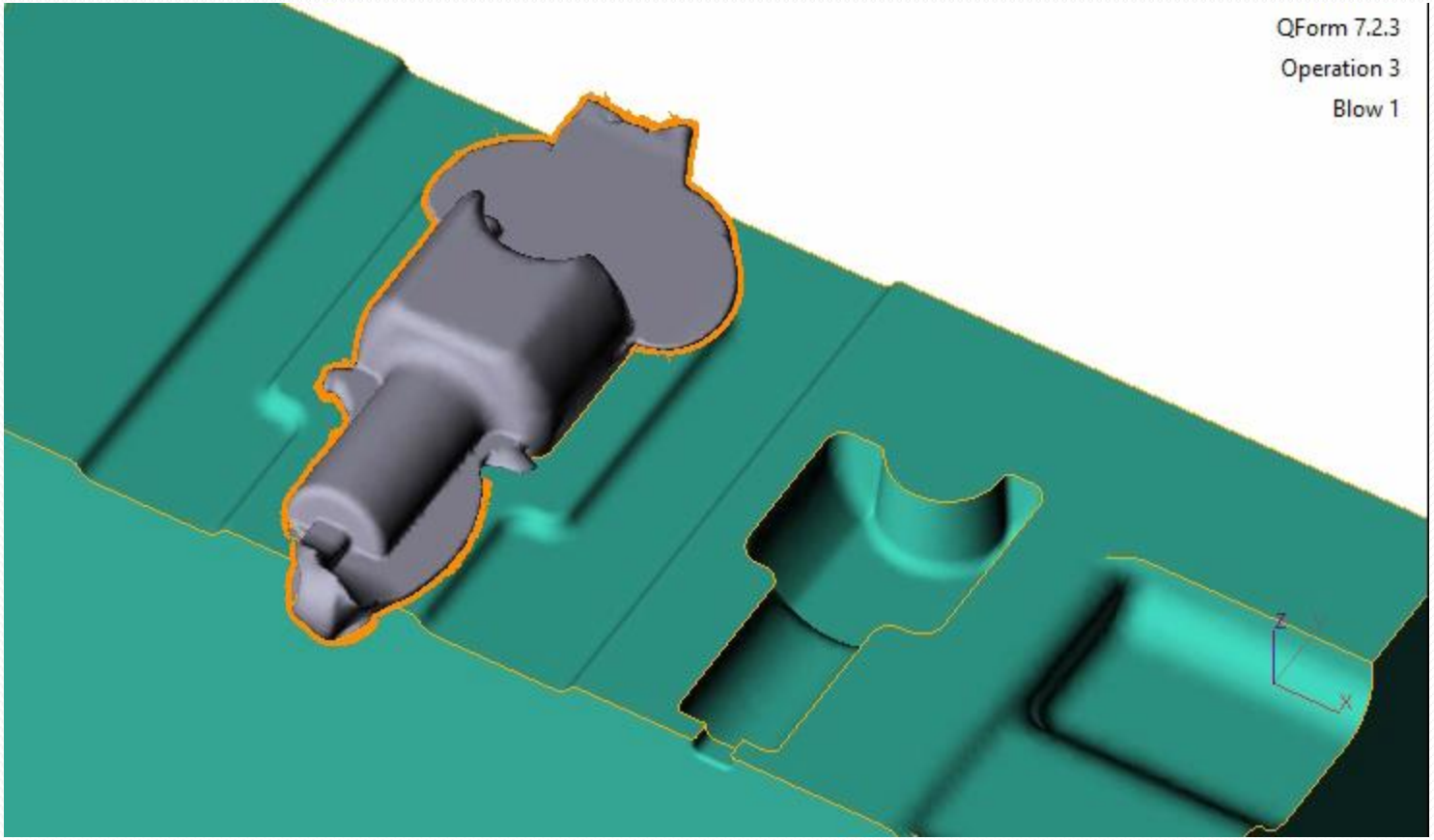




Simulations for optimum results:-



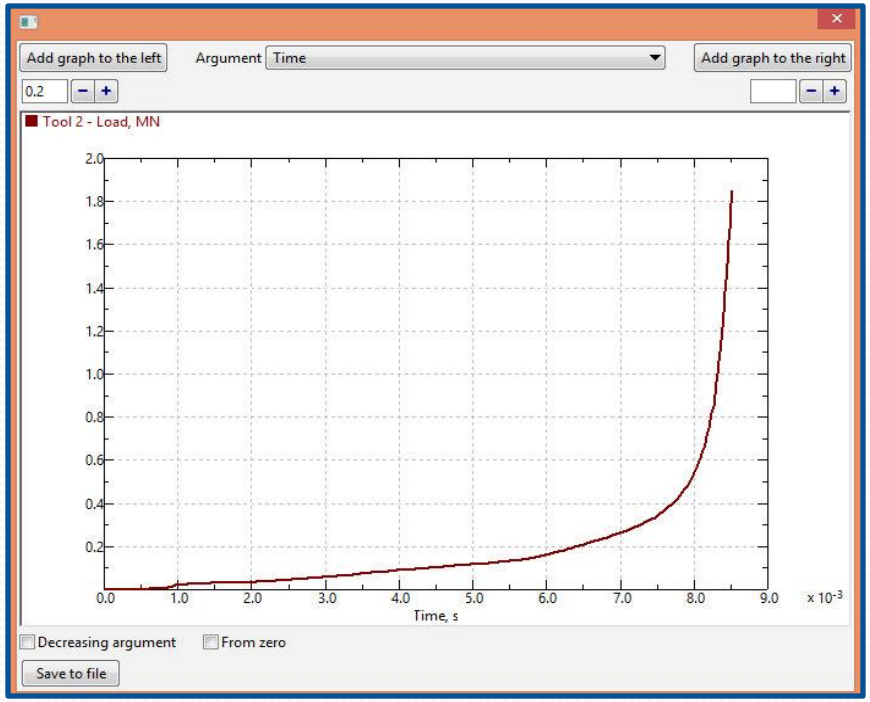

QForm 7.2.3
Operation 2
Blow 1
Y
Z
X


QForm 7.2.3
Operation 3
Blow 1

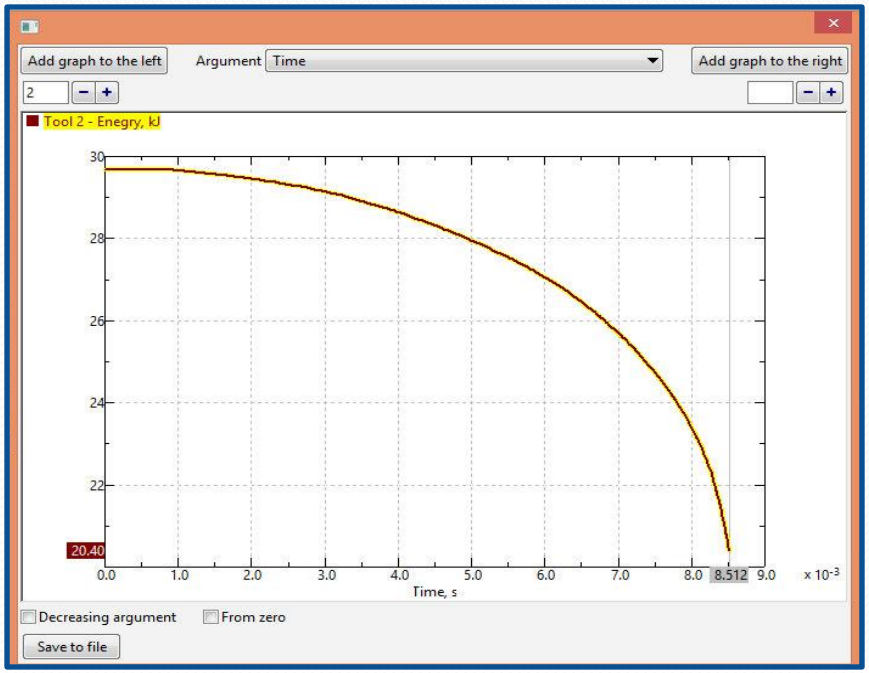
Revised parameters of Hinge:-

- Cut weight - 730 grams/per pc's
- Net weight – 530 grams
- Burning loss allowance -100 gm approx
- Flash weight -100 grams

Graphs after modification



Time v/s Load



Time v/s energy

What are the BENEFITS:-

- Flash reduction 150 gm – 200 gm

- on per kg we save 6.75 rs
- On one day 2ton production we save =2000 x 6.75 =13500rs
- If this components produced 20-25 times in future
- Then we save =25 x 13500 = 337500 rs

- Production rate of hinge will become double.
- Die life will increase.
- Good grain structure, due to this higher hardness.
- Less wastage handling.
- Energy saving on hammer.
- Energy saving in burner.

Thanks