# FLASH REDUCTION

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

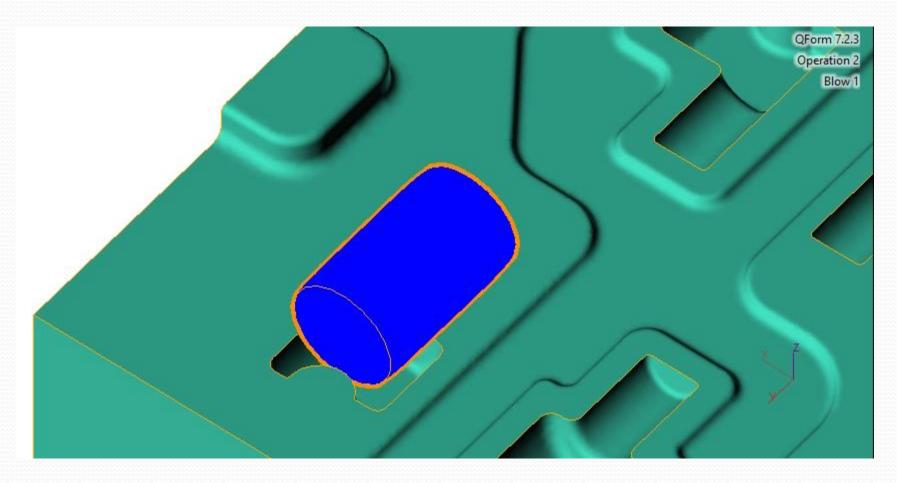
#### Nature of metal flow:-

#### • More flash on less consumption area detected.

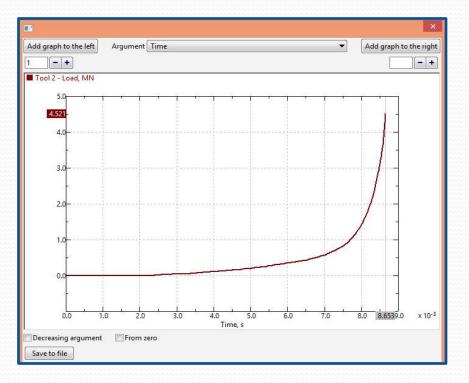


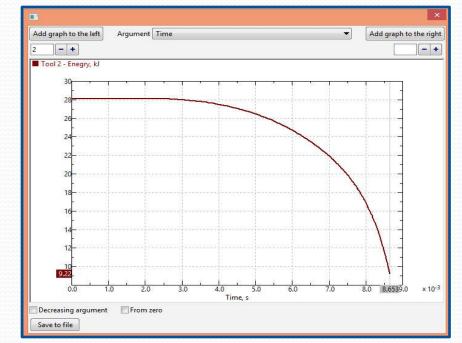


#### **Simulations before modification:-**



#### **Graphs**





Time v/s Load



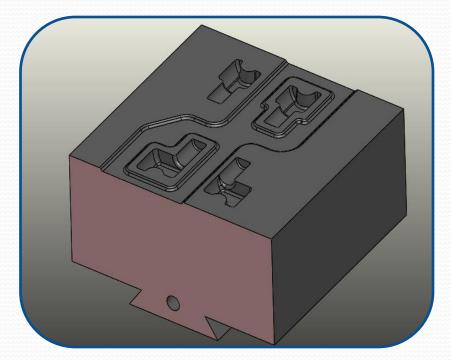
#### After Brainstorming we find out:-

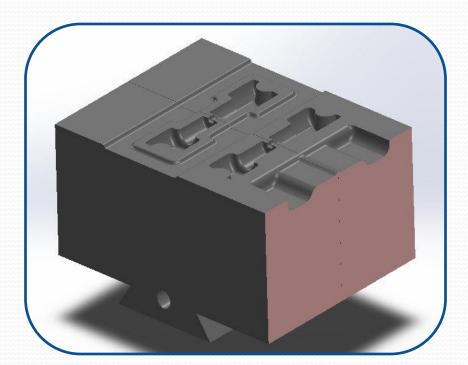
• Flash can easily be reduced by using preform rolling impression.

• Nature of metal flow have to be changed.

 Two components can be easily made in time of single piece current process

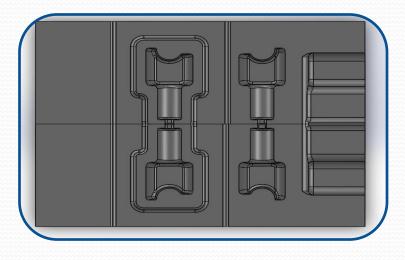
#### **Die modification:-**

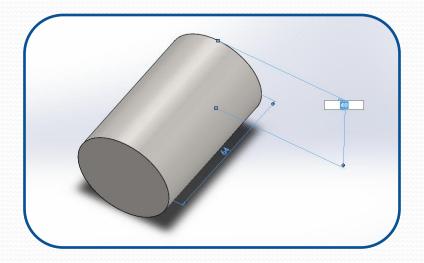


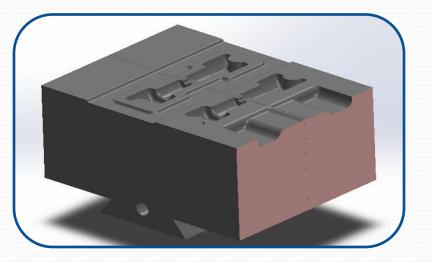


Before v/s After

#### Where the modifications are done:-

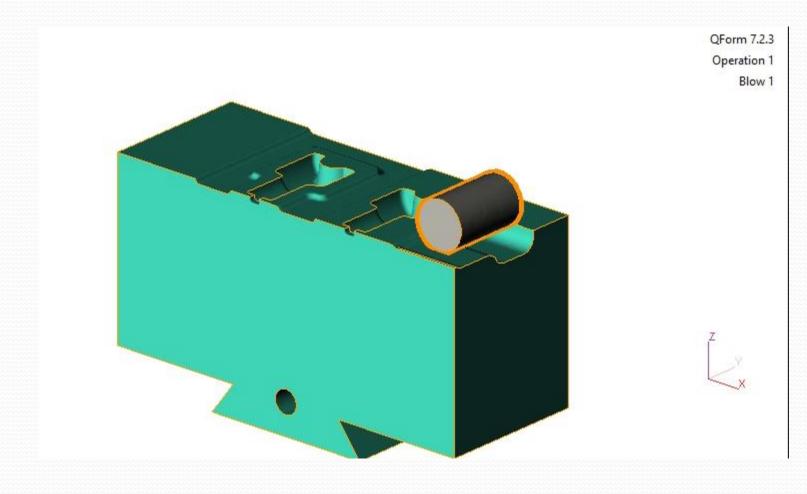




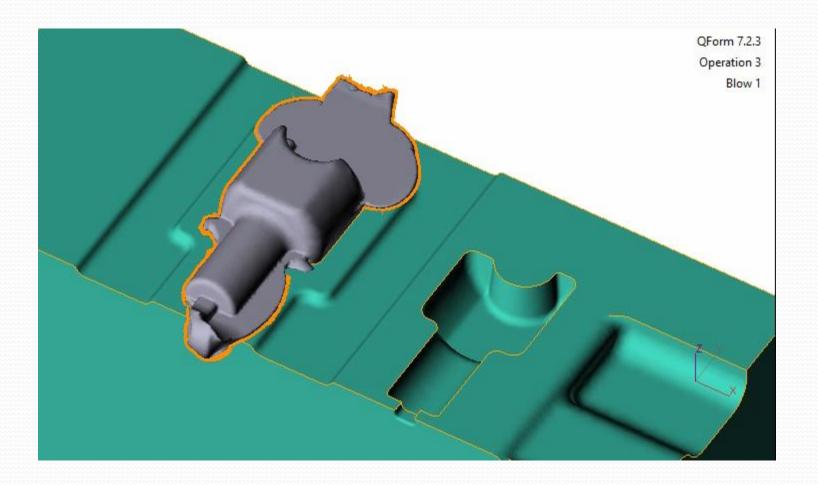


Show weld bead mass				
Report coordinate values relati	ve to: default			
Mass properties of billet Configuration: Default Coordinate system: defa		^		
Density = 0.01 grams per cub	c millimeter			
Mass = 627.31 grams				
Volume = 80424.77 cubic millir	ieters			/
Surface area = 10555.75 squ	re milimetere			
Suitace alea - 10555.75 Squ	i e minimeters		00 -	
Center of mass: (millimeters)				
X = 0.00 Y = 0.00				
Z = 32.00				
Principal axes of inertia and pri	ncinal moments of inertia	v (grams * square mill		
Taken at the center of mass.	reportionertes of include	in (grains addard min		
	Px = 125462.64			
Iy = (0.00, -1.00, 0.00)				
Iz = (1.00, 0.00, 0.00)	Pz = 276854.23		-	
Moments of inertia: ( grams *	square millimeters )			
Taken at the center of mass ar				
Lxx = 276854.23	Lxy = 0.00	Lxz = 0.00		

#### Simulations for optimum results:-





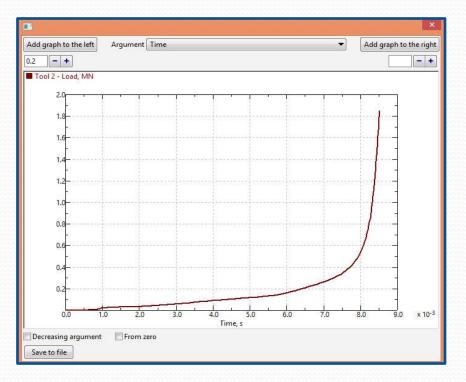


#### **Revised parameters of Hinge:-**

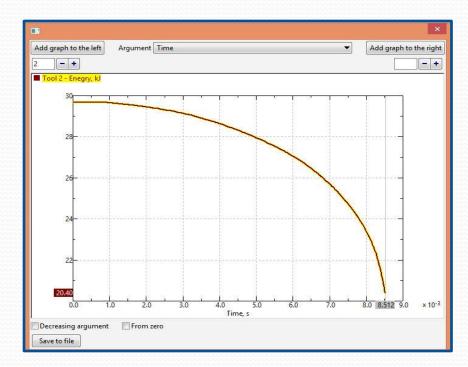
- Cut weight 730 grams/per pc's
- Net weight 530 grams
- Burning loss allowance -100 gm approx

Flash weight -100 grams

#### **Graphs after modification**







Time v/s 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