

## Defect Details

<b>NC No.</b>	7000836634
<b>NC Date</b>	17/05/2022
<b>NC Submission Date</b>	
<b>Part No.</b>	F2LY00312B
<b>Part Name</b>	SOCKET HEADED BOLT M8 - PRECOTE
<b>Supplier Name &amp; Code</b>	100348-SINGLA FORGING
<b>ETL Plant</b>	1126-ETL Pantnagar
<b>Defect Details</b>	LEAKAGE-

## 1. Problem Description

<b>Defect Description</b>	Uneven face/cut marks of Copper Washer resting area in Socket Head Bolt (F2LY00312B).
<b>Detection Stage</b>	Receipt
<b>Problem Severity</b>	Fitment
<b>NG Quantity</b>	1701
<b>Is Defect Repeatative?</b>	Yes
<b>Defect Sketch / Photo</b>	

## Supplier Communication Details

<b>Quality Head Email ID</b>	pntquality@singlaforging.in
<b>Plant Head/CEO Email ID</b>	deepakgupta@singlaforging.com
<b>MD Email ID</b>	jain@singlaforging.com

## 2. Stock Details &amp; action taken for NG parts

Location	ETL End	Warehouse	Transit	Supplier FG	Supplier WIP	Total
<b>Total Qty</b>	17000	0	0	5000	12000	34000
<b>Check Qty</b>	17000	0	0	5000	12000	34000
<b>NG Qty</b>	1701	0	0	86	47	1834

## Action taken on NG part

<b>Scrap</b>	1834
<b>Rework</b>	0
<b>Under Deviation</b>	0

## Containment Action

1-100% segregation of material lying at various stages is started with OK confirmation marking. 2- Quality Alert to be displayed at the work station.

## 3. Process Flow

## Process Flow Description

Operation /No Operation:- 10 -Receipt of Material , 20- Forging, 30- Thread Rolling, 40- Heat Treatment, 50- Packaging and dispatch, 60-Receipt of forging, 70-incoming inspection, 80-Storage, 90-Surface treatment,100-Final Inspection,110-Packaging,120-Dispatch

## 4. Process Details

<b>Process / Operation</b>	Forging
<b>Outsource</b>	Yes
<b>Machine / Cell</b>	Forging
<b>Machine / Cell No.</b>	Forging

## 5. Problem Analysis

Type	Possible Cause	Fact Verification	Jud
Material	Wrong material	Raw Material used as per drawing with all Quality Parameters Checked	O
Man	Unskilled & unaware	Inspector was not detect defective part as the part is in Black Condition so it was difficult to Obs	O
Method	Inspection frequency not adequate	Checked and verified inspection frequency followed as per control plan 05 Pcs per Hour	O
Method	NG part mix with ok part	Separate location for OK and NG part, Red Bins Provided @ Forging Stage	O
Machine	Tool life not follow	Checked and verified tool life monitored and followed but Need to be Validated as Complaint is raised	X
Machine	Setup error	checked and verified setting procedure followed for setting	O
Machine	Die Crack mark	Check and found that die got cracked in running production	X

## 6. Inspection Method Analysis (Current)

<b>Inspection Method</b>	Other
<b>Other Inspection Method</b>	Visual
<b>Check Point at Final Inspection</b>	Yes
<b>Checking Freq.</b>	Sampling
<b>Sampling</b>	No
<b>Sample Size</b>	Samp. Plan

## 7. Root Cause Analysis (Occurance)

<b>Why 1</b>	The Problem Occurred @Cold Forging Stage of the manufacturing Sequence
<b>Why 2</b>	Here Hex Socket ,Head Dia & Head Height are Formed in One Die
<b>Why 3</b>	Due to the nature of the process There is a Heavy Load in Die So Chances are More for Die to get Wear
<b>Why 4</b>	Due to This Wear A Fine Line mark Was Created @ Bearing face
<b>Why 5</b>	This Fine Line mark was difficult to identify in Black Condition during WIP Stage
<b>Root Cause (Occurance)</b>	Die got cracked in running production due to high load on-die during making the socket and head in one Die.

## Root Cause Analysis (Outflow)

<b>Why 1</b>	Defected Part not detected in final inspection stage
<b>Why 2</b>	Inspection was as per sampling Plan.
<b>Why 3</b>	This Fine Line mark was difficult to identify in Black Condition during WIP Stage
<b>Why 4</b>	
<b>Why 5</b>	
<b>Root Cause (Outflow)</b>	This Fine Line mark was difficult to identify as the part is in Black Condition during WIP Stages before Plating. After Plating Such Defects get Clearly Visible

## 8. Countermeasure ( Occurrence , Outflow & System side Actions )

Type	Countermeasure Details	Responsibility	Target Date	Actual Date	Status
Occurance	2-OJT training to be provided to the operator to Understand the Problem, Its Impact & Countermeasures..	Nishant	01/07/2022	01/07/2022	Completed
Outflow	1-Quality Alert is displayed in final inspection stage	Nishant	17/05/2022	17/05/2022	Completed
Outflow	2-Awareness training to be provided to the inspector to Understand the Problem, Its Impact & Countermeasures.	Nishant	16/05/2022	17/05/2022	Completed
Occurance	1- Part M8X27 Head Forging Die's Scheduled Maintenance to be Done At Forging of 1 Lacs Pcs with Light Polishing & Same will be Recorded in Die History card	Nishant Jangra	01/07/2022	01/07/2022	Completed

## 9. Inspection Method After Customer Complaint

<b>Change In Inspection System</b>	Yes
<b>Change Details</b>	Part M8X27 Head Forging Die's Scheduled Maintenance to be Done At Forging of 1 Lacs Pcs with Light Polishing & Same will be Recorded in Die History card
<b>Inspection Method</b>	Other
<b>Other Inspection Method</b>	Visual
<b>Check Point at Final Inspection</b>	Yes
<b>Checking Freq.</b>	100%
<b>Sampling</b>	No
<b>Sample Size</b>	100%

## 10. Evidance of Countermeasure

<b>Occurance (Before)</b>	Quality alert to be displayed <a href="#">121_Occurance_Before.pdf</a>
<b>Occurance (After)</b>	1- Part M8X27 Head Forging Die's Scheduled Maintenance to be Done At Forging of 1 Lacs Pcs with Light Polishing & Same will be Recorded in Die History card 2-OJT training to be provided to the operator to Understand the Problem, Its Impact & Countermeasures.. <a href="#">121_Occurance_After.pdf</a>
<b>Outflow (Before)</b>	Visual inspection done with naked eye <a href="#">121_Outflow_Before.xlsx</a>
<b>Outflow (After)</b>	1-Quality Alert is displayed in final inspection stage 2-Awareness training to be provided to the inspector to Understand the Problem, Its Impact & Countermeasures. <a href="#">121_Outflow_After.pdf</a>

## 11. Horizontal Deployment

<b>Horizontal Deployment Required</b>	Yes
<b>Applicable Machine / Model / Plant</b>	All Bolt

## 12. Document Review

<b>Documents</b>	ControlPlan, PFMEA
<b>Specify Other Document</b>	OJT

## 13. Effectiveness Of Action

<b>Reviewed Quantity</b>	1
<b>Reason for submission</b>	found OK