QFR No - 8000889501

Defect Details

NC No.	8000889501
NC Date	02/09/2024
NC Submission Date	
Part No.	F2DZ07203B
Part Name	FORK BOLT (K-9207) Ni+Cr Plated
Supplier Name & Code	100539-N P ENTERPRISES
ETL Plant	1117-ETL K-228/9 Suspension
Defect Details	NOT AS PER SPECIFICATION-RUSTY

1. Problem Description

Defect Description	RUSTY
Detection Stage	Inprocess
Problem Severity	Aesthetic
NG Quantity	3
Is Defect Repeatative?	Yes
Defect Sketch / Photo	

Supplier Communication Details

Quality Head Email ID	quality@npcindustries.in
Plant Head/CEO Email ID	anand@npcindustries.in
MD Email ID	ajay@npcindustries.in

2. Stock Details & action taken for NG parts

Location	ETL End	Warehouse	Transit	Supplier FG	Supplier WIP	Total
Total Qty	1008	375	1000	0	0	2383
Check Qty	1008	375	1000	0	0	2383
NG Qty	3	2	0	0	0	5

Action taken on NG part

Scrap	5
Rework	0
Under Deviation	0

Containment Action
1-Raw Material Receipt 2- Cutting & Forging 1st 3-Annealing 4-Phosphating 5-Forging - 2nd 6-CNC1st 7-CNC 2nd 8-Thread Rolling 9-Drilling 10-Buffing 11-Head Polishing 12-Plating 13-Final Inspection 14-Packing & Dispatch

3. Process Flow

Process Flow Description
Plating

4. Process Details

Process / Operation	Plating process
Outsource	Yes
Machine / Cell	Plating setup
Machine / Cell No.	plating tank

5. Problem Analysis

Type	Possible Cause	Fact Verification	Jud
Man	Plating operator negligent	Operator found to be not negligent	O
Man	Operator unaware about process	Operator found to be aware about the process	O
Method	Incoming material for plating rusty	Incoming material for plating observed to be rusty	X
Material	RPO not applied uniformly on all parts	Uneven application of RPO found during inspection	X
Material	Material not as per drawing	Material observed as per drawing	O
Method	NG part could not be detected at final inspection	It was observed that NG part skipped final inspection	X
Method	High humidity in storage area leading to rust formation	Storage environment found to have high humidity levels	O
Machine	Buffing machine calibration was incorrect	Machine calibration found to be correct	O

6. Inspection Method Analysis (Current)

Inspection Method	Other
Other Inspection Method	Visual
Check Point at Final Inspection	Yes
Checking Freq.	100%
Sampling	No
Sample Size	100%

7. Root Cause Analysis (Occurance)

Why 1	Bolt caps found rusty at the customer's end
Why 2	The bolt caps were received with rust before plating.
Why 3	The rust preventive oil (RPO) was not present on the material during the plating process.
Why 4	There were inconsistencies in the method or coverage of RPO application and rpo dipping time less.
Why 5	The standard operating procedure (SOP)/WI for RPO application was not detailed enough.
Root Cause (Occurance)	The standard operating procedure (SOP) for RPO application was either not detailed enough .

Root Cause Analysis (Outflow)

Why 1	Bolt caps found rusty at the customer's end
Why 2	Rust was not identified during the final inspection process.
Why 3	The inspector missed detecting rust on the parts.
Why 4	The inspector did not differentiate between rusted parts and acceptable parts.

Why 5	The rust was in its initial phase and not easily detectable through normal visual inspection methods.
Root Cause (Outflow)	The rust was in its initial phase and not easily detectable through normal visual inspection methods.

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

Type	Countermeasure Details	Responsibility	Target Date	Actual Date	Status
Outflow	Provide training to inspectors on identifying early-stage rust, Including visual cues and distinguishing features between rust and minor surface defects.	Mr. Deepak	05/09/2024	05/09/2024	Completed
Occurance	Q-Alert to be displayed at ROP Station.	Mr. Rakesh Thakur	05/09/2024	02/09/2024	Completed
Occurance	A detailed SOP should be established for the RPO application process, ensuring complete coverage of the bolt cap and incress the RPO dipping time of bolt.	Mr. Rakesh Thakur	08/09/2024	07/09/2024	Completed
Outflow	Q-Alert to be displayed at final inspection.	Mr. Princ	04/09/2024	03/09/2024	Completed
Outflow	Awareness should be raised among inspection teams about the importance of identifying early stage corrosion and its impact on product quality.	Mr. Deepak	05/09/2024	04/09/2024	Completed

9. Inspection Method After Customer Complaint

Change In Inspection System	No
Change Details	Awareness should be raised among inspection teams about the importance of identifying early stage corrosion and its impact on product quality.
Inspection Method	Other
Other Inspection Method	Visual
Check Point at Final Inspection	Yes
Checking Freq.	100%
Sampling	No
Sample Size	100%

10. Evidance of Countermeasure

Occurance (Before)	No Special training was given to inspectors for early-stage rust detection. 1057_Occurance_Before.png
Occurance (After)	Provide training to inspectors on identifying early-stage rust, Including visual cues and distinguishing features between rust and minor surface defects. 1057_Occurance_After.jpg
Outflow (Before)	There were inconsistencies in the method or coverage of RPO application and RPO dipping time less. 1057_Outflow_Before.jpg
Outflow (After)	RPO Dipping time increased and WI to be updated. 1057_Outflow_After.jpg

11. Horizontal Deployment

Horizontal Deployment Required	Yes
Applicable Machine / Model / Plant	All Similar Models

12. Document Review

Documents	ControlPlan, PFMEA, WISOP, PackingStd, InspCheckSheet
Specify Other Document	No

13. Effectiveness Of Action

Reviewed Quantity	50
Reason for submission	OK