QFR No - 8000823929

Defect Details

NC No.	8000823929
NC Date	20/03/2023
NC Submission Date	
Part No.	F2FA01200B
Part Name	FORK PIPE RAW K23A (W/O HARDENING)
Supplier Name & Code	101066-TUBE INVESTMENTS OF INDIA LIMI
ETL Plant	1116-ETL K-120 Suspension
Defect Details	NOT AS PER SPECIFICATION-HARDNESS & THICKNESS NG

1. Problem Description

Defect Description	1) Fork pipe Hardness (28±4HRC) observed up to 12 ~15 HRC. 2) Thickness variation observed up to 0.35mm.
Detection Stage	Inprocess
Problem Severity	Safety
NG Quantity	5
Is Defect Repeatative?	Yes
Defect Sketch / Photo	

Supplier Communication Details

Quality Head Email ID	AmitVD@tii.murugappa.com
Plant Head/CEO Email ID	guptaajay@tii.murugappa.com
MD Email ID	mukeshahuja@tii.murugappa.com

2. Stock Details & action taken for NG parts

Location	ETL End	Warehouse	Transit	Supplier FG	Supplier WIP	Total
Total Qty	52407	0	0	0	0	52407
Check Qty	52407	0	0	0	0	52407
NG Qty	5945	0	0	0	0	5945

Action taken on NG part

Scrap	5945
Rework	0
Under Deviation	0

Containment Action
100 % Inspection done by using Eddy Sorter machine in available Qty. 52407 Nos. at ETL End.

3. Process Flow

Process Flow Description
Drawing- Tempering-Straightning-Edyy Current Testing-Cutting-Final Inspection.

4. Process Details

Process / Operation	Tempering Process
Outsource	No
Machine / Cell	Online Tempering Machine
Machine / Cell No.	13A106

5. Problem Analysis

Type	Possible Cause	Fact Verification	Jud
Machine	Power - 203kw , Speed 16 MPM Speed reduced by 4 MPM	1. Hardness found 22-25HRC and not matching with failed part Hardness 2. No visual difference	O
Machine	Power -200kw , Speed 14 MPM Speed reduced by 6 MPM	1. Hardness found 22-25HRC and not matching with failed part Hardness 2. No visual difference	O
Machine	Tube Jerk: Tube holding 2 -3 sec and repeat the same for 3 times in same tube	Hardness found ok	O
Machine	Power -241KW , Speed -20MPM Power increased by 40KW	1. Hardness found 23-28HRC and not matching with failed part Hardness 2. No visual difference	O
Machine	Speed -20mpm , Power -203KW	Hardness found ok	O
Machine	Tube Stuck-up: Tube holding time 5- 6 sec	1. Hardness found 14-15 HRC and matching with failed part Hardness 2. end portion is hardness found	X
Machine	Power - 230 KW ,Speed -20MPM Power increased by 30KW	1. Hardness found 24-28HRC and not matching with failed part Hardness 2. No visual difference	O

6. Inspection Method Analysis (Current)

Inspection Method	Pokayoke
Other Inspection Method	
Check Point at Final Inspection	Yes
Checking Freq.	Sampling
Sampling	No
Sample Size	/JOB ORDER

7. Root Cause Analysis (Occurance)

Why 1	Tube bend during process
Why 2	Tube low hardness
Why 3	Tube low hardness at temering
Why 4	Tube excess tempering
Why 5	Tube struck up at tempering for more than 5 seconds
Root Cause (Occurance)	Tube struck up at tempering for more than 5 seconds

Root Cause Analysis (Outflow)

Why 1	Tube bend during the process

Why 2	Tube low hardness
Why 3	NG tube mixed with ok tube
Why 4	No identification of NG tube
Why 5	
Root Cause (Outflow)	No identification of NG tube

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

Type	Countermeasure Details	Responsibility	Target Date	Actual Date	Status
Outflow	Separate bucket provided for NG tubes	Mr. Rajkumar	30/03/2023	30/03/2023	Completed
Occurance	1. Interlocking of tube struck up (more than 3 seconds) and tempering coil power off	Mr. Rajkumar	30/03/2023	30/03/2023	Completed
Outflow	Auto Paint spray system introduced during tube struck up in tempering line more than 3 seconds	Mr. Rajkumar	30/03/2023	29/03/2023	Completed
Outflow	.Hardness verification point added at tempering stage for each job order	Mr. Rajkumar	30/03/2023	29/03/2023	Completed

9. Inspection Method After Customer Complaint

Change In Inspection System	Yes
Change Details	Hardness verification added during tempering
Inspection Method	Other
Other Inspection Method	Hardness verificatio
Check Point at Final Inspection	Yes
Checking Freq.	Sampling
Sampling	No
Sample Size	/job order

10. Evidance of Countermeasure

Occurance (Before)	NIL 393_Occurance_Before.pdf
Occurance (After)	1. Interlocking of tube struck up (more than 3 seconds) and tempering coil power off 2. Auto Paint spray system introduced during tube struck up in tempering line more than 3 seconds 393_Occurance_After.pdf
Outflow (Before)	NIL 393_Outflow_Before.pdf
Outflow (After)	1. Hardness verification point added at the tempering stage for each job order 2. Separate buckets provided for NG tubes 393_Outflow_After.pdf

11. Horizontal Deployment

Horizontal Deployment Required	Yes
Applicable Machine / Model / Plant	Online Tempering machines at PAN TPI

12. Document Review

Documents	WISOP, InspCheckSheet
Specify Other Document	No

13. Effectiveness Of Action

Reviewed Quantity	
Reason for submission	