QFR No - 7001085484

## Defect Details

| | |
|---|---|
| **NC No.** | 7001085484 |
| **NC Date** | 26/12/2024 |
| **NC Submission Date** | |
| **Part No.** | B2GQ01903O |
| **Part Name** | MASTER CYLINDER RAW CASTING- C101 H |
| **Supplier Name & Code** | 101180-MAULI CAST TECH PVT. LTD |
| **ETL Plant** | 1120-ETL K-226/2 Disc Brakes |
| **Defect Details** | DIMENSSIONAL DEFECT-Pocket ID undersize |

## 1. Problem Description

| | |
|---|---|
| **Defect Description** | Pocket ID Oversize |
| **Detection Stage** | Receipt |
| **Problem Severity** | Fitment |
| **NG Quantity** | 1008 |
| **Is Defect Repeatative?** | Yes |
| **Defect Sketch / Photo** | qlasf0aite00ai1he1jwotfc.jpg |

## Supplier Communication Details

| | |
|---|---|
| **Quality Head Email ID** | quality@maulicasttech.com |
| **Plant Head/CEO Email ID** | planthead@maulicasttech.com |
| **MD Email ID** | shrikant.shelke@maulimetal.com |

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

| Location | ETL End | Warehouse | Transit | Supplier FG | Supplier WIP | Total |
|---|---|---|---|---|---|---|
| **Total Qty** | 1008 | 0 | 0 | 0 | 2508 | 3516 |
| **Check Qty** | 1008 | 0 | 0 | 0 | 2508 | 3516 |
| **NG Qty** | 1008 | 0 | 0 | 0 | 0 | 1008 |

Action taken on NG part

| | |
|---|---|
| **Scrap** | 0 |
| **Rework** | 1008 |
| **Under Deviation** | 0 |

| **Containment Action** |
|---|
| 1.ETL End – 1008 Qty 2.Available stock at Supplier end 100% verification started for Dimn 28 & 46 (2508 no's in WIP At MCTPL End) 3.Awareness given to all concern person with Q alert. 4.100% gauges inspection started at final inspection stage with Dot marking. 5.Provided gauge & 100% inspection started at final inspection stage. |

## 3. Process Flow

| Process Flow Description |
|---|
| Raw material Receipt & Inspection of Alloy - Raw Material Storage -Melting of Aluminum Alloy -Gravity Die Casting -Gate & Riser cutting-Lancering-Fettling -Heat Treatment -T6-Shot Blasting-Tracebility -Final Visual Inspection-Pre- Dispatch Inspection -Packing & Dispatch . |

## 4. Process Details

| | |
|---|---|
| **Process / Operation** | GDC OPERATION |
| **Outsource** | No |
| **Machine / Cell** | GDC MACHINE |
| **Machine / Cell No.** | GDC MACHINE -14 |

## 5. Problem Analysis

| Type | Possible Cause | Fact Verification | Jud |
|---|---|---|---|
| Method | Loose insert dimension is in lower side due to Pocket punch wear out during running. | After recheck the part dimension found in lower side. | X |
| Tool | Pocket punch wear out | Pocket punch wear out due to frequent polishing on punch surface Punch Wear out By 0.020 mm to 0. | X |
| Man | Skipped from in process inspection. | nspector checked as per drawing by vernier and not detected 20 micron variation by VC | X |

## 6. Inspection Method Analysis (Current)

| | |
|---|---|
| **Inspection Method** | Instrument |
| **Other Inspection Method** | |
| **Check Point at Final Inspection** | Yes |
| **Checking Freq.** | 100% |
| **Sampling** | No |
| **Sample Size** | 100% |

## 7. Root Cause Analysis (Occurance)

| | |
|---|---|
| **Why 1** | Found go gauge not passing in RFD part _Dimn. 46+0.2-DR and 28+0.2-DR Under size |
| **Why 2** | Go gauge Not passing completely |
| **Why 3** | Pocket Dimn found under size by 0.020 to 0.040 mm. |
| **Why 4** | Pocket punch wear out during running ( Wear out by 10400 shots). |
| **Why 5** | Tool wear out early as decided tool life due to Pocket punch wear out due to frequent polishing on punch surface . |
| **Root Cause (Occurance)** | Tool wear out early as decided tool life due to Pocket punch wear out due to frequent polishing on punch surface . |

## Root Cause Analysis (Outflow)

| | |
|---|---|
| **Why 1** | Skipped from in process inspection . |
| **Why 2** | Dimn. checked but not detected by 10 to 20 micron during inspection. |
| **Why 3** | This dimn. checked by vernier . |
| **Why 4** | This is pocket profile dimn. So Inspection method is wrong -because dimn. checked by vernier . |
| **Why 5** | |

| | |
|---|---|
| **Root Cause (Outflow)** | 10 to 20 micron not detected during in process inspection . |

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

| Type | Countermeasure Details | Responsibility | Target Date | Actual Date | Status |
|---|---|---|---|---|---|
| Occurance | 1.Die life monitoring started and Punch life to be fixed ( Now Tool life decided 10400 shots ). 2.New punch to be procured for maintaining min max stock. | Pradip Benurkar. | 31/01/2025 | 07/01/2025 | Completed |
| Outflow | 1.Provided gauge & 100% inspection started at final inspection stage. 2.This pocket Dimn. Check by profile gauge during in process inspection & setup. | Nadeem Shaikh | 24/12/2024 | 24/12/2024 | Completed |

## 9. Inspection Method After Customer Complaint

| | |
|---|---|
| **Change In Inspection System** | Yes |
| **Change Details** | Provided gauge & 100% inspection started at final inspection stage and This pocket Dimn. Check by profile gauge during in process inspection & setup. |
| **Inspection Method** | Sp. Gauge |
| **Other Inspection Method** | |
| **Check Point at Final Inspection** | Yes |
| **Checking Freq.** | 100% |
| **Sampling** | No |
| **Sample Size** | 100% |

## 10. Evidance of Countermeasure

| | |
|---|---|
| **Occurance (Before)** | Go gauge Not passing completely. Pocket punch wear out due to frequent polishing on punch surface<br>1293_Occurance_Before.pptx |
| **Occurance (After)** | 1.Tool/punch life monitoring started and Punch life to be fixed (Now Punch life decided is 10400 shots ). 2. New punch to be procured for maintaining min max stock<br>1293_Occurance_After.pptx |
| **Outflow (Before)** | Inner pocket dimn. 46+0.2-DR and 28+0.2-DR found not ok (Under size, pocket gauge not passing completely, All 4 cavity)-<br>1293_Outflow_Before.png |
| **Outflow (After)** | 1. Provided gauge & 100% inspection started at final inspection stage. 2.This Dimn. Check by special profile gauge during setup & in-process inspection.<br>1293_Outflow_After.png |

## 11. Horizontal Deployment

| | |
|---|---|
| **Horizontal Deployment Required** | Yes |
| **Applicable Machine / Model / Plant** | TVS FRONT MASTER CLY. |

## 12. Document Review

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|---|---|
| **Documents** | ControlPlan, PMCheckSheet, InspCheckSheet |
| **Specify Other Document** | Tool life sheet |

## 13. Effectiveness Of Action

| | |
|---|---|
| **Reviewed Quantity** | |
| **Reason for submission** | |