# Technical Documentation: QA / QC Head Dashboard KPIs

This document defines the KPIs used on the QA / QC Head dashboard in a make-to-order manufacturing ERP system. These KPIs offer insights into production quality, rework trends, and rejection sources. Each KPI includes a definition, suggested dashboard visual, and the calculation logic or example.

## 📋 KPI Cards

### Defect Rate (MTD)

Definition: Percentage of defective units compared to the total units produced in the month.

Visual Representation: KPI Card (Percentage).

Calculation Logic / Example:

Defect Rate = (Defective Units / Total Produced Units) × 100  
Example: 28 / 1000 = 2.8%

### Rework Rate

Definition: Percentage of units that underwent rework compared to total produced.

Visual Representation: KPI Card (Percentage).

Calculation Logic / Example:

Rework Rate = (Reworked Units / Total Produced Units) × 100  
Example: 15 / 1000 = 1.5%

### QC Passed %

Definition: Percentage of units that passed QC inspection.

Visual Representation: KPI Card (Percentage).

Calculation Logic / Example:

QC Passed % = (Passed Units / Total Inspected Units) × 100  
Example: 963 / 1000 = 96.3%

### Total Rejections

Definition: Total number of units rejected during QC in the selected time period.

Visual Representation: KPI Card (Count).

Calculation Logic / Example:

Example: 52 units rejected this month

## 📊 Chart-based KPIs

### Defects by Operation / Stage

Definition: Helps pinpoint production stages responsible for most defects.

Visual Representation: Pareto Chart.

Calculation Logic / Example:

Group defects by operation → rank in descending order  
Example: Op2: 30%, Op1: 25%, Op4: 20%

### Defects by Item / Category

Definition: Highlights items or categories with the most quality issues.

Visual Representation: Bar Chart or Heatmap.

Calculation Logic / Example:

Count of defects grouped by item  
Example: Item A = 12, Item B = 5

### Rejection Trend Over Time

Definition: Tracks QC rejections month-over-month.

Visual Representation: Line Chart.

Calculation Logic / Example:

Monthly rejected unit count  
Example: Jan = 22, Feb = 35, Mar = 18

### QC Rejection Reasons

Definition: Breakdown of rejection types (e.g., dimensional, surface, visual).

Visual Representation: Pie Chart.

Calculation Logic / Example:

Group rejection tags and count % share  
Example: Dimensional – 45%, Visual – 30%

### Rework Load by Machine / Department

Definition: Shows rework distribution across machines or teams.

Visual Representation: Stacked Bar or Horizontal Bar.

Calculation Logic / Example:

Count of reworked jobs per machine  
Example: M1 = 5 jobs, M3 = 8 jobs

## 📁 Drill-Down or Report-Based KPIs

### Final QC vs In-Process QC Fail Rate

Definition: Compare rejection rates between in-process and final inspection.

Visual Representation: Side-by-side Bar Chart.

Calculation Logic / Example:

Fail Rate = (Rejected / Inspected) × 100 at each stage  
Example: In-Process: 2%, Final: 1.2%

### Inspector-wise Rejection Pattern

Definition: Identifies trends based on inspector handling.

Visual Representation: Bar Chart.

Calculation Logic / Example:

Group rejections by inspector ID  
Example: Inspector A = 12, B = 5

### Rework Time Consumption

Definition: Time spent on performing rework activities.

Visual Representation: KPI Table or Bar Chart.

Calculation Logic / Example:

Sum of time logs for rework operations  
Example: Total rework time = 42 hrs

### Customer Complaints (External Rejections)

Definition: Total complaints received due to rejected dispatches.

Visual Representation: Bar Chart with complaint type.

Calculation Logic / Example:

Logged complaints grouped by rejection reason  
Example: 4 complaints – 2 surface, 2 tolerance

### Audit Non-Conformances

Definition: Defects identified during audits.

Visual Representation: Line Chart or Table.

Calculation Logic / Example:

NC count by audit date or type  
Example: April – 3 minor, 1 major