

# Data Dictionary – Predictive Maintenance BI

## Clean\_Dataset (Fact\_MachineEvents)

The file `clean_dataset.csv` contains the same fields as the `Fact_MachineEvents` table.

- **EventID**: Surrogate key for each machine reading (integer).
- **DateID**: Foreign key to Dim\_Date (YYYYMMDD integer).
- **MachineID**: Foreign key to Dim\_Machine.
- **ProductTypeID**: Foreign key to Dim\_ProductType.
- **AirTempC**: Air temperature around the machine in degrees Celsius.
- **ProcessTempC**: Process temperature during the operation in degrees Celsius.
- **RotationalSpeed**: Rotational speed of the tool in rpm.
- **Torque**: Torque applied during the operation in Nm.
- **ToolWear**: Cumulative tool usage in minutes.
- **MachineFailure**: Indicates whether any failure occurred during the cycle (1 = Yes, 0 = No).
- **TWF**: Tool wear failure indicator (1 = Yes, 0 = No).
- **HDF**: Heat dissipation failure indicator (1 = Yes, 0 = No).
- **PWF**: Power failure indicator (1 = Yes, 0 = No).
- **OSF**: Overstrain failure indicator (1 = Yes, 0 = No).
- **RNF**: Random failure indicator (1 = Yes, 0 = No).

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## Dim\_ProductType

- **ProductTypeID**: Surrogate key for the product type.
- **ProductType**: Product variant label (L = Low, M = Medium, H = High).

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## **Dim\_Date**

- **DateID**: Surrogate key for the calendar date (YYYYMMDD).
  - **Date**: Calendar date.
  - **Day**: Day of the month (1–31).
  - **Month**: Month number (1–12).
  - **Quarter**: Quarter of the year (1–4).
  - **Year**: Calendar year (e.g., 2025).
  - **Shift**: Shift label (e.g., Day).
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## **Dim\_Machine**

- **MachineID**: Surrogate key for the machine.
- **MachineName**: Human-readable machine name (e.g., Machine A, Machine B, Machine C).
- **Line**: Production line name.
- **Location**: Plant or site where the machine is installed.