

# SEVEN Q.C. TOOLS

1. Pareto Chart
2. Cause and Effect Diagram
3. Stratification
4. Check sheet
5. Histogram
6. Scatter Diagram
7. Graph and Control Chart

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# PARETO DIAGRAM

- A graphical tool for ranking causes from most significant to least significant.
- It helps to identify the vital few from trivial many.
- It indicates which area should be taken up first in eliminating defects & improving operations.

# CHECK SHEET

- A designed format for collecting data efficiently.
- To collect data in a systematic & simple method.
- Types
  - Process distribution check sheet.
  - Defect cause check sheet.
  - Defect location check sheet.
  - Defective cause wise check sheet.

# CAUSE & EFFECT DIAGRAM

- A systematic way of listing down all the possible contributing factors, or causes of a quality problem, the effect.
- It is also called as ISHIKAWA diagram or the Fishbone diagram.
- It is a picture of a brainstorming session.

# HISTOGRAM

- A simple graph for compiling measured data in the form of frequency distribution
- Visually understand the general tendency.
- Know the central value of the group.
- To know the extent of variation.
- To estimate the % of non conformance.
- To see whether non-conformance is due to setting or variability.

# SCATTER DIAGRAM

- A graphical technique to analyze the relationship between two variables.
- Two sets of data are plotted on a graph. The graph will show the possible relationships.
- By controlling the independent factor will also be controlled.

# Control charts

- A chart with lower & upper control limits on which some statistical measure of a series of samples are plotted.
- Chart also shows a central line to help detect a trend of plotted values towards either of the control limits.
- Live information about the process.
- Easy to draw, only samples are required.
- Investigate stability of process

# Control charts

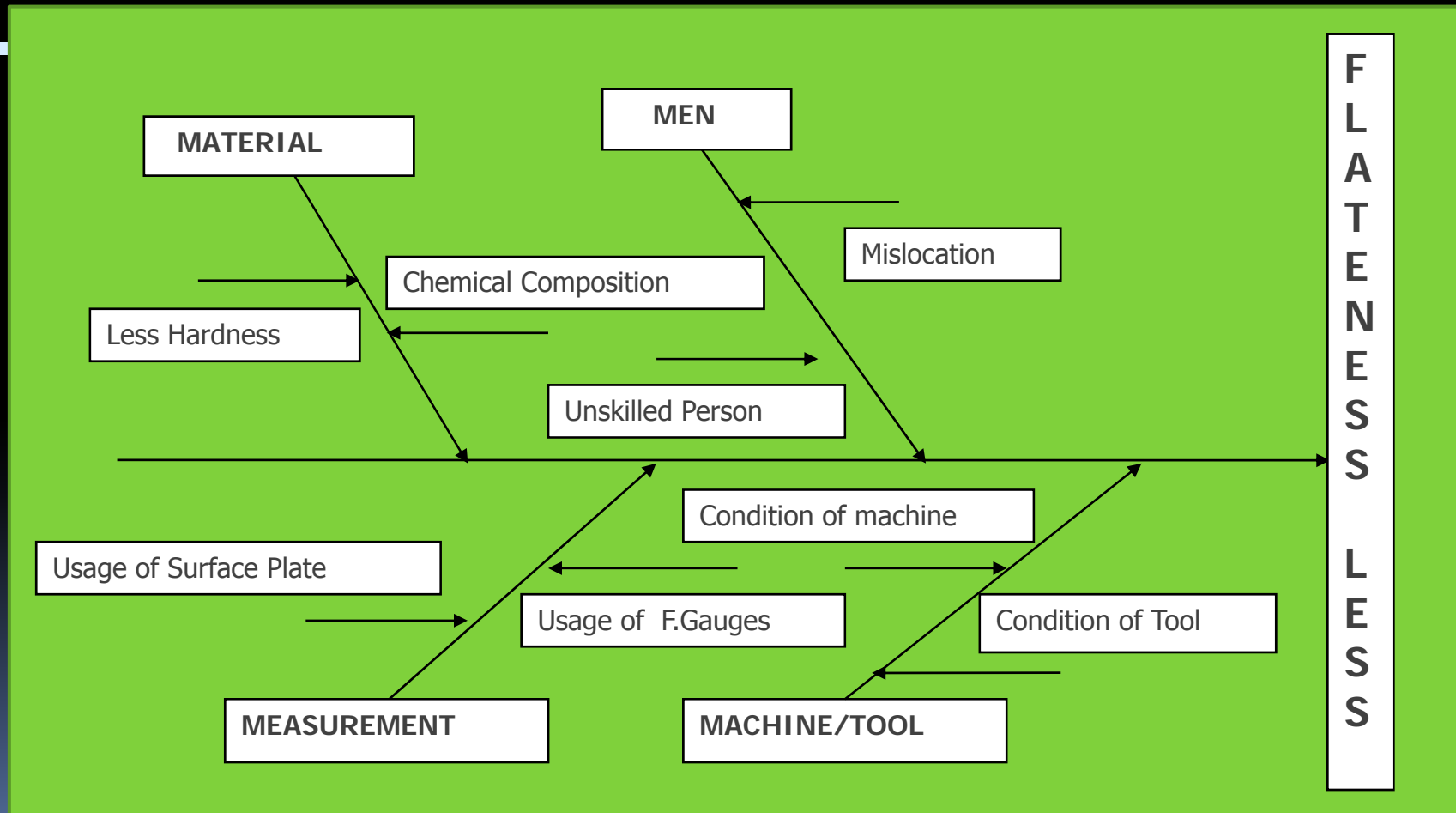
- The most commonly used variable type of charts are  $\bar{X} - R$  charts.
- $\bar{X}$  - Chart is used for monitoring process average
- $R$  - Chart is used for monitoring process variability.



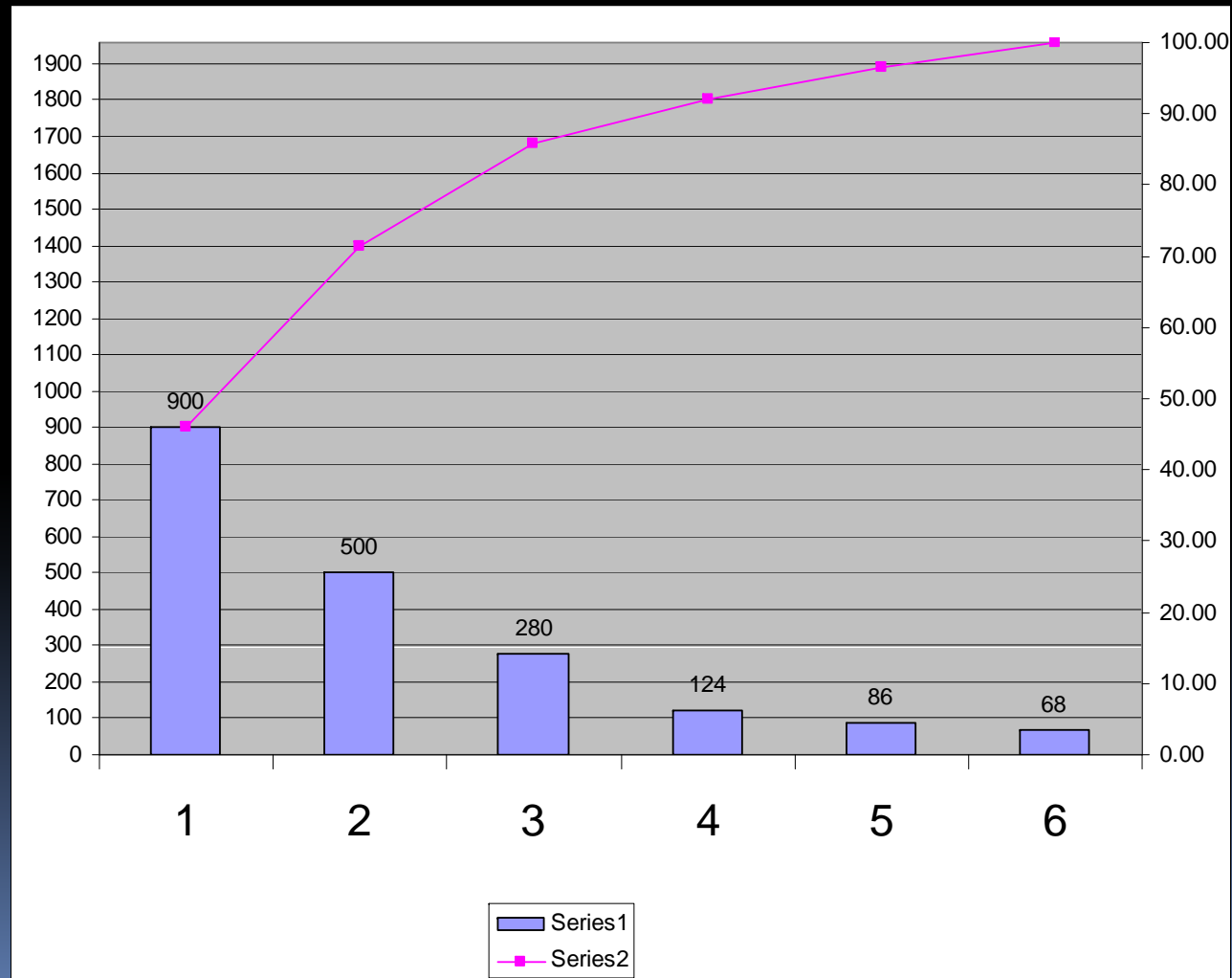
# CHECK SHEET

Type of Defect	No of Pieces	Total
Misblank	IIII / IIII / I	11
Lettering Opp. side	IIII / III	8
Collar width undersize	IIII / II	7
Hub hole burr	IIII /	5
Flatness less	IIII / IIII / IIII / IIII	19
	Total	50

# CAUSE & EFFECT DIAGRAM



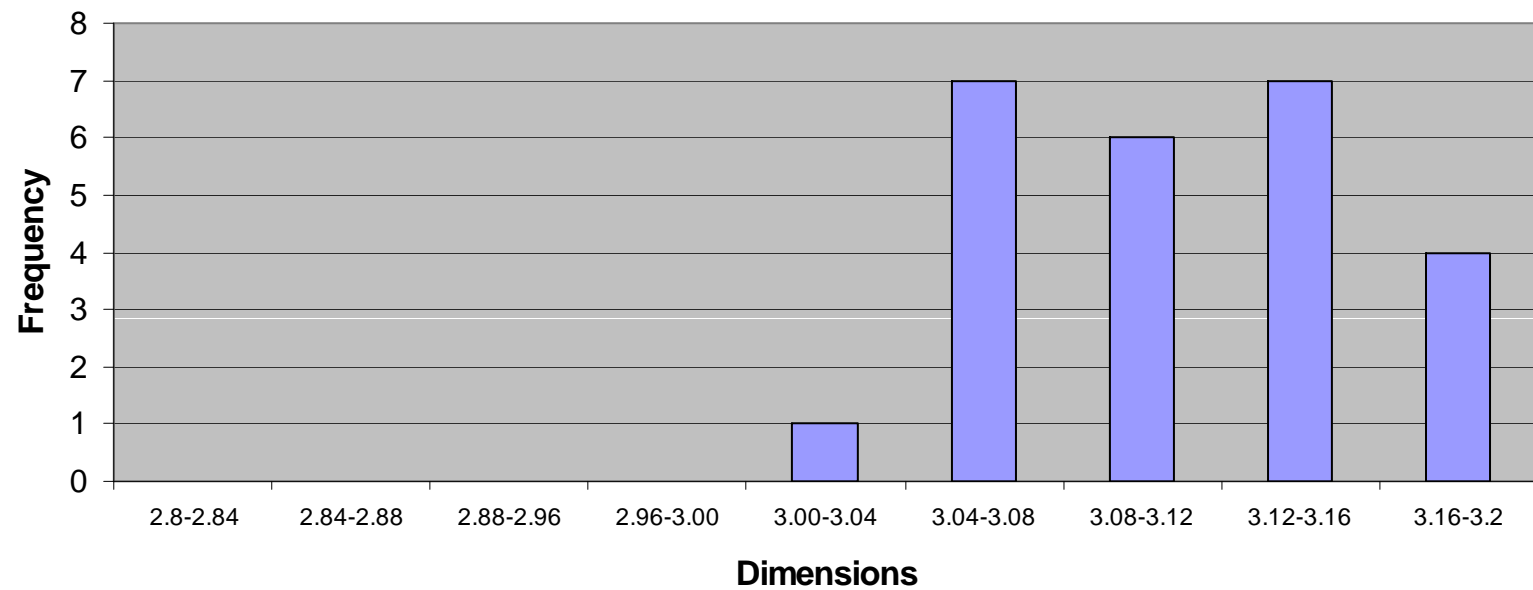
# PARETO DIAGRAM





# HISTOGRAM

Histogram for T/W Back Plate Collar Thickness



# HISTOGRAM

Sl.No	Range	Frequency
1	2.80-2.84	0
2	2.84-2.88	0
3	2.88-2.96	0
4	2.96-3.00	0
5	3.00-3.04	1
6	3.04-3.08	7
7	3.08-3.12	6
8	3.12-3.16	7
9	3.16-3.20	4

# SCATTER DIAGRAM

## Absenteeism reflects on production

