



FREE QUALITY TOOLKIT · KIT 06

Data & Prioritization Kit

Turn a messy pile of defects into a ranked list of what to fix first.

Check sheets catch the data clean; the **Pareto** chart points at the vital few — with a worked example and a chart you can copy.

3 check sheets · Pareto worksheet · worked example + chart · cheat sheet

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WHAT'S IN THIS KIT

You can't prioritize what you didn't count. This kit pairs the two tools that do the counting and the ranking: **check sheets**, the plainest way to capture defects where and when they happen, and the **Pareto chart**, which sorts that data into the vital few worth your morning. Collect, then prioritize.

	TOOL	WHAT YOU GET	PAGE
1	Check sheets	Three ready-to-print templates: defect-location (concentration), defect-cause tally, and an hourly shift log.	3–5
2	Pareto analysis	Plain-terms guide · “vital few” cheat sheet · fillable tally-to-Pareto worksheet + blank chart · worked example with a real chart	6–9
→	See your own floor	The 30-minute offer	10

How to use them.

Print the check sheets and pin them at the station; type into the grey fields of the Pareto worksheet in any PDF reader. Every number in the worked example is invented — a synthetic injection-molding line, not anyone's real plant.

WHERE THESE TOOLS COME FROM · VERIFIED JULY 2026

The **Pareto principle** traces to economist Vilfredo Pareto; **Joseph M. Juran** applied it to quality in 1941 and named it the “**vital few and the trivial many**.” The **check sheet** and the **Pareto chart** are two of the **seven basic quality tools** (ASQ; popularized by Kaoru Ishikawa). These are classical tools with no formal standard edition; framing verified against ASQ and the Juran Institute.

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A check sheet is the least glamorous tool in quality and one of the most useful: a form you design **before** the shift so anyone can tally what's happening without stopping to think about how to record it. Get this right and your Pareto builds itself. First of three shapes — mark the defect where it lands.

1 · Defect-location (concentration) check sheet

PART / PRODUCT _____ LINE / STATION _____ DATE / SHIFT / INSPECTOR _____

Sketch the part (or tape a drawing here). Mark each defect with its symbol, right where it occurs on the part.

[illegible]

Defect-location (concentration) check sheet — one of the seven basic quality tools (ASQ). Synthetic template. Verified July 2026.

CHECK SHEETS — DEFECT-CAUSE TALLY

Second shape. List the defects you expect down the left, tally each one under the day or shift it happened, and total across. At week's end this table drops straight into a Pareto. Leave a couple of blank rows — the floor always finds a defect you didn't predict.

LINE / PRODUCT

WEEK OF

RECORDED BY

DEFECT / CATEGORY	MON	TUE	WED	THU	FRI	TOTAL

Defect-cause tally (frequency) check sheet — a seven-basic-tools staple (ASQ). Tally cells left open for hand marks. Synthetic template. Verified July 2026.

CHECK SHEETS — HOURLY SHIFT LOG

Third shape. One line per hour: what ran, what got rejected, the top defect that hour, and what the operator did about it. A shift log turns “it was a bad day” into a timeline you can actually read — and shows whether defects cluster at start-up, after breaks, or on a particular tool change.

LINE / MACHINE	DATE / SHIFT	OPERATOR

Hour	Units Run	Rejects	Top Defect This Hour	Action Taken

Hourly production/defect log — a process check sheet (seven basic tools, ASQ). Synthetic template. Verified July 2026.

THE PARETO, IN PLAIN TERMS

Juran noticed the same thing on every floor he walked: a handful of causes make most of the trouble. He borrowed Pareto's name and called them the **vital few** against the trivial many. A Pareto chart just draws that — defects sorted tallest-first, with a line tracking the running total. Where the line crosses ~80%, you've found the short list worth your week.

#	STEP	WHAT IT MEANS
1	Pick one question	Defects on which line, over what window? A Pareto mixing three lines answers nothing.
2	Count by category	Use last week's check sheet. Same categories, no overlap, an 'Other' bucket for the stragglers.
3	Sort tallest-first	Rank categories by count, biggest on the left. 'Other' always goes last, whatever its size.
4	Add the running %	Cumulative count ÷ total, category by category. That's the line.
5	Read the vital few	The categories left of the ~80% crossing are where the payback is. Start there.

The honest version: the “80/20” is a pattern, not a law of physics. Sometimes it's 70/30, sometimes one cause is 60% on its own. Don't force the numbers — the point is the ranking, not the ratio.

Sources: Juran Institute, “Pareto Principle (80/20 Rule) & Pareto Analysis.” J.M. Juran (1941), after V. Pareto. ASQ, “Seven Basic Quality Tools.” Verified July 2026.



VITAL FEW VS TRIVIAL MANY

Five ways a Pareto lies to you — and how to make it tell the truth.

- **Don't Pareto by count when cost is the real driver.** Fifty scratches that buff out can outrank one cracked casting that scraps the whole lot — on the count chart. Weight each category by what it actually costs you (scrap + rework + warranty) and the ranking often flips.
- **Watch the 'Other' bucket.** If 'Other' is one of your tallest bars, your categories are too coarse. Break it open — the vital few might be hiding in there.
- **One question per chart.** A Pareto that blends three lines, two shifts, and a month of data points nowhere. Slice it down until it answers a single question.
- **Re-run it after you fix the top bar.** Knock out the biggest cause and the chart reshapes. Yesterday's number-two is today's number-one. Pareto is a loop, not a one-time snapshot.
- **Count clean or the chart is fiction.** A Pareto is only as honest as the check sheet under it. Fuzzy categories and missed tallies produce a confident-looking, wrong answer.

TALLY-TO-PARETO WORKSHEET — FILLABLE

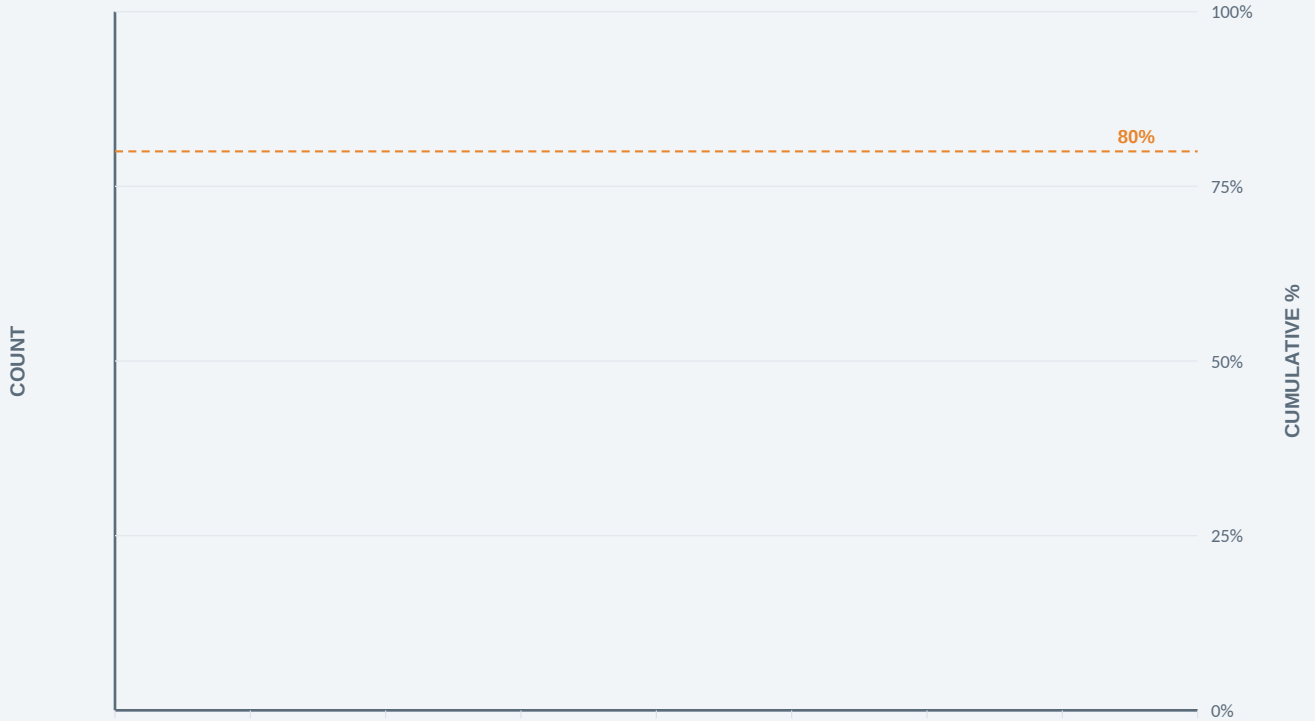
Type into any grey field, or print and write.

LINE / PRODUCT

WINDOW (DATES)

TOTAL DEFECTS (N)

DEFECT CATEGORY (tallest first)	COUNT	CUM. COUNT	CUM. %



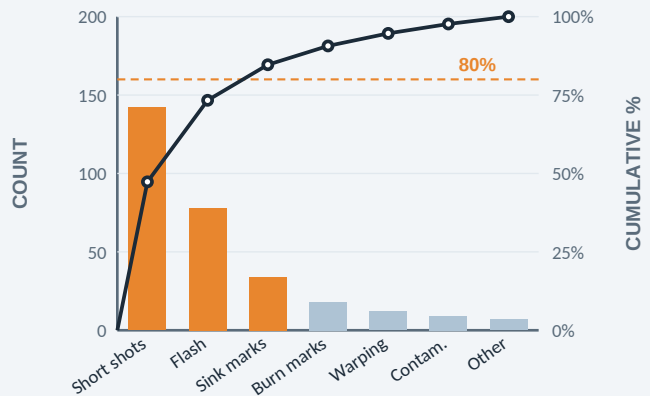
Bars = count per category (tallest on the left). Line = running cumulative %.

Worksheet structure per ASQ Pareto method. Synthetic template. Verified July 2026.

PARETO — WORKED EXAMPLE (SYNTHETIC)

Injection-molding line 2, one week, 300 defects. Pulled from the tally check sheet, sorted tallest-first, with the running percentage. Invented data, to show the read.

DEFECT	CT	CUM%
Short shots	142	47%
Flash	78	73%
Sink marks	34	85%
Burn marks	18	91%
Warping	12	95%
Contam.	9	98%
Other	7	100%
Total	300	



Read it: short shots and flash are 73% of the week from two of seven categories. Add sink marks and you're at 85% with three. Those three are the vital few — fix them and most of the pile disappears.

NOW WEIGHT IT BY COST

Give each defect its scrap + rework cost and the picture changes. **Contamination** — only 9 parts, dead last by count — scraps a whole lot each time, so by dollars it jumps to #2, behind short shots and ahead of flash. If you only Pareto by count, you never touch the defect that's quietly costing the most. Run it both ways.

FloorSignal builds the Pareto for you from your existing reports — no manual tally.



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