

Production Schedule Gantt

How-to guide: what the workbook does, how to use it and what every number means.

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Production Schedule Gantt

Schedule jobs on machines in working days, see each job's end date, slack to due date and progress, and check machine load against usable capacity on a Gantt dashboard.

For: Production planners, schedulers, shop supervisors and owners of machine shops and job shops.

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Quick start

1. On Setup, set the plan start, the horizon in working days and the status (as of) date, then replace the example machines (hours per day, availability, efficiency) and holidays.
2. On Schedule, add one row per job: machine, quantity, setup hours, cycle minutes per piece, start date, due date and percent complete.
3. Read the end date, slack and progress columns, and fix anything the Check column names (overlaps, non-working start days).
4. Open Timeline for the day-by-day Gantt grid to print for the shop floor.
5. Open the Dashboard: the Gantt chart, machine load against capacity, and the late and behind-schedule counts.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Plan dates, capacity thresholds, the machines with their usable hours, and holidays.
Schedule	One row per job: machine, quantity, times, start and due dates. End date, slack and progress follow.
Timeline	The day-by-day Gantt grid: one row per job, one column per working day. Green = done, blue = still to do.
Dashboard	Jobs on a Gantt chart, machine load against usable capacity, and the jobs that are late or behind.
Method	How every number is calculated, with assumptions, limits and sources.
Verify	Self-check: the workbook's formulas recomputed on fixed inputs against an independent reference.

What each number means

Quantity	How it is calculated	Units
Usable hours per day	Hours per day x availability x efficiency, per machine on Setup.	h/day

Quantity	How it is calculated	Units
Work	Setup hours + quantity x cycle minutes / 60.	h
Working days needed	Work / the machine's usable hours per day (looked up by machine).	working days
End date	WORKDAY(start, MAX(1, ROUNDUP(working days needed, 0)) - 1, holidays): the last working day of the job. A job needing 0.4 days ends on its start day.	date
Gantt offset, done, remaining	In the Dashboard job list: offset = start - plan start; span = end - start + 1 (calendar days, so a bar covers the weekends inside a job); done = span x percent complete; remaining = span - done.	days
Slack	Working days from the end date to the due date: NETWORKDAYS(end, due, holidays) - 1, negative when the end is after the due date.	working days
On time	Yes when the end date is on or before the due date, No otherwise.	-
Progress	As of the status date: Complete (100%), Overdue (end date before the status date and not complete), In progress (started), Not started.	-
Plan end	The horizon's last working day: WORKDAY from the first working day on or after the plan start, horizon - 1 working days on.	date
Usable capacity	Usable hours per day x the horizon in working days, per machine.	h
Machine load	Scheduled hours (sum of the work of every job on the machine) / usable capacity. Under capacity below the near threshold, Near capacity from it, Over capacity above the over threshold.	%
Timeline cells	A job's row is filled on each working day from its start to its end date; dark while the day is before start + done days.	-

Assumptions, limitations, sources and the self-check (the Verify sheet, which recomputes the workbook's formulas on fixed test inputs) are in the workbook. The last page shows the Dashboard with the example data for Hartwell Precision, a fictional business.

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Engineering estimates for planning and improvement work. Verify the results against your own process, data and standards before you rely on them.

Jobs on a Gantt chart, machine load against usable capacity, and the jobs that are late or behind.

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11 Nov 2026

JOB	DATE	TIME	STATUS	REMARKS
1	2025-01-01	08:00	On Schedule	Job 1 completed on time
2	2025-01-01	09:00	On Schedule	Job 2 completed on time
3	2025-01-01	10:00	On Schedule	Job 3 completed on time
4	2025-01-01	11:00	On Schedule	Job 4 completed on time
5	2025-01-01	12:00	On Schedule	Job 5 completed on time
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