

4-Crew Shift Rotation Schedule

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

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Pick a four-crew 12-hour pattern and see who is on days and nights every day, people on shift against the minimum, and each crew's hours, weekends and holidays.

For: Plant and operations managers, shift supervisors, HR and scheduling staff in plants that run around the clock.

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Quick start

1. On Setup, choose the rotation pattern, the date crew A starts cycle day 1, the shift length and the people required on every shift; enter your four crews and their headcount.
2. On Rota, keep one row per date (the example covers 12 weeks); mark public holidays and type the people on planned leave for each day and night shift.
3. Read the Check column (exactly one crew on days and one on nights) and the Status column: Below target means a shift is short of people.
4. Open the Dashboard: people on shift against the minimum, weekends and holidays per crew, and hours against contract hours.

What is in the workbook

Start Here	Read this first: what the workbook does and how to use it.
Setup	Rotation pattern, required people per shift, the four crews and the pattern codes.
Rota	One row per date: each crew's shift, who is on days and nights, people on shift and coverage.
Dashboard	People on shift against the minimum, weekends and holidays per crew, and hours against contract hours.
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
Cycle day	MOD(date - anchor date, cycle length) + 1: where crew A is in the pattern on that date.	day

Quantity	How it is calculated	Units
Crew code	Crew k (A = 0, B = 1, C = 2, D = 3): the Active pattern code on cycle day MOD(date - anchor + offset x k, cycle) + 1. D day, N night, O off.	code
Day crew, night crew	The crew whose code is D (N) that day. Check reports a day without exactly one crew on each.	crew
People on shift	Crew size from Setup - people absent on that shift (typed).	people
Fewest on shift	MIN(day on shift, night on shift): the weaker of the day's two shifts.	people
Lowest coverage	Fewest on shift / required people per shift. Same ratio as the Shift Coverage calculator, for the weaker of the two shifts.	%
Status	On target at or above the coverage target; Near target within 5% below it; Below target otherwise.	-
Shifts short	Number of the day's two shifts with fewer people on shift than required (0, 1 or 2).	shifts
Day and night shifts per crew	Rota days on which the crew's code is D (N), counted per crew column.	shifts
Hours per person	(Day shifts + night shifts) x shift length, for one person who works every shift of their crew.	h
Average per week	Hours per person / (days on the Rota / 7). A four-crew 24/7 pattern averages 168 / 4 = 42 h/week over whole cycles.	h/week
Above contract	Average per week - contract hours per week (Setup).	h/week
Weekend and holiday shifts	Shifts worked by the crew on Saturdays and Sundays, and on dates marked Holiday.	shifts

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 Eastbank Polymers, a fictional business.

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Eastbank Polymers (example): 2-2-3 Panama pattern, 12-hour shifts, 84 days on the Rota from 5 Oct 2026. Required on every shift: 11 people.

LOWEST SHIFT COVERAGE	SHIFTS BELOW REQUIRED	AVERAGE HOURS PER WEEK	ABOVE CONTRACT HOURS
82%	18	42.0	+2.0
Target 100%	Target 0	Per person, average of the four crews	h/week against contract hours on Setup
Below target	Above target		

