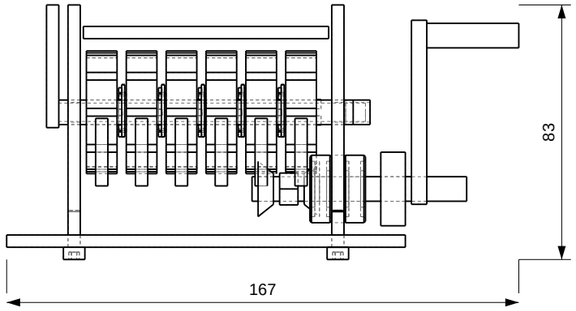
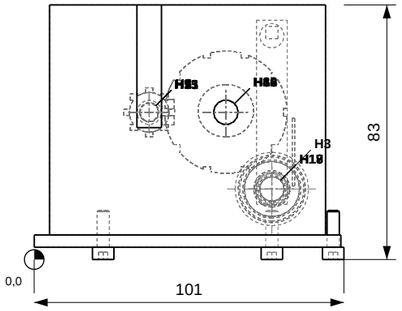
FRONT VIEW



LEFT SIDE VIEW



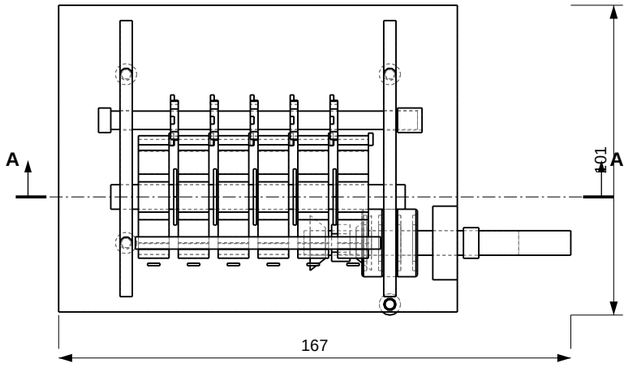
DRIVING DIMENSIONS

Parameter	Value	Unit
Number of digits	6	
Wheel diameter	40	mm
Wheel width	10	mm
Wheel pitch	13	mm
Wheel shaft dia	8	mm
Lay shaft dia	6	mm
Carry pinion dia	16	mm
Plate thickness	4	mm
Crank radius	50	mm
Base h	70	mm

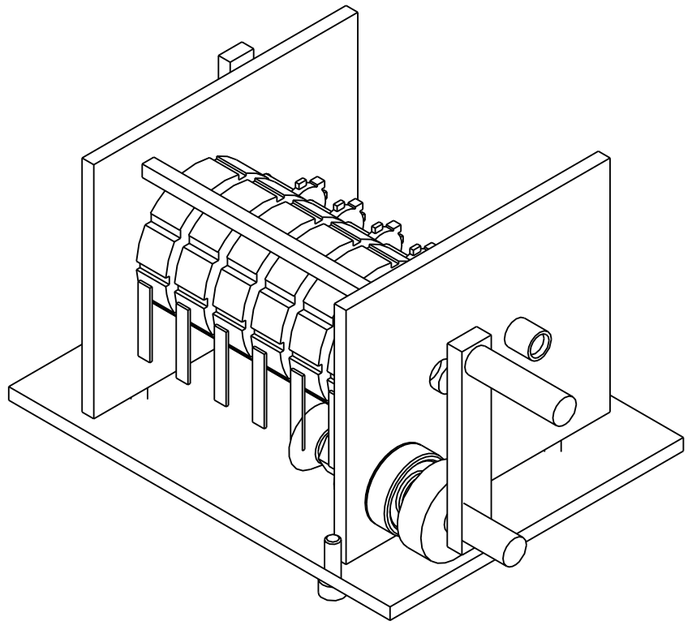
PARTS LIST

Pos	Part	Qty	Standard / mass
1	base_plate	1	408.2 g
2	side_plate_l	1	209.3 g
3	side_plate_r	1	197.4 g
4	wheel_shaft	1	37.9 g
5	lay_shaft	1	22.2 g
6	digit_wheel_1	1	92.5 g
7	heart_cam_1	1	1.9 g
8	detent_spring_1	1	0.6 g
9	carry_pinion_1	1	2.5 g
10	digit_wheel_2	1	92.5 g
11	heart_cam_2	1	1.9 g
12	detent_spring_2	1	0.6 g
13	carry_pinion_2	1	2.5 g
14	digit_wheel_3	1	92.5 g

TOP VIEW



ISOMETRIC



NOTES

1. Geometry of carry teeth and mutilated pinion is simplified in the solid (discs with representative teeth); final tooth profiles need a kinematic check
2. Six-stage carry at 999999->000000 requires ~6x single torque; clutch setting must exceed that
3. Heart cam reset forces all wheels simultaneously; reset bar must not be operated while crank is turning (crank lock recommended)
4. Digit wheel Ø40 x 10 mm wide, pitch 13 mm along the axle
5. Carry: each wheel has a 2-tooth carry segment on its right side; the lay-shaft pinion (8 teeth, mutilated: alternate teeth half-width) locks the next wheel except during the 9->0 or 0->9 transition, so carry and borrow are the same contact reversed
6. Wheel shaft Ø8 h6, lay shaft Ø6, side plates 4 mm laser cut
7. Crank torque < 1 N·m, slip clutch set ~0.5 N·m
8. Reset: a sliding lay-shaft (pulled 3 mm axially by reset lever) disengages carry pinions; heart cams on each wheel are then pushed by a common reset bar to zero; return springs push lay shaft and bar back
9. Detent: leaf spring with ball tip per wheel engaging 10 V-notches

TITLE

Six-digit reversible mechanical counter

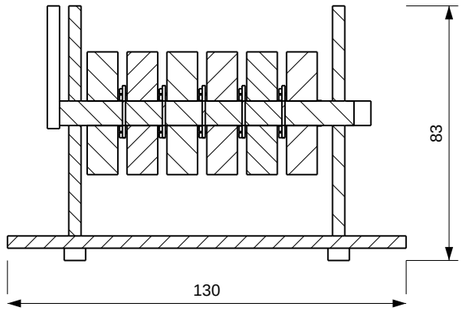
LUXXO

DRAWN BY Luxxo AI design engineer	DATE 2026-11-14	PROJECTION ISO first angle [|O] -O
MATERIAL Steel (S235)	GENERAL TOLERANCE ISO 2768-m ± 0.2 mm	MASS (calc.) 1.62 kg
SCALE 1 : 2	SHEET 1 / 2 A3	DRAWING No. LX-38FE47-v1

Dimensions in mm · unspecified tolerances ISO 2768-m · surface Ra 3.2 unless noted · break sharp edges 0.5 × 45° · machining

Hidden lines omitted · not to scale

SECTION A-A



A-A (1 : 2) cutting plane y = 0 mm, viewed from the front

HOLE TABLE (X / Y from datum 0,0 of the view F / S / T on sheet 1)

Tag	Ø	X	Y	Depth	View	Thread / fit / note
H1	Ø8	62.5	48	THRU	S	Drilled
H2	Ø6.5	37.5	48	THRU	S	Ø6.6 H13 for M6 (ISO 273 medium)
H3	Ø22	77.5	23	THRU	S	Ø22 H13 for M20 (ISO 273 medium)
H4	Ø8	62.5	48	THRU	S	Drilled
H5	Ø6.5	37.5	48	THRU	S	Ø6.6 H13 for M6 (ISO 273 medium)
H6	Ø8	62.5	48	THRU	S	Drilled
H7	Ø6	37.5	48	THRU	S	Drilled
H8	Ø8	62.5	48	THRU	S	Drilled
H9	Ø6	37.5	48	THRU	S	Drilled
H10	Ø8	62.5	48	THRU	S	Drilled
H11	Ø6	37.5	48	THRU	S	Drilled
H12	Ø8	62.5	48	THRU	S	Drilled
H13	Ø6	37.5	48	THRU	S	Drilled
H14	Ø8	62.5	48	THRU	S	Drilled
H15	Ø6	37.5	48	THRU	S	Drilled
H16	Ø8	62.5	48	THRU	S	Drilled
H17	Ø8	77.5	23	THRU	S	Drilled
H18	Ø8	77.5	23	THRU	S	Drilled
H19	Ø8	77.5	23	THRU	S	Drilled

FITS & TOLERANCES (ISO 286)

Feature	Size	Max / min	Fit
digit wheel bore	Ø8 H7	8.015 / 8.0	H7/f7 clearance
lay shaft	Ø6 g6	5.996 / 5.988	H7/g6 clearance
608 seat	Ø8 js6	8.005 / 7.995	H7/js6 transition
Bearing seat 608 on wheel_shaft	Ø8 js6	8.005 / 7.995	H7/js6 transition
Bearing seat 608 on crank	Ø8 js6	8.005 / 7.995	H7/js6 transition

ENGINEERING CHECKS (simplified hand calculations)

OK input: 608: P = 20 N, C = 3.45 kN → L10 = 5132953.1 mil. rev = 1,425,820,312 h at 60 rpm (need 5,000.0 h)

OK input shaft: Ø8: T = 0.5 N·m, M = 0.6 N·m → σv = 14.7 MPa, safety 15.96 vs. Re 235 MPa (need 2.5), min. Ø4.3

Flat patterns: 7 DXF files (21 pcs) for laser cutting - download in the app.

Section hatching per ISO 128-50 · hole coordinates from the datum symbol · fits ISO 286-2 · weld symbols ISO 2553 · weld preparation EN ISO 9692-1

TITLE

Six-digit reversible mechanical counter

LUXXO

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MATERIAL Steel (S235)	GENERAL TOLERANCE ISO 2768-m ± 0.2 mm	MASS (calc.) 1.62 kg
SCALE 1 : 2	SHEET 2 / 2 A3	DRAWING No. LX-38FE47-v1