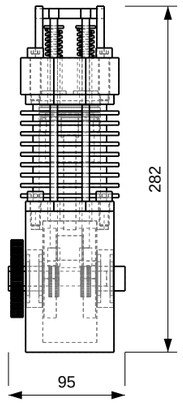
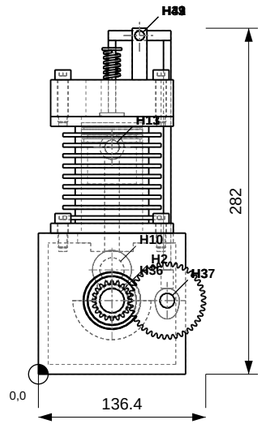
FRONT VIEW



LEFT SIDE VIEW



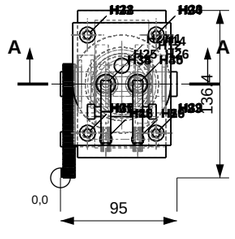
DRIVING DIMENSIONS

Parameter	Value	Unit
Bore	50	mm
Stroke	50	mm
Rod length	100	mm
Big end d	20	mm
Pin d	12	mm
Piston h	50	mm
Pin to top	20	mm
Deck clear	5	mm
Gear module	1.5	
Crank gear	20	teeth
Z cam	40	mm
Gear w	10	mm
Valve diameter	20	mm
Valve x	13	mm
Stem d	6	mm
Head h	30	mm
Fin count	9	
Fin d	80	mm

PARTS LIST

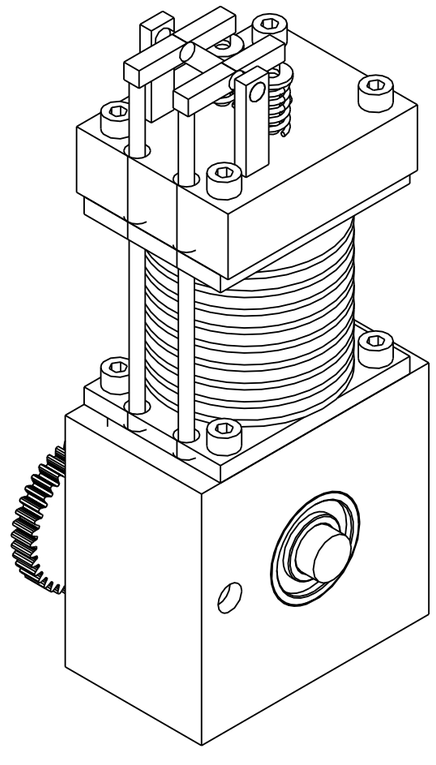
Pos	Part	Qty	Standard / mass
1	crankcase	1	3638.0 g
2	Deep groove ball bearing 6204	2	bearing
3	crankshaft	1	613.0 g
4	conrod	1	169.7 g
5	piston	1	351.1 g
6	gudgeon_pin	1	42.4 g
7	cylinder	1	1614.8 g
8	cylinder_head	1	1731.4 g
9	Socket head cap screw M8x35	4	head_bolt
10	Socket head cap screw M8x20	4	base_bolt
11	crank_gear	1	29.4 g
12	cam_gear	1	211.0 g
13	camshaft	1	106.1 g
14	valve_in	1	20.5 g

TOP VIEW



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

ISOMETRIC



Hidden lines omitted · not to scale

NOTES

1. Bearing 6204 (gear side): life 107 h is below 2,000.0 h - choose a larger bearing or reduce the load
2. Bearing 6204 (free side): life 107 h is below 2,000.0 h - choose a larger bearing or reduce the load
3. Shaft crankshaft: safety 1.21 below 2.5 - increase to at least Ø26 mm or use a stronger steel (C45 / 42CrMo4)
4. The camshaft lies close to the swept envelope of the crank webs and conrod. Check the full rotation for clearance.
5. Valve timing and gear tooth phase are not set.
6. S235 is unsuitable for a piston, liner or valves. Use aluminium alloy or cast iron and valve steel for a running engine.
7. No lubrication, piston rings or crankcase split are modelled. The crankcase must be split for assembly.
8. Crank axis along X, cylinder axis along +Z. Model shown at TDC.

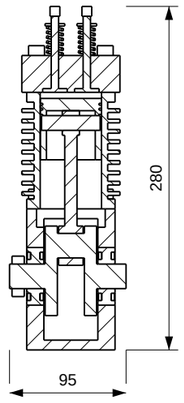
TITLE

Single-cylinder 4-stroke engine

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 ± 0.1 mm	MASS (calc.) 9.17 kg
SCALE 1 : 5	SHEET 1 / 2 A3	DRAWING No. LX-38FE2F-v1

SECTION A-A



A-A (1 : 5) cutting plane y = 0 mm, viewed from the front

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

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	Ø56	50	76.4	THRU	T	Bored
H2	Ø47	60	60	THRU	S	Ø47 H7 (+0.025 / 0) bearing housing
H3	Ø12.5	105	60	THRU	S	Drilled
H4	Ø10	37	31.4	THRU	T	Drilled
H5	Ø10	63	31.4	THRU	T	Drilled
H6	Ø6.8	22	36.4	15	T	M8-6H, tap drill Ø6.8
H7	Ø6.8	22	116.4	15	T	M8-6H, tap drill Ø6.8
H8	Ø6.8	78	36.4	15	T	M8-6H, tap drill Ø6.8
H9	Ø6.8	78	116.4	15	T	M8-6H, tap drill Ø6.8
H10	Ø20	60	85	THRU	S	Drilled
H11	Ø12	60	185	THRU	S	Drilled
H12	Ø39.8	50	76.4	THRU	T	Bored
H13	Ø12	60	185	THRU	S	Ø12 H7 (+0.018 / 0) gudgeon pin
H14	Ø50	50	76.4	THRU	T	Bored
H15	Ø10	37	31.4	THRU	T	Drilled
H16	Ø10	63	31.4	THRU	T	Drilled
H17	Ø9	22	36.4	THRU	T	Ø9 H13 for M8 (ISO 273 medium)
H18	Ø9	22	116.4	THRU	T	Ø9 H13 for M8 (ISO 273 medium)
H19	Ø9	78	36.4	THRU	T	Ø9 H13 for M8 (ISO 273 medium)
H20	Ø9	78	116.4	THRU	T	Ø9 H13 for M8 (ISO 273 medium)

+ 23 more holes - full list in the app

FITS & TOLERANCES (ISO 286)

Feature	Size	Max / min	Fit
main journal	Ø20 k6	20.015 / 20.002	H7/k6 transition
bearing housing	Ø47 H7	47.025 / 47.0	H7/k6 transition
crank gear hub	Ø20 H7	20.021 / 20.0	H7/k6 transition
gudgeon pin	Ø12 H7	12.018 / 12.0	H7/g6 clearance
Bearing seat 6204 on conrod	Ø20 k6	20.015 / 20.002	H7/k6 transition
Bearing seat 6204 on valve_in	Ø20 k6	20.015 / 20.002	H7/k6 transition
Bearing seat 6204 on valve_ex	Ø20 k6	20.015 / 20.002	H7/k6 transition

ENGINEERING CHECKS (simplified hand calculations)

!! gear side: 6204: P = 4000 N, C = 13.5 kN → L10 = 38.4 mil. rev = 107 h at 6000 rpm (need 2,000.0 h)

!! free side: 6204: P = 4000 N, C = 13.5 kN → L10 = 38.4 mil. rev = 107 h at 6000 rpm (need 2,000.0 h)

!! crankshaft: Ø20: T = 2.4 N·m, M = 152 N·m → σv = 193.6 MPa, safety 1.21 vs. Re 235 MPa (need 2.5), min. Ø25.4

OK crank gear: m1.5 z20 b10: Ft = 33 N, tooth root σF = 17.6 MPa (allow ~120), contact σH = 311 MPa (limit ~470)

Flat patterns: 3 DXF files (4 pcs) for laser cutting - download in the app.

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SCALE 1 : 5	SHEET 2 / 2 A3	DRAWING No. LX-38FE2F-v1