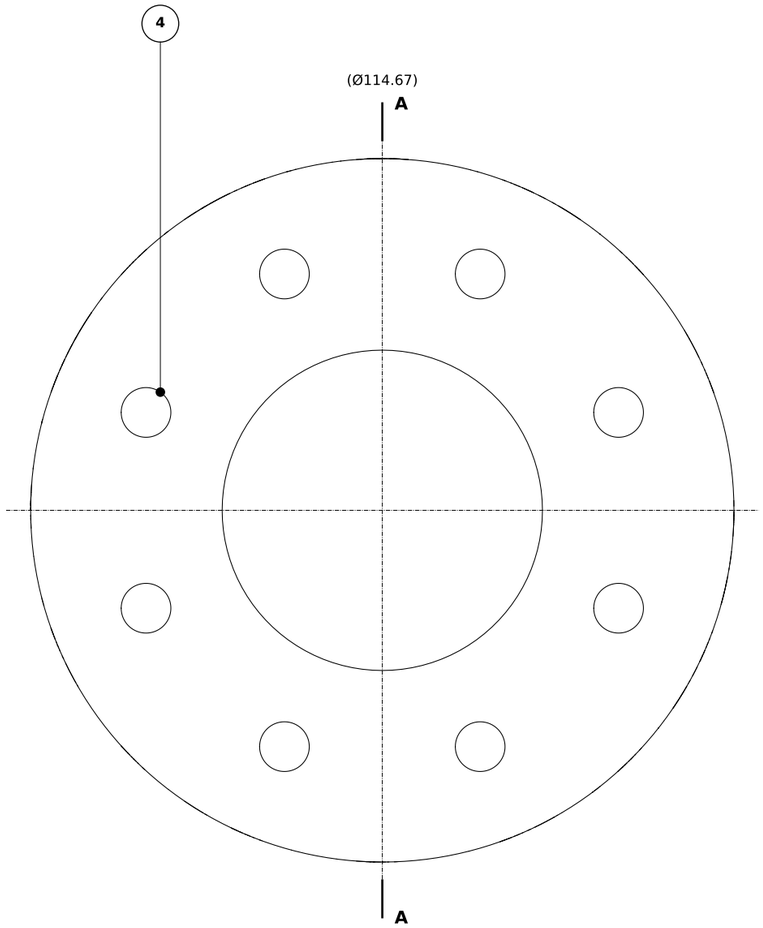
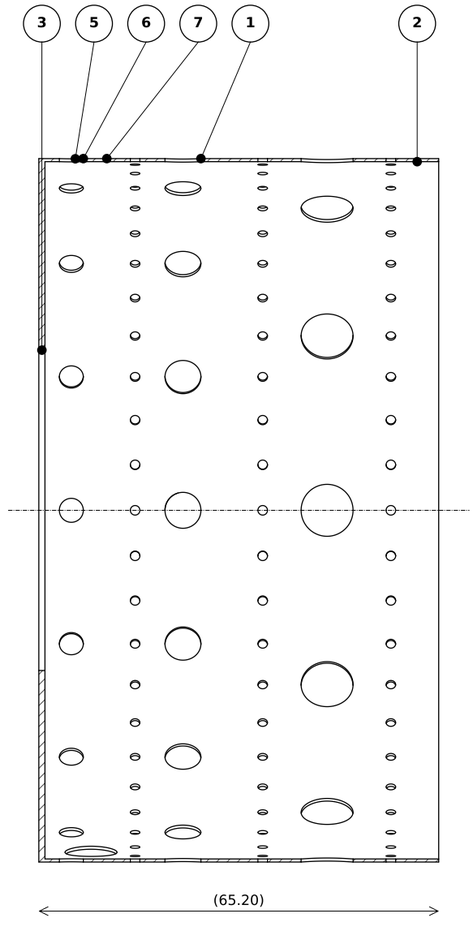


VIEW FROM THE INLET



SECTION A-A

REQUIREMENTS

1. 310S sheet: liner 0.5, plate 1.0. A weldment: the rolled liner, the flat plate, the 8 sticks (HL-TJ-14) and the inner liner (HL-TJ-13); flat patterns from flat.py
2. Bore Ø113.67 ±0.1 at the back, rolled round on a mandrel: slides over the exit cone's front band
3. Plate bore Ø52.22 +0.1/0: the inner liner goes through, TIG fillet on the plate's front face
4. 8× Ø8.1 laser-cut through the plate on Ø83.4, at 22.5° + n × 45°: the sticks go through, TIG fillet on the front face
5. Holes, laser-cut in the flat: 16× Ø3.91 at 5.3; 48× Ø1.56 at 15.7; 16× Ø5.86 at 23.5; 48× Ø1.56 at 36.5; 12× Ø8.47 at 47; 48× Ø1.56 at 57.4 (mm from the plate's front face); each row equally spaced, Ø ±0.05
6. Start system: Ø8.5 for the glow plug at 191.25° and Ø5 for the gas tube at 168.75°, both 8.5 from the plate's front face (angles from the first primary hole)
7. Seam butt-welded at 11.2° (2.9 mm to the nearest hole), dressed flush inside

NOTES

1. Model is master: sizes not called out come from combustor_outer.step, at the general tolerance.
2. Break sharp edges 0.1–0.3 unless noted. No burrs. No tool marks across sealing or seating faces.
3. Surface finish Ra 1.6 µm unless noted. Threads to ISO 965 (metric fine).
4. Welds TIG (or laser) with 310 filler and an argon back-purge. Flow-check the welded can before its first fire: a known airflow through it and its pressure drop (the liner drop is sized at 4.6% with a discharge coefficient of 0.6).
5. Inspection report, CMM and material certificates are add-ons on the quote.

HIGHLAND Turbojet, 170 N class

combustor_outer.step · highlandmetal.ca

PART Combustor outer liner and plate	PART NUMBER HL-TJ-11		REVISION A
MATERIAL Stainless 310S sheet (ASTM A240), annealed			
FINISH None, as machined		HEAT TREAT None	
TOLERANCE UNLESS NOTED ±0.13 mm (±0.005 in) unless noted; angles ±0.5°			
QUANTITY 1 per engine	MASS 146.9 g		SCALE 1:1
UNITS mm	PROJECTION Third angle	DATE 2026-11-20	SHEET A3, 1 of 1