

Concept 20.2

Mechanical Typewriter

R8 Astra | Rapid Product Solutions | Supplier brief

WIDTH (mm)	HEIGHT (mm)	DEPTH (mm)
88	136	27.2

Body dimensions. Depth including LED dome: 28.5 mm.

Inspiration photo



CAD assembly / R8 Astra



Appearance intent; CAD shows the current engineering proposal. Views are not to scale.

CAD front



CAD rear



CAD exploded



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Quote and materials

R8 Astra | Rapid Product Solutions | Cast urethane and woven front with metal trim and serviceable, calibrated controls.

Please review manufacturability and quote a staged enclosure prototype for Walkie One, a handheld push-to-talk voice device. We need to evaluate grip, button operation, speaker/microphone openings, status light, charging access and serviceability.

What to quote first

C01 volume, C02 full PTT and C03 front mechanism fixtures; C04/C05 rear lettering/bond comparison and C06 cloth sample. Then one full unpowered fit enclosure. Defer cosmetic tooling/metal trim commitment until the antenna layout is reviewed.

Materials and processes

Structure	SLS nylon with machined stop/seat datums; Rapid lists RPS Nylon PA. Confirm actual powder grade and finishing capability.
Soft skins	RPS Elastomer cast polyurethane, 40 +/-5 Shore A, is a published Rapid family. Confirm current grade and cream/sage pigment/bond system. Rear lettering pad is 1.30 mm nominal; perimeter skin remains 0.80 mm.
Cloth and metal	Woven acoustic cloth, 0.60 mm total installed cloth/bond budget. FR402 is a candidate; fiber chemistry and thickness must be confirmed. CNC 6061-T6 key/rims with agreed anodize; preserve the exact dotted W and rear artwork.

Published capability is not acceptance of this specific geometry. Exact grades, fine tolerances, thin-section casting, specialty coatings/cutting and test services need Rapid confirmation. General website tolerances do not replace the finished drawing tolerances.

Build and inspect

Envelope	88 x 136 x 27.2 mm body; the retained LED dome makes overall depth 28.5 mm. Side controls also extend width. Do not quote the body depth as complete device depth.
Assembly path	Captured keys require removable stops and a staged rear/inward path. One rear screw is relocated to X-26/Y51. Follow the R8 drawings; never use archived R7 screw/stop locations.
Calibration	Controlled side stroke 0.85 +/-0.10 mm; front 0.80 +/-0.07 mm. Measured freeplay minus measurement uncertainty must be at least 0.15 mm side / 0.10 mm front. The 0.06-0.10 mm post-contact trial range needs approved switch loading.
Bond and trim	Rear local bondline 0.10 +/-0.03 mm; cloth uses perimeter-only bond. Metal rim seat has a total nominal 0.10 mm anodize/bond budget. No unbudgeted full-skin adhesive layer.

Assembly order

1. Start with PCB, tray, acoustic parts, carriers and stops removed. Insert side keys from rear/inboard, then move outward; stage cassettes and carriers similarly. Insert the front key with all four stops removed, then install stops. Follow original detail page 6 and insertion drawings.
2. Fit specified springs and M1.4 front jack screws; do not substitute archived M2 jacks. Measure cassette seats after tightening, actual switch make/release and all key settings before the board blocks access.
3. Prove removal as well as insertion, then cloth/skins/trim and approved hardware routing. Test the long PTT at top, middle and bottom; repeat calibration after cassette removal. Record actual RF layout separately.

Keep separate

O1 flush-window optics is excluded from the primary quote. It relocates the intact LED and needs separate optics/retention work; the base build retains the dome.

Use the supplied artwork at its specified size and position. Approve physical color, texture and marking samples together; screen colors are visual intent. Keep finish and adhesive off guides, stops, acoustic openings, optical faces and service seams unless the drawing explicitly calls for them. Record any proposed substitution before using it.

Inputs and delivery

Rapid is asked to make, finish, inspect and optionally assemble agreed parts using Walkie One-supplied hardware. Walkie One owns electrical design, firmware, battery/charging, RF and acoustic validation. Rapid may quote specialist support separately; these services are not assumed from its website.

Before mechanism acceptance	Rapid with Walkie One mechanical	Fixture results, spring lot/force data, machined datum capability, thread tests and measured end-press behavior.
Before full finish	Rapid proposes; Walkie One design approves	Skin casting/bond map, rear fill, cloth grade/W process and matched metal/skin samples.
Before cosmetic tooling or powered build	Walkie One electrical/RF	Actual conductor map, antenna placement/clearance, mated connector/coax and harness. The retained antenna location is a packaging reference, not RF approval.

Quote and return

Quote each concept separately: one unpowered fit set and the priority samples on page 2, followed by one finished appearance article after sample approval. This is a comparison basis, not an order for all concepts. Show any minimum quantity; confirm the selected concept, quantity, delivery date and ship-to with Walkie One before work starts.

Please itemize parts, fixtures/coupons, tooling, finishing, assembly, inspection and shipping; state lead time from receipt of approved inputs. Identify partner-made work, exclusions and tolerances you cannot hold. Quote a feasible alternative with its effect on fit/appearance rather than silently changing the design.

Return identified parts/samples, the material and finish selections, measured critical dimensions, assembly photos and the completed applicable inspection record. List hand fitting, deviations and unresolved items. Leave unperformed tests blank or NOT TESTED. Walkie One approves samples and engineering changes before repeat finished units.

Use these files

This brief controls supplier scope and responsibilities. The current per-part STEP, BOM and finished-interface drawings retain the technical requirements. Stop and return a marked question if they disagree. Millimetres throughout. Assembly STEP is a reference, not a single part to print. Purchased hardware, foam, cloth and adhesive solids are not rigid-print instructions.

BOM: docs/BOM_R8.csv

Records: docs/Qualification_Traveler.csv; docs/Rapid_Open_Items.csv.

Original detail pages 6-13 and the eight critical drawings cover insertion, datums, calibration, spring choice, bonds, cloth and RF limits.

Supplier capabilities checked 06 Sep 2026. Source links and confirmation limits: docs/Rapid_Capabilities.md.
<https://www.rapid-products.com/>