

Concept 1.2

Soft-Shell Hybrid

R8 | Rapid Product Solutions | Supplier brief

WIDTH (mm)	HEIGHT (mm)	DEPTH (mm)
88	136	24.5

Modeled size dimensions.

Inspiration photo



CAD assembly / R8



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 | Rapid Product Solutions | Soft silicone exterior with a woven front and a removable guided play mechanism.

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

One PA12 rigid fit set, one complete guided play coupon, one curved skin/core bond coupon, a woven cloth/W sample and a split PMMA optical sample. Quote the full silicone appearance article after these pass review.

Materials and processes

Rigid structure	SLS unfilled PA12; EOS PA 2200 is the requested candidate. Rapid lists RPS Nylon PA, but equivalence and current powder grade need confirmation. Machine the precision lands and guides.
Silicone skins	0.80 mm nominal, 40 +/-5 Shore A. LR3003/40 LSR is a benchmark, not an assumed Rapid process. Ask for a named RTV silicone prototype route or separately priced LSR route. PU is not an approved silicone substitute.
Cloth and optics	Real breathable woven polyester with the supplied W; 0.60 +/-0.05 mm installed textile. PMMA uses a 0.60 mm sheet transport and separate output post. Quote optical finishing and assembly trials.

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

Body and bonding	88 x 136 x 24.5 mm body. Keep the 30.8 mm play face and existing controls/artwork. Skin adhesive belongs in 0.10 +/-0.03 mm reservoirs, flush with dry lands; no added full-face film.
Guided play	Finished stems 3.000-3.002 mm; cassette bores 3.010-3.012 mm. These are precision-machined targets, not SLS accuracy. Rapid must confirm a practical matched-part process before this coupon.
Calibration	Measure 0.060 +/-0.010 mm positive rest gap. The 0.040 +/-0.010 mm post-contact setting is provisional and needs Walkie One mechanical/electrical approval of switch loading. Never preload the switch to obtain contact.
Optics and battery space	Keep the 0.90 mm tray floor and lateral mic-lead relief. Test the thin PMMA route with the actual LED. The nominal mic-to-cell space does not establish battery expansion or solder clearance.

Assembly order

1. Inspect the rigid parts; install the play key, cassette, actual switch and measured support/stop shims from the rear before PCB and battery obstruct access. Use the detailed sequence in Engineering_Detail.pdf, original page 9.
2. Measure contact, stop and return at the center and eight rim positions. Fit side controls, speaker/cloth, guide and microphone; confirm lateral solder/lead clearance.
3. Trial the actual charging cable and complete harness. Bond front and rear skins separately after fit approval; demonstrate three open/remove/refit cycles without tearing skins or trapping leads.

Keep separate

U1 centered USB mouth and A1 sculpted surround are separate studies, excluded from the base quote. U1 does not relocate the actual socket. A1 has an unqualified thin silicone edge.

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 trial	Walkie One mechanical/electrical	Actual switches, final switch retention/lead detail and approved force/travel limits.
Before powered assembly	Walkie One electrical	Populated board identity, cable and receptacle mating data, dressed leads, actual battery maximum/aged envelope and retention limits.
Before full finish	Rapid proposes; Walkie One approves	Named silicone/cure/bond recipe, cloth SKU and W treatment, rear ink/primer and optical result.

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.csv

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

Original detail pages 4-10: bonds, mechanisms, optics, materials, assembly and physical tests; drawings remain with the package.

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