

Engineering revision handoff

Engineering file ID 25.2 | E1 builds on R1

Front-button mechanism rebuilt around the supplied Omron B3F4000. Original compact exterior and 38 mm play face retained.

Partial internal rebuild. Review the represented geometry and listed changes. Remaining CAD and physical qualification are explicit below.

Grip: 90.4 x 138.4 x 28.8 mm. Side controls extend overall width to 93.2 mm. 28.8 mm is depth; visible play face is 38 mm.



Use these files first

00_Handoff.pdf explains scope and assembly. 01_Current_CAD contains the E1 STEP and imported-solid Fusion assemblies. BOM_Represented_Parts.csv identifies the represented part files; Rapid_Open_Items.csv lists unresolved work.

The primary package supersedes earlier files only for the E1 represented geometry. Earlier documents and appearance films remain historical references.

Changes and evidence

CAD checks apply to the revised interfaces and their represented neighbours

What changed

- Replaced the placeholder switch ring with a rear-open carrier and screwed reaction plate bearing on the rigid switch case.
- Added a guided pusher interface, nominal 0.14 mm rest gap and separate 0.65 mm travel stop.
- Added shell mounting bosses and six M2 screw envelopes; preserved terminal and locating-peg passages.

What was checked

- New carrier and reaction plate have no reported overlaps with represented parts; screw-head checks are clear.
- Straight travel is clear at 0, 0.14, 0.30, 0.50, 0.64 and 0.65 mm. A 0.66 mm probe contacts the intended stop.
- Carrier and reaction-plate STL files are watertight with consistent winding. No complete device print kit is claimed.

Static or sampled rigid-body checks do not prove force, allowable switch overtravel, rocking, spring return, tolerance extremes, fatigue, electrical function or production readiness.

Assembly and service

Sequence for the changed interface; complete device assembly remains open

1. Insert the front cap from inside the housing so its flange remains captured.
2. Insert the actual B3F4000 into the rear-open carrier. Feed the pins and pegs through the reaction plate.
3. Fit four M2 x 5 reaction-plate screws; establish physical fit and torque before clamping the switch case.
4. Fit the pusher into its guide and attach the carrier to the front-shell bosses with two M2 x 4 screws.
5. Provide rear wiring access and strain relief. Verify return, centre and edge presses on a material sample.

Material and fastener assumptions

Confirm polymer and elastomer grades, manufacturing process, finished tolerances and surface treatment with the supplier. Modeled screw envelopes do not specify a purchased drive or thread profile. A 1.7 mm pilot, where used for M2, is a prototype assumption requiring process and torque qualification.

No adhesive or flexible gasket envelope is permission to print that layer as a rigid solid. Review the material role of every part. Nominal switch case bearing faces require actual dimensional and clamping checks.

Remaining work before release

These items are not marked passed by the new CAD or website publication

1. Side-button pushers, switch mounts, guidance and retention are still missing.
2. Complete actual PCB, battery, speaker, microphone and antenna packaging and retention remain to be rebuilt.
3. Service closure, grip retention and the PCB-derived USB location remain open.
4. Harness and mating connectors, material/process tolerances, switch force and edge-press testing require completion.

Manufacturing decision

Review and quote the current engineering work with these limitations. Select and verify the affected process and hardware before making functional parts. Complete the missing mechanical work, full assembly checks and physical fit prototype before approving a working device or production batch.

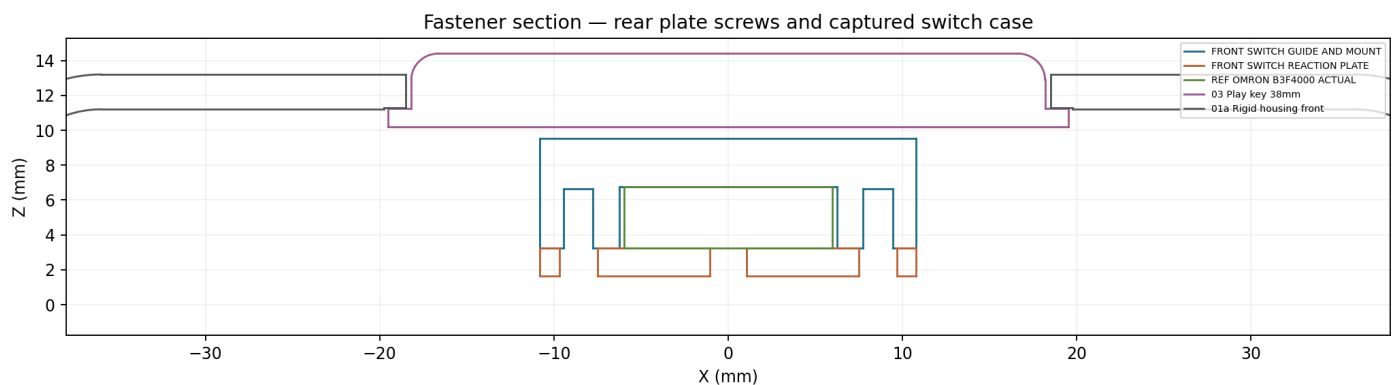
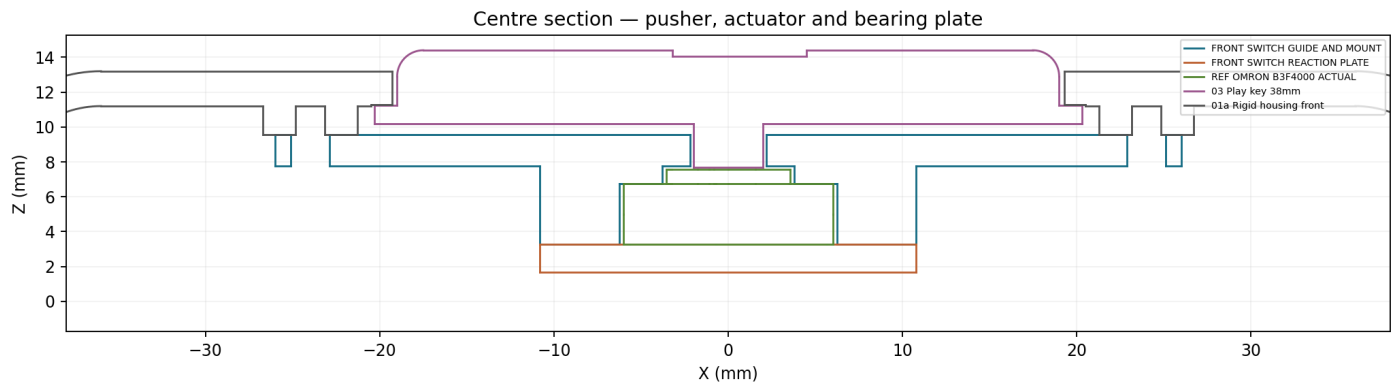
Version control

Use E1 together with this handoff and its file inventory. Do not mix E1 replacement components with earlier carriers, switches or untrimmed layers. The website preserves historical download URLs; those files are not the current engineering instruction.

Engineering sections

Appendix A | Sections generated from the actual revised CAD

25.2 E1 — actual Omron B3F4000 front interface
0.14 mm rest gap · 0.65 mm nominal hard stop · engineering candidate



Dimensions in the section image are millimetres in the design coordinate system. The displayed section is a geometric inspection aid, not a fully tolerated manufacturing drawing.

For 25.2 and 23.2, the nominal front-button gap is 0.14 mm and the local stop is 0.65 mm. For 21.2 and 26, use their recorded measured interfaces and motion reports; do not transfer dimensions between concepts.

File authority and check limits

Appendix B | Reproducible inputs and remaining qualification

Current geometry

The E1 reference STEP is the assembly authority for represented geometry. Fusion review archives contain editable imported solids, not rebuilt native feature history.

Individual parts

The parts directory follows the represented assembly. Component groups may contain multiple solids. Treat this as a represented-parts inventory, not a complete procurement BOM.

Fit meshes

Only the two checked front-module STL files for 25.2 and 23.2 are included as local fit candidates. A full device STL or 3MF fabrication kit is not released.

Source and evidence

03_Verification contains the authoritative checks listed below. 05_Editable_Source contains delta builders and links to their original baseline dependencies.

Reports: front_interface_validation.json, front_module_interference.json, component_mesh_validation.json

Assembly SHA256: 44977f28e709199e6feeaddc3304d6612f0f5d0e1bf9a23412fd2d02d11ea000

Missing harness and process details affect their final interfaces and qualification. They do not prevent independent CAD corrections; unfinished mechanical work remains listed on page 4.