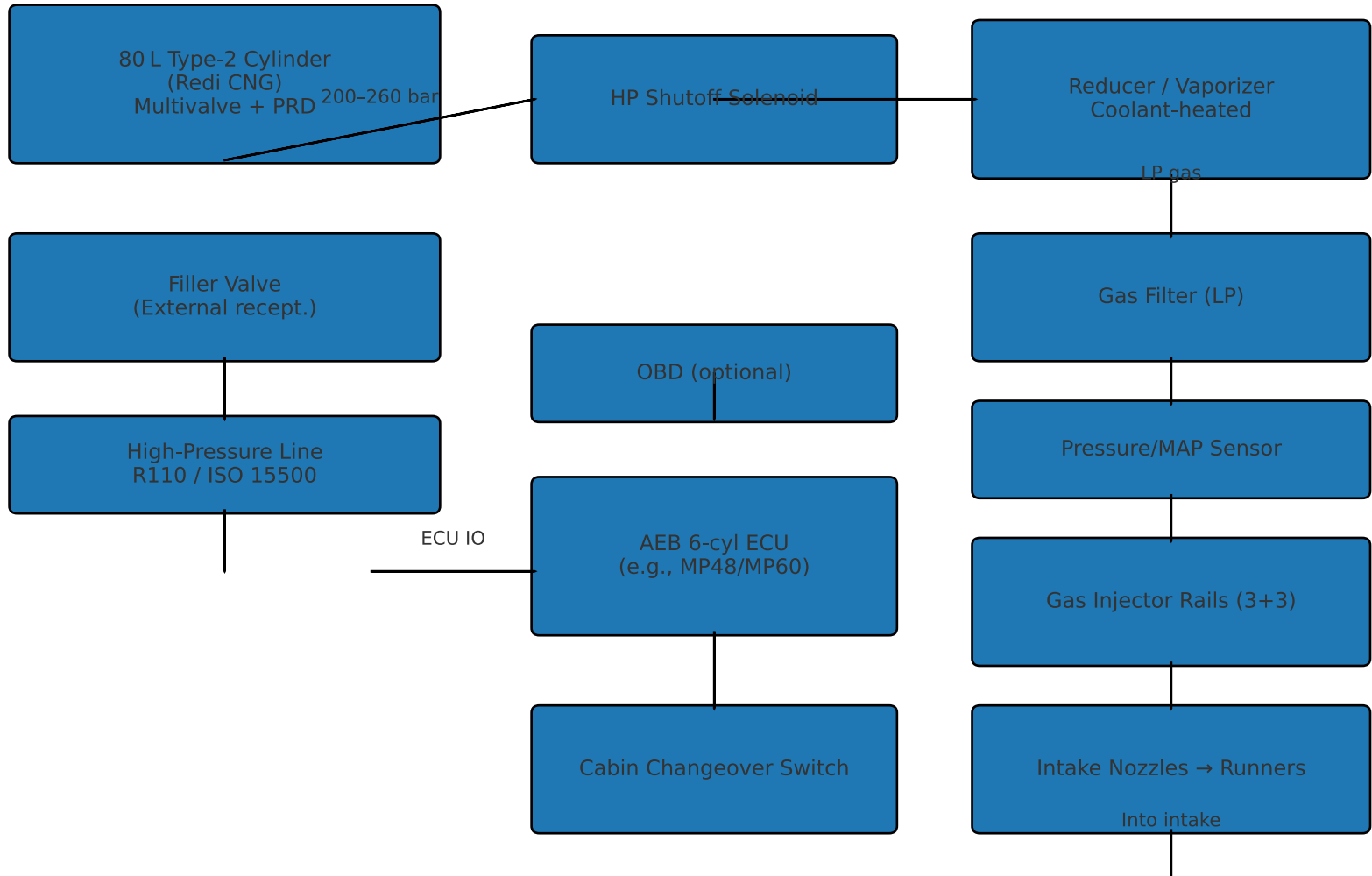


Redi CNG — Bi-Fuel Conversion Overview (PFI 6-cyl)

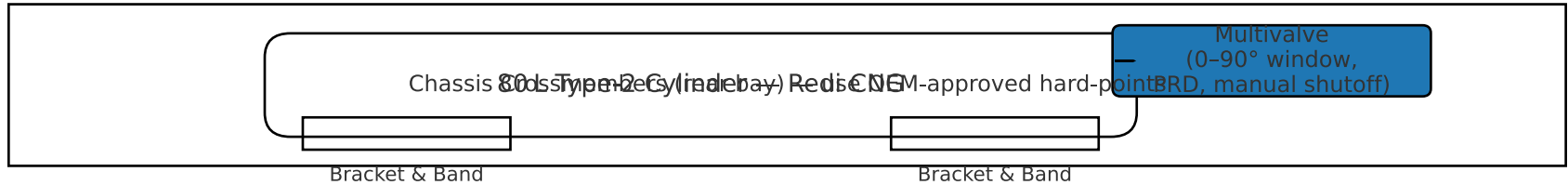
High-level layout using AEB ECU & components + 80 L Type-2 cylinder



ECU controls: injector timing, temp/pressure sensors, RPM, petrol injector cut, OBD trims (if supported)

Step 1 — Install 80 L Type 2 Cylinder (Redi CNG)

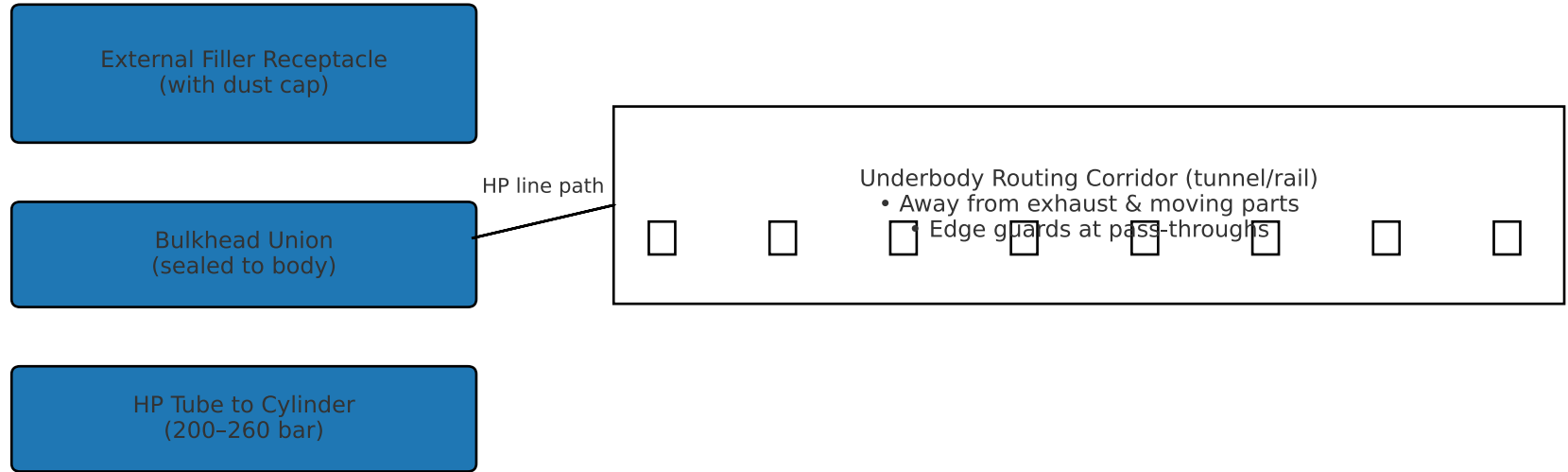
Mounting & multivalve orientation



- Orient multivalve per supplier spec (usually $\leq 30^\circ$ from horizontal).
- Use 2+ steel saddles; torque per bracket spec. Protect body with rubber pads.
- Label cylinder clearly: “Redi CNG”. Ensure PRD vents outside cabin.
- Bond to chassis ground; record cylinder serial for documentation.

Step 2 — Filler Valve & HP Line Routing

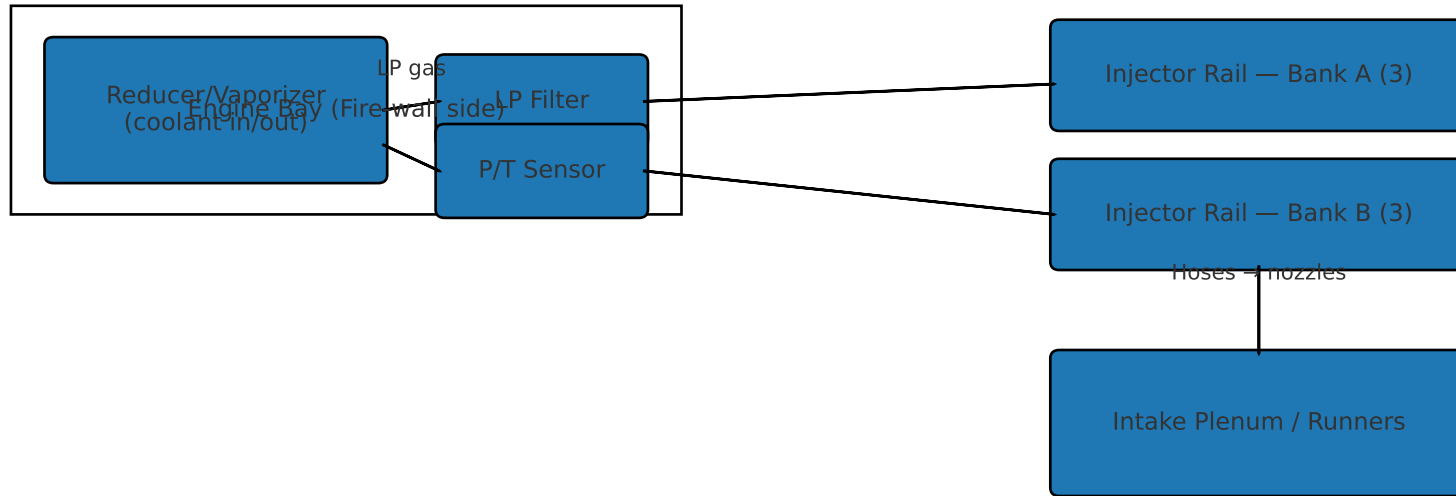
Use ECE R110/ISO 15500 tube, bulkheads, and clamps ≤ 50 cm spacing



- Pressure test with inert gas first; then with CNG at service station (after inspection).
- Use approved flare/compression fittings; never solder. Protect with conduit where exposed.

Step 3 — Reducer Placement & LP Plumbing

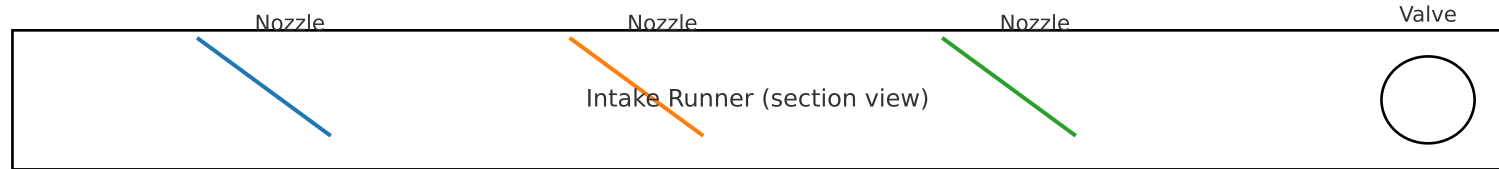
Close to heater hoses; short LP hoses to rails; tidy brackets



- Tee reducer into heater hoses; purge air; verify coolant flow.
- Mount rails upright; shortest equal-length hoses to each runner.
- Fix components to metal brackets; avoid vibration and heat soak.

Step 4 — Nozzle Positioning (PFI)

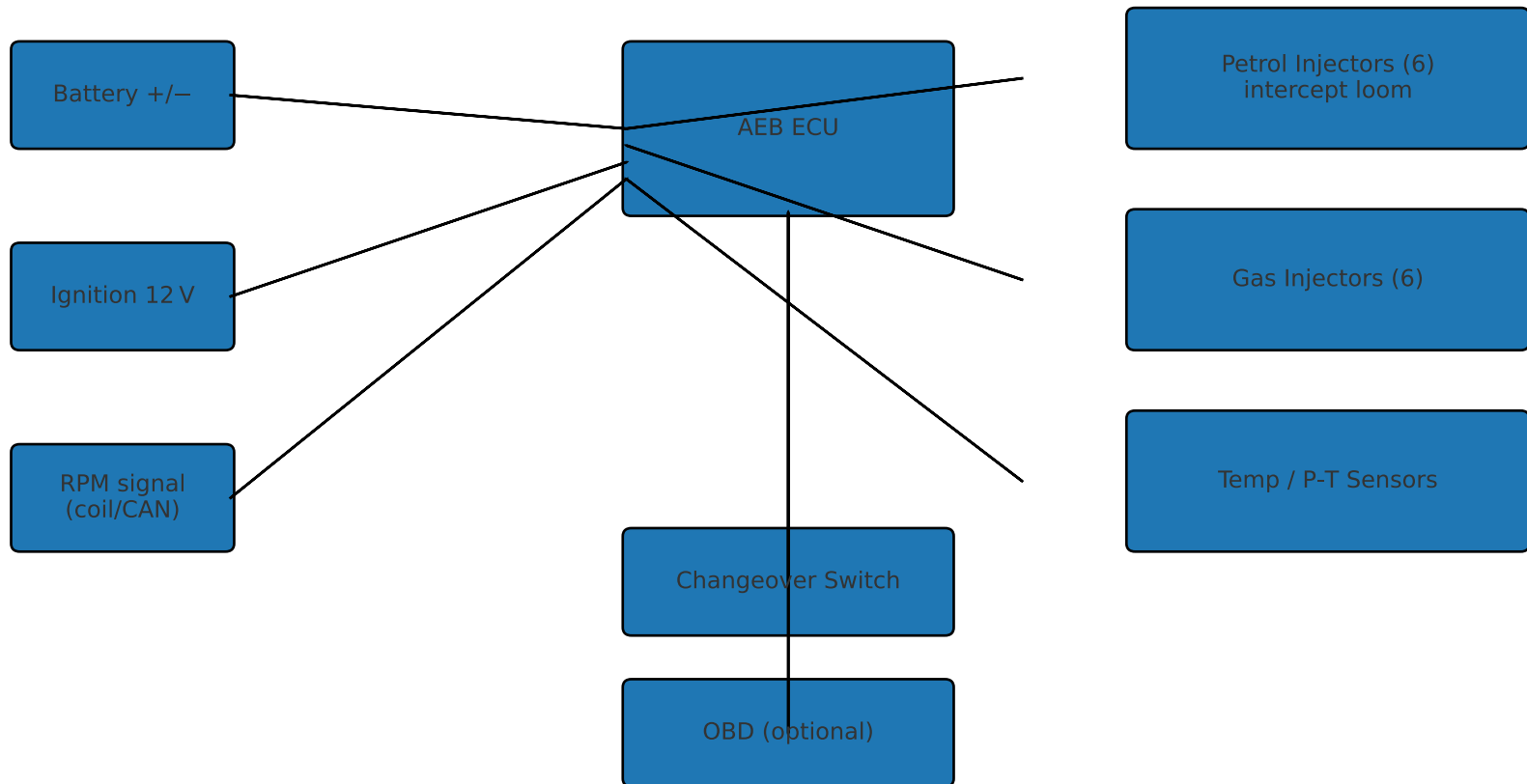
Drill/tap each runner ~60-100 mm from intake valve, 30-45° angle



- Drill at shallow angle toward airflow; avoid shavings entering manifold (grease bit).
- Tap threads per nozzle spec (e.g., M6×1). Use thread sealant approved for gas.
- Fit barbs; connect equal-length hoses from corresponding rail outlet.

Step 5 — Electrical & ECU Wiring (AEB)

Intercept petrol injectors, tie to RPM, ignition, sensors, and changeover switch



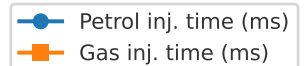
- ECU ground to clean chassis; fuse the +12 V feed. Keep loom away from heat.
- Use proper injector order/bank mapping. Secure with split-loom & grommets.

Step 6 — Software Calibration (AEB suite)

Autocalibrate at idle/cruise; refine under load; monitor fuel trims & gas pressure

Typical sequence:

- 1) Set engine type: 6-cyl, sequential PFI. Reducer type & nominal pressure.
- 2) Enter nozzle size & rail model; enable coolant-temp switchover (e.g., 40–50 °C).
- 3) Idle calibration; then 2000–3000 rpm no-load points.
- 4) Road test: light/medium/high load cells. Adjust map so STFT/LTFT stay near $0 \pm 5\%$.
- 5) Validate petrol-mode trims are unaffected; confirm seamless changeover.
- 6) Set safety cutoffs: low gas pressure, RPM loss, injector faults.



Step 7 — Leak-Check, Documentation & Handover

Pressurize & test, label, maintenance intervals

- Leak test: HP side at service pressure; LP side at reducer outlet (~1-2 bar). Use approved leak spray.
- Verify PRD vent routing; test manual shutoff & solenoid operation.
- Secure all hoses/looms; clamps ≤ 50 cm; heat shields near exhaust.
- Startup on petrol; switchover at temp threshold; revert to petrol on low pressure.
- User handover: refueling procedure, switch functions, emergency shutoff, service schedule.
- Maintenance: LP filter 10-20k km; HP filter 60k km (as specified). Cylinder periodic inspection per regulation.
- Labels: Engine bay & fueling door — “Redi CNG Bi-Fuel”.

Compliance: Use components certified to ECE R110 / ISO 15500. Observe local Nigerian regulations and insurer requirements.