



THE BAJA DUCATI

A machine that reads Ducati and survives the desert.

THE PROBLEM

Two machines in opposition

What reads Ducati

- Rigid steel trellis, mass central and forward
- Low stance, short travel, tight tuck
- Sealed for tarmac, not for dust

What survives Baja

- 300 mm of wheel travel, a tall stance
- A long wheelbase for stability over whoops
- Everything sealed against abrasive sand

THE RESOLUTION

Not a compromise — a deliberate re-mapping

- Keep the Ducati cues that are visual and architectural: the trellis language, the tank-to-tail line, mass visually centralized, the naked-mechanical aesthetic.
- Discard the cues that are dynamic: the low stance, the short travel, the sealed-for-tarmac philosophy.
- Series-hybrid is what makes this resolvable, not merely stylable: the engine never touches the driveline, so mass is placed by the physics of handling — not by a chain run.
- Ducati language on rally-raid proportions. A tall, long, wide-footed desert machine wearing a trellis.

WHY NOW

Two advantages no throttle cable can match

200 mi

RANGE WITH NO CHARGER — FUEL
CARRIES THE ENERGY, THE BATTERY
CARRIES THE DYNAMICS

ms

E-MOTOR TORQUE METERED AT
MILLISECOND RESOLUTION — THE SAND
ADVANTAGE

1 point

THE GENSET RUNS AT ITS SINGLE BEST-
EFFICIENCY POINT, DECOUPLED FROM
ROAD SPEED

The 'why now' lives in the powertrain: desert range without charging infrastructure, plus e-motor torque control that meters slip in soft sand faster and finer than any throttle cable — where the line between drive and dig-in is a few percent of wheelspin.

THE ARCHITECTURE

The wheels are only ever driven by the electric motor

A series hybrid (range-extended EV). The engine has no mechanical path to the ground — it spins a generator at its efficient RPM to feed the DC bus and top up the battery.

- Battery, central in the frame triangle — the densest mass, where a Ducati's engine sits
- Axial-flux motor at the swingarm pivot — 94 mm long, minimal overhang
- Small range-extender genset, tucked low and rear
- Ride-by-wire: the throttle is a torque request, not a butterfly



GROUNDED, NOT GUESSED

Every block is a real part — or a proven part-class



The frame is bespoke too. The risk is not in inventing components — it is in the three bespoke subsystems (frame, pack, genset), and those are named as hard.

Subsystem	Named supplier	Sourcing
Traction motor	EMRAX 228 / 268 axial-flux	COTS
Inverter	Cascadia Motion, HEV-rated	COTS
Battery cells	Molicel P42A / P45B	COTS
Suspension	WP rally, ~300 mm travel	COTS
Battery pack	Bespoke — sealed, liquid-cooled	Bespoke
Range-extender genset	Bespoke — ICE + PM generator	Bespoke

Here is the risk, and here is the mitigation

- Hybrid packaging vs. Ducati mass centralization — the defining design task. Solvable because series-hybrid decouples the ICE, but real work.
- Range-extender genset — no off-the-shelf motorcycle-scale unit exists. An integration job: engine + PM generator + controller. The longest pole.
- Weight lands ~200–240 kg wet — heavier than a pure rally bike. We own the number; an insider who does the mass math will distrust a claimed 170 kg.
- Sand ingress + desert thermal — known fixes (IP66/67, dual cooling loops), unforgiving of any single miss.
- Desert traction-control calibration — development, not invention. The e-motor's fine torque control is what makes a good desert calibration possible.

Buildable. The risk is execution, not physics.

THE MARKET

Where a Ducati-register desert machine sits

Premium

A HALO MACHINE IN THE REGISTER OF
KTM RALLY, DUCATI DESERTX, THE
ELECTRIC-ADVENTURE FRONTIER

Strategic

BUILT TO BE PRESSURE-TESTED BY A
MANUFACTURER OR RACE OUTFIT —
CREDIBILITY IS THE PRODUCT

First-of-kind

A SERIES-HYBRID DESERT MOTORCYCLE
PROVING DESERT RANGE WITHOUT
CHARGING INFRASTRUCTURE

This is a strategic, insider-facing machine: the audience is a manufacturer, a race outfit, or moto money who know bikes cold. The value is a defensible, first-of-kind architecture — the prototype is what makes the market conversation real.

PROTOTYPE PLAN

One running, desert-tested machine — NRE-dominated

The parts total ~€51k–€105k; the engineering that makes them a first-of-kind machine totals ~€290k–€690k — five to six times the hardware. The three cost drivers are the three hard parts: genset integration (€60–140k), battery-pack engineering (€50–120k), frame engineering (€40–90k). Planning centre: ~€500k–€600k.

Bucket	Low	High
Components (hardware on the machine)	~€51k	~€105k
NRE, integration & test	~€290k	~€690k
Total prototype	~€341k	~€795k

THE TIMELINE

Built backward from the genset pole

~14–20

MONTHS, ARCHITECTURE LOCK TO A
DESERT-TESTED RUNNING PROTOTYPE

3

LONG POLES: GENSET (~20–36 WK),
FRAME (~12–24 WK), BATTERY PACK
(~16–28 WK)

co-design

THE THREE INTERLOCK — THE FRAME IS
BUILT AROUND THE PACK AND GENSET
ENVELOPES

Done when the machine has completed a real desert test day — not when it first turns a wheel. Contract more of the genset and pack work and it lands nearer 14 months; a leaner in-house build lands nearer 20.

THE ASK

A first round to reach the machine that proves the thesis

€1.0–1.8M

FIRST-ROUND ENVELOPE: THE
PROTOTYPE PLUS ~12–20 MONTHS OF A
LEAN SENIOR TEAM, WORKSHOP AND
TEST PROGRAM

€500–600k

THE PROTOTYPE ITSELF, NRE-
DOMINATED — THE PLANNING CENTRE
TO BUILD AGAINST

1 machine

WHAT THE RAISE FUNDS WELL: ONE
DEMONSTRABLE, DESERT-TESTED
PROTOTYPE

This raise does not claim to fund homologation, volume tooling, or a production line — and saying so is the credibility move. It funds the prototype that makes those the next conversation. The money is spent on integration and engineering execution, not on unproven physics: a fundable risk profile.

A machine you can watch cross the desert.

Ducati language on rally-raid proportions.

Series-hybrid. Electric-primary. Ride-by-wire.

The risk is execution — and that is the fundable kind.

Every load-bearing number in this deck traces to the feasibility dossier and its grounded sources, or is an honest range with its basis named.