GearShift AUTO PARTS

Case Study: DIY Engine Installation in Arizona: A Customer's Step-by-Step Success Story

Client Success Story – Gearshift Auto Parts

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Client Overview

Name: Chris Donnelly
Location: Glendale, Arizona

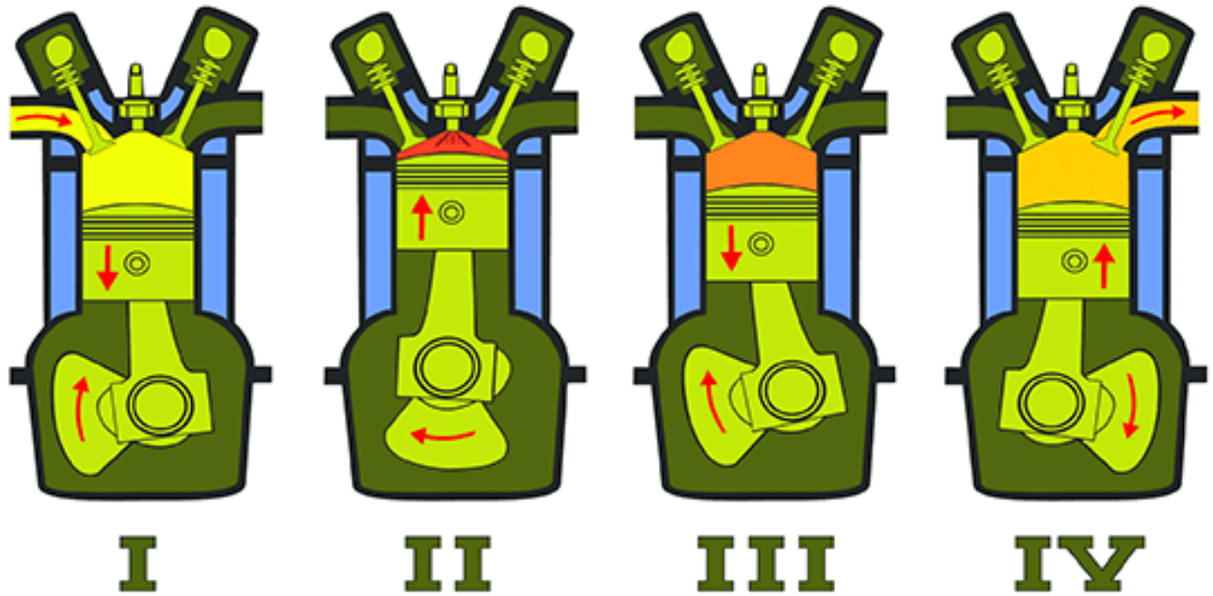
The user wasn’t new to turning wrenches. He’s worked on dirt bikes and pickups in his spare time, but never tackled something like swapping out his tired 2008 Infiniti G37 V6 for a higher-performance, low-mileage VQ37VHR engine pulled from a 2015 model. This wasn’t just about getting back on the road. Chris wanted more torque, better top-end pull, and something that didn’t sound like it was dying every time he got on the throttle.

Arizona’s brutal heat had already punished the old power plant. Blown head gaskets, worn cams, and an overheating issue that wouldn’t go away had finally pushed Chris to do something serious. He didn’t want a shop charging him five grand in labor. So, he decided to do it himself—with a little help from YouTube, a buddy who worked at a local parts warehouse, and a used engine sourced online for under $2,200.

Finding the Right Engine: Where the Process Began

Chris didn't waste time on eBay. He used xyz.com, a trusted used auto parts platform that lets buyers filter by mileage, compression tested status, and shipping timelines. He searched for a 2015+ VQ37VHR engine with under 60K miles.

He landed on one with 53,000 miles out of California. It came with a 6-month warranty and complete sensor package—no core return needed. Shipping took four days to Glendale, and the crate arrived intact. No broken mounts, no rust in the ports, and all exhaust studs were clean. Chris confirmed the block ID, oil pan style, and intake manifold compatibility before moving forward.



Preparing the Workspace: Real Garage Setup, Not a Shop

Chris cleared out his two-car garage, borrowed an engine hoist from his neighbor, and picked up a new Craftsman torque wrench. He didn't have a lift, so jack stands, ramps, and plywood sheets became his best friends. He also ordered:

- **Full OEM gasket kit**
- **Upgraded motor mounts**
- **New oil cooler and radiator**
- **Fresh spark plugs, belts, and fluids**
- **Standalone oil catch can kit**

He labeled every connector during the tear-down and bagged bolts by section—intake, exhaust, mounts, accessories. Everything got Sharpie tags. Nothing fancy, just organized enough not to screw himself later.

Pulling the Old Engine: A Weekend of Sweat and Swearing

- **The temps that weekend were 109E, so Chris began work at 6.a.m. and quit around noon.**
- **Day 1: Removed the batteries, drained radiator, fans off, drained the as well fuel and removed the driveshaft.**
- **Day 2: Exhaust manifold bolts (half of which snapped), wiring harness unplugged, mounts removed, and transmission unbolted. With the help of his friend Dan, they hooked up the hoist and got the engine out by late Sunday.**

That’s when Chris found his first real issue—the original motor mounts had been installed slightly misaligned from a past accident repair. The frame mount on the driver’s side needed grinding and repainting to seat the new one properly. No big deal, but it added a day of prep.

Installing the Performance Engine: Fitment, Fluids, and Frustration

The 2015 VQ37 dropped in without too much hassle, but a few performance-related adjustments were made:

- Chris installed a custom-fabbed 2.5” intake with a high-flow filter
- He replaced the stock radiator with an aluminum dual-core unit
- The ECU was re-flashed using UpRev software for better throttle mapping
- Secondary O2 sensors were disabled due to a true dual exhaust upgrade

Wiring matched almost perfectly, but he had to extend the knock sensor harness slightly due to changes in the 2015 block layout. He used solder and heat-shrink, not crimp connectors, for better long-term durability.

On first crank, the car didn’t start. After tracing back every ground, he found a loose harness plug on the camshaft position sensor. Once corrected, it fired up. Clean idle. No smoke. All gauges stable.

Road Testing and Tuning: Numbers Don’t Lie

Chris drove the car for 200 miles before the full dyno tune. He kept RPMs under 4000 during break-in.

At 226 miles, he dropped the break-in oil, cut the filter open to inspect for shavings (none found), and filled it with fresh oil. Then came tuning day.

At the dyno on full bolt-ons and on a conservative, street-driven tune, the G37 had 308whp and 265 lb-ft torque, a decent increase over the stock 280whp. What is more important is that throttle response was quick, the idle was clean, with the AFR being steady at WOT.

Final Verdict: Real DIY Success with a Used Engine Upgrade

Chris spent a total of $3,800:

- **$2,200 for the used engine**
- **$300 in gaskets and fluids**
- **$600 for cooling, mounts, intake**
- **$500 for the tune and software**
- **$200 misc tools**

He saved nearly $4,500 in labor by doing everything himself and got a stronger engine with more output, better reliability, and more room for upgrades down the line.

Lessons from Chris’s Build: What Actually Matters

- **Compatibility Research Pays Off**
  Cross-checking motor mounts, sensors, and intake layout before buying made install smoother.

- **Quality Used Parts Aren’t a Gamble**
  Buying from a verified vendor with test results and warranty gave peace of mind.

- **A Solid Plan Matters More Than Fancy Tools**
  Chris did this in a basic garage with just a jack, stands, hoist, and determination.

- **Performance Upgrades Add Layers of Complexity**
  More power = more heat. Cooling upgrades weren’t optional—they were required.

- **Tuning Ties It All Together**
  Without a proper ECU flash, the engine would’ve run lean. The tune was worth every penny.

Why gearshiftauto.part was Used

James sourced the adapter plate, bell housing, slave cylinder, and mount hardware directly from gearshiftauto.part. Why?

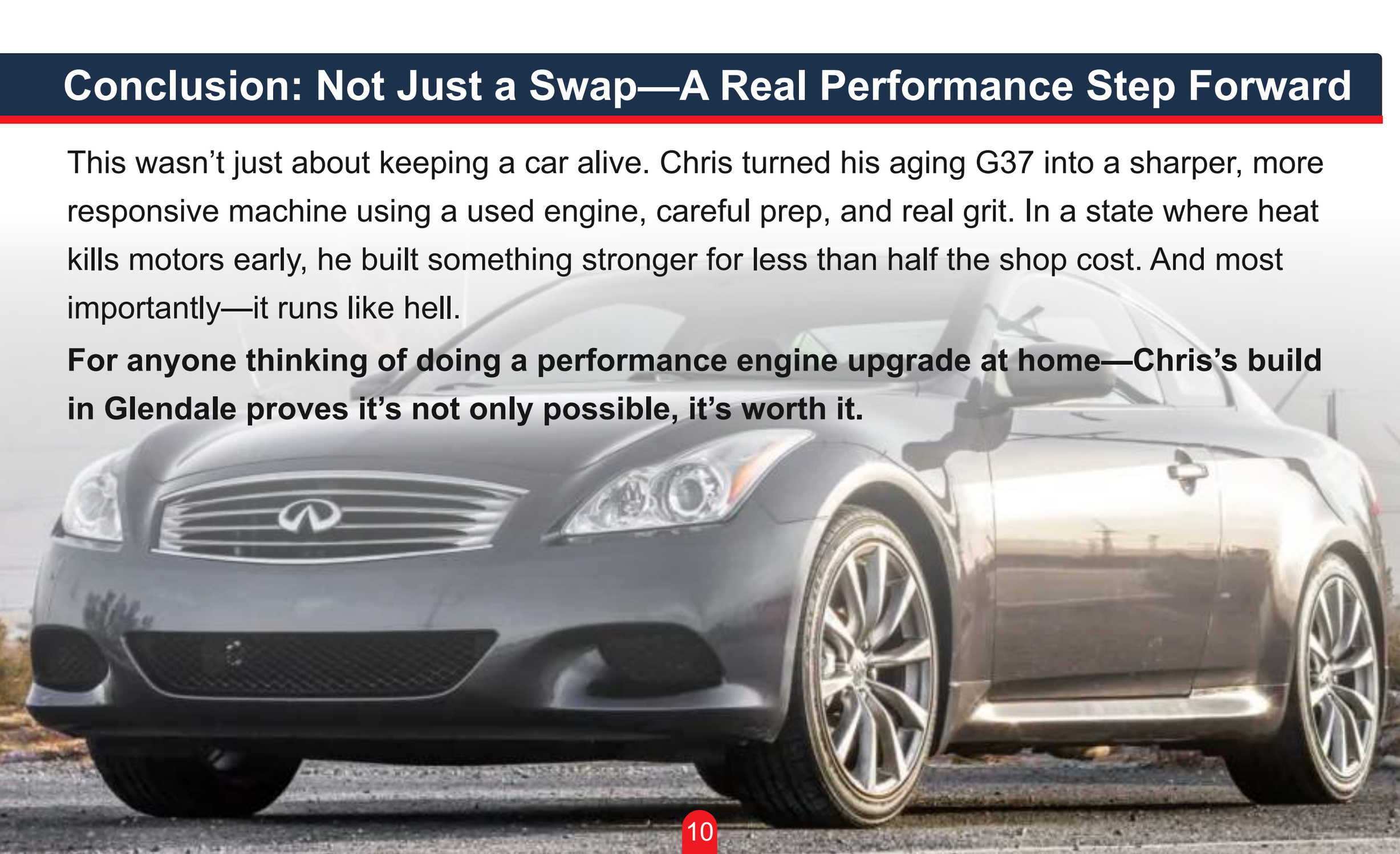
Here’s what mattered most:

- We list real-world compatibility—not just SKU matchups.
- Each part includes actual install notes from mechanics.
- No gimmicks, no delays. Every part shipped within 48 hours.
- Support staff helped James verify bore size and slave throw requirements.

Conclusion: Not Just a Swap—A Real Performance Step Forward

This wasn't just about keeping a car alive. Chris turned his aging G37 into a sharper, more responsive machine using a used engine, careful prep, and real grit. In a state where heat kills motors early, he built something stronger for less than half the shop cost. And most importantly—it runs like hell.

For anyone thinking of doing a performance engine upgrade at home—Chris's build in Glendale proves it's not only possible, it's worth it.



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Thank You

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