


# RX-8 Totality Swap Kit







If you're in the market for a high performance road or track car that is incredibly unique, cost effective, and pleasing to drive, Keisler Automation has a new hybrid option for you to consider. Our recipe consists of one of the most high performing chassis's ever manufactured and combining it with an efficient, compact, and powerful modern drivetrain. This is accomplished using our totality drivetrain installation kit that is so thorough and simple to install, that a couple guys can complete this drivetrain swap in a weekend with moderately basic tools.

## WHY THIS SWAP?

Keisler Automation's Totality swapped LFX RX8 was designed to be a competitive choice for a high performance road or track car. In this brochure, we take performance data from a total of 5 cars which are commonly seen on a spirited mountain drive or at your local road course and compare them to our hybrid combination. These cars were all produced around the same time span as the Rx8 and are known to be very competitive in many racing environments without major modification. Although the powertrain placement, drive wheels, and used-market cost of these competitors vary greatly, we consider each to be a viable choice for performance.

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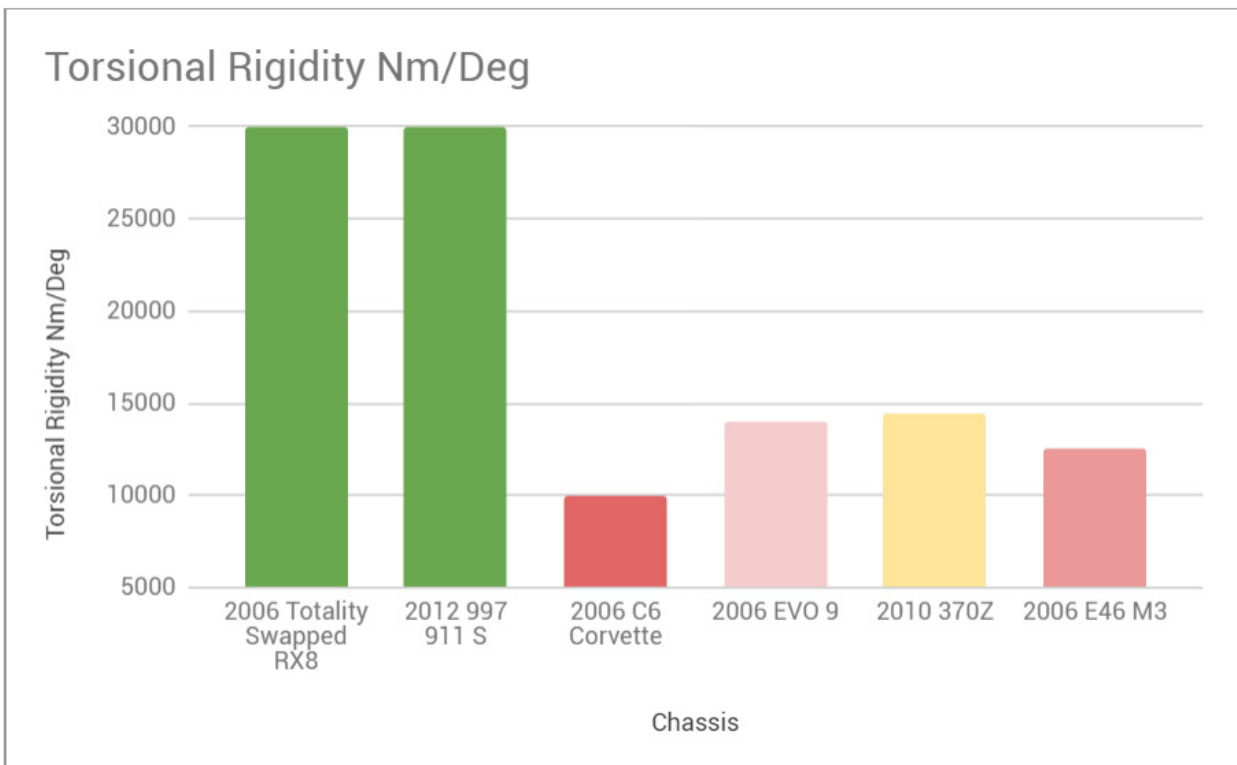


# Chassis Design and Rigidity

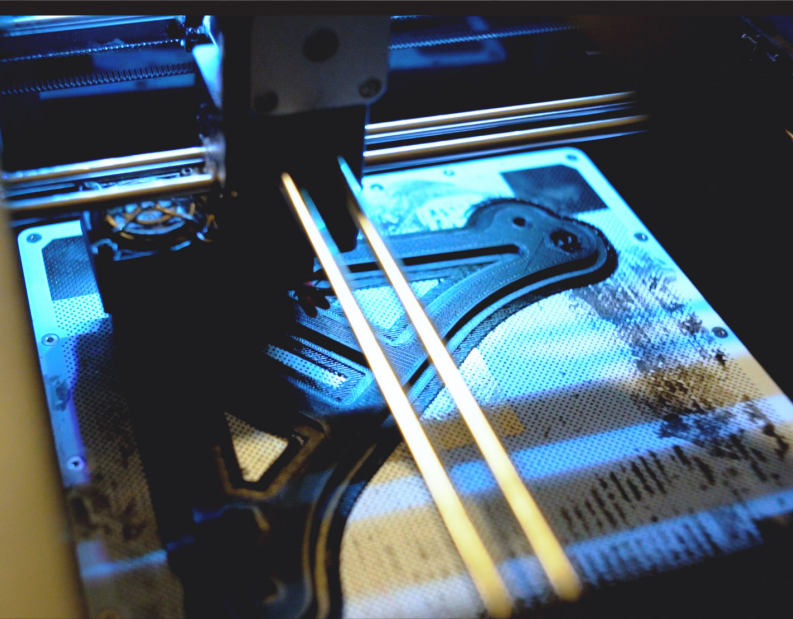
Chassis design and structure is the most critical area in a vehicle's composition, however it seems to be completely overlooked by many when choosing their next performance vehicle or race car. As the torsional rigidity of a chassis increases, lateral load transfer between the front and rear suspension becomes more efficient. Increased stiffness allows the suspension to work more effectively which amplifies responsiveness and cornering abilities.

Chassis	Torsional Rigidity Nm/Deg	Drag Coefficient
2006 Totality Swapped RX8	30000	0.31
2012 997 911 S	30000	0.29
2006 C6 Corvette	10000	0.28
2006 EVO 9	14000	0.36
2010 370Z	14500	0.29
2006 E46 M3	12500	0.33

The key feature to the RX8's outstanding rigidity is the closed-section backbone/tunnel structure which extends from the dashboard crossmember all the way to the crossmember behind the rear seats. With an approximate 10 year technology advancement, Mazda was able to double the rigidity of its predecessor, the FD RX7, which was extremely rigid for its time. At 30,000 NM/per degree, the RX8 and 911 are within, if not surpassing, the range of most modern-day hyper cars.



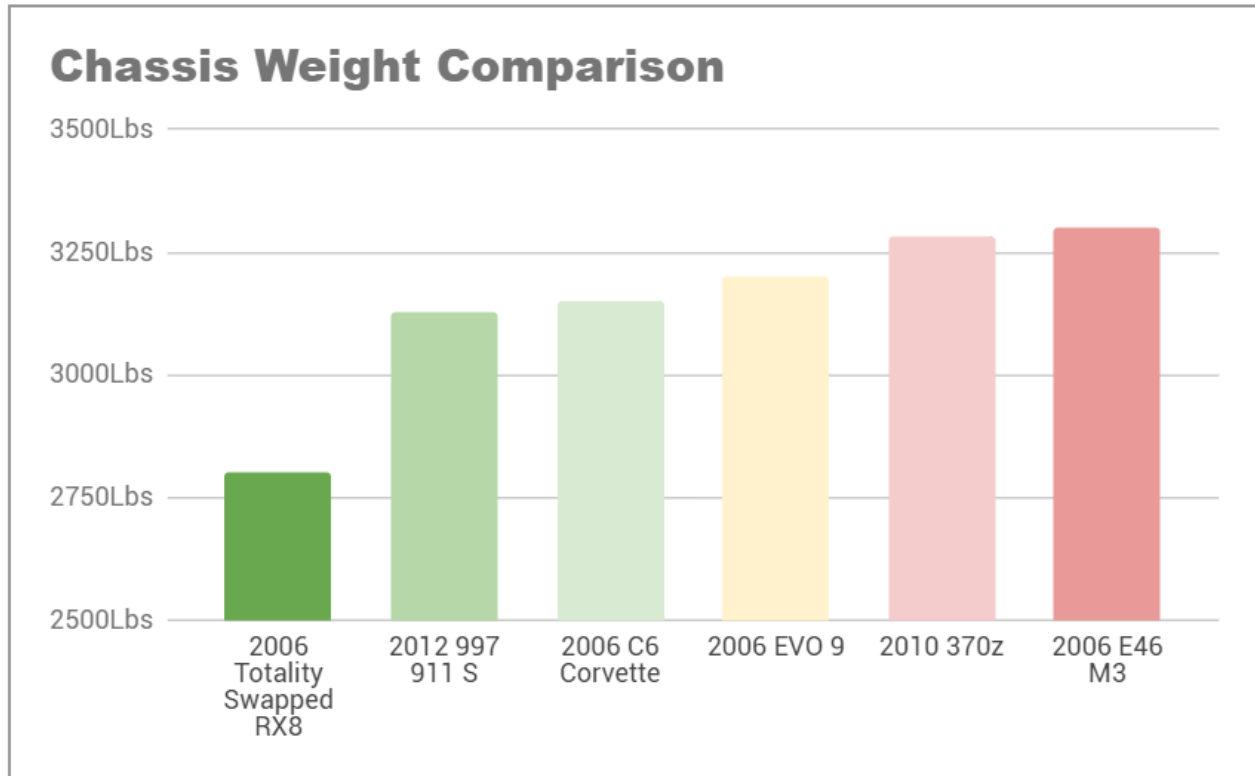






# WEIGHT

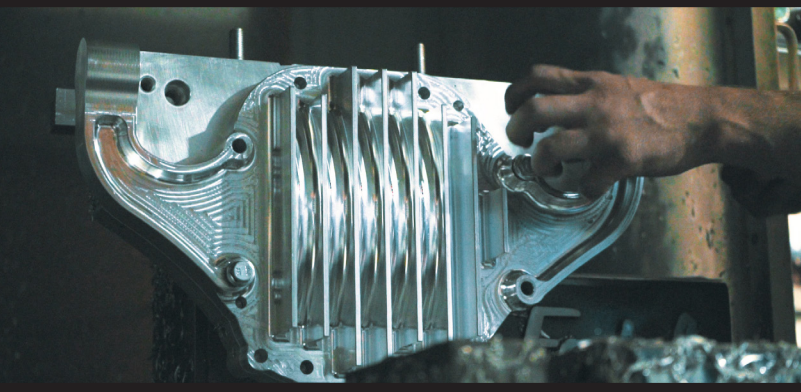
Eliminating weight is one of the most efficient ways to reduce lap times. Doing so increases acceleration, cornering, and braking abilities while consequently consuming less fuel and reducing wear on brakes and tires. The base model Totality swapped S1 RX8 tips the scales at approximately 2800 pounds which weighs an outstanding 300-500 pounds less than the competition.



Because of our efficient design and engineering, the Totality swap RX8 weighs approximately 10 pounds less than a factory base model Rx8. Due to the symmetry of the V6 and the offset rear placement of the battery, the corner balance is also improved.

Chassis	Weight Lbs	F/R Distribution
2006 Totality Swapped RX8	2800	50/50
2012 997 911 S	3130	38/62
2006 C6 Corvette	3150	51/49
2006 EVO 9	3200	60/40
2010 370z	3280	53/47
2006 E46 M3	3300	50/50

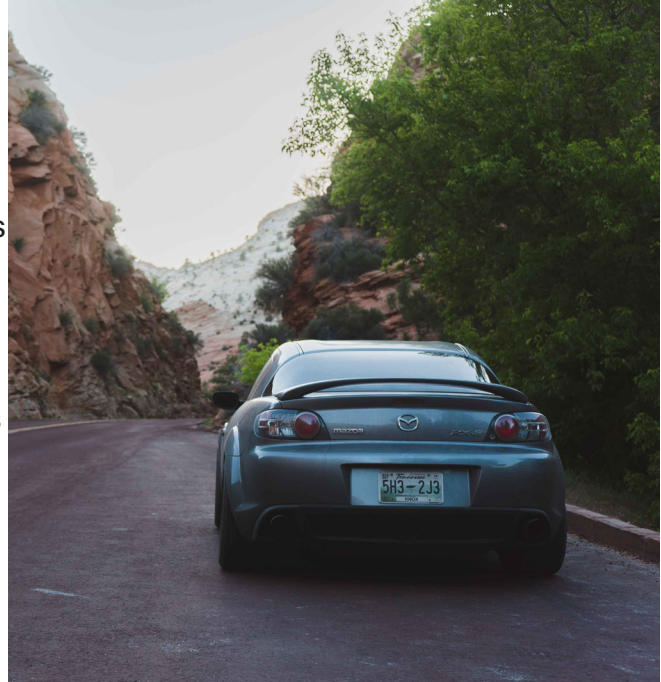




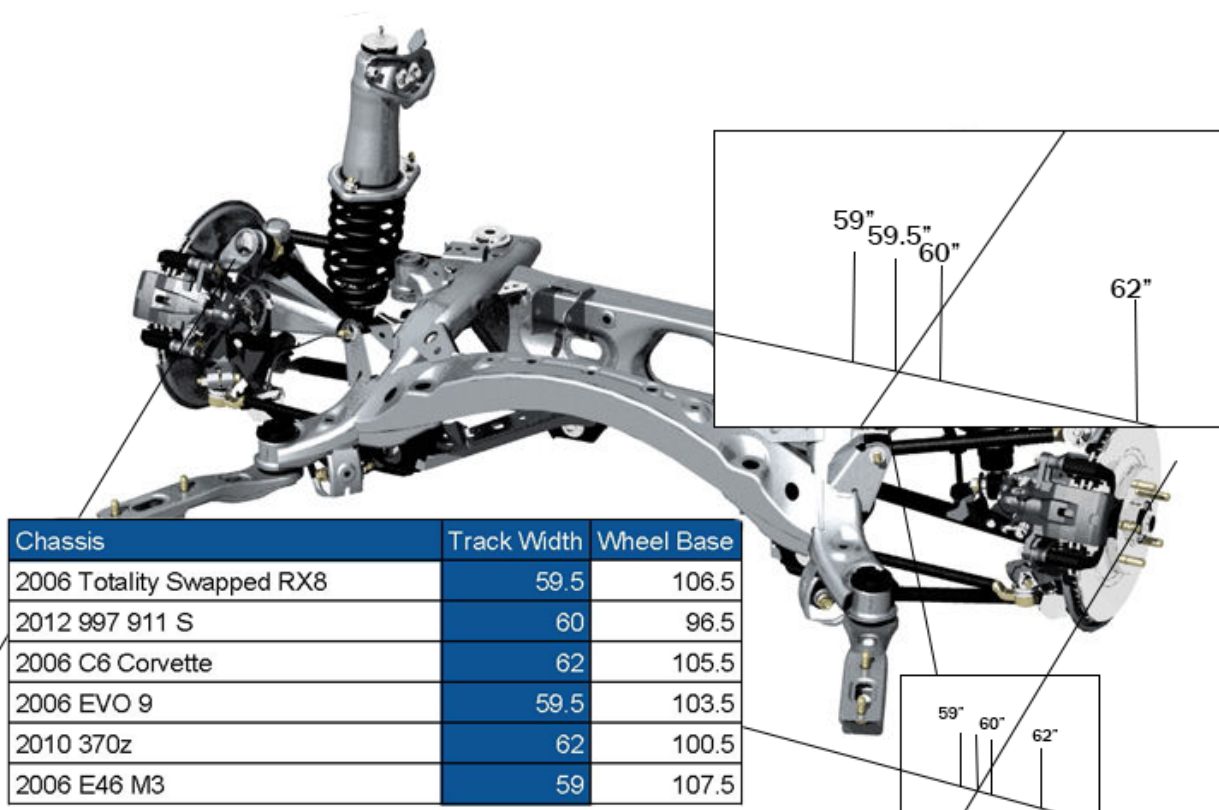


# Footprint

With a track width of approximately 59.25" and a wheel base of 106.5", this footprint yields remarkable performance. The RX8's lengthy wheel base ensures high-speed straight line stability while the wide track width reduces geometric weight transfer. It would be almost impossible to find another production chassis with as large of a footprint as the RX8's while being as lightweight and rigid.



## Track Width Comparison Diagram



## RX-8 REAR SUBFRAME DIAGRAM

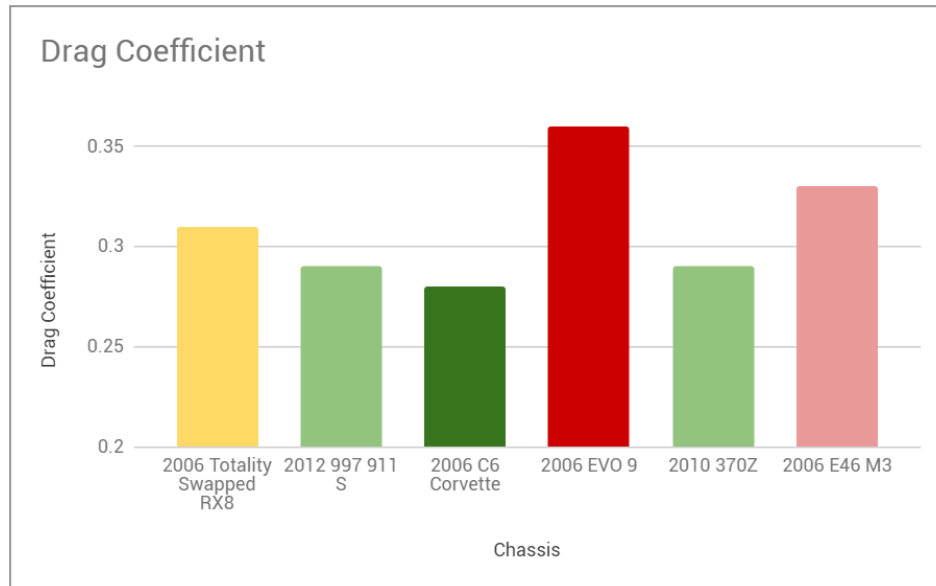




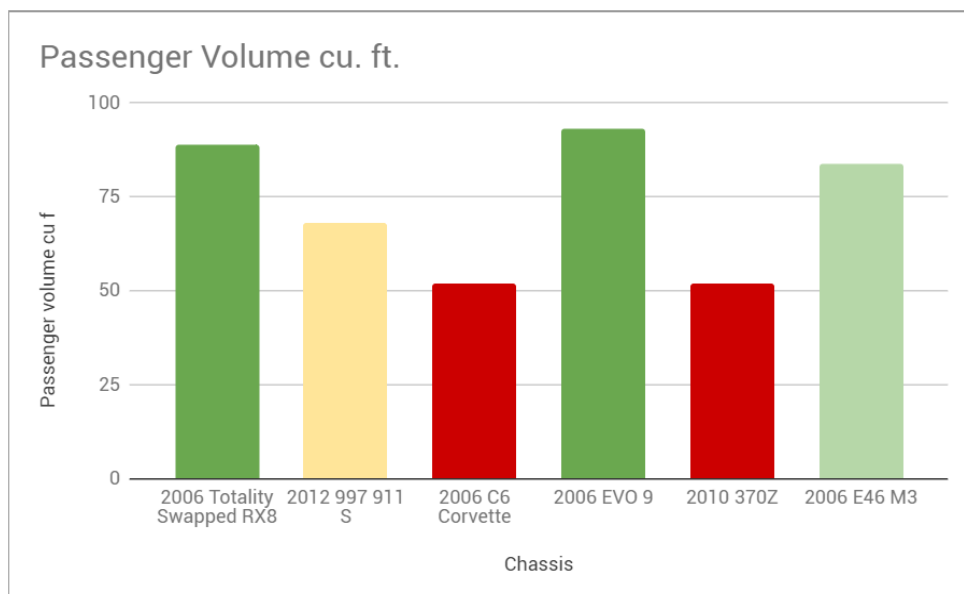


# COCKPIT SIZING, SAFETY, AND DRAG COEFFICIENT

Arguably, the most unique feature the RX8 offers is the free-style door system. This B pillar-less design allows for the largest door opening of any performance chassis along with a massive passenger volume of 89 cubic feet. This spacious cockpit not only comfortably seats 4 adults, but is convenient for installing racing components such as a roll cage, safety equipment, and ballast for chassis balancing. This additional space can greatly reduce the risk of bodily contact when compared to many other competitor chassis's in the event of an accident. The freestyle door system employs aluminum rear doors for reduced weight and ease of operation. The front doors incorporate dual stamped steel impact beams and open to an impressive 68 degrees for easy access inside the vehicle.



Although passenger volume and overall chassis size are not directly related to drag coefficient, there is a clear trend to see higher drag with larger cockpits. The RX8 has an unusually low drag coefficient considering its very spacious chassis.



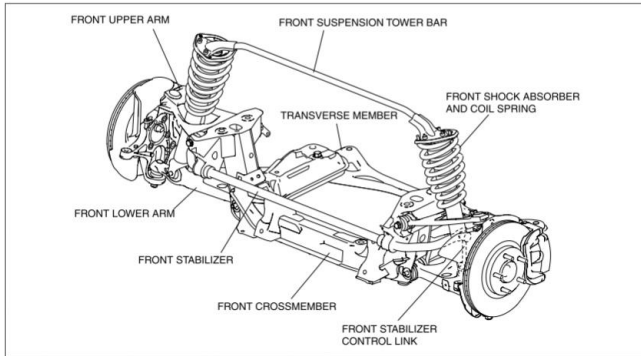






# SUSPENSION AND STEERING DESIGN

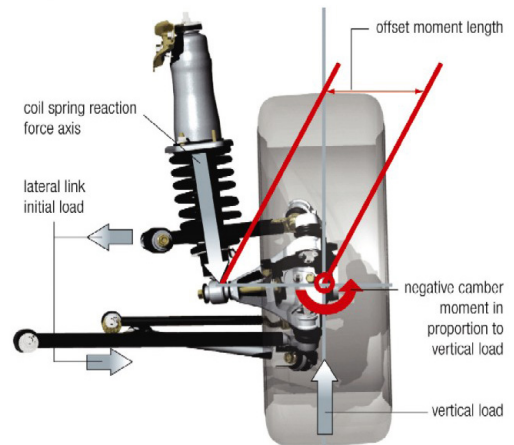
The RX8 utilizes a superior in-wheel, double wishbone suspension consisting of molten-forged aluminum control arms and ultra-rigid cast steel uprights. The front crossmember incorporates a welded box-section and twin turrets that was so well designed, Mazda engineers dubbed it "The Fortress Frame". Third generation front hub assemblies are used for superior bearing performance and longevity. This results in an excellent suspension design which allows linear alignment changes through the suspension travel.



A rear multi-link suspension was adopted to provide ideal geometry when responding to external forces during aggressive driving. The rear suspension links attach to an extremely stiff hydroformed 6 point rear crossmember. Forged aluminum spindles house a robust wheel bearing and also contain the shock's lower pickup point. This design utilizes a superb .923 to 1 motion ratio.

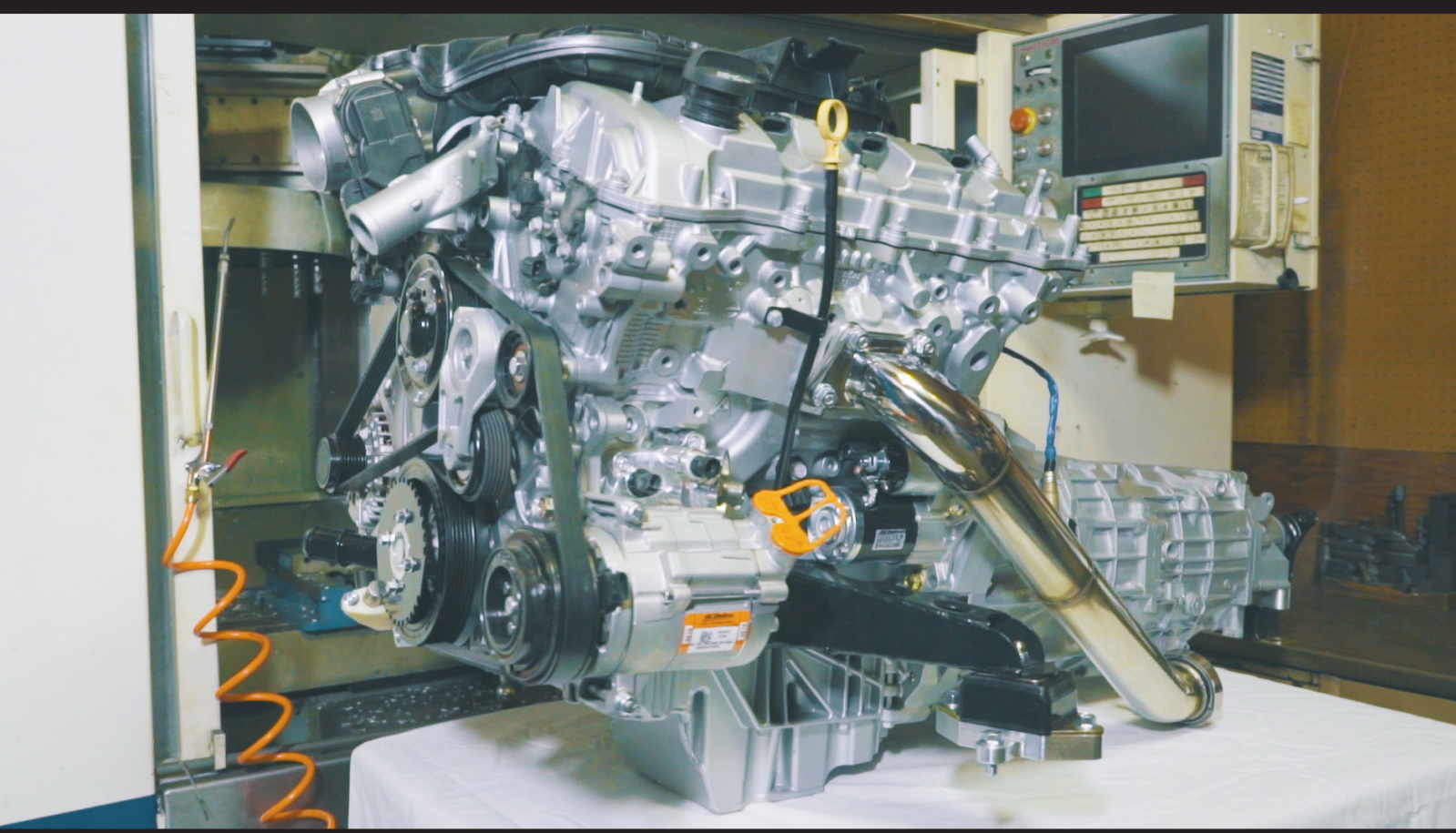
The inner suspension pickup points use zero-clearance stopper bushings which Mazda first designed for the RX8. This ingenious design allows the suspension to be tuned for optimal lateral stiffness while providing sufficient compliance for a quality ride.

The RX8 has adopted a sophisticated electronically controlled and assisted rack and pinion system. To improve steering feel, the system provides damping control by feeding reverse current against the motor's torque output. This electronic system lowers the center of gravity, eliminates power steering fluid, and removes horsepower draw of a hydraulic unit.



The RX8's crossmembers, suspension, and steering are designed so well that, with the addition of proper springs and dampers, the chassis is ready to race. This is not the case with most other suspension designs that need considerably high cost changes to make the chassis competitive. Simply put, you will not find a better suspension and steering system on a production chassis.





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## LFX 3.6 V6 Drivetrain

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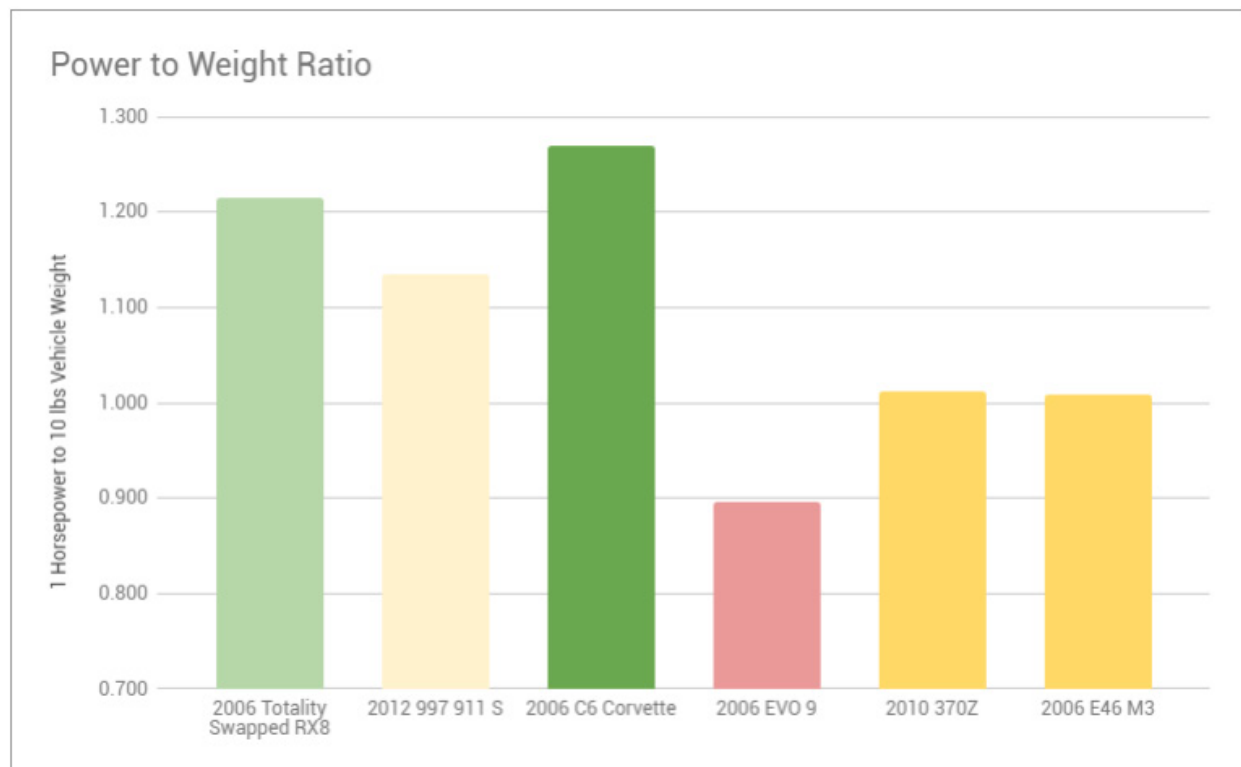


# THE DRIVELINE, ACCELERATION, AND EFFICIENCY

The driveline we have chosen for our hybrid combination is derived from the 2012-2015 camaro. The 3.6 liter V6 LFX engine features eleven and a half to one compression, continuous variable cam phasing, direct injection, and is flex fuel compatible. These attributes allow for outstanding fuel efficiency while producing 323 hp and 278 ft-lbs of torque from the factory. The all aluminum engine, integrated exhaust manifolds, composite intake manifold, and the integral oil pan aid in lightweight structure and efficient packaging.

Chassis	Crank HP	Ft. Lbs Torque	Lbs per crank hp
2006 Totality Swapped RX8	340	295	8.2
2012 997 911 S	355	295	8.8
2006 C6 Corvette	400	400	7.9
2006 EVO 9	287	289	11.1
2010 370z	332	269	9.9
2006 E46 M3	333	262	9.9

The light weight chassis and powerful V6 engine gives the Rx8 a power to weight ratio just behind the corvette and exceeding the other competition. The LFX RX8 has been tested for tens of thousands of miles while achieving combined city/highway fuel consumption of 28-30 MPG, which is considerably better than the competition.





SUMMIT  
8975 FT.





## UPFRONT AND LONGTERM OWNERSHIP

Due to the notorious engine failures the RX8 is known for, chassis's are plentiful in non-running condition with low mileage and minimal wear and tear. The beauty is not only the low upfront cost of the chassis, but the long-term affordability. If you happen to crash the car, another chassis can be purchased at low cost, and your driveline can be transferred over. This is not the case with most any car that you may consider a direct competitor. The same principle goes for interior, exterior, and suspension components. With how easily attainable the chassis's are, racing teams or individuals can afford to have multiples prepped and on hand. The modern drivetrain can be obtained with mileage from 5,000-30,000 which ensures long-term, worry-free use. The LFX engine was placed in 14 different GM models spanning from 2012 to present (2019) which has resulted in mass affordability and abundance of parts.

Chassis	Roller good-great condition	Engine	Mileage	Transmission	Mileage	Majors Total
2006 Totality swapped RX8	\$1,250.00	\$550.00	25,000	\$700.00	22,000	\$2,500.00
2012 997 911 S	\$13,000.00	\$12,000.00	31,000	\$4,000.00	20,000	\$29,000.00
2006 c6 corvette	\$6,500.00	\$3,000.00	50,000	\$2,000.00	60,000	\$11,500.00
2006 EVO 9	\$6,000.00	\$3,000.00	110,000	\$2,000.00	80,000	\$11,000.00
2010 370z	\$5,000.00	\$1,500.00	94,000	\$1,000.00	37,000	\$7,500.00
2006 E46 M3	\$3,500.00	\$4,500.00	78,000	\$2,500.00	130,000	\$10,500.00

Used drivetrain related components: (Sub 30,000 mile LFX engine, MV5 transmission, 8.8" differential, and accessories. New clutch/flywheel assembly and fluids)

\$2000.00-\$3000.00

Good condition Rx8 in none running condition:

\$500.00-\$2000.00

Totality drivetrain kit:

\$8000.00

After the above items are purchased, the only required expense is a custom exhaust system from the down-pipes to the rear of the vehicle:

\$250.00-\$1200.00

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Total average cost for completed DIY totality swapped RX8:

**\$12,500**



**OEM Look and Feel**



**Install With Confidence**



**SAFETY.**

**SIMPLICITY.**

**RELIABILITY.**

**PERFORMANCE.**

**UP-FRONT VALUE.**

**LONG-TERM AFFORDABILITY.**

Our hybrid combination embodies these 6 qualities within it's super-car-like chassis, modern and efficient drivetrain, and thoroughly engineered swap kit. The LFX RX8 stands second to none when considering the complexity of each of these qualities and what they each bring to the table. Allow us to help you build your perfect high performance road or track car.







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