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The Steve McQueen movie *Le Mans* remains one of the best racing epics ever. The racing action was believable and the romantic plot line plausible – both more reality-based than normal for Hollywood efforts. The racing storyline portrayed the real-life battle between the Porsche 917 and Ferrari 512S at the 1970 Le Mans 24-hour endurance race. While there have been numerous kit replicas of the Porsche 917 over the years there have only been two of the Ferrari 512 series. Today there is only one, and the manufacturer, EM Motors, doesn't even claim it! Perhaps it's because the new EM578 isn't an exact replica, or maybe it's due to the hostile legal climate engendered by Ferrari's hatred of replicas. In any case, the EM578 is an interesting kit whether you see any resemblance to the Ferrari 512S or not.

The Ferrari 512S was a brutal mid-engine racing car built to take on the formidable Porsche 917. It had a 5-liter V-12 topped with fuel injection and backed with a 5-speed transaxle. The tubular steel frame had aluminum stiffening panels riveted in place and a fiberglass body. It weighed 1,850 pounds and had a top speed of 218 mph. Ferrari initially built 25 512S models to qualify for racing regulations in effect at the time. Although quick, they proved inferior to the 917 and an improved version, the 512M, was hurried out in late 1970. It wasn't enough either. The 512 only won one World Championship event, Sebring in



1970, although it did take some minor trophies. But the 512S sure looked great, particularly in the 1980s *Maraunder* offered a kit replica of the 512M but few were built.

EM President, Eric Barge, always loved Le Mans racers. In 2005 he decided to build a kit that recalled the glory days of the 1970s, yet would be affordable to more enthusiasts than the real thing (an original 512S is now well into 7 figures). Barge intended his new car to be street legal, but also fun at track events. He's a long-time SCCA racer with a degree in Mechanical Engineering and he had been a general manager for an industrial equipment manufacturer. Barge had the motivation and the ability to fulfill his dream.

EM Motors was founded and a custom factory built. They started with a 1/12 scale model and mapped the profile with a CNC mill. From this a 3D CAD model was "sliced" into 93 cross sections and mapped onto 93 sheets of plywood. These profiles were assembled, filled, covered with fiberglass and made into a full-size back from which they could pull molds. The first body was hung into position and a perimeter spaceframe chassis was laid out and fabricated underneath it.

The forged ARCA racing front spindles were suspended into their final positions and, using lasers and dial indicators, the EM crew was able to mock-up various A-arm configurations and "move" the suspension through its arc to optimize bump steer. Ackerman and other suspension functions. Once the ideal suspension mounting points were established, the first chassis was built

to match. The results were so good that, after testing the prototype, no changes were needed before they went into production.

The chassis was designed to take a variety of popular V-8 engines from Chevy and Ford, plus the transaxle can be set further back in the frame to make room for longer engines (perhaps a V-12). Currently Porsche G50 or 930 transaxles are recommended, although they hope to try a new Mendeola box soon. Some automatic transaxles can also be adapted. Porsche CV joints are used on EMPI racing axles.

The wheelbase is 93.5" and the suspension is fabricated by EM. A Mustang II steering rack is used with Carrera adjustable coilover units front and rear. The standard brakes are 11.3" vented rotors with GM calipers, but Wilwood or AP binders are optional. The wheels are chosen by the customer and can be up to 18" in diameter and 12" wide at the rear. An RCI 15.5 gallon fuel cell is filled via dual Monza-style quick-release caps.

Safety was an important consideration during the design phase. Integrated roll hoops protect the feet, legs and head in case of a roll-over. Large, reinforced side rails provide side-impact protection. Both the front and rear of the frame incorporate impact cages that crush and break away during a hard collision to protect the occupants. The frame is MIG and TIG welded in a jig before a thorough chemical cleaning and painting with acrylic enamel (powdercoating is optional). The floor pan and other structural panels are bonded and riveted to the frame.

The hand-laid fiberglass body is light and comes painted with a DuPont Chromabond basecoat/clearcoat in solid colors (metallics and custom paint are optional). The doors flip up just like a racing car. The windshield and rear window are DOT-legal laminated safety glass and the side windows, headlight covers and engine bay window are thermoformed polycarbonate.

Inside the cockpit there is plenty of room even for 6'2" drivers. The pedals are adjustable and seat sliders are available if needed. The cockpit can be floored or upholstered in vinyl or leather. VDO Cockpit-Series black-faced gauges are arrayed in a racing-style dashboard and a Painless wiring harness hooks everything together. A Grant GT steering wheel (on a tilt column) is standard, or the customer can specify another. Hunsaker racing seats provide plenty of bracing for driver and passenger.

Not much air gets in the removable side windows so a Southern Air system is optional (heat and defroster are standard). Other options include leather upholstery, a white-faced custom gauge package, rear-view camera, Powerlock anti-theft system, fire-suppression system and a killer stereo.

EM claims cockpit noise levels are kept low by the engine being behind the driver, and the rear-mounted radiators also help keep heat out of the interior. The two oversized radiators are mounted at the rear and are cooled by twin thermostatically controlled fans. Custom Schoenfeld crossover headers are Ceramachrome coated and are dampened by Flowmaster mufflers. The completed EM578 weighs in at 2,160 pounds and stands 42" high.

The EM578 is available in turnkey-minus (starting at \$34,500) and turnkey form. The Turnkey-Minus kit includes an assembled rolling chassis with a painted body and all plumbing and wiring in place. Install your engine and transaxle and get going. Turnkeys start at \$40,800 based on a Chevy 350 and a Porsche transaxle. This makes the EM578 competitive price-wise with most Cobra replicas and cheaper than most GT-40 kits. The EM578 should be a winner, whether you think it looks like one of those Italian prancing-horse cars or not.

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