



1983 BMW 528e Maintenance and Modifications History

Summary as of April 8, 2013 by Rod Paine
(includes invoice dates for major items and additional comments in red.)

A Summary of Modifications to the vehicle is at the end of this document. Modifications are fully documented on the web site at: <http://tinyurl.com/dosn7> Note - some maintenance tasks are also modification/update items, such as larger BMW disc brake systems, stainless steel brake hoses, Bilstein HD shocks installed, etc., instead of stock 528e replacement parts.

Current Mileage - 136,110

Build Date - October 1982

Purchase Date - April 1983

Purchased From - Evergreen Motors, Inc., Frederick, MD

VA State Inspection due April 2014

VA Emissions Inspection no longer required, vehicle is exempt and now licensed as an antique vehicle. (31 years old Oct. 2013)

General Condition

I am the original owner of this BMW. This vehicle has the original paint and interior, showing minimal wear and careful care and maintenance of all surfaces. Zymol products have been used exclusively, to wax and treat painted, vinyl and leather surfaces. Gummi Pledge is used on all weatherstrip seals. Electrical connections are maintained using CAIG Labs products, since new.

Normal operating maintenance involving oil changes, fluid changes, etc., is not addressed here, other than to indicate that RedLine and Castrol synthetic lubrication products are used well before recommended change intervals. The vehicle has never been damaged or exposed to severe weather conditions and the vehicle has been covered when parked inside its garage. It is now parked in an insulated and heated/air conditioned garage. From 1983 to 1988, it lived outside during the week days in a public parking lot, where my business was located. Other than being baked by the summer sun, (interior protected by custom silver mylar window shades) it never suffered any parking lot damage and was not driven in winter weather, during periods of snow. The engine, drivetrain and suspension have been carefully maintained, with receipts for all work and parts since I took delivery of this BMW, new, from the dealer. No major maintenance has ever been required on any items, beyond normal wear replacements and BMW service campaigns to address issues detected during E28 model production.

The car has won Judges Choice, First Place and Second Place in the past three years at the annual BMWCCA National Capital Chapter Deutsch Marque Concours d' Elegance event. The car is well known by a number of my BMW peers, who consider the car exceptional, given the quality of its original components condition, the extensive and documented preventive maintenance performed over the years and the type and quality of the modifications made to the car.

Maintenance History Summary of Service Records

All service records and parts receipts as identified below, since I leased this new car, April 1983, are on hand and available for inspection. The original owners manual, service booklet and other materials are also in the car, as they were at the time of its delivery. A BMW Factory Service Manual (the Big Blue Book) was purchased June 21, 1983. Cost was \$47. A Bentley manual was purchased May 1992 and a Haynes 3&5 Series manual purchased August 1993. All three have been valuable at various times.

Engine

- 23,321 lambda service and ignition service campaign. First BMW repairs. 2/13/84
- 31,322 fix idle and stall problems. AFM warranty issue, front and rear brake pads. 6/12/84
- 34,692 full tuneup plus idle valve and AC BMW service campaign.
- 48,437 new head gasket to correct an oil seepage problem between the head and the block on the right side and to decarb the valves, BMW warranty work. Full tuneup. 2/26/85
- 59,522 full tuneup and new timing belt. 9/13/85
- 65,506 Repair cold solder joint on Pin-2 of Idle Control Module to fix intermittent poor idle (too low/high) and stalling problem. (owner repair, BMW unable to diagnose and repair after two days) 1/18/86
- 68,578 Replace front brake pads and sensors, failed coolant level sensor replaced. 2/27/86
- 75,161 full tuneup. 7/11/86
- 78,010 Replace failed radiator fan clutch, locked up running at full rpm's. (owner serviced) 9/12/86
- 81,954 fuel vapor purge BMW Engine Campaign performed. Corrected hot starting issue. Rear muffler replaced due to cracked and broken mounting tabs, front end alignment. 11/4/86
- 3/25/87 replaced damaged and leaking O-ring during 11/4/86 work. Owner serviced.
- 91,829 full tuneup. Replace ruptured AC hose and recharge AC, front and rear rotors and pads. 6/24/87
- 103,710 cold start valve. Last BMW service, Evergreen BMW went out of business after 2/27/90, closed without any notice. Hand written note on door said "Out of business Sorry!" Unable to contact any employees or management.
- 105,606 a third, new design head gasket installed and BMW Torx head bolts upgrade. Earlier replacement head gasket did not fully correct oil seepage issue. New timing belt, thermostat and all fuel and water hoses and clamps replaced. Full tuneup. First use of Dulles Int'l Motorsport, Ltd., Herndon, VA. 7/25/94
- 106,374 alignment and general service. Dulles Int'l Motorsport. 10/22/94 (out of business, February 2008)
- 117,113 Replace main fuel pump due to excessive operating noise. Preventive maintenance. 9/29/99
----- I started doing all work on my BMW in 2002, including work on other 528e models -----
- 122,523 full tune-up including spark plug wires, spark plugs, rotor and cap. Poly alternator bushings. Critical circuit relays (fuel pump, main, radiator fan speeds, headlights) replaced. 1987 Motronic '027' DME/ECU and E.A.T. chip installed. Tests of Conforti and Dinan chips conducted in additional DME/ECU units. (owner serviced) 4/16/05
- 124,935 preventive maintenance work, new timing belt, water pump, camshaft seals, thermostat, O² sensor, fuel pressure regulator, radiator expansion tank, radiator, MB antifreeze, fan clutch, drive belts, hoses and radiator fan shroud installed. The radiator fan shroud was not an original part when the car was built in October 1982.
- 125,137 new temp sensors (4) installed. Corrected random/intermittent engine idle and stumble problems, sensors were intermittent, as coolant temperature changed. Two were original 23 year old sensors that tested good hot and cold!
- 125,647 new flywheel sensors (2) installed. Preventive maintenance measure.
- 134,034 new alternator regulator/brushes assembly, replaces original due to high brush wear. Preventive maintenance.

Transmission and Drivetrain

Third gear syncro is slow, first noted at 59,522 on 9/13/85. Condition has not changed, but syncros can be over-run if a fast 2-3 or 4-3 shift is attempted. Normal shifting speeds is not a problem for the syncros.

- 105,606 heavy duty Sachs clutch assy. and release bearing, flywheel resurfaced. This year M20 uses the light weight flywheel. (Dulles Int'l Motorsport, Ltd., Herndon, VA). 7/25/94
- 129,130 rebuilt axle shafts and installation of used 1988 3.46 Limited Slip Differential and new rubber mount. One original CV joint had light knocking, made decision to replace both half-shafts as preventive maintenance. April 2007

Suspension and Brakes

- 31,322 front and rear brake pads. 6/12/84
- 44,251 updated front upper and lower control arm bushings and all shocks replaced to correct brake shudder and suspension vibration, BMW warranty work. 12/12/84
- 48,437 front end alignment. 2/26/85
- 59,522 rear brake pads. 9/13/85
- 68,578 front brake pads. 2/27/86
- 81,954 front end alignment. 11/4/86
- 91,829 front and rear brake pads and rotors. 6/24/87
- 101,681 front sway bar links replaced. 7/25/88
- 105,606 front and rear Bilstein HD shocks and front end alignment. (Dulles Int'l Motorsport, Ltd., Herndon, VA) 7/25/94
- 124,505 rebuilt E32 calipers and new Balo rotors and pads installed on front and rear. All brake line hoses replaced with stainless steel hoses. 22mm front anti-sway bar and 16mm rear anti-sway installed, both adjustable. As addressed on my web pages, a number of different suspension combinations were tested over a period of several years, using different springs, anti-sway bars, shocks, tires, etc., before the present configuration was chosen. 12/23/05
- 132,011 Meyle front sway bar links, replaced "K" labeled links with failed and leaking rubber boots after only 2300 miles!

- June 2005 Wiechers front strut brace installed. Idle Control Valve, Speed Sensor Connectors Mounting Bracket, Throttle Cable Bracket and Radiator Expansion Tank mounting locations modified to provide proper clearance.
- August 2005 new rear pitman arms and rear sway bar links installed. Suspension components cleaned of minor surface rust, treated and repainted to protect components.

- 127,249 Lemforder 750i Thrust arm bushings in E28 upper Control arms and ball joints, standard BMW lower Control arms, front sway bar links, L & R tie rod assy's, Center link assy and Idler arm. All new component attachment hardware, replacing **installer damaged*** and corroded/rusted hardware. Right side upper Thrust arm stainless steel heat shield installed. Not installed on original October 1982 build. Suspension components cleaned /repainted. Four wheel Hunter computer alignment. 7/31/06 ***Technician or mechanic damaged hardware, due to poor skills, tools used or simply stupid. Parts not replaced as they should have been.**

Tires and Wheels

- 123,805 rebuilt BMW E39 style 29 BBS 16x7-inch wheels (with hub-centric adaptors) with Yokohama AVS Sport 205/55/16 tires fitted. Wheel Collision Center, Bath, PA, supplied all materials and balance services. 9/15/04
- 132,366 new General Exclaim UHP 205/55/16 tires from Tire Rack, installed /balanced by Hogan & Son Inc., local. 8/6/08

Interior and Exterior

- 101,514 Install BBS custom painted front spoiler. 5/18/88
- The interior and exterior has been maintained with Zymol products, since new. It is stored in a heated and air conditioned garage and covered with a fitted flannel car cover. It has been polished and waxed twice a year or more frequently as conditions demand. The interior leather is treated twice a year and the front seats have been reversed twice, first in February 1995 and again January 2006. During the seat reversal, they are detail cleaned and treated while out of the vehicle, which is in addition to their normal twice yearly cleaning and treatment. April 2006 the rear bumper was removed and polished to remove failed anodize finish. Polishing of the front bumper is also planned, pending the identification of a service that can strip the anodize at a reasonable cost. Quotes to date have been in excess of \$800, to strip and polish the bumper! May 2007 a pearl beige leather shift boot was installed, replacing the black vinyl shift boot which was deteriorating from age and flexing.

Electrical

- 5/27/88 Install Sears DieHard battery, model 43038 (battery lasted 13 years)
 - 7/8/01 Install Sears International battery, model 22831248 (currently in service for 11 years)
- All electrical power and ground connections, including switches such as for the power windows received their once every two years cleaning and preservation, September 2012, which is approximately a 30 hour maintenance job involving Caig Labs DeoxIT contact cleaner and SHIELD products. There was no evidence of contact oxidation, since my last electrical service performed February 2010. (my background includes 9 years as Associate EE and Engineering Technician for several aerospace firms, heavily involved with electronic circuit fabrication, maintenance and calibration, so I am very comfortable and experienced in working on electronic circuits and discrete components)

Modifications to be completed

Install the Metric Mechanic SST Sport ETA Head and Mark D'Sylva custom '027' ECU chip, designed for this MM cylinder head configuration. A used E28 533i tachometer will also be installed to reflect the new 6500 RPM redline, that the MM head and E.A.T. chip produces.

Summary of Modifications to Vehicle (items not originally installed on the vehicle as delivered)

- E32 7-series front brakes, (E34 530i rear brakes installed/removed) and all brake hoses replaced with stainless steel hoses.
- AC Schnitzer full leather 350mm steering wheel. **BMW M-Tec 1 380mm recovered (sold)** and E36 M3 BMW M-Tec II 370mm steering wheel modified and fitted with a MOMO coarse spline hub is also used. All are shown on my web site.
- New Hella Euro 7-inch & 5-3/4-inch headlights, grilles and associated high capacity wiring and switching system.
- Bilstein Heavy Duty shocks and ST 22mm and RD 16mm adjustable front and rear anti-sway bars.
- Later model radiator fan shroud installed. This October 1982 build did not have one.
- BMW E39 style 29 16x7 ET20 wheels with aluminum hub centric adapter rings.
- 1987 325e DME/ECU type '027' with D'Sylva E.A.T. 528e performance chip. (+20 hp, +500 rpm redline) Dyno tests show an actual power increase of 15.8 RWHP with E.A.T. chip. (Dyno Dynamics, York Automotive, Mt. Airy, MD, 2006)
- 1988 528e tachometer face with 5200 RPM redline. (replaced original 4750 RPM redline face)
- Wiechers-Sport front strut support brace, with associated modifications to engine component locations (Idle Control Valve, Radiator Expansion Tank and Throttle and Cruise Control cables) for brace installation. See the website.
- Custom polished and detailed BMW valve cover and associated brackets.
- Taillight modifications to unused lamp sockets for improved stoplight visibility of vehicle from rear.
- Installed illuminated window and sunroof control switches (7). Rebuilt as shown on my web site.
- E32 750i upper Thrust arm bushings and stainless steel heat shield for right upper Thrust arm bushing.
- 1988 3.46 Limited Slip Differential replaced factory 2.93 Limited Slip Differential. An excellent ratio and combined with the E.A.T. chip, overall performance has improved significantly, without impact to the fuel efficiency I have previously monitored for over eight years, noted on each fuel pump receipt!
- Pearl beige leather shift boot from Creative Options, replaced aged and worn original black vinyl shift boot.
- E46 leather shift knob, replaced worn leather original shift knob.
- A David Pepin **Clutch Pedal Bracket Reinforcement installed** as a preventive maintenance item.