

1963 Austin Healey 3000 MKII BJ7, *Ruddspeed* Evolution Imagined

Owner/builder: Steve Thomson

The following is a list of the modifications and upgrades built into my 1963 BJ7. The modifications and body changes were done as a homage to Ken Rudd and his *Ruddspeed* Austin-Healeys. Ken was an engineer. He was at the forefront of what today are categorized as “tuner” cars. Tuner cars are not just modified engines but are a full comprehensive automotive offering. This car is intended to invoke an image of what his *Ruddspeed* Austin-Healey’s would have evolved to in today’s world, while maintaining the essence of Donald Healey’s cars. I began with a multi-year development and fabrication of the EFI while simultaneously making changes to the frame and suspension. After completing this effort, I took the car down to the bare frame... media-blasted the frame and began the reconstruction. In short, even if it isn’t listed here – everything was restored to “as new” or replaced.

Body/Chassis:

- 1- Works rally side vents with stainless steel mesh inserts
- 2- Footwells modified to allow side vents to be installed without trimming
- 3- Works rally front shroud ducts with stainless steel mesh inserts
- 4- Works rally carburetor access panel
- 5- Split rear bumpers with custom mounting brackets
- 6- License plate mount with 3rd brake light in Lucas housing
- 7- Works style quick fill gas cap with lock
- 8- Grill modified to works rally configuration with ducting for cool air to TB
- 9- Twenty-three unused holes in firewall filled
- 10- Center section reinforced to prevent scuttle shake
- 11- Firewall reinforced to prevent scuttle shake
- 12- Gusseted motor mounts
- 13- Gusseted front suspension mounts - Kilmartin (also see Suspension)
- 14- Works style aluminum ¼” skid pan attached to tabs welded to frame
- 15- Rear shock tower mounts triangulated with aluminum swedge tubing
- 16- Tubes welded into outriggers for supply/return gas lines
- 17- Floor channel and false toe board on passenger side for wiring
- 18- Frame outriggers modified as needed (reinforced) to accommodate rerouted exhaust
- 19- Frame outriggers modified to raise exhaust ½”
- 20- Driver side foot well modified to fit injector fuel rail (no loss of foot room)
- 21- Fender well channel for cool-air duct to throttle body
- 22- Glass replaced, correct original TripleX markings (original wind wings were used)
- 23- Original emblems, bezels and chrome restored or replace with new
- 24- Doors modified to accept BJ8 locking door handles
- 25- Trunk lid gas strut lift kit
- 26- Custom "*fuel injection*" badge on the trunk lid
- 27- Custom driving light mounts with mesh guards hold 7" Lucas rally driving lights

Interior:

- 1- Upholstered in leather, vinyl and Wilton wool carpet
- 2- Dash modified to accept rally time-of-day clock
- 3- *Ruddspeed* cloisonne dash medallion, only one in U.S., courtesy of Cape Int’l

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- 4- Original gauges restored
- 5- Tachometer converted from mechanical to electrical
- 6- Auxiliary instrument panel with 6 gauges: A/F Ratio, Fuel Pressure, Exhaust Temp., Oil Temp, Water Temp. and Volts. Auxiliary Panel also holds High/Low Beam indicator and Driving Light indicator.
- 7- Derrington 15" wood/aluminum steering wheel
- 8- Works rally shift knob with switch for 7" driving lights
- 9- Shift pedestal to fit chrome shift trim ring and additional insulation
- 10- Center arm rest storage compartment
- 11- Tunnel sectioned 2" and slight recontouring, inside aluminum panels direct air flow
- 12- Bluetooth Amp controller in custom housing on package tray
- 13- Speaker housings in front kick panels in ¼" aluminum with sound deadening
- 14- Cruise control, electric Rostra control mounted in ashtray
- 15- Electrical compartment behind seats houses electrical components (See: Wiring)
- 16- Electrical compartment with luggage hold-down straps and document access door
- 17- Dead pedal, replaces headlight dip switch
- 18- Dip switch relocated to dash with XKE switch bezel (Hi/Dip)
- 19- Pedals repositioned and custom competition style aluminum pedal pads
- 20- Seat belts, 3 point retractable
- 21- Shoulder belt attachment with removeable headrests
- 22- Fresh air ducting revised
- 23- Sound and heat insulation throughout interior, including doors
- 24- Interior door panels are aluminum (upholstered over)
- 25- Haartz Stayfast cloth convertible top

Suspension/handling:

- 1- Bilstein gas shocks all around – Putzke's Fahrspass
- 2- Bilstein custom shock tower brace in rear with triangulated aluminum swedge tubing
- 3- Adjustable camber bushings, set at ¼ degree negative – Cape International
- 4- King pins rebuilt - Apple Hydraulics
- 5- Front end lowered ½" - Tom's Import Toys
- 6- ¾" front sway bar with custom links to compensate for lowering – Tom's Import Toys
- 7- Elastomer polyurethane bushings (30% stiffer), all new bushings – Tom's Import Toys
- 8- Constant radius steering shaft - DWM
- 9- Front wishbone reinforcements (aka: A-arms) - Kilmartin
- 10- Rebuilt rear springs with vinyl liners – Speedway Motors
- 11- Upgraded panhard bar - Cape International
- 12- Wheels: Minilite 8 spoke aluminum knock-offs, 15" x 5.5"
- 13- Tires: Vredestein Classic Sprint 185/70 x 15 radial

Brakes:

- 1- Aluminum 4-piston aluminum front calipers with braided steel lines - Fosseway
- 2- Vented front rotors - Fosseway
- 3- Rear brake shoes radius matched to drums

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- 4- Wilwood dual master cylinder with brake pedal pivot pt. modified to accommodate
- 5- Wilwood front/rear proportioning valve, 3 PSI residual valve for rear brakes
- 6- Aluminum 3 chamber fluid reservoir (front/back/clutch) - Scott's
- 7- All new brake lines

Wiring/electrical:

- 1- 32 fused circuits
- 2- 19 relay activated circuits
- 3- WeatherPack connectors and high grade TXL wires
- 4- Flame resistant wires with high temperature wrapping
- 5- Wiring routed in floor channel and false toe board (no external wiring)
- 6- Alternator GM 105-amp, Bret Blades
- 7- Dash LEDs
- 8- Halogen headlights and Lucas 7" driving lights
- 9- Rear reflectors converted to LED stop/turn signals
- 10- 3rd brake LED light in Jaguar XK140 Lucas license plate light
- 11- Two DC power outlets on instrument cluster and one on package tray
- 12- ECU with Bluetooth sender for tuning and diagnostics
- 13- Hazard light (4-way) flasher, switch under dash
- 14- Starter kill switch under dash
- 15- Wiper delay switch on panel under dash
- 16- Hella horns with black protective grilles
- 17- Kenwood 400W Bluetooth 4 channel amplifier, control panel on package tray
- 18- Focal 60 watt 4" 2-way coaxial speakers, 2 in rear and 2 in front kick panels

Engine:

- 1- Bored 30 thousands (0.030), to 2,963 cc (stock is 2,912 cc)
- 2- Federal Mogul pistons and tri-metal bearings
- 3- Extensive head work: flowed, CC'd, 3-angle valve job, oil return improved - Hap Waldrop
- 4- Head converted for unleaded fuel (exhaust valves) - Hap Waldrop
- 5- Compression ratio raised to 9.8:1 (from 9.1:1)
- 6- Head gasket full copper with copper spray - Payen
- 7- Block girdle 5/16" custom, Jule - Marty Jansen
- 8- ARP head studs
- 9- Custom cut, Elgin Cams Street Performance for this EFI by Dema Elgin, 268° with 108° LSA
- 10- Rocker arms reprofiled to 1.5:1 (from 1.42:1) - Rocker Arms Unlimited
- 11- Pro/Race harmonic balancer
- 12- Light 15 lbs. flywheel (org. 29 lbs.) - DWM
- 13- Race level balancing (½ gram), including flywheel, clutch, and harmonic balancer
- 14- Rotary oil pump - British Parts Northwest
- 15- Full circle rear seal conversion - DWM
- 16- Hydraulic timing chain tensioner - DWM
- 17- Timing chain cover seal reinforcement - Kilmartin
- 18- Water pump rebuilt

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- 19- Remote spin-on oil filter conversion tapped for oil temperature gauge
- 20- Alternator, GM 105 amp on Bret Blades mount
- 21- Electronic pointless magnetic pulse distributor (GM HEI unit machined to fit, plug compatible with ECU)
- 22- Custom EFI intake manifold with Weber style runners and finned plenum with bung for air-intake temp. sensor and bung for MAP sensor
- 23- Fuel delivery, electronic fuel injection - 6 Bosch injectors - 22 lbs/hr injectors (GM - LS1)
- 24- Ford 60mm throttle body with idle air control (IAC) and throttle position sensor (TPS)
- 25- MegaSquirt V2 Electronic Control Unit (ECU) (3.57 C3.4.3 w/LC2 A/F sensor control) controls the injectors firing (timing and duration), distributor advance, idle air control, fuel pump, and cruise control input
- 26- Throttle body cool air intake duct with Spectre air filter, required fender well channel
- 27- Exhaust headers 1½" (Kirk and Maxinnovation components) required frame outrigger modifications and reinforcement, pipes ceramic coated inside and out.
- 28- Exhaust header dropout section with sensors for A/F and exhaust temp.
- 29- Exhaust system rerouted around Bilstein shocks. exhaust pipes are ceramic coated inside and outside, muffler ceramic coated on outside
- 30- *Ruddspeed* aluminum valve cover, very rare only one I know of in U.S.
- 31- Gas tank modified with in-tank high pressure pump for EFI – Tanks Inc (#PA-2)
- 32- External adjustable fuel pressure regulator – Mallory #4305
- 33- Fuel injection rated full flow aluminum canister style fuel filter – Mallory #29249
- 34- AN-6 fuel lines, braided Kevlar with AN aluminum anodized fittings for supply and return
- 35- Fuel lines (supply/return) run through frame
- 36- Fuel tank plumbed with external charcoal air filter – AC Delco GM#19208702
- 37- High torque mini-starter – British Car Specialist
- 38- Aluminum oil catch can plumbed to valve cover and crank case vent with sight tube
- 39- Stainless steel heater return line
- 40- Stainless steel exhaust exits, behind left rear wheel, required frame outrigger work

Cooling:

- 1- Aluminum radiator - Cape International
- 2- Texas Kooler flex fan, new style - Moss
- 3- Auxiliary push fan ECU temperature controlled - Cape International
- 4- Full fan shroud with modifications - British Car Specialist
- 5- Aluminum deep "V" fan pulley - DWM

Drive train:

- 1- W58 5-speed transmission rebuilt with shortened shifter
- 2- BJ8 diaphragm clutch, fitted to light 15 lbs. DWM flywheel, slave cyl. remote bleed
- 3- DWM 3.54 rear gear, differential rebuilt

Paint:

- 1- GM 1963 model year, Silver Blue Metallic (912) PPG 12546 (GM-WA2973)