

A writer associate of ours in Arizona is an engineer at Raytheon who drives a '03 Turbo Diesel. He says the TDR is the best diesel pickup magazine in the world ... because it deftly balances technical depth with reader accessibility. It has real "moxie," he says. We Googled the definition of "moxie": "Know-how, inventiveness, and aggressive energy." In other words, resourceful. We think moxie is a good word for the TDR—for fourteen years the most resourceful information exchange written by and for the experts and the shadetree mechanics and the average diesel pickup owners—except that TDR members, as Dodge-Cummins Turbo Diesel guys and gals, are not exactly average. Here is this year's index and summary guide to the past four issues of TDR. We are hopeful that this comprehensive reference source makes it easy for you to find the information you need.

Bob and Jeannette Vallier

Accelerator pedal position sensor (APPS), cleaning internal contacts

Issue 54 (24-Valve Engines) A member offers a creative expedient for cleaning the internal contacts that control the function of the APPS, a workaround that might avoid entirely replacing the pricey unit. 40–41

Accelerator pedal position sensor (APPS), recalibration

Issue 54 (24-Valve Engines) Readers provide instructions for position recalibration in replacing an APPS, or bell crank, in a 24-valve engine. 40

Air-Fuel Control (AFC) housing, leak in

Issue 56 (First Generation) A TDR member provides kit part number and instructions to repair a leak in the AFC by replacing the O-ring seal. 24

Air-Fuel Control (AFC) module, modifying to change fueling

Issue 55 (12-Valve Engines) Joe Donnelly describes two possible AFC modifications to adjust rocker travel in the Bosch P7100 injection pump, thereby changing air-fuel ratio in the 12-valve engine. 34

Air conditioner compressor, failure to cycle off

Issue 54 (First Generation) Failure of the air conditioner compressor to cycle off is correctly identified as a malfunctioning temperature control switch in a First Generation Turbo Diesel. 18

Air conditioner system, troubleshooting of. See Vacuum line, corrosion in, troubleshooting

Aircraft jet fuel efficiency

Issue 56 (Backfire) An airline pilot disputes what he interpreted as an implication in Kevin Cameron's essay (Issue 54, p. 167) that the Boeing 747's fuel consumption is a relatively inefficient use of energy. 149

Air filter, aftermarket

Issue 54 (Back In The Saddle) Scott Dalgleish evaluates the new Amsoil EaA189 air filter and finds that it solves his smoke problem as well as a restriction problem. 126

Air filters, aftermarket, Dodge's advisory

Issue 55 (Ranch Dressing) Dodge advises checking the "filter minder" more often when an aftermarket filter is used on Third Generation trucks; John Holmes expresses his reservations about the reliability of the "filter minder" even with stock filters. 72

Air intake heater, installation of LED monitors, instructions

Issue 56 (5.9 HPCR) A TDR member provides parts numbers and instructions for installing and wiring a pair of LED lights to monitor the programmed on/off cycling of the engine intake air heater on a 5.9 HPCR Turbo Diesel. 40–41

Air intake heater, programmed operation, explanation

Issue 56 (5.9 HPCR) A reader explains detailed specs of the engine intake air heater and its on/off cycling in operation under various temperature conditions. 40

Air intake heater, testing

Issue 55 (24-Valve Engines) Readers specify method of testing with a voltmeter to determine the proper performance of the intake grid heater of a Third Generation truck. 39

Air intake systems, aftermarket

Issue 53 (Ranch Dressing) John Holmes endorses the aftermarket blue Cool Hose air intake system, and recommends adding the charge air tubes of the same material, mainly for looks, now a standard part of the Carson Dodge performance package. 84
 Issue 56 (TDRRelease) Performance Systems Manufacturing offers a cold-air intake system for Second Generation Turbo Diesels with upgraded fuel plates and power tuners. 158
 Issue 56 (TDRRelease) Icebox offers a cold-air system for Second Generation Turbo Diesels designed to reduce air intake temperatures. 159

Air intake systems, comprehensive review

Issue 56 (Product Showcase) Air intake systems, both stock and aftermarket, and their operation in Turbo Diesels, are described in detail by Pete Tomka, with commentary by Joe Donnelly on the effect on dyno testing. 150–157

Air intake systems, stock vs. aftermarket, effects on performance

Issue 56 (Product Showcase) To compare stock air intake systems to aftermarket alternatives, Pete Tomka tests them for their three main components (air boxes, filters, intake tubes) in terms of boost, torque, hp; and offers caveats. 151–156

Air pollution emissions issues. See Diesel fuel, less polluting of the environment than gasoline

Aisin transmission in the 6.7 Turbo Diesel, reader critiques

Issue 56 (6.7 HPCR) Owners of the new 6.7 Turbo Diesel evaluate the Aisin transmission, expressing reservations about shifting pattern, noting awkwardness, while giving it general approval. 46–48

Alarm system, out-of-park warning of open door. See Horn-honking warning of open door

Alpenlite, corporate restructuring

Issue 56 (TDRV) The TDRV columnist notes that Alpenlite, the quality of which has suffered in recent years and which is ailing financially, has been purchased by an investment group intent on turning around the fortunes of the brand. 140

Anti-theft switch

Issue 53 (Third Generation) Robert Patton provides instructions for installing an anti-theft device in a '03 Turbo Diesel with automatic transmission, to complement instructions for other truck models in TDR issues #40 and #43. 36–37

API CI-4 engine oil, when and if it must be superseded by CJ-4. See Lube oil, EPA requirement of the new API CJ-4

Appearances vs. reality, in life choices and trucks

Issue 55 (Motor-Minded) Sometimes there is less than meets the eye, says Mark Barnes: aesthetic appeal is legitimate in buying a vehicle as in all aspects of life; but glamour should not trump the tried and true. 108–109

ATS Diesel Performance, description of manufacturing facility

Issue 55 (Celebrity Corner) Sam Memmolo tours ATS Diesel Performance, describes its

manufacturing facilities, introduces Clint and Renee Cannon and the rest of the crew, while showcasing its array of products for diesel pickups. 83–84

Audi V12 turbo-diesel engine

Issue 55 (Four Whaling) In his on-going survey of European diesel development, G.R. Whale summarizes specs of Audi's new 6-liter V12 TDI diesel engine, with 500 hp and 738 ft-lb of torque, mounted in its Q7 sport-utility. 57

Automatic Fuel Control (AFC) spring, explanation of

Issue 56 (12-Valve Engines) Joe Donnelly explains the automatic fuel control (AFC), its several optional degrees of spring tension, guidelines for selection among them, effects on torque-plate rack-travel, psi of boost, and EGT. 35

Automatic Number Plate Recognition (ANPR), a device for surveillance

Issue 56 (Ranch Dressing) John Holmes enlarges on dangers to freedom in the increasing use of camera surveillance devices such as ANPR on public highways to monitor and record citizens' actions. 86–87

Axle, suitable choice for heavy sled pulling

Issue 55 (24-Valve Engines) To a reader who twisted his splines in heavy sled pulling, Joe Donnelly recommends the heavier-duty Mark Williams axle. 40

Axle ratio, criteria for selection

Issue 53 (Idle Clatter) Particularly in tow vehicles, optimum axle ratio is critically important; and that the automatic differs from that for manual transmission. 74

Baja 1000, 2006 race

Issue 55 (Your Story) Kent Kroecker reports on KORE's running the 2006 Baja 1000, in which it entered three "Stock Full" race trucks, all with Toyo tires, Weld wheels, Fox shocks, FASS pumps, AEM filter systems; and projects six teams for 2007. 110–111

Batteries, basic facts, maintenance, and troubleshooting

Issue 55 (From The Shop Floor) Andy Redmond explains the anatomy and function of storage batteries: tips on safety, testing, brands, and installation. 120–123

Batteries, dual vs. single in First Generation trucks

Issue 56 (First Generation) Readers consider whether First Generation trucks originally equipped with a single battery would be better powered if a second one were added, but conclude that one good, large battery is adequate for starting the engine. 24

Batteries, truck, aftermarket upgrade

Issue 56 (Idle Clatter) Jim Anderson reports a reader's upgrade to the Odyssey #1700-65 batteries. 82

Battery charging system, failure, troubleshooting

Issue 55 (First Generation) To correct a failure of the charging system in a First Generation truck, readers check for defective ground and loose connection from crankshaft sensor, but finally fix it by replacing the PCM. 24

Battery voltage indicator, progressive drop, troubleshooting. See Power Control Module (PCM), loose connection

Bed extender, for short-bed trucks

Issue 54 (Ranch Dressing) John Holmes sings the praises of the Estin Bed Extender, and describes its installation on a shortbed. 104

Issue 55 (TDRRelease) A press release from AMP Research products describes its "Bed X-tender," with an easy-to-use QuickLatch system, designed for the short-bed Mega Cab. 131

Bell crank. See Accelerator pedal position sensor (APPS)

Biodiesel, pros and cons and restrictions

Issue 53 (Idle Clatter) Jim Anderson reviews the standard cautions concerning use of biodiesel fuels, their limitations and costs. 74

Issue 54 (Member2Member) Scott Dalgleish updates advisory guidelines for use of biodiesel fuels, emphasizing that, to date, Cummins recommends a mix of no more than five percent bio for the Turbo Diesel engine. 12

Issue 54 (Ranch Dressing) John Holmes explains how it is that the chemical characteristics of biodiesel require redesigning engine and re-formulating composition of components. 105

Issue 54 (Have Ram, Will Travel) Joe Donnelly summarizes recommendations by DaimlerChrysler and Cummins governing what is acceptable in biodiesel fuel mixes, limiting use to a five percent blend, except in specific government and commercial use. 136

Issue 55 (Ranch Dressing) John Holmes reminds readers that Cummins does not approve of using more than 5% biodiesel fuel in Turbo Diesel trucks, with exception of the 6.7-liter engine in operation where government or fleet users control quality. 72

Issue 55 (Backfire) Biodiesel advocates report tests of 20% bio in marine diesel engines, in which Cummins takes part, suggesting energy yields similar to those of standard diesel, while conceding problems yet unsolved, but foreseeing eventual remedies. 126–127

Black Box, use in surveillance

Issue 56 (Ranch Dressing) John Holmes fears that the on-board ECM is liable to be used by government to surveil the driving habits of Americans. 86

See also **Electronic Control Module (ECM), used by Dodge for evidence in warranty claims;**

See also **Event Data Recorder**

Block heater, troubleshooting and replacing

Issue 55 (24-Valve Engines) A member describes his use of an ohmmeter to diagnose a failure in his block heater, proving it defective, corrected by replacing the unit. 38

Issue 56 (First Generation) Six TDR readers pool their expertise in locating the block heater in First Generation trucks and compare notes on methods of removing it. 18

Bluetec alliance, standardized performance specs

- Issue 55 (Four Whaling) G. R. Whale advocates the adoption by American manufacturers of standardized criteria for diesel-engined vehicles to reduce confusion among consumers, such as those of BlueTec alliance in Europe. 56–57
- Body panel, replacement of parts**
 Issue 56 (First Generation) A reader seeking sources for replacing left-hand body parts (fender, door, cab corner, bed side) for a First Generation truck is counseled on components and their assembly, and advised to cannibalize a complete truck. 26
- BorgWarner's AirWerks Extreme Diesel Showdown**
 Issue 55 (TDRelease) A press release publicizes an event known as the BorgWarner's AirWerks Extreme Diesel Showdown, featuring performance events, seminars, products, competitions, with \$10,000 in cash or prizes, Mar. 30–Apr. 1, Tulare, CA. 130
- Brake, failure. See Power steering fluid, freeze-up**
- Brake, faulty engagement during steering-wheel lockup**
 Issue 54 (Idle Clatter) Jim Anderson reports a reader's problem with his service brake, which engages whenever the steering wheel is turned to full lock, and asks for helpful input from other members. 98
- Brake drums, rear, adjusting of**
 Issue 55 (Idle Clatter) Jim Anderson writes that the rear drum brakes on all model '89-01 Turbo Diesels can quickly get out of adjustment, and gives instructions for necessary periodic manual adjustment. 60
- Brake rotors, resurfacing**
 Issue 56 (First Generation) A reader recommends finding a shop equipped to resurface brake rotors on the truck, while another recommends new rotors because removing metal leads to faster warping. 18
- Brakes, ABS (anti-skid), troubleshooting**
 Issue 55 (Idle Clatter) Jim Anderson recounts a reader's solution of a problem with his ABS brakes, evidenced by concurrent and intermittent ABS and brake lights on the dashboard, which he traced to a severed vacuum line. 60
- Braking anomaly, traced to source**
 Issue 56 (Idle Clatter) The braking anomaly reported by Jim Anderson (Issue 54, p. 98) in which the brakes apply themselves when the vehicle turns a corner, is corrected by rebuilding the hydro boost unit, an expediency confirmed by Andy Redmond. 83
- Brite Box. See Headlight illumination, aftermarket improvement**
- Bucking, in automatic transmission lockup**
 Issue 56 (Member2Member) In response to a reader's complaint of bucking and jerking at low speeds in third-gear lockup and overdrive, Joe Donnelly explains the transmission's operation and recommends not using significant power under 1800 rpm. 15
- Build-A-Truck, Dodge website for ordering truck**
 Issue 53 (Idle Clatter) The Dodge "Build-A-Truck" website provides only an incomplete listing of options and packages, says Jim Anderson. 74
- Bumper, front, aftermarket**
 Issue 54 (From The Shop Floor) Andy Redmond installs an aftermarket front bumper manufactured by Road Armor, and gives the product a qualified two-thumbs-up. 158
- Bumper, rear, aftermarket**
 Issue 56 (5.9 HPCR) Joe Donnelly describes the specifications, the installation, and the merits of the Reunel heavy-duty rear tow bumper. 42
- Cab air filter**
 Issue 55 (TDRelease) Easily installed over the truck cab's air duct vents, the "Cab Fresh Filter Kit" promises to remove 97% of dirt, dust, and soot, while it reduces odors by 76%, offered by Geno's Garage to diesel users with allergies. 133
- Calendar. See TDR annual wall calendar**
- Camber setting. See Suspension, front end, camber setting**
- Cam plate for the P7100 injection pump in the 12-valve engine**
 Issue 55 (12-Valve Engines) Responding to a TDR member in Norway, Joe Donnelly advises on specs and performance of the TST #8 and TST #10 in the 12-valve engine, for use with manual and automatic transmissions respectively. 35
- Camshaft, aftermarket**
 Issue 54 (Back In The Saddle) Pursuing greater fuel efficiency in his Third Generation truck, Scott Dalglish installs a PDR camshaft with a grind reputed to give a 2 mpg advantage. 120–122
- Camshaft, matching to the Bosch P7100. See Fuel injection pump, Bosch P7100, matching the correct camshaft**
- Caster setting. See Suspension, front end, caster setting**
- Catalytic converter, effect on fuel economy**
 Issue 54 (Idle Clatter) Jim Anderson says that the catalytic converter has only a negligible effect on fuel economy, and reminds the reader that removing it is illegal. 95
- Chassis Cab, commercial Dodge Ram 3500 with optional ISB 6.7-liter diesel**
 Issue 53 (Third Generation) Drawing from a presentation at 2006 May Madness by a Cummins representative, Joe Donnelly provides detailed specs of Dodge's new Chassis Cab pickup. 34–35
 Issue 54 (Third Generation) Greg Whale reports his inspection of the new Dodge Ram 3500 Chassis Cab truck, with emphasis on the option of Cummins ISB 6.7 liter engine, with variable-geometry turbocharger providing for factory-option brake. 42–43
 Issue 54 (Ranch Dressing) John Holmes reviews the new Heavy Duty Ram Chassis Cab, and expresses hope for a version for non-commercial Ram pickups in 2007. 104
- Chassis Cab, marketing strategy**
 Issue 53 (Third Generation) Joe Donnelly describes market strategy in promoting the new Dodge Chassis Cab pickup truck. 34–35
- Check valve, lift pump, leaky. See Fuel transfer pump, replacement of, in 12-valve engines**
- Chevrolet Duramax. See General Motors' Duramax**
- Chrysler Group, represented in diesel competition**
 Issue 56 (Blowin' In The Wind) In addition to Dodge Turbo Diesel trucks, Chrysler Group has fielded several diesel-powered vehicles, including Jeep Cherokee and the Dodge Sprinter. 54
 Issue 56 (Four Whaling) G.R. Whale notes the new diesel-powered vehicle models introduced by the DaimlerChrysler group, spotlighting models with the 6.7 liter engine, comparing specs and prices to competing trucks of other brands. 78
- Clutch, aftermarket upgrade for the new G56 manual transmission**
 Issue 53 (Back In The Saddle) Scott Dalglish justifies replacing the original clutch with a South Bend upgrade as part of his project to enhance power in his Turbo Diesel equipped with the G56 six-speed manual transmission. 100–101
- Clutch, manual transmission, overview of construction, use, and troubleshooting**
 Issue 55 (Idle Clatter) In a treatise he calls "Clutches 101," Jim Anderson explains construction of the clutch in manual transmissions, gives guidelines for proper use, and lists signs of impending trouble. 59
- Clutch, South Bend, double disc**
 Issue 55 (TDRelease) South Bend Clutch is in the final stages of testing a new double disc, sprung-hub clutch for high-horsepower Turbo Diesels, built to avoid the failure possible in solid hub clutches subjected to extreme power usage such as sled pulling. 131
- Clutch safety start switch, wiring information**
 Issue 53 (Third Generation) A TDR reader provides information on wiring of the clutch safety start switch in Third Generation manual transmission. 38
- Clutch slippage**
 Issue 56 (Member2Member) Joe Donnelly responds to a reader's complaint of wear on flywheel by recommending the South Bend con-FE, saying it is effective and resistant to wear. 15
- Cold-weather code-settings. See Technical Service Bulletins (TSBs) concerning cold-weather code-settings**
- Constant Velocity Joint, lubrication of**
 Issue 54 (Third Generation) Readers review procedures for lubricating the Constant Velocity Joint on the front driveshaft, with hints on preventing grease spattering. 45
 See also U-joint, front end, grease needles to lube fittings difficult to access
- Control arms, for 4x4 truck, aftermarket**
 Issue 53 (Member2Member) A member recommends Solid Steel's 4x4 lower control arms to replace stock in '94 to '02 trucks, which he says are light duty and too flexible. 10
- Coolant, extended life**
 Issue 54 (From The Shop Floor) Andy Redmond advocates the use of extended-life engine coolants. 157
- Coolant, summary of information on approved fluids for all models**
 Issue 54 (From The Shop Floor) Andy Redmond digests essential information on coolants for all models of Turbo Diesels. 157
- Coolant, testing for electrolysis**
 Issue 54 (From The Shop Floor) Andy Redmond describes the proper use of a digital multimeter to test for electrolysis in the radiator, coolant system or engine block. 156
- Coolant leak, troubleshooting**
 Issue 56 (First Generation) Several TDR members canvass the many possible causes of coolant leak, including defective water pump, water pump gasket, thermostat housing, heater hose return elbow, and hose clamps. 22
- Coolant reservoir, mysterious disappearance of fluid**
 Issue 56 (12-Valve Engines) Mysterious loss of coolant from reservoir is traced to a very small hole in a heater hose. 30
- Cooling system, servicing**
 Issue 54 (24-Valve Engines) A reader provides instructions for opening the drain valve and flushing the radiator in a 24-valve Turbo Diesel engine. 39
 Issue 54 (From The Shop Floor) Andy Redmond rehearses the rules for properly servicing and maintaining the cooling system of the Turbo Diesel. 157
 Issue 55 (12-Valve Engines) Experienced service personnel provide instructions for flushing and cleaning the cooling system fouled with oil, with suggestions on appropriate detergent products. 32
 See also Radiator, servicing
- Cruise control, troubleshooting**
 Issue 55 (First Generation) In the cruise control of a '92 truck, failure of the Resume/Accel function may be remedied by disassembling the switch and adjusting electrical contacts. 22
 Issue 55 (First Generation) Owners of First Generation trucks identify several suspect components—cable from servo to throttle lever assembly; vacuum hose; vacuum switch; wiring; fuse—failure in any one of which would explain a dead cruise control. 28
 Issue 56 (12-Valve Engines) Possible cause of problems with cruise control include: hole in the vacuum line, stuck pull-cable to throttle linkage; dry ball ends of throttle rod from linkage to injection pump lever. 30
 See also Vacuum line, corrosion in, troubleshooting
- Cruise control switch, replacement part**
 Issue 53 (First Generation) A TDR reader supplies the part numbers for cruise control switches in a First Generation truck. 22
- Cummins, Clessie. See Cummins, diesel engine, story of early development**
- Cummins, diesel engine, story of early development**
 Issue 53 (The Way We Were) Josh Madden reviews Lyle Cummins' book, "The Diesel Odyssey," recounting his father's lifelong work in developing the diesel engine for automotive vehicles in America. 58–60
- Cummins, role in manufacturing railroad diesel engines**
 Issue 53 (Idle Clatter) Jim Anderson speculates on the influence of Clessie Cummins' pioneering work in the shift from steam to diesel power in America's railroad locomotives, and tells the story of that change from coal to oil. 70–72
 Issue 55 (Idle Clatter) Jim Anderson describes several current Cummins diesel engines manufactured to power railroad locomotives, and provides a website for more information. 58
- Cummins 6.7 HPCR diesel-powered Dodge meets EPA 2010 emissions standards**
 Issue 56 (6.7 HPCR) As announced at Washington Auto Show in January, the Cummins 6.7 HPCR engine makes Dodge trucks the first to meet EPA's strict 2010 emissions standards, a major advance and industry coup. 44–45
- Cummins 6.7 HPCR diesel engine, technological information disclosed**
 Issue 56 (6.7 HPCR) The editor reprints a report in the February '07 issue of Diesel Progress magazine disclosing detailed technical information on the Cummins 6.7 HPCR diesel engine. 44–45
- Cummins diesel, speculation on introduction of new engines**
 Issue 54 (Blowin' In The Wind) The editor reports on press speculation of several new diesel engines for future Dodge powertrains including light-duty trucks. 58–59
- Cummins engine, improvement made in the engine for Dodge Turbo Diesel trucks**
 Issue 53 (Third Generation) In a report on a presentation by a Cummins representative at 2006 May Madness, Joe Donnelly ticks off improvements in and statistics on the Cummins 5.9L and the new 6.7L engines in the Dodge Turbo Diesel pickup. 34–35
- Cummins engine, superiority over other brands**

- Issue 55 (Member2Member) John Janko summarizes Cummins performance data, and reports evidence from past issues of the TDR, to argue that the Cummins engine beats the competition in all areas of comparison. 16–18
- Cummins V6 & V8 engines, for DaimlerChrysler light-duty vehicles**
- Issue 55 (Blowin' In The Wind) Cummins will in fact manufacture new light-duty V6 and V8 diesel engines for DaimlerChrysler light-duty vehicles to be introduced to the American market no later than 2010. 50
- Customer Satisfaction Notifications**
- Issue 54 (TDRSource) TDR reviews "Customer Satisfaction Notifications" on issues with some models '03, '04, and '06, concerning transmission cooler line, powertrain control module connectors, and roll-over valve vent hoses. 83
- Cylinder head porting, on 12-valve engine**
- Issue 56 (12-Valve Engines) Joe Donnelly explains the merits of cylinder head porting to avoid cracks in the head of 12-valve engines enhanced to a level above 400 hp. 3
- Dash warning lights, revision of, in new model trucks**
- Issue 55 (Ranch Dressing) On new model trucks, the wait-to-start light (WTS) and the water-in-fuel light (WIF) do not flash as do the other indicators/symbols on the dash when the ignition is first switched on, John Holmes reports. 72
- Dash warning lights, troubleshooting**
- Issue 53 (12-Valve Engines) A member provides wiring information to troubleshoot and correct the problem of a water-in-fuel instrument-panel light's failure to go out after servicing the filter. 26
- Issue 55 (12-Valve Engines) When the lights on his dashboard failed in his Second Generation truck, Brad Nelson traced the cause to a short which he repaired by running a new wire from the fuse box to the back of the instrument panel. 36
- Issue 56 (First Generation) TDR readers trace the cause of intermittent and flickering water-in-fuel (WIF) and wait-to-start (WTS) warning lights to a cracked insulation wire at the overdrive solenoid assembly inside the transmission. 22
- See also **Four-wheel drive, dash indicator light**
- Death wobble (uncontrolled front-axle oscillation)**
- Issue 53 (Member2Member) To eliminate the "dreaded death wobble" a TDR member recommends installing Solid Steel's adjustable lower control arms, together with its steering stabilizer and adjustable track bar. 10
- Defrost door, repair of**
- Issue 55 (5.9 HPCR) For repairing a broken defrost door on a '03 model truck, Robert Patton locates a 26-page write-up on the TDR website, from which he reproduces photos and to which he refers the reader. 42–43
- Delivery valves, laser-cut**
- Issue 56 (12-Valve Engines) Joe Donnelly says that when he tried laser cut delivery valves after going from stock 181s to 191s in his Second Generation truck, he lost about 12 hp, with lots more smoke. 35
- Diagnostic trouble codes (OBD codes)**
- Issue 55 (Ranch Dressing) John Holmes identifies four "diagnostic trouble code" warnings — P0071, P0111, P0514, and P0191 — covered in TSB 18-005-06, which should be consulted to decide whether the PCM needs to be re-flashed. 74
- Issue 55 (Have Ram, Will Travel) Joe Donnelly provides a comprehensive list of On-Board Diagnostic II Trouble Codes, a handy resource because these codes cannot be pulled up on the odometer of the '06, as was possible in earlier models. 96
- Issue 56 (Idle Clatter) Checking "trouble codes" should be a part of any diagnostic routine, says Jim Anderson, who thanks Joe Donnelly for publishing the full list in his column in Issue 55, p. 96. 83
- Diesel, increased importance of clean fuel**
- Issue 56 (Member2Member) Particularly in the high-pressure systems of later-model engines, the advent of ULSD makes it crucially important to provide fuel as clean as possible, according to the editor. 14
- Issue 56 (Have Ram, Will Travel) Joe Donnelly emphasizes the critical importance of clean fuel in HPCR engines, with five injection events per power cycle and higher injection pressures. 103
- Diesel-powered vehicles, progress in consumer acceptance of**
- Issue 55 (Four Whaling) Greg Whale reflects on progress in consumer acceptance of diesel-powered consumer vehicles during TDR's 15 years of publication, remarking that in Europe sales of diesel passenger vehicles now surpass those of gas vehicles. 56
- Diesel engine, inherent superiority to gasoline engine**
- Issue 53 (Ranch Dressing) According to an article in the Wall Street Journal, reported by John Holmes, rising petroleum prices and advances in engine design will improve the market for diesel-powered vehicles worldwide. 85
- Issue 55 (The Way We Were) To augment John Janko's article, p. 16, the editor reprises "Why a Diesel?" on the inherent design superiorities of Clessie Cummins' invention, explaining why it inevitably gets better fuel efficiency than the gasoline engine. 52–55
- Diesel fuel, alternative**
- Issue 54 (Ranch Dressing) The advantages of alternative diesel fuels is, according to John Holmes, "only half the story," posing costs and hazards, in an increasingly severe world energy crisis. 102
- Diesel fuel, less polluting of the environment than gasoline**
- Issue 53 (Letter Exchange) A meteorologist for the National Weather Service and long-time TDR member maintains that gasoline fuels are more polluting than diesel fuels, especially in the volatile organic compounds (VOCs) released in fuel transfers. 7
- Issue 56 (Letter Exchange) Compared to gasoline, diesel fuel produces 99.6% less VOC (volatile organic compounds) mass emissions, and thus poses less of a threat to air quality, according to EPA evidence. 8
- Diesel fuel, questionable "premium" designation**
- Issue 55 (Technical Topics) Doug Leno revisits the subject of so-called "premium" grade diesel, touted as providing an improved product, but which, because of industry's imprecise definition, continues to be of questionable benefit to the consumer. 48–49
- Diesel fuel, slow leak from under engine**
- Issue 56 (Letter Exchange) A reader reports fuel stains under his truck engine and telltale smell of diesel: the editor provides information for troubleshooting a failing return rubber hose line from the Bosch P7100 pump to the fuel tank. 9
- Diesel Particulate Filter (DPF), explanation of**
- Issue 55 (6.7 HPCR) The editor cites information from AutoWeek magazine and earlier issues of the TDR to explain the principle and function of the innovative diesel particulate filter (DPF), standard on the 3500 Chassis Cab truck. 46
- Diesel truck industry and the competitive market**
- Issue 55 (Blowin' In The Wind) The editor updates increasingly firm reports that all major American truck manufacturers will be marketing light-duty trucks with V-6 or V-8 diesel engines before the end of the decade. 50
- See also **Cummins engine, superiority over other brands;**
Cummins V6 & V8 engines, for DaimlerChrysler light-duty vehicles;
Diesel-powered light-duty trucks;
General Motors, V8 diesel engine
- Differential, rear, pinion seal**
- Issue 55 (5.9 HPCR) Joe Donnelly guides a reader in changing the rear pinion seal on his '03 dually. 45
- Differential cover, front, aftermarket**
- Issue 54 (Back In The Saddle) Scott Dalgleish recounts the merits of the Mag-Hytec front differential cover and describes its installation on his Third Generation truck. 124
- Differential cover, rear, aftermarket**
- Issue 54 (TDRRelease) Oasis Differential Covers publicizes its aluminum rear differential cover, providing good looks, improved heat dissipation, and increased oil capacity. 165
- Differential fill levels, Third Generation, 2500/3500 trucks**
- Issue 56 (Ranch Dressing) For owners of 2500/3500 Turbo Diesels who do their own servicing, John Holmes specifies the lube differential capacity and fill level to avoid foaming. 88
- Differential gears, Second Generation vehicles, specs**
- Issue 56 (12-Valve Engines) In answering a query from a reader who wants to change gear ratio from 4.10 to 3.54 in a Second Generation vehicle, Joe Donnelly provides specs and explains variables and options. 34
- Digital monitor. See Performance enhancement product: digital tuner and/or monitor**
- Digital tuner. See Performance enhancement product: digital tuner and/or monitor**
- Do-It-Yourself maintenance, merits of**
- Issue 53 (Motor-Minded) Mark Barnes analyzes the advantages, both psychological and practical, of amateur Do-It-Yourself vehicle maintenance, while conceding the higher competence of truly professional expertise. 66–68
- Dodge-Cummins '06 Turbo Diesel truck, Jim Anderson's evaluation of**
- Issue 56 (Idle Clatter) After several months and 20,000 miles driving and towing with his '06 Turbo Diesel 3500 dually with automatic transmission, Jim Anderson evaluates the vehicle and shares his opinions. 82–84
- Dodge-Cummins 2007.5 Turbo Diesel pickup, automatic transmission**
- Issue 56 (Ranch Dressing) John Holmes reports that the new automatic transmission for the 2007.5 Turbo Diesel pickup is a Mopar 68RFE six-speed (rather than the Japanese Aisin six-speed). 87
- Dodge-Cummins 6.7 HPCR Turbo Diesel Chassis Cab, reader report and critique**
- Issue 56 (6.7 HPCR) Periodically during the initial 18,000 miles of hauling with the 6.7 HPCR Turbo Diesel, member Eldred Bergstrom reports his impressions and evaluation of the new '07 Turbo Diesel Chassis Cab. 46–48
- See also **Aisin transmission in the 6.7 Turbo Diesel, reader critiques;**
Fuel efficiency of the 6.7 Turbo Diesel, reader reports
- Dodge-Cummins 6.7 Turbo Diesel 4500 and 5500, advance report**
- Issue 56 (Truckin' Through The Internet) Steve St. Laurent gives a rundown on the imminent introduction of series 4 and 5 models of the 6.7 Turbo Diesel Chassis Cab, with details on engine, drive train, chassis, interior, service infrastructure. 56–59
- Issue 56 (Ranch Dressing) John Holmes provides an advance report (he calls it "the skinny") on the 2008 4500 and 5500 Rams. 88
- Dodge-Cummins Ram light-duty 1500 pickup, slated for 2010**
- Issue 56 (Blowin' In The Wind) The editor reports that Dodge will introduce a new Cummins-powered diesel model of its light duty Ram 1500 before 2010. 54
- Dodge-Cummins Turbo Diesel truck, reader testimonials**
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- Issue 53 (Letter Exchange) A member driving a '98.5 manual Quad Cab recounts the few parts replacements and repairs he's made in the first 170,000 miles of flawless service pulling a 34' Jayco trailer. 6
- Issue 56 (Letter Exchange) A reader praises his '01 pickup, describes his service protocols, and reports 510,000 miles of flawless performance. 9
- Issue 56 (Letter Exchange) A knowledgeable reader reports experience with two First Generation Turbo Diesels, each purchased used, both solid performers and admirable trucks. 10
- Issue 56 (Letter Exchange) TDR readers submit photos testifying to their Turbo Diesel trucks' roles as heavy-duty work horses. 11
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- Issue 55 (First Generation) Readers agree on the routine for removing doors on First Generation trucks and, where necessary, for replacing pins or the entire hinge unit. 22
- Dowel pin problem**
- Issue 55 (12-Valve Engines) Joe Donnelly reprises the "killer dowel pin" problem in 12-Valve engines, describes the preferred fix, and emphasizes the importance of properly dealing with it. 34
- Issue 56 (Have Ram, Will Travel) The notorious "killer dowel pin" problem besetting 12-valve Turbo Diesels is anatomized by Joe Donnelly, who provides photos and identifies ways to address it. 106
- Driveline vibration, troubleshooting of**
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- Drive shaft, removal and replacing**
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- Driving strategies for fuel efficiency**
- Issue 53 (Life's a Beach) Jerry Nielsen describes the driving strategies he adopted in a

deliberate plan to maximize fuel efficiency. 90–91

Issue 56 (Idle Clatter) Jim Anderson describes his conservative driving style, which if adopted widely would help alleviate the national energy crisis. 80

Dual Mass Flywheel (DMF), component in the G56 transmission, advisability to upgrade with power enhancements

Issue 53 (Back In The Saddle) Scott Dalgleish reports expert opinion that the Dual Mass Flywheel (DMF) component in the new G56 manual transmission would better be upgraded to a heavier-duty solid flywheel if power enhancements are made to drivetrain. 94–101

Dyno Day sports events, their story

Issue 56 (Have Ram, Will Travel) Joe Donnelly recounts the history of Dyno Day sports meetings, and the characteristics of these increasingly popular events that distinguish them from other competitions at diesel events. 111

Dyno run, Dodge win, at '06 May Madness

Issue 53 (Your Story) Richard "Reb" Brown chronicles his dyno win, with 893 hp, to regain the laurels for the Dodge-Cummins Turbo Diesel in competition at '06 May Madness. 62–63

Dyno testing, role of, in power enhancement

Issue 53 (Your Story) Richard "Reb" Brown emphasizes the critical importance of dynamometer testing in making engine modifications for increasing horsepower. 62–63

Earn Your Stripes, license tag

Issue 55 (Earn Your Stripes) The editor announces a new license tag bearing the TDR's Super-B cartoon character, lithographed in color, for Turbo Diesel owners to proclaim their power achievements, in increments of 100 hp, available at a cost of \$4. 106

Issue 56 (Earn Your Stripes) TDR continues its offer of color-lithographed license tag bearing the Super-B cartoon character, for Turbo Diesel owners to proclaim their power achievements, in increments of 100 hp, at cost of \$4. 124

Electrical system, failure to charge

Issue 54 (First Generation) Failure of electrical system to charge in a '93 Turbo Diesel is traced to corroded wiring from the CPS to the PCM. 17

Electronic Control Module (ECM), used by Dodge for evidence in warranty claims

Issue 56 (5.9 HPCR) The Electronic Control Module (ECM), which continuously monitors and records engine operation, has become a virtual "Black Box" which Dodge uses to decide legitimacy of claims for service under warranty. 38–39

Electronic stability control (ESC)

Issue 55 (Four Whaling) Computerized programs known as "electronic stability control" (ESC), have questionable merit because they take control of brake and throttle in emergency situations, and frustrate serious drivers, according to G.R. Whale. 56–57

Emissions hazards from fugitive volatile organic compounds (VOCs)

Issue 56 (Letter Exchange) Loren Marz, TDR member and consulting meteorologist, argues that fugitive emissions of VOCs (volatile organic compounds) present a greater threat to air quality than does NOx (nitrous oxide) from internal combustion. 8

Energy crisis, strategies for addressing the national problem

Issue 54 (Exhaust Note) Kevin Cameron poses the global dilemma in coping with a threatening, catastrophic over-consumption of energy, noting that if America relied on bio fuel exclusively it would require more than all its available arable land space. 166–167

Issue 56 (Tailgating) Doug Leno decries federal emphasis on environmental protection and asserts that the way to solve the motor-vehicle energy crisis is to unleash competition in the development of biodiesel and ethanol industries. 6–7

Issue 56 (Four Whaling) G.R. Whale argues that a shift to diesel in motor vehicles would largely solve the problem of America's fuel shortage, but our politicians ignore the facts. 76

Issue 56 (Idle Clatter) We will not soon be getting effective legislation to conserve energy, so America's responsibility rests with the individual consumer, says Jim Anderson, who describes his driving strategies to save on fuel consumption. 80

Issue 56 (Celebrity Corner) The country's petroleum shortage and energy crisis are grave, says Sam Memmolo, who recalls other presidential appeals in the '70s and says serious measures should have been taken decades ago. 94

Issue 56 (Motor-Minded) Mark Barnes approaches energy conservation from a psychologist's perspective, explaining that eons of human experience disincline us to defer satisfaction for longterm advantage, hence presenting a challenge of epic proportions. 128–130

Issue 56 (From The Shop Floor) Our energy problem is a public relations problem, opines Andy Redmond: we must be ambassadors of diesel; expand public discourse beyond a narrow focus on environmental protection; and exploit technology we already have. 144

Issue 56 (Exhaust Note) In reflecting on the need for energy efficiency, Kevin Cameron turns from considerations of political policy to the myriad of small technological innovations in improving efficiency of the drive system. 164–165

Energy efficiency, design refinements to reduce waste in compound drive systems

Issue 56 (Exhaust Note) Kevin Cameron writes about the perennial quest to reduce inefficiency in engine systems, with examples from staying aloft in WWII fighter planes to keeping warm at overnight truck stops. 164–165

Engine, at high-mileage, discretionary inspection of components

Issue 56 (First Generation) TDR readers identify those components of a Turbo Diesel engine that should be examined for servicing or replacement after 250,000 miles. 24

Engine, re-priming of. See Starting the diesel after prolonged storage

Engine block heater, saving on energy costs

Issue 53 (12-Valve Engines) Readers suggest installing a heavy-duty timer to limit the operating time of the block heater, to economize on electric energy costs. 28

Engine intake air heater. See Air intake heater

Engine oil drain pan plug, removal

Issue 54 (Third Generation) A reader identifies the proper tool for removing and re-installing the drain plug on the crankcase oil pan. 47

Engine oil drain valve, aftermarket

Issue 55 (TDRRelease) Appreciated by service attendants and do-it-yourself oil changers, the "Finger Touch" engine oil drain valve permits draining with a mere flip of the finger and avoids stripped threads, fractured drain plugs and leaky gaskets. 133

Engine oil pan, removal of

Issue 55 (First Generation) Agreeing that "oil pan removal is a tough chore," readers share instructions for the procedure, which requires lifting the motor off mounts. 26

Engine oil pressure gauge, unreliable reading of

Issue 54 (12-Valve Engines) Failure of engine oil pressure gauge to provide an accurate reading is traced to a defective pressure sender. 26

Engine overheating, troubleshooting

Issue 56 (24-Valve Engines) Service procedures to prevent overheating in the cooling system include checking proper operation of the radiator fan and periodic cleaning of the radiator after removing it. 36

See also **Cooling system, servicing**

Engine power, intermittent falling-off, with excessive white smoke

Issue 55 (12-Valve Engines) Joe Donnelly suggests that an injector sticking in open is the most likely cause of a 12-valve engine's intermittent falling-off of power, accompanied by excessive white smoke. 34

Engine pre-oiler, aftermarket

Issue 54 (Product Showcase) Wayne Owen describes the AMS-Oiler, an engine oil pre-charger, designed to avoid dry startups; and provides instructions for installation. 163

Engine shut-down, malfunction

Issue 53 (12-Valve Engines) Refusal of engine to shut down may be caused by interference of the throttle linkage with the fuel shut-down solenoid, correctable by adjusting position of the solenoid or of the linkage to it. 26

Engine starting, failure

Issue 56 (24-Valve Engines) Seeking cause of an engine's failure to start, a reader discovers that the #1 injector was ejecting no fuel, which Joe Donnelly says suggests plugged filter, clogged lines, a bad lift pump, or a dead VP44 pump. 37

Issue 56 (From The Shop Floor) A problem in which a 12-volt Turbo Diesel engine cranks but fails to start may be explained by an impaired start/run solenoid: Andy Redmond provides a chart of specs for multimeter testing of operability. 146

Engine startup, inoperable after fuel filter change

Issue 55 (24-Valve Engines) In a diesel engine after running out of gas or changing the fuel filter, air may lock up the injection pump, resulting in failure to start: Joe Donnelly provides instructions for clearing air from the fueling system. 38

EPA 2010 emissions standards, met by Cummins 6.7 HPCR engine. See Cummins 6.7 HPCR diesel-powered Dodge meets EPA 2010 emissions standard

Event Data Recorder (EDR)

Issue 54 (Idle Clatter) Jim Anderson notes pending federal legislation that might require "event data recorders" in private vehicles, similar to aircraft "black boxes," which have the potential to compromise privacy and affect insurance settlements. 96

Events 2006

Issue 53 (Ranch Dressing) John Holmes reports on events at the 2006 May Madness in Pahrump, NV. 82

Issue 53 (Polly's Pickup) In her roundup on events and rallies in the West, Polly Holmes shares impressions of May Madness 2006, Reno historic races, and the National Family Motor Coach Association. 86–87

Issue 53 (Have Ram, Will Travel) The annual "Mopars at the Strip" event was held at the Speedway complex, Las Vegas, NV, Mar. 24-26, '06, featuring dyno testing of Cummins-powered trucks and exhibition of vintage drag race cars. 106

Issue 53 (Out Standing In The Field) Scheid Diesel's annual open house was held Aug. 25-Aug. 27, '06, Terre Haute, IN. 116

Events 2007

Issue 53 (Out Standing In The Field) Thirteenth Annual May Madness is scheduled for Apr. 30-May 5, '07, Pahrump, NV. 116–120

Issue 54 (Out Standing In The Field) Joe Donnelly announces the Thirteenth Annual TDR Western Regional Rally, May Madness, Apr. 30 – May 5, '07, in Pahrump, NV, and provides the official registration form. 138–140

Issue 55 (Out Standing In The Field) BorgWarner's AirWerks Extreme Diesel Showdown, Mar. 30–Apr. 1, 2007, Tulare, CA. 98–100; and 13th Annual Turbo Diesel Register (TDR) Western Regional Rally, May Madness 2007, Apr. 30–May 5, Pahrump, NV. 98–100

Issue 56 (Chapter News) The New Mexico chapter of the TDR held its first "Dyno Day" on Feb. 10, '07, in Albuquerque: Joe Donnelly lists the entrants, their truck brand, engine, and achieved HP and torque. 111

Issue 56 (Out Standing In The Field) In this issue TDR presents the calendar of events, both those reserved for Turbo Diesels and those open to other diesel pickups, as scheduled for 2007, including the following:

- TS Performance's annual open house, May 11–12, Bowling Green, KY. 112
- Thirteenth Annual May Madness 2007, Apr. 30–May 5, Pahrump, NV. 112–114
- Scheid Diesel's Diesel Extravaganza, Aug. 24–26, Terre Haute, IN. 112, 116
- Second Annual Nor-Cal Diesel Rally, June 15–16, Redding, CA. 112, 116

Exhaust brake. See also Pacbrake PRXB for model '06, an updated evaluation

Exhaust brake, an option on the 6.7-liter engine

Issue 54 (Ranch Dressing) John Holmes notes that the Turbo Diesel Chassis Cab truck comes with the optional exhaust brake built in. 104

Issue 55 (Ranch Dressing) John Holmes reports that the early price quoted by Dodge for the exhaust brake option on the 6.7-liter Chassis Cab is \$495. He asks, Why would you order one without it? 68

Exhaust brake, continues to be disapproved with 48RE transmission in the '05 truck

Issue 54 (Ranch Dressing) John Holmes regretfully declares that, to the best of his knowledge, Dodge will NOT provide an update for the PCM to permit installing an aftermarket exhaust brake on '05 models with automatic transmission. 103

Issue 55 (Member2Member) TDR informs readers of Dodge's decision against modifications necessary to accommodate an exhaust brake to '05 Turbo Diesel with automatic transmission. 15

Exhaust brake, installation of a Pacbrake on a '06 Turbo Diesel engine

Issue 54 (Product Showcase) Jim Anderson describes installing Pacbrake's PRXB system on his '06 automatic, a complex job but one providing satisfactorily improved braking in his tow rig. 160–162

Exhaust brake, installation of a Pacbrake on a 12-valve Turbo Diesel engine

Issue 54 (12-Valve Engines) Bob Vallier describes installing, first, a Pacbrake and, second, 60-psi valve springs in his '94 Turbo Diesel, employing in the latter procedure an air-hold tool rather than the more common "top dead center" method. 30–35

Issue 54 (12-Valve Engines) The editor explains his preference for using the "valve overlap" procedure (finding TDC) for changing exhaust valve springs, when installing an exhaust brake in a 12-valve Turbo Diesel engine; and gives instructions. 35–36

Issue 54 (Ranch Dressing) John Holmes tells of his acquisition of a "rehabbed" 35 PSI Pacbrake and its installation in his "Old Blue" '94 Ram, done simply and much to his

- delight. 104
- Exhaust brake, installation of a Pacbrake on a Third Generation truck**
 Issue 55 (Back In The Saddle) On his Third Generation truck, Scott Dalgleish installs Pacbrake's new PRXB exhaust brake, a somewhat more complex assembly because it includes its own air compressor and storage tank. 92-93
- Exhaust brake, Jacobs, approved with 48RE in models '06 and later**
 Issue 55 (Member2Member) Dodge has made the necessary changes to permit use of the Jacobs Exhaust Brake with automatic transmission in models '06 and later. 15
- Exhaust brake, updated Banks model for Second Generation trucks**
 Issue 54 (Life's A Beach) Jerry Nielsen describes the virtues and the installation of the Banks exhaust brake updated for the Second Generation truck. 112
- Exhaust emissions, alternative methods for reducing nitrogen oxide**
 Issue 55 (Exhaust Note) Kevin Cameron explains the problem with NOx in diesel exhaust emissions, the technical challenges in reducing it, the two contenders in NOx aftertreatment, uncertainty about which will be adopted and by whom. 134-135
- Exhaust housing, stainless steel, aftermarket**
 Issue 56 (Member2Member) Joe Donnelly explains that a stainless steel exhaust housing is superior because its bigger outlet port and port openings increase wastegate flow by 100% and because it traps heat better than cast iron. 15
- Exhaust manifold bolts, deformed and broken, repair of**
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- Exhaust system, aftermarket**
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 Issue 53 (TDRRelease) ANSA provides product information on its doublewall diesel exhaust tip and offset mufflers. 147
 Issue 54 (Back In The Saddle) In a continuing project to better the performance and fuel efficiency in his Third Generation Turbo Diesel, Scott Dalgleish adds a Banks Monster Diesel Duals exhaust. 123
- Extrude honing, description of the process**
 Issue 56 (Back In The Saddle) Scott Dalgleish takes his 2005 Turbo Diesel to Dynamite Diesel Performance to refine his stock injectors by the Extrude Hone process, which smooths nozzle contours and improves flow, to increase horsepower and lower EGTs. 96-99
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- Fan blades, broken-away and dangerous. See Radiator fan blades, cracked**
- Fan drive, loose, repair**
 Issue 55 (First Generation) To repair a loose fan drive, a reader suggests replacing the fan-drive ball bearing, and provides the Cummins part number. 22
- FASS fuel pump**
 Issue 55 (TDRRelease) Diesel Performance Products releases information on the newest edition of its fuel pumps, the FASS 95, a younger brother of the FASS 150 series, which extracts air from fuel, along with dirt and water separation. 131
 See also **Pusher pump, recommended with power additions**
- FASS system, guide to the right kit for all Turbo Diesel trucks**
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- FASS system, installation on Second Generation Turbo Diesel**
 Issue 54 (Have Ram, Will Travel) Joe Donnelly gives instructions with photos for installing the FASS system in Second Generation trucks. 133-134
- FASS system, installation on Third Generation Turbo Diesel**
 Issue 56 (Have Ram, Will Travel) Noting that installation of the FASS system on Third Generation trucks is similar to that on a Second Generation, Joe Donnelly provides instructions on installing the sending unit and mounting the system in later models. 102-103
- Fifth-gear nut problem. See Transmission, NV4500, fifth-gear nut problem**
- Fifth-wheel hitches, competitive brands. See Towing equipment questions, various**
- Filter cap of billet steel, recommended with high lift-pump pressures**
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- Five Points Tour**
 Issue 53 (Five Points Tour) Margaret and Joe Goodman recount the story of their Five Points Tour, begun at their home in Soldotna, AK, and completed 22,800 miles later at San Ysidro, CA. 132-133
 Issue 53 (Five Points Tour) The TDR continues its sponsorship of the Five Points Tour to encourage continental travel among members, designed to be self-directed but with rules enough for structure. 130-133
- Flex Plate, aftermarket**
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- Fog lights, Brite Box "Fogster" control**
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- Ford, F-150 pickup, speculation on diesel engine**
 Issue 54 (Blowin' In The Wind) The editor quotes speculation in Automotive News that Ford plans on introducing a version of the F-150 with a 4.4-liter diesel engine "late in the decade." 60
 Issue 55 (Blowin' In The Wind) Automotive News reports that Ford will market an F-150 pickup with a 3.6-liter V8 diesel engine by the end of the decade, thus likely to be first among American light-truck diesels. 50
- Ford makeover, with a Cummins diesel engine**
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- Ford Powerstroke 6-liter diesel engine**
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- Ford Super Duty pickup, new diesel engine slated for '07**
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- Four-Way Performance kit, Second Generation truck**
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 Issue 53 (12-Valve Engines) A blinking four-wheel-drive dash light in a Second Generation truck is traced to a failure in the control vacuum system and corrected by installing a new vacuum-operated shift motor. 28
- Four-wheel drive, failure to engage**
 Issue 53 (12-Valve Engines) Failure of front wheels to engage in four-wheel drive is traced to failure of the vacuum operated shift motor at the axle, either because of a loose vacuum hose or a defective vacuum operated shift motor. 26
- Four-wheel drive, front driveline, disconnecting of**
 Issue 54 (Idle Clatter) Jim Anderson speculates on possible development of a kit to disconnect the front axle drive in a late model truck to save wear when not engaged in 4x4 operation, and solicits reader input. 95
- Four-wheel drive, front drive shaft, lubrication of. See Constant Velocity Joint**
- Freeze plug, repairing leak at**
 Issue 56 (24-Valve Engines) To correct an oil leak at a freeze plug in the engine block, Joe Donnelly recommends a reader not try to remove and replace it, but simply clean the area and seal with RTV (Room Temperature Vulcanizing) sealant. 37
- Front axle, oscillation. See Death wobble**
- Front end, two-wheel drive, popping noise**
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- Front end, vibration, diagnosing**
 Issue 54 (First Generation) Front end vibration in the First Generation, two-wheel-drive Turbo Diesel is variously diagnosed by readers as failure of shocks, upper and lower ball joints, wheel bearings, and steering-shaft U-joint. 17
- Fuel-Air Separation System (FASS). See FASS**
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- Fuel/water separator, sensor, broken**
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- Fuel additives, advice and warnings**
 Issue 56 (Member2Member) The editor updates his position on fuel conditioners, explaining use for later-model engines, identifying products, and warning against products containing alcohol or acetone. 14
- Fuel control actuator, servicing**
 Issue 54 (Third Generation) Irregular throttling is traced by a reader to fouling condensation on the sensor of the fuel control actuator, located before the CP3 injection pump. 45
- Fuel Economy Project, update**
 Issue 54 (Back In The Saddle) In narrating an ongoing project to increase fuel economy of his '05 Turbo Diesel, Scott Dalgleish describes installation of aftermarket camshaft, turbocharger, exhaust system, differential cover, suspension, and air filter. 116-126
 Issue 55 (Back In The Saddle) In further pursuing his project to increase fuel economy, Scott Dalgleish revises his goal upwards, aiming now to achieve both a 20% increase in fuel efficiency AND horsepower increase to the 500-rwhp mark. 86-87
- Fuel efficiency, improvement of**
 Issue 53 (Life's a Beach) Jerry Nielsen reports 21.8 average mpg on a 1200-mile tour of the Sierras, itemizes accessories and modifications, and describes his style of driving to achieve this performance. 90-91
- Fuel efficiency of the 6.7-liter Turbo Diesel Chassis Cab, reader reports**
 Issue 56 (6.7 HPCR) TDR readers report on fuel efficiency of their Turbo Diesel Chassis Cabs towing various loads, disclosing results generally comparable to, or a bit less than, with the HO engine, NV 5600 manual transmission. 46
- Fuel filter, 7-micron (FS19800), potential problems with models prior to '03**
 Issue 55 (Ranch Dressing) John Holmes notes that the 7-micron FS19800 fuel filter on the new Third Generation HPCR engine is not recommended for models prior to '03 because its higher restriction is incompatible with earlier transfer pumps. 68
- Fuel filter, recommended for HPCR engine**
 Issue 56 (Member2Member) Robert Patton explains why the new 7-micron FS19800 fuel filter should be used in the high-pressure common-rail engines in models '03 and later. 14
- Fuel filter, technique for removing**
 Issue 52 (Member2Member) Joe Donnelly explains that it is better to drain the fuel-filter canister before removing it, to prevent contaminants from entering the standpipe. 15
- Fuel filter, upgrade for finer filtration with ULSD**
 Issue 54 (Ranch Dressing) Because of the high detergency of ULSD, sludge flushed from pipelines and storage tanks poses a potential problem, calling for use of the new 7-micron fuel filters. 102
- Fuel filter drain valve, leak at**
 Issue 53 (24-Valve Engines) New O-rings or a replacement drain valve may solve the problem of a leak at the fuel filter drain valve. 30
- Fuel gelling, prevention of. See Winterizing, cold-weather vehicle maintenance**
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- Fueling box. See Performance enhancement product: tuner and/or monitor**
- Fueling problems in high-horsepower HPCR engines, need for auxiliary pump**
 Issue 53 (From The Shop Floor) Andy Redmond analyzes fueling problems in high-horsepower HPCR engines which may require installation of an auxiliary transfer pump, and interprets advice from the maker of the FASS system. 144
- Fueling problems in high-horsepower HPCR engines, need for fuel pressure gauge**
 Issue 53 (Idle Clatter) Jim Anderson advises operators of truck models '98.5 and later to install a fuel pressure gauge and monitor it carefully because whatever pump or injection system is used, pressure and flow is problematic and subject to failure. 76
- Fuel injection pump, Bosch CP3, installation**
 Issue 56 (Have Ram, Will Travel) Joe Donnelly describes and illustrates installation of the

- Bosch CP3 High Pressure fuel injection pump, which he says is an easier job than with previous pumps. 107–108
- Fuel injection pump, Bosch P7100, matching the correct camshaft**
 Issue 55 (24-Valve Engines) In answering a reader's query about what camshaft he should select for an engine converted to a mechanical Bosch P7100, Joe Donnelly recommends staying with a 24-valve cam design. 40
- Fuel injection pump, Bosch P7100, timing degrees in**
 Issue 55 (Have Ram, Will Travel) Joe Donnelly provides a chart showing timing degrees for different engine horsepower rates for the Bosch P7100 in-line injection pump used from '94 through first half of '98 model year. 95
- Fuel injection pump, Bosch P7100, variations in Second Generation model years**
 Issue 56 (12-Valve Engines) Bosch P7100 215 hp injection pumps in models '96, '97, and '98 are practically the same and are serviced with the same parts, says Joe Donnelly. 35
- Fuel injection pump, malfunction caused by collapsed return springs**
 Issue 53 (First Generation) Collapse and breakup of return springs in fuel injector pump results in clicking noise accompanied by performance decrease and predictive of mechanical damage. 24
- Fuel injection pump, puller tool**
 Issue 55 (First Generation) Joe Donnelly identifies the part number and gives instructions for using a Snap-On/Blue Point tool for pulling the VE injection pump. 28
- Fuel injection pump, VP44, fraught with problems**
 Issue 53 (Idle Clatter) The VP44 injection pump is subject to failure and should be carefully monitored with a fuel pressure gauge or replaced with an aftermarket FASS system, says Jim Anderson. 76
- Fuel injection pump start/run solenoid. See Fuel shut-down solenoid, troubleshooting**
- Fuel injector, aftermarket, matched to stock turbo, in heavy towing**
 Issue 55 (24-Valve Engines) Joe Donnelly spells out specs and constraints when upgrading injectors with the stock turbocharger, in response to an owner of a 24-valve truck hauling a 13,500 lb fifth-wheel. 39
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 Issue 53 (First Generation) Several TDR members offer suggestions for testing and diagnosing the operational condition of fuel injectors in First Generation trucks. 23
- Fuel injector, stuck, consequent problems. See Engine power, intermittent falling-off with excessive white smoke**
- Fuel injector connector tubes, instructions for removing**
 Issue 56 (24-Valve Engines) A TDR reader provides instructions for proper removal of injector connector tubes on a 24-valve Turbo Diesel. 37
- Fuel injector line, upgrade**
 Issue 56 (Have Ram, Will Travel) The #6 fuel injector line has failed on a few Third Generation HPCR engines, for which Cummins and Mopar provide update kits including a bracket that should dampen vibrations leading to failure. 108
- Fuel injectors, in 12- and 24-valve engines, when to replace**
 Issue 56 (12-Valve Engines) Factors most conducive to the inevitable wear of fuel injectors are dirty fuel and EGTs either too high or too low; and unless or until they malfunction, replacing them is at the operator's discretion. 35
- Fuel injectors and cross-over tubes, loose, troubleshooting**
 Issue 56 (Ranch Dressing) Complaints of rough idle, long crank-to-start, and intermittent no-start can be caused by loose injectors and cross-over tubes, according to John Holmes, who gives instructions for critical torquing. 88
- Fuel injector swap-out, necessary tools and procedures**
 Issue 56 (5.9 HPCR) Joe Donnelly reviews his list of tools, torque specifications, and instructions for exchanging fuel injectors in the common-rail engine. 42
- Fuel lift pump for the VP44 injection pump, aftermarket**
 Issue 56 (24-Valve Engines) A reader recommends the Holley Blue brand lift pump as a replacement to provide adequate pressure and flow to the VP44 injection pump. 37
- Fuel mileage calculator in overhead console, inaccurate**
 Issue 56 (Idle Clatter) Jim Anderson reports that the fuel mileage calculator built into the overhead console of his '06 Turbo Diesel is optimistic by 2 mph at road speeds of 70 mph. 82
- Fuel pickup tube, upgrade, installation**
 Issue 56 (Have Ram, Will Travel) Joe Donnelly describes installation of a 3/8" fuel pickup tube supplied by Diesel Performance to avoid cavitation in larger transfer pumps in Third Generation trucks. 102–103
- Fuel pre-heater, troubleshooting**
 Issue 54 (12-Valve Engines) Several TDR readers collaborate in troubleshooting problems with the fuel heater, identifying melted electrical connections, relevant parts, and repair procedures. 22
- Fuel pressure gauge, advisability of adding**
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 Issue 55 (12-Valve Engines) When his starter shut-down solenoid switch began to fail, Brad Nelson ordered the kit to rebuild the contacts, but he delayed until it stuck in the open position and self-destructed, requiring a costly new unit. 37
 Issue 56 (12-Valve-Engines) Troubleshooting a failed starter on a 12-valve engine, TDR readers check for a burned-out fuel shut-down solenoid and relay diode, finally locating cause of the problem in corroded electrical connection to batteries. 28
 Issue 56 (From The Shop Floor) Failure to start may be caused by a bad fuel injection pump's start/run solenoid, according to Andy Redmond, who provides a table of specs for multimeter testing and diagnosis. 146
- Fuel system, loss of prime**
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- Fuel system, priming of, procedure for**
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- Fuel transfer pump, auxiliary, in Third Generation trucks, advisability. See Fueling problems in high-horsepower HPCR engines, need for auxiliary pump**
- Fuel transfer pump, explanation of its role in the Cummins Third Generation engine**
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- Fuel transfer pump, installation of**
 Issue 54 (Letter Exchange) A TDR member reports his successful shadetree installation of a new fuel pump in his 24-valve Turbo Diesel, facilitated by instructions provided in Issue 48. 6
 Issue 54 (Have Ram, Will Travel) Joe Donnelly provides instructions, with illustrations, for installing the FASS fuel supply pumping system, to replace the inadequate factory Carter lift pump. 133–134
- Fuel transfer pump, leak at**
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- Fuel transfer pump, replacement of, in 12-valve engines**
 Issue 55 (Idle Clatter) Jim Anderson notes that the best way to address a leaky check valve in the lift pump of a 12-valve engine is simply to replace the pump; he gives the current price of a new one and provides instructions for doing the job. 60
- Fuel transfer pump, retro-fit in-tank lift pump to replace weak OEM part in '98.5–'04.5 Turbo Diesels**
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- Fuel transfer pump for the VP44 injection pump, aftermarket**
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- Fuel transfer pumps, in-tank vs. engine-mounted**
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- Fuel transfer pumps, roundup of information on**
 Issue 56 (The Way We Were) From back issues of the TDR, the editor reviews fuel transfer pumps, their specs, problems and solutions, with primary focus on model years '98.5–'02. 60–65
- Fuse box, accessory, in-dashboards, installation in '03–'06 trucks**
 Issue 54 (Member2Member) Installation of an auxiliary fuse box in the '05 model is devised and described by TDR reader Marketos; and by John Roberts of Geno's Garage for '06 trucks. 14–15
- Gale Banks Engineering, portrait of the company, its owner, and facilities**
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- Gaskets, installation**
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 Issue 55 (Ranch Dressing) John Holmes summarizes Dodge's published instructions on proper procedures in changing gaskets in the Turbo Diesel engine. 72
- Gauge, fuel pressure, a recommended addition. See Fuel pressure gauge, advisability of adding**
- Gauge, fuel rail pressure, proposed and under development**
 Issue 53 (From The Shop Floor) Andy Redmond speculates on the uses and advantages of an analog fuel rail pressure gauge for the HPCR engine, under development by Doug Leno. 145
- Gauges, dashboard, malfunction, troubleshooting of**
 Issue 53 (Idle Clatter) Jim Anderson offers suggestions to correct malfunctioning dashboard gauges, particularly intermittent problems caused by contamination in low-voltage circuits between the PCM or ECM and the dash. 78
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- General Motors' Duramax diesel, redesigned for '07 models**
 Issue 54 (Blowin' In The Wind) The editor reprints a column from Automotive News reporting modifications in the Duramax engine to meet '07 EPA regulations, in production after Jan. 1. 60
- General Motors, V8 diesel engine, for light-duty vehicles**
 Issue 55 (Blowin' In The Wind) The editor cites a report in Automotive News that General Motors will market V8-diesel-powered light-duty vehicles "as early as 2010." 50
- Geno's Garage annual donation to a non-profit organization**
 Issue 54 (TDRRelease) Contributions to charity by Geno's Garage from its annual December "Got Diesel?" T-shirt program have exceeded \$25,000 since its inception and will continue in '06, with proceeds to the Armor 4 Troops Foundation. 165
- Governor spring stud, broken, repair of**
 Issue 54 (12-Valve Engines) Because the governor stud assembly is a complete unit, a broken stud requires replacement of the complete assembly, best performed by a Bosch pump technician. 28
- Grid heater. See Air intake heater**

Hard starting

- Issue 55 (12-Valve Engines) The two most common causes of hard-starting in the 12-valve engine are solenoid malfunction and deterioration of the fuel return hose; Robert Patton explains and gives instructions for correcting the problem. 30
- Issue 56 (24-Valve Engines) A leak anyplace in the lines of the fuel system can cause drain-back to the tank and air in the line, resulting in hard starting. 36
- Issue 56 (Ranch Dressing) According to John Holmes, both hard starting and rough idling may be caused by loose injectors and cross-over tubes, for which he gives specs for exact torquing. 88
- See also **Engine startup, inoperable after fuel filter change;**
- See also **Starter, troubleshooting;**
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Head bolts, retorquing, in 12-valve engine

- Issue 56 (12-Valve Engines) Joe Donnelly details the specs for retorquing head bolts on the 12-valve Turbo Diesel engine, explaining his own method. 32

Headlight illumination, aftermarket improvement

- Issue 53 (Back In The Saddle) Installation of a Brite Box to increase highway illumination and the Fogzilla kit to up the power of fog lights is described by Scott Dalgleish. 104-105

Heater/ventilation/air-conditioner unit. See HVAC evaporator temperature sensor

Honda, economy TDI diesel engine

- Issue 55 (Four Whaling) Honda is developing a diesel engine to compete in the "economy" market with the acclaimed VW TDI diesel passenger vehicles, which, according to G.R. Whale, bodes well for diesel's wider acceptance among consumers worldwide. 57

Honors and recognition awards

- Issue 53 (TDR/R/R) TDR adds to its roster of honorees for enlisting new members, high mileage, and other distinctions in the Turbo Diesel world. 122-129
- Issue 54 (TDR/R/R) TDR adds to its roster of honorees for enlisting new members, high mileage, and other distinctions in the Turbo Diesel world. 141-144
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- Issue 56 (TDR/R/R) TDR adds to its roster of honorees for enlisting new members, high mileage, and other distinctions in the Turbo Diesel world. 118-123

See also **Travel Companion**

Hood scoop, evaluating

- Issue 55 (5.9 HPCR) A reader with an SRT 10 hood scoop asks about excluding water from the air box, to which Joe Donnelly replies that he himself relies on his air filters to do the job, and references information in a previous issue. 45
- Issue 56 (12-Valve Engines) Joe Donnelly explains that while a ram air hood scoop will not increase air pressure to the engine, it provides denser air, and lowers EGT. 34

Horn-honking warning of open door, deactivating

- Issue 54 (Idle Clatter) Jim Anderson justifiably objects to the horn-blowing warning programmed when driver door is opened during some modes of operating automatic transmission in late model trucks, and describes ways to defeat it. 96
- Issue 54 (Ranch Dressing) John Holmes provides instructions for mounting an SPST switch in the horn circuit to deactivate the warning horn-honking sounded when the door is opened while driving in reverse. 103

Horsepower enhancement, levels of incremental component upgrades and costs

- Issue 56 (12-Valve Engines) Joe Donnelly advises increasing horsepower incrementally, with graded replacements in camplate, pump, and turbocharger, in step with upgrade of injectors. 32

Hoses, aftermarket

- Issue 53 (Ranch Dressing) John Holmes reviews the bright blue Cool Hose air intake system and charge air tubes, aftermarket upgrades regularly installed at Carson Dodge. 84
- Issue 54 (Life's A Beach) In his on-going evaluation of high-performance hoses, Jerry Nielsen again chooses Mr. Bob's silicone hoses, this time for his Third Generation Turbo Diesel truck. 113
- Issue 55 (First Generation) Readers pool information on sources of hydraulic hose lines for automatic transmissions in First Generation trucks. 24
- Issue 56 (Idle Clatter) Jim Anderson says Mr Bob's cooler-system silicone hoses are worth the extra cost. 82
- Issue 56 (Have Ram, Will Travel) Noting that in Third Generation Turbo Diesels, the hose from the turbo compressor discharge is subject to failure, Joe Donnelly recommends replacement with Mr. Bob's blue (or black) silicon hose. 104

HPCR engine, longevity of, compared to that of the 12-valve engine

- Issue 54 (Idle Clatter) Jim Anderson concedes that, because it powers heavier equipment and conforms to stricter EPA standards, the HPCR engine is not likely to last as long as the 12-valve engine. 95

Hub bearing assemblies, alternative replacement source

- Issue 54 (Third Generation) A reader does some fancy detective work to locate and order from a source for hub bearing assemblies for his '03 4x4 truck. 46

HVAC evaporator temperature sensor

- Issue 55 (5.9 HPCR) Readers prescribe proper location of the temperature sensor on the evaporator when servicing late model HPCR trucks. 44

Hydraulic clutch, method for bleeding

- Issue 56 (24-Valve Engines) Readers recite their methods for bleeding the hydraulic clutch system on a 24-valve Turbo Diesel. 36

Hydro-boost brake unit, replacement of

- Issue 53 (24-Valve Engines) A TDR reader provides instructions for a painless replacement of the hydro-boost brake unit on a 24-valve engine, with further reference to Redmond's instructions in Issue 51, pp. 146-147. 30

Idle, annoying vibration. See Vibration in engine at idle, troubleshooting

Idle, rough, accompanied by engine stalls

- Issue 54 (First Generation) A TDR reader correctly identifies an impaired injection pump as cause of rough idle and associated engine stall in a First Generation Turbo Diesel. 18

Idling time, punitive laws limiting

- Issue 54 (Idle Clatter) Jim Anderson reviews the wide range of laws restricting extended diesel-engine idling in various jurisdictions. 96

Ignition timing, effects of advancing and retarding

- Issue 56 (5.9 HPCR) A reader asks if he would get better mileage by adjusting engine ignition to a lower setting of the Smarty tuner: Joe Donnelly replies that an advance would give better mileage; retarding is used to reduce smoke. 42

Index, TDR Issues 49-52

- Issue 53 (TDRSource) This index to issues 49-52 accesses technical information arranged alphabetically by topic with brief informative annotations. 44-56

Injection pump. See Fuel injection pump

Injection pump, impaired and malfunctioning. See Idle, rough, accompanied by engine stalls

Input shaft bearing, NV5600, starved of lube oil

- Issue 55 (Idle Clatter) In heavy-duty hauling with frequent uphill climbing, possible lube starvation of the input shaft bearing in the NV5600 transmission may be mitigated by adding two quarts of oil to the recommended four. 58

Intake air flow efficiency. See Intercooler, modifications

Intake Manifold Air Heater Grid. See Air intake heater

Intercooler, aftermarket

- Issue 53 (TDRRelease) BD Diesel Performance offers its new "Cool-It" intercooler for diesel systems with aggressive fuel curve with elevated boost levels, promising a reduced EGT of up to 200 degrees F. 147

Intercooler, modifications for higher-altitude operating

- Issue 55 (First Generation) In response to a reader's query about how he might modify the intercooler of his First Generation truck to improve intake air flow efficiency at higher altitudes, Joe Donnelly suggests switching to a smaller exhaust housing. 26

Intercooler, removal, in 12-valve Turbo Diesels

- Issue 56 (12-Valve Engines) Joe Donnelly tells how to access the intercooler in a '95 Turbo Diesel vehicle and gives instructions for its removal. 34

Iraq, American diesel enthusiasts soldiering in the Middle East

- Issue 56 (Letter Exchange) CPT Jonathan Bodenhamer updates his story (see Issue 52, p. 68) of an army unit's service and casualties in Iraq, and his appreciation of the Turbo Diesel truck and TDR readers' support. 12

Jacobs exhaust brake switch, insulation of

- Issue 53 (Third Generation) TDR readers contrive ways to dampen a rattle at the dash switch for the Jacobs exhaust brake. 38

Khol, Ron, tribute to, with excerpt from his editorial writing

- Issue 55 (Letter Exchange) A reader commends TDR for publishing writers of Ron Khol's caliber, pays tribute to him since his passing, and sends a copy of one of his editorials from "Machine Design" magazine, an excerpt from which the editor reprints. 9

Killer dowel pin. See Dowel pin problem

Leaks, various. See the following topic heads:

- Air-Fuel Control (AFC) housing, leak in;**
- Coolant leak, troubleshooting;**
- Coolant reservoir, mysterious disappearance of fluid;**
- Freeze plug, repairing leak at;**
- Fuel filter drain valve, leak at;**
- Fuel transfer pump, leak at;**
- Fuel transfer pump, replacement of, in 12-valve engines;**
- Pinion seal, rear differential, leak at;**
- Rear wheel bearing/seals, failed;**
- Transfer case seals, servicing [for leak];**
- Transfer case U-joint yoke, leak at;**
- Turbo oil drain tube, replacement**

LED lights. See RV LED lights

Lift pump. See Fuel transfer pump

Limited slip differential for Second Generation trucks

- Issue 56 (12-Valve Engines) Joe Donnelly explains why he prefers Detroit Lockers when selecting a limited-slip differential. 34

Lube oil, EPA requirement of the new API CJ-4

- Issue 54 (Member2Member) John R. Martin explains the reasons for the EPA's requirement of the new CJ-4 engine oil, its specifications, and advice on when and if its use must replace that of API CI-4. 10-11

Lube oil, myths about

- Issue 55 (Member2Member) John Martin gives a brief history of lube-oil, traces product improvements, and provides an exposé on what you can believe and not believe about advertising claims. 12-14

Lube oil, synthetic, weight and brands, Dodge guidelines on

- Issue 55 (Ranch Dressing) John Holmes notes that Dodge has finally approved synthetic diesel engine oil, prescribing 5W-40; and names synthetic oil brands that comply. 72

Lube oils, blind-test ranking of competing brands

- Issue 56 (Technical Topics) A blind test comparing nine competing brands of lube oil meeting the new CJ-4 specs reveals that price is not a sure index to quality and that available products are approaching "commodity status," or generic equivalence. 50-52

Lumbar support, seat accessory

- Issue 55 (TDRRelease) Identified by Geno's Garage as particularly appreciated by "experienced" diesel users, the Rostra Adjustable Lumbar kit fits neatly under the seat cover of either the driver's or passenger's seat. 132

Magnetic finger. See Tool, magnetic finger

Manifold heater, important role in proper startup routine

- Issue 56 (Idle Clatter) Jim Anderson finds it is important to let the manifold heater do its job at start-up in cold weather to avoid extended rough idling. 82

May Madness 2006

- Issue 53 (Have Ram, Will Travel) Joe Donnelly chronicles the excitement of May Madness '06, highlighting dyno competitions, sled pulls, vendor exhibits, Show-n-Shine contests, awards, seminars, and banquets —with accolades to all who made it a success. 106-109

May Madness 2007

- Issue 53 (Out Standing In The Field) Description, invitation, and registration instructions are provided for May Madness '07, Pahrump, NV, the premier TDR rally and large-scale event of the year. 118-120
- Issue 54 (Out Standing In The Field) Joe Donnelly advertises the Thirteenth Annual May Madness scheduled for Apr. 30-May 5, in Pahrump, NV and includes a registration form. 139-140
- Issue 55 (Out Standing In The Field) Description, invitation, and registration form are provided for May Madness 2007, the premier TDR rally and large-scale event of the year. 99-100
- Issue 56 (Out Standing In The Field) Joe Donnelly promotes the Thirteenth Annual May

- Madness rally scheduled for Apr. 30–May 5, Pahrump, NV. 112–114
- Mega Cab, '07 short bed, stretched**
 Issue 55 (Your Story) A TDR reader describes the process of stretching the chassis of his '07 Mega Cab short-bed dually and installing an eight-foot bed, with more than satisfactory results, documented with before and after photos. 112
- Mercedes GL320, specs and performance**
 Issue 54 (Four Whaling) G.R. Whale reports on his testing of the Mercedes GL320 V-6 diesel at demos in Iceland. 90–91
- Methanol injection, cooler kit**
 Issue 54 (TDRRelease) BD promotes a boost cooler kit for water/methanol injection, featuring a high-volume pressure pump and variable controller, claiming power increase of 70 hp and EGT drop of 250 degrees. 164
- Millard, Bill, autobiographical sketch**
 Issue 55 (Tailgating) Bill Millard tells of a childhood love of cars, photography, writing, and automotive lore, leading him to an Air Force career in logistics, a life of tinkering, and later years as "the Ol' Schoolmaster" at Towne Auto Museum. 5
- Monaco Coach RV, to market a Dodge-branded trailer**
 Issue 56 (Four Whaling) Greg Whale reports that the Monaco Coach RV company will market Dodge-branded, Monaco-built trailers, to bear the Ram's-head logo. 77–78
- Issue 56 (TDRV) The Monaco Corporation has made an agreement with Chrysler to use the Dodge logo on a line of toyhaulers, presumably to be paired with the Turbo Diesel pickup. 140–141
- Moser, Ken, in memoriam**
 Issue 55 (Have Ram, Will Travel) Joe Donnelly notes the passing of Ken Moser, 74, Coast Guard vet, cyclist, boater, member of TDR, diesel enthusiast, and impresario of the Rodeo in May Madness; and extends condolences to Ken's widow, Janet. 94
- Mud flaps for the dually**
 Issue 55 (Idle Clatter) Conceding that the rear fenders on the dually Dodge Turbo Diesel truck do not fully protect quarter panels from road spatter, Jim Anderson adds mud flaps to his vehicle and provides instructions for installation. 62–63
- Negative camber, correction of. See Suspension, front end, camber setting**
- Neilsen, Jerry, autobiographical sketch**
 Issue 55 (Tailgating) Jerry Neilsen begins his self-portrait with a spirited yarn about the soapbox racer he built when eight years old, demonstrating a flare for storytelling, put to good use in his many product reviews gracing the pages of the TDR. 6
- New truck, criteria in selecting features at purchase**
 Issue 53 (TDRReview) Jim Anderson gives advice on choosing features to consider when buying a truck, focusing on the use to which it will be put, including consideration of driveline components, transmission, axles, and bed length. 40–42
- Nitrogen in tires**
 Issue 55 (Ranch Dressing) While officially nitrogen is not required for inflating tires, John Holmes says, nevertheless it is a good thing because it leaks out more slowly and thus maintains stable pressure longer. 72
- Nitrogen oxide (Nox), difficulties of reducing in diesel exhaust emissions. See Exhaust emissions, alternative methods for reducing nitrogen oxide**
- Nitrous system, aftermarket**
 Issue 53 (TDRRelease) TS Performance markets a computer-controlled nitrous system designed especially for diesel engines, which it claims delivers up to 300 additional horsepower. 146
- Noises, various. See the following topic heads:**
Fuel injection pump, malfunction;
Front end, two-wheel drive, popping noise;
Horn-honking warning of open door;
Jacobs exhaust brake switch, insulation of;
RV, generator exhaust kit
- Oil drain pan. See Engine oil drain pan**
- Oil filter, difficult to change in 6.7 HPCR Chassis Cab**
 Issue 56 (6.7 HPCR) A reader reports that changing the fuel filter on his new Chassis Cab Turbo Diesel is a tougher job than on the '03 truck. 47
- Oil filter change, preventive maintenance during**
 Issue 53 (First Generation) When removing and changing the oil filter, it is good preventive maintenance to pull the air intake tube and check turbo for wear on the shaft bushings, according to two readers. 23
- Oil pressure sending unit**
 Issue 56 (First Generation) Readers conclude that the original oil-sending unit on First Generation trucks is susceptible to failure from engine vibration, and find a solution in upgraded Chrysler/Cummins parts. 18
- Oil pump priming**
 Issue 56 (Member2Member) Answering a reader's question, Joe Donnelly says that the oil pump cannot be primed outside the engine; he provides instructions for the correct procedure. 14
- Option packages, caution advisable in ordering a new truck**
 Issue 53 (Idle Clatter) Selecting option packages when ordering a new truck requires forethought, to avoid what Jim Anderson calls "quirks." 74
- Overdrive, refusal in cold weather. See Transmission, automatic, refusal to shift into overdrive in cold weather**
- Pacbrake PRXB for model '06, an updated evaluation**
 Issue 56 (Idle Clatter) Jim Anderson updates his report on the PRXB Pacbrake (see Issue 54, pp. 160-162) after learning how to use it properly, and declares it works just as well as the Pacbrakes on his earlier trucks. 83
- Perfection Clutch, facilities tour**
 Issue 56 (Celebrity Corner) Sam Mommolo recounts his tour of Perfection Clutch facilities in Timmonsville, S.C., on a trip to film a show for "Two Guys Garage." 95
- Performance enhancement product: digital tuner and/or monitor**
 Issue 53 (Technical Topics) In Part Four of a series analyzing aftermarket fueling enhancements, Doug Leno tests and reports on the Edge Juice with Attitude, Quadzilla Xzillaraider, and ATS Xcelerator Downloader. 11–18
- Issue 54 (Life's A Beach) Jerry Nielsen reviews Edge Products' Juice tuner and the Attitude monitor, together comprising a complete package for viewing and controlling the power functions in the 24-valve Second Generation truck. 110–111
- Issue 54 (Have Ram, Will Travel) Joe Donnelly provides advance notice of new features in the PowerMax-CR power box, made by TST Products, designed for Third Generation trucks. 135
- Issue 54 (TDRRelease) Banks announces availability of the Six Gun tuner and Power PDA,
- for the '06 Turbo Diesel, providing for adjustable power levels and ready monitoring. 164
- Issue 55 (TDRRelease) Van Aaken releases information on its new vA Commander, a digital system for monitoring seven parameters simultaneously, for complete powertrain management, compatible with monitors from many other manufacturers. 130
- Issue 56 (Have Ram, Will Travel) Joe Donnelly describes new features incorporated in TST Products' PowerMaxCR power box making it compatible with changes Cummins has made in engine software for the '07 model year. 103
- Issue 56 (TDRRelease) Superchips Inc. has updated its "Flashpac" tuner to work with '03-'07 Turbo Diesel trucks. 160
- Performance upgrades, custom ensemble**
 Issue 53 (All Dressed Up) J&H Performance modifies and re-equips a customer's '98, 12-valve, 4x4 with 98,000 miles, to dyno 600 horsepower and run 12s in the quarter mile, by upgrading all major drive components, at a project cost of \$19,365. 112–113
- Piezoelectric fuel injection system, introduced in Ford's new 6.4-liter diesel engine**
 Issue 54 (Blowin' In The Wind) The editor re-prints a media report that the new 6.4-liter engine in Ford's Super Duty pickup will include a piezoelectric injection system, the first in the domestic industry. 59
- Pinion seal, rear differential, leak at**
 Issue 53 (First Generation) A reader diagnoses and prescribes fix for a leak at the rear differential pinion seal in a '92 model truck. 22
- Pot joint, failure from road-throw contamination. See Steering, wandering, diagnosing and correcting**
- Power additions, "the slippery slope" — a humorous recitation**
 Issue 56 (Have Ram, Will Travel) Joe Donnelly recites the sequence of upgrades and performance enhancements he made several years ago to empower his '96 Turbo Diesel, titled, "Twenty-One Steps to a Poor Old Sockly Ram." 108–109
- Power box. See Performance enhancement product: digital tuner and/or monitor**
- Power Control Module (PCM), loose connection, consequent systems malfunction**
 Issue 55 (12-Valve Engines) Readers suspect a failed crankshaft speed sensor is the cause of a compound problem with tachometer, voltage indicator light, and refusal to shift into overdrive; but discover the cause to be loose wire connections to the PCM. 32
- Power enhancement, a costly and sometimes counter-productive game**
 Issue 56 (Member2Member) Joe Donnelly warns that power-train modifications to increase horsepower entail costs for other, necessary upgrades to the system and may compromise reliability. 15
- Power enhancement, choice of injectors with a tow rig. See Fuel injector, aftermarket, matched to stock turbo, in heavy towing**
- Power enhancement, truck make-over to win competition**
 Issue 53 (Your Story) Richard "Reb" Brown recounts his quest for maximizing horsepower and describes modifications to his '03 HPCR engine, to achieve a first place win in May Madness dyno competitions in 2006. 62–63
- Power enhancement. See also Performance enhancement (Note: these terms are often used interchangeably by vendors and writers)**
- Power steering, failure, troubleshooting**
 Issue 54 (First Generation) Failure of power steering on a '90 Turbo Diesel is traced to air in the system. 18
- Power steering, problems in First Generation Turbo Diesel trucks. See Steering, increasing difficulty in turning**
- Power steering fluid, freeze-up**
 Issue 56 (12-Valve Engines) Two TDR readers report that Valvoline SynPower brand of power steering fluid solved problems of failed power steering and brakes at very cold ambient temperatures. 30
- Power tuner. See Performance enhancement product: digital tuner and/or monitor**
- Pre-oiler. See Engine pre-oiler**
- Puller tool, for removing the VE injection pump. See Fuel injection pump, puller tool**
- Pusher pump, recommended with power additions**
 Issue 55 (5.9 HPCR) In response to a reader reporting low power in a rig with power additions, Joe Donnelly recommends adding a pusher pump such as the FASS for better fueling. 45
- Racing, Chrysler's role in the competition, history**
 Issue 56 (Chalkdust From The Schoolhouse Floor) Bill Millard tells the story of Chrysler's competition in racing, from its first run at Le Mans in 1924 with a pair of stripped-down Chrysler B-70s, till today's clean sweeps by the Oreca Vipers. 134–136
- Racing, off-road, Turbo Diesel pickups. See Baja 1000, 2006 race**
- Racing vehicles, diesel**
 Issue 53 (Four Whaling) Greg Whale writes about Audi's R10 diesel racing car powered by a 5.5-liter V-12 engine, giving it high marks as an advertisement for the merits of diesel power. 64–65
- Issue 54 (Your Story) The editor spotlights the fortunes and successes of three diesel-powered speed-competition vehicles: JCB's Streamliner; Freightliner's Century-class cab; and Chassis Engineering's Cummins-powered Streamliner. 88–89
- See also Volkswagen Touareg
- Radiator, servicing**
 Issue 56 (24-Valve Engines) Inefficient engine cooling may be caused by malfunction of the radiator fan, but more likely it results from a dirty radiator, maintenance of which normally requires removal and pressure cleaning of the fins. 36
- See also Cooling system, servicing
- Radiator fan blades, cracked**
 Issue 55 (12-Valve Engines) Owners of Second Generation trucks have experienced broken fan blades that damage the radiator, prompting them to find replacements of heavier construction. 30
- Radio, Sirius, antenna, relocation with a slide-in truck camper**
 Issue 53 (Third Generation) A reader finds it necessary to relocate the antenna for his Sirius radio after installing a slide-in camper. 38
- Radio sound system, upgrade**
 Issue 53 (Back In The Saddle) Scott Dalgleish describes installing a Sirius Sportster Replay unit, replacing speakers, and refurbishing sound control insulation. 104
- Rail pressure, measurement of**
 Issue 53 (Technical Topics) Doug Leno describes the functions and merits of an analog gauge, "the best real-time diagnostic indicator of rail pressure," soon to be marketed as part of the Pricol Optix series. 18

Re-priming the engine after running out of fuel

Issue 55 (12-Valve Engines) Joe Donnelly provides instructions on how to relieve air lines and injectors when re-priming the 12-valve engine at the plunger on the lift pump. 34

Rear-end differential ratio, technique for distinguishing a 3.73 from a 4.10

Issue 56 (Letter Exchange) The editor describes a simple performance test to determine whether a particular differential has the 3.73 or the 4.10 ratio. 9

Rear wheel bearing/seals, failed

Issue 55 (From The Shop Floor) Andy Redmond details troubleshooting, diagnosing, and repair of failed rear wheel bearings and seals in all models of the Dodge Turbo Diesel truck, from '89 through the latest build. 116-119

Recalls

Issue 54 (TDRSource) Two vehicle recalls apply to some '03, '04, and '05 model year trucks: out-of-park alarm system; and antilock brake control module. 83

Rodeo, promotion and description of the event for diesel pickups

Issue 55 (Letter Exchange) Janet Moser, chairman of the diesel-rodeo event at May Madness, describes how a truck rodeo works, what its competition is like, and how it is scored; and solicits participation in next year's meeting. 10

Royal Purple, lubricant manufacturer, facilities expansion

Issue 56 (TDRRelease) Royal Purple, manufacturer of high-performance lubricants, reports that it has enlarged its tank farm. 159

RV, generator exhaust kit, to ameliorate objectionable noise and fumes

Issue 54 (TDRV) To dampen generator noise, cool exhaust gases, and re-route fumes to above an RV's roof line, CAMCO markets "Gen-turi," an inexpensive, easy-to-install and effective kit. 152-153

RV, manufactured overweight

Issue 53 (TDRV) Greg Whale draws on his experience in RV journalism to reveal that some recreational vehicles are designed and built with excess axle weight and woefully inadequate cargo capacity. 136

RV associations, event news

Issue 53 (Ranch Dressing) John Holmes reports his attendance at the Family Motor Coach Association annual event in Pomona, gathering place for thousands of vendors and private attendees. 84

Issue 53 (Polly's Pickup) Polly Holmes tells of the thousands of motor homes at the Family Motor Coach rally in Pomona and other events she attended. 86-87

RV haul truck, 3500 Turbo Diesel modified to serve as a tractor

Issue 56 (Letter Exchange) A Canadian reader illustrates modifications of his '07 3500 Turbo Diesel 4x4 to serve as a virtual tractor to pull his fifth-wheel. 11

RV information, websites and forums

Issue 56 (TDRV) A TDR reader in Texas suggests two websites on which readers may find information on RV matters. 142

RV LED lights, source for

Issue 54 (Idle Clatter) Jim Anderson passes along information from a reader on a website offering a wide variety of LED lights suitable for RVs. 95

RV problems in getting service

Issue 53 (TRDV) In today's booming seller's market, purchasers of recreational vehicles frequently have a hard time getting service and warranty repairs from their dealers, says Greg Whale. 137-138

RV purchasing, how to research and shop

Issue 53 (TDRV) Greg Whale provides background and advice for researching the purchase of a recreational vehicle and how to buy defensively. 139

RV quality control

Issue 53 (TDRV) Greg Whale addresses the issue of poor manufacturing quality control in RV products, suggests reasons for its prevalence, and ways in which buyers and owners can deal with the problem. 134-139

RV refrigerators, Dometic brand, safety recall

Issue 56 (TDRV) The manufacturer of Dometic brand RV refrigerators has issued a recall of a million units made between Apr. '97 and May '03, for fire hazard. 140

RV smoke and gas detectors, maintenance

Issue 54 (TDRV) John Holmes summarizes guidelines for maintaining alarms/detectors of smoke, propane, and carbon monoxide, critical for safety in a closed RV environment. 154

RV tow/haul, weight limits

Issue 53 (Idle Clatter) Once again Jim Anderson emphasizes the crucial importance of respecting trailer weight limits in properly configuring a hauling rig. 78

RV trailer tire-pressure monitors. See Tire pressure monitor, add-on wireless kit

Seal, rear main, replacing

Issue 54 (First Generation) TDR readers combine information on methods and necessary tools for replacing the rear main seal on First Generation trucks. 16

Seat heater, aftermarket

Issue 55 (TDRRelease) Rostra offers a seat heater kit as an answer to cold bottoms and aching backs, easily installed under the seat cover, operated at either of two settings, back-only or back-and-seat-bottom combination. 133

Seat height, judged as too low

Issue 56 (Idle Clatter) Even at its highest adjustment, for short people the seat height in his '06 3500 Turbo Diesel rides too low for clear sighting over the hood, says Jim Anderson. 82

SEMA (Specialty Equipment Manufacturers Association) 2006

Issue 55 (Ranch Dressing) John Holmes reports on some of the new automotive accessory products on display at the 2006 SEMA extravaganza in Las Vegas. 70

Issue 55 (Have Ram, Will Travel) Joe Donnelly provides impressions of the 2006 SEMA show, emphasizing the prominence given "Diesel and Mini-Rigs," one of the top ten trends identified in the program, spotlighting increasing consumer interest. 94-95

Issue 55 (Product Showcase) Robert Patton presents a double-page photo spread of outrageous displays at SEMA 2006, products appealing to a sense of the absurd, including a Ford "Super-Duty" tailgate flip-out step, a gizmo you won't find at Geno's Garage. 128-129

Shift towers for NV4500 transmission, upgrading

Issue 56 (12-Valve Engines) Joe Donnelly explains the difference between the round shift tower in the '94-'97 Turbo Diesel and the square shift tower in the '98+, and names modifications necessary when replacing the former with the latter. 32

Shops, repair facilities recommended by TDR members

Issue 53 (Letter Exchange) A TDR member recommends the repair facilities of North American Diesel Performance in Edmonton, Alberta. 7

Shut-down solenoid, troubleshooting. See Fuel shut-down solenoid, servicing and repair

Sled pulling, suitable axles. See Axle, suitable choice for heavy sled pulling

Smoke, excessive at all speeds, troubleshooting

Issue 56 (5.9 HPCR) Joe Donnelly speculates that the excess smoke reported by the owner of a Third Generation truck is likely the result of a poor job of Extrude honing, a procedure intended to add power. 42

Smoke, exhaust, black, excessive, troubleshooting

Issue 55 (First Generation) Adjustments may be made in the "smoke screw," the AFC diaphragm, and the starwheel, in order to minimize black smoke at take-off in a First Generation truck, according to several experienced operators. 26

Smoke, exhaust, white, excessive, troubleshooting. See Engine power, intermittent falling-off, with excessive white smoke

Speedometer recalibration

Issue 56 (24-Valve Engines) Joe Donnelly recommends employing a Smarty brand tuner to recalibrate the speedometer after increasing tire size. 37

Speed sensor, rear axle, removal of

Issue 55 (24-Valve Engines) Readers improvise several ways to extract a stubborn speed sensor from the rear axle. 39

SRT 10 hood scoop. See Hood scoop, evaluating

Starter, blown fuse

Issue 53 (24-Valve Engines) Worn solenoid contacts are found to be the cause of a blown starter fuse. 30

Starter, troubleshooting

Issue 54 (24-Valve Engines) A reader with a balky starter is advised to replace the starter contacts as an alternative to buying a new starter unit. 39

See also Fuel shut-down solenoid, troubleshooting

Starter contacts, heavy duty, sourcing of. See Starter, troubleshooting

Starting the diesel after prolonged storage

Issue 55 (Idle Clatter) After prolonged storage of a 12-valve Turbo Diesel, fuel may drain from filter, lines, and pump; systematic re-priming is necessary, says Jim Anderson, who provides instructions for getting the engine fired up. 60

Steering, increasing difficulty in turning

Issue 54 (First Generation) A reader provides comprehensive diagnoses of difficulty in turning the steering gear in First Generation trucks, including servicing of the regulator/bypass valve and replacement of the steering pump and gear box. 17

Steering, loose, in Second Generation 4x4 trucks

Issue 55 (24-Valve Engines) Joe Donnelly concedes that steering in a Second Generation 4x4 Turbo Diesel is looser than in a '04 Turbo Diesel, and suggests some positive caster, approx. 3-5 degrees. 40

Steering, power, failure. See Power steering fluid, freeze-up

Steering, wandering, diagnosing and correcting

Issue 53 (First Generation) Failure of the "pot joint" in the OEM steering shaft of First Generation trucks leads to looseness and excessive play, redressed by replacement with a Borgeson, double U-joint steering shaft, according to several readers. 24

Issue 54 (First Generation) Replacing the steering box and/or kingpin bushings is suggested by readers to correct wandering steering in a First Generation truck. 16

Steering-wheel tilt-column, play in

Issue 53 (First Generation) Play in the steering-wheel tilt-column is addressed by tightening internal bolts after disassembly. 22

Steering assembly, sourcing replacement parts

Issue 56 (12-Valve Engines) Readers identify reliable vendors of replacement tie rod ends, ball joints, Pitman arms; and provide brief instructions for installation on a Second Generation Turbo Diesel pickup. 30

Steering gearbox, selecting and adjusting

Issue 53 (From The Shop Floor) Andy Redmond explains the differences among the three Saginaw steering gearbox combinations used by Dodge, justifies his preference, and offers user advice. 143

Steering problems. See Suspension, front end, caster setting; See Suspension, front end, camber setting

Steps, entry, retractable

Issue 55 (TDRRelease) AMP Research products presents the Power Step, with a full-length board and hefty 600 lb. capacity, guaranteeing easy access to the Mega Cab, endorsed by Geno's Garage for the "experienced" diesel owner. 131-132

Issue 55 (TDRRelease) The Kodiak Sidewinder Steps offer economical electric automatic raising and lowering, with a sure 350 pound capacity, offered for sale at Geno's Garage to the "experienced" diesel owner. 132

Storage of vehicle, long-term. See Starting the diesel after prolonged storage

Suspension, air springs

Issue 54 (Back In The Saddle) To maintain a level truck bed when hauling heavy loads, Scott Dalgleish installs the Air Lift air springs. 125

Suspension, front end, camber setting

Issue 56 (TDRV) Two readers suggest possible corrections of negative camber on a Turbo Diesel carrying a 3000 lb slide-in. 142

Suspension, front end, caster setting

Issue 54 (From The Shop Floor) Noting that frequently the factory sets caster at near 3.0 degrees positive, Andy Redmond says that a 5.00 caster setting works better. 159

Issue 55 (24-Valve Engines) Joe Donnelly suggests positive caster to correct for loose steering in Second Generation 4x4 trucks. 40

See also Steering, loose, in Second Generation trucks

Suspension, front end, coil springs, replacement

Issue 54 (From The Shop Floor) After installation of a heavier front bumper, the truck's tendency to bottom-out was corrected by Andy Redmond with a pair of stiffer Mopar coil springs. 158-159

Suspension, front end, correcting problems

Issue 53 (From The Shop Floor) Continuing his running exposition on front-end suspension, Andy Redmond explains principles, terminology, methods of correcting degraded components, and describes aftermarket upgrades. 140-143

Suspension, rear end, sway bar, aftermarket

Issue 53 (Ranch Dressing) John Holmes recommends a sway-bar kit, specifically that manufactured by Roadmaster, to operators hauling campers, toy haulers and fifth wheels, and gives instructions for installation. 80

Issue 54 (Ranch Dressing) John Holmes reports improved trailer-towing stability after installing a Roadmaster Rear Sway Bar Kit on his '03 3500 (described in Issue 53,

p. 80). 103

Suspension, sagging front end

Issue 56 (5.9 HPCR) To address the problem of a sagging front end in a vehicle equipped with a heavy snowplow, Joe Donnelly recommends a KORE Chase system and suggests heavier front springs for Third Generation Turbo Diesels. 42

Suspension system, aftermarket

Issue 53 (Have Ram, Will Travel) Joe Donnelly describes the installation of a "Chase Series" KORE suspension system—front and rear—and finds it much superior to the stock suspension. 110–111

Issue 53 (TDRelease) The Superlift company provides product information on two new suspension systems for the Mega Cab, designed to accept factory-offset wheels. 147

Issue 55 (Back In The Saddle) In the most recent refinement to his Turbo Diesel in a quest for both increased performance and better fuel economy, Scott Dalgleish installs a custom-made suspension kit by KORE. 87–89

See also **Control arms, for 4x4 truck, aftermarket**

Tachometer, failure, troubleshooting. See Power Control Module (PCM), loose connection

Tailgate drop support

Issue 54 (Idle Clatter) Jim Anderson describes the virtues of the Gate Glide tailgate assist device, easy to install and available at Geno's Garage. 99

Issue 55 (TDRelease) The Gate Glide from WigiDigit, a simple, inexpensive easy-to-install unit, can make raising and lowering the tailgate seem nearly effortless. 133

Tampa RV Supershow, report

Issue 56 (TDRV) The Tampa RV "Supershow" in late January '07 showcased models from all major RV brands, spotlighting toyhaulers, with displays of Ford and GM pickups (but no Dodges to be seen). 141

TDR annual wall calendar

Issue 53 (Tailgating) The editor announces a new TDR wall calendar, to be published annually, each month featuring a photo of a member's truck. 4

Issue 54 (Tailgating) The editor introduces the first annual TDR wall calendar, distributed with Issue 54, featuring photos of the Dodge Turbo Diesel pickup truck, selected from submissions by members and sponsoring advertisers. 4

TDR clubs and chapters

Issue 53 (Chapter News) The roster of TDR chapters is brought up to date. 114

Issue 54 (Chapter News) Quarterly news of local chapters including the roster of TDR chapters, brought up to date, 2006. 137

Issue 55 (Chapter News) The roster of TDR chapters is brought up to date. 97

Issue 56 (Chapter News) TDR chapter news and roster is brought up to date (spring 2007). 110

Issue 56 (Chapter News) Joe Donnelly gives an account of the first Dyno Day organized by the New Mexico chapter of the TDR and held Feb. 10, '07, in Albuquerque. 111

TDR publications, as source of reliable information

Issue 55 (Idle Clatter) Jim Anderson compares TDR to other publications in the field and declares that it surpasses the others, in breadth and depth of treatment and reliability of information, thus cementing a sense of solidarity among its readers. 58

TDR readers' yarns about the Turbo Diesel truck

Issue 54 (Letter Exchange) A TDR member and gospel evangelist recounts adventures as a preacher using his Turbo Diesel truck in his calling. 8

TDR reader testimonials about the magazine

Issue 55 (Letter Exchange) A subscriber is pleased with the magazine and identifies a half-dozen articles in his initial issue that he found particularly helpful. 10

TDRV, debut of a regular column on RVs

Issue 53 (Tailgating) Robert Patton inaugurates a new regular column, known as TDRV, to give the TDR perspective on RVs. 4

TDRV column on recreational vehicles, reader critiques and editorial responses

Issue 54 (Letter Exchange) Three readers write letters with critiques, pro and con, on the new regular column titled TDRV, devoted to recreational-vehicle matters. 6

Issue 54 (Backfire) After expressing appreciation for the TDRV column, a reader challenges aspects of its presentation in Issue 53; to which the editor responds with a defense of the writer's authority and a justification of the article's relevance. 150–151

Issue 55 (TDRV) A reader says an article in the TDRV column, Issue 54, was not germane to his interests; another questions the viewpoint of a column in Issue 53; Robert Patton and Jim Anderson provide editorial perspectives on the new column's purpose. 114–115

TechAuthority Online (replaces TSB directory)

Issue 54 (TDReSource) The Dodge TSB (technical service bulletin) directory has been superseded by an online service with information keyed to individual VIN numbers, a resource recommended by the editor. 82

Technical Service Bulletins (TSBs), TDR's annual review

Issue 54 (TDReSource) In its annual review of Dodge Technical Service Bulletins, the TDR presents all relevant releases issued to date in 2006. 62–82

Technical Service Bulletins (TSBs) concerning cold-weather code settings

Issue 56 (Ranch Dressing) John Holmes summarizes several recent TSBs concerning setting codes in cold weather. 88

Theme for Issue 53: appropriate objects of gratitude

Issue 53 (Tailgating) The editor sets the theme for Issue 53: people, values, and things deserving of gratitude in our shared Turbo Diesel world. 4

Issue 53 (Idle Clatter) Reflecting over many years of association with the TDR, Jim Anderson expresses gratitude for what he has learned from the membership and TDR friends he has made. 78

Issue 53 (Ranch Dressing) John Holmes recounts things he is thankful for, particularly Polly's successful struggle with multiple sclerosis and his own health, in a year marked by the passing of friends and associates in the Turbo-Diesel world. 80

Theme for Issue 54: "only half the story"

Issue 54 (Tailgating) The editor sounds the theme for Issue 54, advertisers' half-truths and presentations of "only half the story" about a job, a product, or a project. 4

Issue 54 (Motor-Minded) Mark Barnes emphasizes the need for fair balance between "both halves of the story" in all life's dilemmas, and says the TDR strives for that sort of balance in its writing on truck-related issues. 92–93

Theme for Issue 55: TDR's fostering of a sense of community

Issue 55 (Tailgating) Robert Patton enumerates the many ways in which the TDR, unlike competing periodicals, fosters a sense of real community among members; and announces this topic as the theme for writers in Issue 55. 4

Issue 55 (Ranch Dressing) John Holmes reflects on how participation in the TDR led to

camaraderie with a world-wide circle of Dodge-Cummins Turbo Diesel enthusiasts. 68

Issue 55 (Polly's Pickup) A wedding ceremony of a couple and attendees from three generations of the TDR "family," presided over by a TDR writer, embodied the close sense of community fostered by the TDR, according to Polly Holmes. 76

Issue 55 (Life's A Beach) Jerry Nielsen reflects on how his life has changed since his first Turbo Diesel event, in 1998, when he was adopted into the TDR family, to forge lasting friendships with the other writers and hundreds of "members at large." 80

Issue 55 (Celebrity Corner) Sam Memmolo says his paycheck for contributing a regular column to TDR, is fellowship with the rest of the crew, with Robert and Robin at the helm. 83

Issue 55 (Back In The Saddle) The TDR community fosters a unique camaraderie of Turbo Diesel enthusiasts, says Scott Dalgleish, who, as an example, recounts a recent extended visit with Joe Donnelly and their sharing of lore and know-how. 86

Issue 55 (Have Ram, Will Travel) Joe Donnelly says TDR provides what the dictionary defines as "camaraderie," that is, friendly good-fellowship among comrades, sharing Turbo Diesel information and experiences. 94

Issue 55 (From The Shop Floor) Andy Redmond celebrates the TDR's uncommon sense of community, which he finds on its websites and in the mutual aid among members in its Travel Companion network. 116

Theme of Issue 56: achieving a better national energy policy

Issue 56 (Tailgating) The editor accepts the President's State-of-the-Union challenge that the nation cut gasoline consumption 20% to achieve a more rational energy policy — and names it the theme for Issue 56. 4

See also **Energy crisis, strategies**

Thermostat, cooling system, defective

Issue 55 (12-Valve Engines) Readers discover that a loosened rubber seal may cause the coolant thermostat to stick in open position, resulting in excessively low engine operating temperatures. 35

Throttle cable, frayed, recalled

Issue 53 (12-Valve Engines) Readers are reminded of a safety recall on the throttle cable in 12-valve engines. 26

Throttle, irregular and stumbling, troubleshooting. See Fuel control actuator, servicing

Throttle Position Sensor (TPS), troubleshooting

Issue 53 (Idle Clatter) Sometimes a supposed problem with the throttle position sensor (TPS) is actually caused by a malfunction of a discretionary switch installed to keep the torque converter clutch locked on deceleration. 78

Issue 56 (First Generation) TDR readers provide instructions for adjusting the Throttle Position Sensor (TPS) in First Generation trucks. 26

Issue 56 (From The Shop Floor) Andy Redmond presents a treatise on the Throttle Position Sensor (TPS), its construction, function and malfunction, with guide to troubleshooting and repair. 144–145

Ticking sound near injection pump. See Injection pump, malfunction

Timing the Bosch P7100 injection pump. See Fuel injection pump, Bosch P7100, timing degrees in

Tire, taller, requiring recalibrating the speedometer. See Speedometer recalibration

Tire, taller, to reduce engine rpm

Issue 55 (Back In The Saddle) Following refinements in the suspension of his Turbo Diesel truck, Scott Dalgleish selects and installs taller tires, and provides a minute account of his calculations, in further pursuing his Fuel Economy Project. 90

Tire chains, use in 4x4 driving

Issue 55 (5.9 HPCR) Joe Donnelly reports that, on the two occasions he has used a single set of chains on his '97 in 4x4 driving, he has opted for putting chains on the front, concurring in a reader's conjecture that pulling does better than pushing. 45

Tire pressure monitor, add-on wireless kit

Issue 54 (TDRV) John Holmes describes an easy-to-install, aftermarket, wireless tire-pressure electronic monitor kit, which he uses in all his RV and trailer-hauling rigs. 153–154

Tires, use of nitrogen in. See Nitrogen in tires

Tire valves, on late model dually trucks, weak

Issue 56 (Idle Clatter) In an extended evaluation of his '06 Turbo Diesel dually, Jim Anderson says Dodge supplies weak tire valves that are wobbly and liable to fail. 82

Tool, magnetic finger

Issue 54 (Celebrity Corner) Sam Memmolo shares his discovery of a handy tool for precisely situating small washers and nuts in hard-to-get-to places: a magnetic finger, available on line and from Geno's Garage. 114

Tool holder, engine bay convenience accessory

Issue 54 (Idle Clatter) As an under-the-hood accessory for models '03 and later, Jim Anderson recommends a condenser guard that serves handily as a tool tray. 98

Issue 56 (5.9 HPCR) There is no place in the Third Generation truck to put tools and parts while working in the engine bay, a deficiency supplied by a handy portable tray available at Geno's Garage, says Joe Donnelly. 42

Tools, favorite, comical definitions

Issue 53 (Letter Exchange) TDR member Scott E. Jones provides a catalog of comical definitions of tools and shop improvisations familiar to technicians and shadetree mechanics in their work on Turbo Diesel trucks. 8–9

Tool sizes, metric vs. inch systems. See Wrench/socket size scale, metric and American equivalents

Torque converter, extended cycling, troubleshooting. See Torque converter, lock-up problems

Torque converter, lock-up position controller, aftermarket

Issue 53 (Life's A Beach) Jerry Nielsen installs and describes operation and advantages of the ATS Co-Pilot automatic-transmission controller which effectively manages shift points and permits use of an exhaust brake at speeds below 35 mph. 90–91

Torque converter, lock-up problems

Issue 53 (Member2Member) Dunrite Converters describes the fix for torque-converter lock-up problems caused by AC frequency-induced electrical noise in the ground circuit of the battery. 10

Issue 54 (Letter Exchange) A reader writes to report his successful solution to a torque-converter lock-up problem, by following instructions provided in Issue 53, p. 10. 6

Issue 54 (24-Valve Engines) Installing a noise filter corrects erratic cycling of torque converter in a 24-valve Turbo Diesel. 38

Torque converter, override lockout button, missing from lever in '05 model

Issue 53 (Idle Clatter) In the 2005 model truck equipped with the 48RE automatic

- transmission, the button for overdrive lockout is missing from the lever, an oversight redressed on later models, according to Jim Anderson. 74
- Torque converter switch, installed to maintain clutch lockup on deceleration.** See **Throttle Position Sensor (TPS), troubleshooting**
- Torque plate (cam plate), characteristics of the TST#10**
Issue 56 (12-Valve Engines) Joe Donnelly explains how the increased rack travel provided by the TST #10 torque plate results in increased horsepower with the 180 hp and 215 hp injection pumps in the 12-valve Turbo Diesel engine. 34
- Towing, a Turbo Diesel pulling a two-car trailer**
Issue 55 (Letter Exchange) A TDR couple tell about their acquisition of, and satisfaction with, a used Turbo Diesel to tow a two-car trailer for transporting vehicles in their Pontiac Fiero collector car service business. 8
- Towing capacity, of SUVs and passenger cars**
Issue 56 (Four Whaling) G.R. Whale laments the reduction in trailer-towing capacity in domestic passenger car models and SUVs since the 1970s. 76-77
- Towing equipment questions, various**
Issue 56 (TDRV) The TDRV columnist answers a range of common questions about RV towing: travel trailer vs. 5th-wheel, electric brake controllers, 5th-wheel hitch, aluminum vs. wood frames. 142
- Toyhaulers, increasing share of RV market**
Issue 56 (TDRV) The fastest-growing segment of the RV industry in 2006 was "toyhaulers," designed to carry offroad vehicles, but demanding more power to pull. 140
- Toyota, a diesel-powered pickup, soon to come**
Issue 56 (Blowin' In The Wind) Toyota has bought an interest in Isuzu, developer of the Duramax engine, in preparation for competing in the diesel market. 54
- Track bar.** See **Suspension, front end, correcting problems**
- Trailer brakes, electric controller, competitive brands.** See **Towing equipment questions, various**
- Trailer frame, aluminum vs. wood.** See **Towing equipment questions, various**
- Trailer frame, how to evaluate construction, integrity, durability**
Issue 56 (TDRV) Jim Anderson provides a checklist of good and bad things to look for in assessing the frame that must support a trailer or slide-in. 139-140
- Trailer towing, improving stability with rear truck sway bar.** See **Suspension, rear end, sway bar, aftermarket**
- Trailer towing rigs, adding accessories to the truck bed**
Issue 56 (TDRV) Jim Anderson rehearses the planning necessary when adding accessories to a Turbo Diesel's truck bed for hauling a 5th-wheel RV, emphasizing calculation of location and weight of hitch, tool chest, and auxiliary fuel tank. 138
- Trailer wheel bearings, failure**
Issue 56 (TDRV) Failure of wheel bearings in trailers with electric brakes is not uncommon, resulting either from over-greasing, which fouls the shoes, or from a failed wheel bearing seal, again usually a result of error during servicing. 138
- Transaxle, six-speed automatic**
Issue 53 (Ranch Dressing) John Holmes notes that the 62TE automatic transaxle equipped in some '07 Pacificas and Sebrings is "fill-for-life" and speculates whether this may be in the Ram's future. 84
- Transfer case seals, servicing**
Issue 53 (First Generation) A TDR member provides instructions and part numbers for servicing and replacing seals for a leaking transfer case in a First Generation truck. 23
- Transfer case U-joint yoke, leak at**
Issue 54 (24-Valve Engines) A reader provides instructions for correcting an oil leak at the end of the transfer case yoke, by filling the plastic end with an RTV (room temperature vulcanizing) sealant. 39
- Transmission, 6-speed manual, flywheel, grinding to proper thickness**
Issue 54 (24-Valve Engines) Joe Donnelly and other knowledgeable TDR members share specifications for proper thickness in grinding the flywheel in the 6-speed transmission of the 24-valve Turbo Diesel engine. 38
- Transmission, automatic, Aisin, in 6.7 HPCR.** See **Aisin transmission in the 6.7 Turbo Diesel, reader critiques**
- Transmission, automatic, erratic shifting in and out of lockup**
Issue 56 (From The Shop Floor) Andy Redmond explains that complaints of an automatic's tendency to shift in and out of lockup may sometimes be corrected by replacing the TPS/APPS or installing a noise filter: he provides an explanation and instructions. 144
- Transmission, automatic, failure of reverse gear**
Issue 53 (First Generation) In a First Generation truck, failure of reverse gear after replacing the 727 automatic transmission is traced to high pressure caused by a stuck pressure regulator valve. 22
- Transmission, automatic, failure to shift down to first or up to overdrive.**
Issue 55 (24-Valve Engines) To correct failure of transmission to automatically shift up to overdrive or down to first, readers consider replacing governor solenoid and transducer, but eventually solve the problem by replacing the speed sensor. 38
See also **Power Control Module (PCM), loose connection**
- Transmission, automatic, fluid, optimal temperature readings**
Issue 54 (The Way We Were) The editor reprises a graph charting automatic-transmission life-expectancy in a range of operating temperatures. 84
- Transmission, automatic, fluid cooler, aftermarket**
Issue 54 (First Generation) A TDR reader describes an aftermarket automatic transmission cooler mounted on the underside of the truck bed in First Generation Turbo Diesels. 18
- Transmission, automatic, in '06 Turbo Diesel, Jim Anderson's critique**
Issue 56 (Idle Clatter) Jim Anderson describes the operation of the 4-speed automatic transmission with the tow/haul mode on his '06 Turbo Diesel 3500 dually, and explains his unfavorable evaluation. 82
- Transmission, automatic, oil pan, drain plug, aftermarket, locating drill point**
Issue 53 (Third Generation) Readers exchange information on locating the drill point when installing an aftermarket drain plug in the automatic transmission oil pan. 38
- Transmission, automatic, oil pan, efficient draining of**
Issue 54 (The Way We Were) Robert Patton describes drilling a hole and installing a B&M drain plug kit to provide for easier fluid draining. 86
Issue 54 (The Way We Were) The editor describes a procedure to completely drain automatic transmission fluid in a Second Generation Turbo Diesel. 87
- Transmission, automatic, open-door horn-blowing warning.** See **Horn-honking warning of open door**
- Transmission, automatic, refusal to shift into overdrive in cold weather**
Issue 56 (24-Valve Engines) It is normal for a transmission to refuse to shift into overdrive before the temperature sensor in the transmission solenoid registers above a pre-set 50 degrees. 36
- Transmission, automatic, relative superiority to manual**
Issue 53 (Idle Clatter) Jim Anderson revises his long-standing preference for manual over automatic transmission and assesses the relative superiority of the new 48RE automatic transmission in models '06 and later. 72
- Transmission, automatic, rough shifting**
Issue 56 (From The Shop Floor) Andy Redmond explains that rough shifting may sometimes be ameliorated by installing a noise filter. 145
- Transmission, automatic, temperature sensor, location of**
Issue 54 (The Way We Were) The editor considers several alternative locations for siting the sensor for the automatic transmission temperature gauge, and concludes with recommending a Westach dipstick sensor. 84
- Transmission, automatic, total fluid change, "approved" shadetree method**
Issue 56 (Backfire) Clint Cannon, ATS Diesel Performance, describes the circulation of fluid in the Ram automatic transmission, explains the proven shadetree method of a complete change of fluid, and provides instructions for the job. 148-149
- Transmission, automatic, tow/haul function in models '06 and later**
Issue 54 (Idle Clatter) Jim Anderson explains operation and uses of the tow/haul function in automatic transmission in model '06 and later. 95
- Transmission, G56 six-speed manual, analysis of**
Issue 53 (Back In The Saddle) Scott Dalgleish analyzes the new G56 six-speed manual transmission, standard on models '05 and later: comparing it to the NV5600, defending its merits, and noting provisos about the Dual Mass Flywheel. 94-101
- Transmission, manual, comparative merits of pilot bushing vs. pilot bearing**
Issue 54 (First Generation) A TDR reader expresses the opinion that while a pilot bearing is theoretically superior to a pilot bushing, in the First Generation manual transmission the difference is negligible. 16
- Transmission, NV4500, fifth-gear nut problem**
Issue 55 (12-Valve Engines) Again noting that the fifth-gear mainshaft nut in the NV4500 transmission may loosen, Brad Nelson defends his choice to spot weld the threads on the output shaft, but doesn't recommend the practice to others. 37
- Transmission, NV5600, oil fill**
Issue 55 (Idle Clatter) Jim Anderson recommends that for rigs with the NV5600 transmission dedicated to heavy-duty hauling over routes with serious grades, 2 quarts of oil be added to the four quarts called for in the manual. 58
- Transmission pan, aftermarket**
Issue 56 (Life's A Beach) Jerry Nielsen reviews the Mag Hytec transmission pan which he installed on his '04 Turbo Diesel and recommends to the readers. 93
- Travel Companion**
Issue 53 (TDR/R/R) The editor recommends the TDR's Travel Companion network, a program offering mutual advantage to all enrollees. 124
Issue 54 (TDR Travel Companion) The editor describes the benefits of TDR's "Travel Companion," a unique network for members seeking and giving help in distress on the road; sets forth the rules; and solicits more enrollments. 145-148
Issue 55 (Tailgating) The editor announces distribution of a new edition (Spring '07) of the Travel Companion book, greatly expanded to 686 entries. 4
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Turbocharger, aftermarket, single vs. twin

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Turbocharger, High Tech Turbo, best all-around compromise to date

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