

GREELEY AUTOMOTIVE MACHINE, INC.

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Recommended Engine Maintenance

I. Check Valve Lash

- A. Adjust valves weekly
- B. Warm engine to 200 degrees.
- C. Set lash to cam specifications: When exhaust begins to open adjust the intake. When intake has fully opened and almost closed again, adjust the exhaust; engine rotation clockwise.
 - 1. Record any adjustments and if any valve continually gets out of adjustment, CALL.

II. Check Valve Spring Pressure

- A. Use Moroso spring pressure gauge #62390 or equivalent & check all valve springs.
- B. Make sure valves are fully seated & have lash, then check pressure it takes to open valve slightly. Make sure valve still has lash after checking.
- C. Keep track of spring pressures; if any springs check low, CALL.
- D. Watch for consistency, not pressure. Intake should be the same and exhaust the same but intake vs. exhaust may be different.
- E. Check valve springs after each night of racing. Look at seals, top of valve guide & visually check for broken springs or anything that looks unusual.

III. Oil

- A. Wet sump, change oil after every night of racing.
 - 1. Heat engine to 200 degrees water temp, drain oil, change filter.
 - 2. Fill new filter with oil before installing on engine.
 - 3. Do not spin engine when starting to build oil pressure after an oil change. Just start engine without touching throttle, do not rev engine.
- B. Dry sump, change oil after 300-500 laps of track time.
 - 1. Warm engine to 200 degrees water temp.
 - 2. Remove drain plug from oil tank.
 - 3. Punch hole in bottom of pressure oil filter.
 - 4. Remove oil pump belt.
 - 5. Spin pump with drill until flow of oil stops from tank & filter.
 - 6. Install oil tank plug & new oil filter.
 - 7. Fill tank with oil.
 - 8. Spin pump with drill until engine has oil pressure.
 - 9. Install oil pump belt & start engine. Run for 5 minutes, then shut off & check oil level. Oil level in tank should be 2/3 full.

- C. Check scavenge filter (dry sump motors) after each race event, use Peterson screen take apart filter. Note any unusual amounts of material. Check to see if it is magnet attracted, and then call.
- D. Wet sump, cut open oil filter & check each oil change, use good quality high capacity filter (WIX Racing series or equivalent.)
- E. Dry sump system design refer to example "A"
- F. Call for oil recommendation (Flat tappet cams must use an oil with zinc)
- G. Occasionally check oil pressure-note any fluctuations.
- H. Do not exceed 250 degree oil temp.
- I. Dry sump motors adjust oil pump to give 70-80 psi, at end of straight.

IV. Timing

- A. Set at Dyno determined setting.
- B. Check both ignition systems on dual systems.
- C. Warm engine, rev to 3000 rpm. Check for total advance using timing light.
- D. Use MSD factory connectors (crossing trigger wires will destroy your engine). If in doubt on trigger wire orientation, try the wires both ways. The combination with the least amount of timing is correct, call with any questions. When available, use graduation on damper.

V. Carburetor settings as determined by Dyno testing.

- A. Jets - do not change jets after dyno test for Colorado. For other tracks call.
- B. Power valve - check power valve is not leaking.
- C. Air cleaner - Use good quality paper filter, largest that will fit. Never use K&N type, R2C type, or racing high-flow filters as they let too much dirt/debris through
 - 1. Use well sealed air cleaner housing.
 - 2. Set idle mixture screws all the same.
 - 3. Close completely and turn out 1 full turn then start engine and adjust as necessary.
 - 4. Make all adjustments with engine hot.
 - 5. Float level should be set to the bottom of sight plug thread.

VI. RPM

- A. Do not exceed recommendation.
- B. Proper gearing
- C. Use revlimiter on all engines. Most tachometers are not accurate; they are off by as much as 500 RPM. Use the rev limiter for safety they are accurate.
- D. Use a Tachometer with a recall to check maximum RPM.

VII. Oil pressure switch

- A. Install switch on all cars to kill engine if oil pressure drops. Call for recommendation.
- B. Use a spring loaded switch for override for emergency situations.

VIII. Preheat & motor warm up

- A. Preheat oil 30 min. before starting (dry sump)

- B. Start & run motor to 200 degrees water temp before going out on track.
- C. Do not exceed 2500 RPM during warm up.
- D. Build oil pressure before turning on ignition switch.
- E. Do not let engine idle at really low speed for long periods of time, this will wear the lifters out.
Keep warm up idle at 1500-2000 RPM. Reset idle to 1000 RPM for racing.

IX. Water Temperature

- A. Do not use straight water. Use NAPA #1300 antirust or Driven CSP & ½ bottle of block sealer (NAPA brand).
- B. Do not exceed 240 degrees

X. Spark Plugs

- A. Gap at 0.040 in.
- B. Change after 300 laps track time.
- C. Use antiseize on plug threads.
- D. Make sure antiseize is only on the threads of the spark plug not on porcelain or plug boots

XI. Clutch & Transmission

- A. When installing clutch, make sure flywheel bolts are not too long and hitting rear of block.
- B. Make sure pilot bushing or bearing are in good condition.
- C. Make sure transmission input shaft does not bottom out against crankshaft.
- D. Make sure pilot shaft is properly engaging pilot bearing
- E. Depress and release clutch pedal after installing a new clutch so that the input shaft can properly align clutch disc(s) – do this before starting the engine.

XII. Starting

- A. Never try to start engine with clutch pedal in, this will damage thrust bearing, use neutral.
- B. Spin engine to build oil pressure before turning on power to ignition.

XII. Engine Cool-Down

- A. Bump starter with ignition off every few minutes in order to cycle valve springs so each takes equal heat to avoid spring failure