

## Race-1 602 Tear Down Procedure

- This is an inspection of the engine as from GM
- Remove seal for each component only as the component is ready for removal.
- Remove Valve covers and inspect breather boxes
- Remove a pair of rocker arms and inspect
- Remove two push rods and inspect
- Remove intake seals and then intake manifold
- Inspect gasket should be GM 602 plastic unless otherwise noted in repair notes
- Inspect intake manifold for any port work----GM does do some deburring and radiusing of edges and flanges
- Remove 2 lifters and disassemble
- Remove cylinder head seal and remove head
- Inspect bolts and gasket to be GM 602
- Clean head surface and check cylinder volume to be no less than 60CC-----If the first cylinder checked is below 60CC the remainder of cylinders must be checked and an average be taken to determine legality
- Check an intake runner volume to be no more than 172CC-  
---if the first runner checked is over 172CC the remainder of runners must be checked and an average taken to determine legality
- Inspect all chambers and runners for performance porting or enhancements –NOTE there is no spec volume for the exhaust runner a visual inspection is the only tech.

- Remove valve springs and test per track, series and/or GM spec pertaining to the application.
- Check that keepers and retainers also match track, series and/or GM spec pertaining to the application
- Check Installed height and that it matches track, series and/or GM spec of 1.700---as a note if no shims are present and all components are deemed legal the installed height can in many instances be short and that is from factory
- Remove intake valve and inspect that it 1.940 and GM 602
- Inspect Intake valve seats and bowl area to be GM 602
- Remove Exhaust Valve and inspect that it is 1.500 and GM 602
- Inspect valve seats and bowl area to be GM 602
- Inspect harmonic balancer to be GM 602 (there are 2 available
- Install Degree wheel
- Check intake duration to be 212\* at .050 +or- 5\*
- Check intake lift to be .290 lobe +or- .010
- Check intake opening to be .035 to .045 at TDC (new style)
- Check intake opening to be .025 to .035 at TDC (old style)
- Check Exhaust duration to be 222 at .050 +or- 5\*
- Check Exhaust lift to be .307 lobe +or- .010
- Check exhaust closing to be .035 to .045 at TDC
- Remove oil pan seal
- Remove oil pan
- Inspect pan for legality per track, series and/or GM rules

- Inspect Oil pump to be M155 with stock spring and standard gears
- Check piston in the hole dimension to be no less than .025" in the hole as an average between front and rear of the piston at TDC-----If the average dimension is less than .025 complete disassembly will be required to check average deck height at a minimum of 9.019 from crankshaft centerline to deck surface per the GM rule book
- Check bore size to be a maximum of 4.008
- Check stroke to be at a maximum 3.485
- If bearings are oversized .010 is all that is permitted and if the crank has been ground the maximum stroke permitted is 3.480
- Main caps are to be stock GM602 along with bolts
- There are 2 versions of connecting rods and both are acceptable but must have stock bolts and to have NO grinding for balance or loss of weight
- There are many versions of the 602 crankshaft but none of them will have an after market insignia or any type of welding or weight added-----refer to engine builder library if suspicions
- Remove Timing cover seal and then timing cover-----this should be a chrome GM cover
- There are 2 versions of the 602 timing gear sets---refer to examples from GM to determine legality-----inspect dowel pins and key ways for modification

- Remove camshaft and check the base circle dimension at .633 intake and .616 exhaust +or- .010

The GM “yellow” manual will be referred to during the tear down inspection and there will be examples of known legal components on hand such as connecting rods—pistons—piston rings ---gaskets —harmonic balancers —lifters---valves—to make comparison