

ECOtEC CAMSHAFT INFO SHEET

This sheet provides basic information regarding production camshafts used in the ECOtEC engines listed below. This information is accurate as of August, 2007. GM reserves the right to change specifications and part numbers without notice.

Note: ECOtEC Engine codes refer to the following

L61 - 2.2L, used in Saturn ION & VUE; Chevy Cobalt & HHR, Pontiac G5

LE5 - 2.4L, used in Saturn ION & Sky, Chevy Cobalt SS & HHR, Pontiac G5 GT, G6, & Solstice

LSJ - 2.0L supercharged, used in Saturn ION Redline, Chevy Cobalt SS Supercharged

LNF- 2.0L turbocharged, used in Pontiac Solstice GXP, Saturn Sky Redline, Chevy HHR SS

Production ECOtEC Camshaft Specifications:

INTAKE Part	Cam Peak Lift	Valve Peak Lift	Valve Timing	Duration @1mm lash	Valve area @1mm lash
12587985 - LSJ	5.9557	10.037904	100	196.50	1117.70
12590699 - '07 L61	5.9804	10.079534	116	198.40	1112.90
12578511 - LE5	6.2551	10.542521	135	210.30	1253.30
12589335 - LNF	6.111207	10.299999	126	203.60	1171.30

EXHAUST Part	Cam Peak Lift	Valve Peak Lift	Valve Timing	Duration @1mm lash	Valve area @1mm lash
12584363 - LSJ	5.9543	10.043928	-115	191.70	1076.40
12590700 - '07 L61	5.9752	10.079183	-108	193.30	1078.00
12578512 - LE5	5.95143	10.039087	-125	195.40	1092.70
12589340 - LNF	6.106106	10.300000	-120	194.00	1106.00

Valve springs are the same across all variants, and should be upgraded for high-rpm operation or increased lift. Upgraded valve springs are available from Bates Engineering (batesengineering.info).

2.2L L61, through 2006 model year



- Intake cam is longer than exhaust cam.
- Uses "waste spark" control system, so there is no cam position sensor.
- Intake cam is the same *casting* as the LSJ intake and exhaust cam, but lacks the pressed-in hex.
- Compatible with GM Performance Parts adjustable cam gears.
- Can be replaced by GM Performance Parts matched cam set (requires Bates Engineering valve springs and retainers to prevent coil bind) or other aftermarket cams from Comp Cams.

2.2L L61, 2007 and beyond

- New intake cam has a wheel-style cam position sensor.
- Intake cam is not interchangeable with any other ECOTec cams, nor with the GMPP intake cam.
- Exhaust cam casting is the same as previous model years, with a slightly different cam profile
- Exhaust cam is interchangeable with the GMPP exhaust cam (requires upgraded valve springs and retainers).
- Compatible with GM Performance Parts adjustable cam gears.

2.0L LSJ



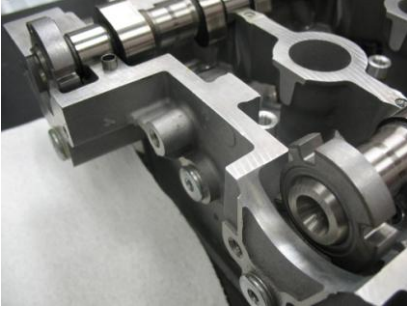
- Intake and exhaust cams are the same casting as each other.
- Both have a pressed-in hex. The hex on the exhaust cam drives a cam location sensor.
- Compatible with GM Performance Parts adjustable cam gears.
- Cannot be replaced by the GM Performance Parts cam set.

2.4L LE5



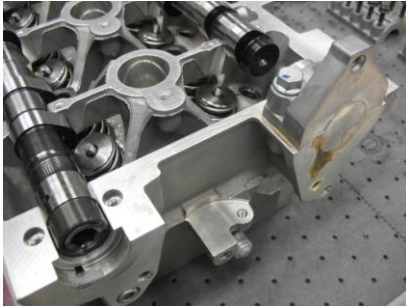
- The LE5 engine has variable valve timing and, therefore, has cam phasers.
- Not compatible with the GM Performance Parts adjustable cam gears.
- Both intake and exhaust cams have wheel-style cam locators.
- Intake and exhaust cams are the same casting with different profiles and slightly different locations of oil sealing rings.
- Intake and exhaust cam castings are the same casting as the LNF exhaust cam casting.
- Cannot be replaced by the GM Performance Parts cam set or any aftermarket cam set.

2.0L LNF



- The LNF engine has variable valve timing, and, therefore, has cam phasers.
- Not compatible with the GM Performance Parts adjustable cam gears.
- Both intake and exhaust cams have wheel-style cam locators.
- Intake cam is longer and includes a 3-lobe drive for the high-pressure fuel pump. This cam is not interchangeable with any other cam.
- Exhaust cam casting is the same casting as the LE5 intake and exhaust cam castings.
- Cannot be replaced by the GM Performance Parts cam set or any aftermarket cam set.

Billet cams used in pro-level GM Racing engines (from Comp Cams)



- Billet replica of the 2.2L L61 cam castings, but with a hex pressed into the intake cam.
- GM Racing uses the hex on the intake cam to drive a distributor on ECOTec race engines.
- GM Racing installs the billet cam set in either the L61 or LSJ head. When installed in the LSJ head, the exhaust cam falls short and the production cam hole is plugged (see photo).
- Intake cam would fit in both the exhaust and intake positions on and LSJ head, but the orientation of the hex on the exhaust side would need to match the production exhaust cam exactly.
- Requires upgraded valve springs and retainers.
- Compatible with GM Performance Parts adjustable cam gears.

This cam casting. also fits here (refers to **fit only**, does not refer to operable cam profile)

GMPP Adj Cam gears	L61 and LSJ
GMPP Intake, cast	L61 Intake thru '06 , LSJ Intake
GMPP Exhaust, cast	L61 Exhaust
GMPP Intake blank, cast	LSJ Intake, L61 Intake thru '06
GMPP Exhaust blank, cast	L61 Exhaust
Comp Cams Intake, billet	LSJ Intake, LSJ Exhaust, L61 Intake thru '06
Comp Cams Exhaust, billet	L61 Exhaust
L61 Intake thru'06	LSJ Intake
L61 Exhaust thru'06	none
'07&later L61 Intake	none
'07&later L61 Exhaust	L61 Exhaust thru '06
LSJ Intake	L61 Intake thru '06
LSJ Exhaust	L61 Intake thru '06, can be cut (shortened) to fit L61 Exhaust
LE5 Intake	none
LE5 Exhaust	LNF Exhaust
LNF Intake	none
LNF Exhaust	LE5 Exhaust