



Revision 23/26/19

**CIRCLE TRACK (Stock Toyota Casting) CAMSHAFT SPECIFICATION
(Part #1022013, Grind #LC69@104)**

This Camshaft must be installed with new rocker arms. LC Engineering, Inc. will not warranty any camshaft that was not purchased together with Aluminum rocker arms. LCE highly recommends using our Pro Camshaft Kit (Part# 1020000) or Double Spring & Retainer Kit (Part# 1023210) when running any cam with over .460" lift or in any application that requires a sustained RPM of 6,000 or higher.

	Intake	Exhaust
Valve Lash	.008	.012
Valve Lift	.390	.390

THE FOLLOWING FIGURES, TAKEN @ .050 LIFT AT VALVE, WITH .000 VALVE LASH

Duration @ 50	232°	232°
Lobe Center	110°	110°
Lobe Separation	110°	
Intake Opens	6° BTDC	Exhaust Opens 46° BBDC
Intake Closes	46° ABDC	Exhaust Closes 6° ATDC

**Always check valve to piston clearance and Valve to valve clearance with this Camshaft!
Failure to install this cam with matched valve train components can cause engine damage.**

CHECK VALVE TO PISTON CLEARANCE WHEN THE ENGINE IS ASSEMBLED:

After installing a new camshaft, lash #1 intake valve to zero then screw intake valve in .080" (Valves not closing completely) with spark plugs removed turn engine over **CAREFULLY BY HAND**. Do intakes first, if OK then do exhaust. If engine cycles without binding, you are sure that you have minimum clearance (If binding occurs, piston clearance is required).

CAMSHAFT BREAK-IN PROCEDURE

The first few minutes on camshaft and rockers are the most important wear period. In this period the cam and rockers become burnished together. When installing the camshaft, thoroughly coat the lobes with the special assembly lube provided. Cam should be installed per factory service manual procedures.

Set valves at proper lash dimensions, and then readjust valves after break in period is completed. **CHECK** valve train for interference. **CHECK** valve to piston clearance, you must have .100" min. **CHECK** valve spring retainer to valve guide and seal for clearance. **CHECK** valve springs for coil binding, you must have .090" min. Of free travel before the springs become solid after the valve in fully open. 98% of all cam failure is excessive valve spring pressure.

Start engine quickly, excessive cranking of engine is not good for the camshaft. Bring rpm to 1500-1800 for 20-30 minutes (ABSOLUTELY NO IDLING & NO REVING OVER 2000 RPM) during the break in period. Camshaft should now be burnished to the rockers. It is absolutely vital that once a cam lobe and rocker have been burnished together, they remain together. So if the camshaft and rockers are removed from the engine, be sure the rockers are numbered and reinstalled on the same lobe. Failure to do this is asking for disaster.

NOTE: Standard degreeing procedures should be followed for maximum performance.
All cam specifications are checked at .050" lift.

TORQUE SPECIFICATIONS:

Intake Manifold Bolts: 14	Exhaust Studs: 33
Camshaft Bearing Caps: 12	Camshaft Timing Gear bolt: 1
Cylinder Head Bolts: 58	LC Cylinder Head Studs: 6
	(With ARP Moly Lube)