SPEED-PRO CAMSHAFT PERFORMANCE CODES
AND SELECTION GUIDELINES
Federal-Mogul Document #1101

Speed-Pro Performance Camshafts are power coded in order to make cam selection easier. Each camshaft has been assigned a category which describes its Operating characteristics when installed in a particular engine. The categories start with Pro-1500, and extend through Pro-5000 in order of relative power potential.

The Pro-1500, Pro-2000, and Pro-3000 series of cams are specifically designed for street use*. These cams will deliver a significant power increase when compared to most stock camshafts. They will allow the use of most power accessories, give acceptable idle quality, and perform well in day to day driving. These are the components recommended for use in a tow vehicle, a street rod, or a muscle car. When matched with the recommended Speed-Pro, Federal Mogul, and Carter parts, these cams will deliver reliable performance without the added maintenance and headaches associated with “all out” racing cams.

**Pro-1500**
Less than 195° duration at .050”
Smooth idle and good low R.P.M. torque. Excellent fuel economy in RV’s and passenger cars. Works well in stock engines with stock rear end gears. Power range 1000-3500 R.P.M. Cruise/torque range 1600-2200 R.P.M. Compression ratio should be 9.0 or less. Compatible with computer engine controls. Free flowing exhaust will yield best economy.

**Pro-2000**
195°- 210° duration at .050”
Good idle and low R.P.M. torque. Good torque/economy cam RV, 4WD, passenger cars and towing. Camshaft works well in stock or slightly modified engines with stock gears. Power range 1500-4000 R.P.M. Cruise/torque range 1800-2600 R.P.M. Compression ratio should be 9.5 or less. Compatible with computer engine controls. Additional power increases can be expected with use of small diameter headers and low R.P.M. performance 4 barrel manifold/carburetor combination.

**Pro-3000**
210°- 225° duration at .050”
Fair idle with some lope. Excellent mid-range torque for every day street performance, mild bracket racing. RV and light towing. A slightly modified engine is suggested with a performance intake manifold, 4 barrel carburetor and headers. Gears 3.70:1 or lower recommended. Power range 2000-3200 R.P.M. Cruise/torque range 2400-3200. Compression ratio 10.31:1 or less. Computer compatible in larger engines with cams of 220 duration or less. Mild porting can be beneficial with these cams. Mild stall speed converter suggested with automatics.

Pro-1500, Pro-2000, and Pro-3000 camshafts are designed to produce increases in basically stock engines or engines with only minor modifications. Before selecting a camshaft, check the performance series to determine what performance changes can be expected and what modifications must be made to the engine. **DO NOT OVER-CAM!** When in doubt over a cam selection, choose the more moderate version. Your vehicle’s performance won’t be improved if your engine is not capable of reaching the R.P.M. range where the improved power curve is found. These cams have been found to be computer compatible in most installations.

**Pro-4000** series cams are for dual purpose, street/strip applications, as well as for limited racing applications. These are not legal for vehicles subject to emission control legislation. These cams are usually tractable enough to use in cars that see limited street duty, but are not intended for regular daily use. They will have a decidedly rough idle, and will generate lower manifold vacuum that may not allow for power accessories. As with any racing component, more frequent inspection of the valvetrain becomes necessary when using these.

**Pro-4000**
225°- 240° duration at .050”
Pro-5000 is our designation for “Competition Series” cams - these are true racing camshafts. Included are radical hydraulic and solid lifter grinds intended for bracket racing, oval track, and limited use street vehicles; along with high R.P.M. roller lifter profiles that deliver the horsepower needed to win at the track. The uses of these cams require that the rest of the engine be upgraded to match their R.P.M. and power capabilities. Most of these cannot be used with vacuum driven accessories such as power brakes. These parts are not emission legal and are not intended for street use. Pro-Street type vehicles can make use of these cams, but frequent valve lash and spring inspection will be necessary, and idle quality may be marginal.

PRO-5000
240° - up duration at .050”
Rough idle with heavy lope. Very little vacuum. Competition cam for oval and bracket racing. Power range 3200-6500 R.P.M. Cruise/torque range 3800-5000 R.P.M. 4.20 or lower gear ratio. Compression ratio 10.5 or higher. Competition engine modifications required, such as head porting, large 4 barrel, improved ignition and headers. Very high stall converter needed with automatics.

PRO-4000 and PRO-5000 camshafts are designed to increase the power output of an engine when compared to the stock, factory camshaft. However, the engine’s power curve is raised to a higher R.P.M. level. This is done at the expense of low R.P.M. power. A rough idle and lowered intake manifold vacuum are common. Stock, factory torque converters usually will not allow the engine to idle high enough to enter a power band capable of sustaining good idle or of producing good off-idle performance. In these cases we recommend the use of a high stall speed aftermarket converter to provide customer satisfaction when using these camshafts in automatic transmission vehicles.

Warning: Do not use PRO-4000 or PRO-5000 series camshafts in computer controlled engines. The lower than stock vacuum will not allow the computer to perform properly. Some O.E. computer packages will not allow any camshaft change - many “speed density” Ford trucks are examples. When installing and Speed-Pro camshaft, you may change the performance of the new engine to suit your own preference by using a Speed-Pro timing set with the three position sprocket. If stronger low R.P.M. performance is desired, the camshaft can be advanced four degrees. Always check piston to valve clearance when changing cams or cam timing.

A few general rules to follow:
1) A larger displacement engine is less sensitive to idle and low end torque problems associated with large cams. As an example: if a 283 and a 350 used the same cam, the 350 would idle better.

2) A heavier vehicle should use a smaller cam to enhance low end torque and acceleration.

3) A solid lifter cam will idle better than a hydraulic having similar specs, a roller will be better yet.

4) Use the matching springs and retainers for each application. We do not recommend the use of Rotocoils or valve rotating devices for performance applications.

5) Always check for valve spring coil bind. You must have at least .060” of additional spring travel available at maximum valve lift.

6) Always check piston to valve clearance, you must have a minimum of .100 in all directions.

7) Always follow recommended break-in procedures, and use LL5 Assembly Lube. On flat tappet cams using double valve springs for increased pressure, we recommend breaking in the cam with the outer springs only and then installing the inners afterward.

8) If you are undecided between two camshafts, pick the smaller one. You’ll always be better off!

*Speed-Pro Performance Cams that have an E.O. Number alongside them in the application section are legal for use in emission controlled vehicles.
# SPEED-PRO PERFORMANCE CAMSHAFT CODES

<table>
<thead>
<tr>
<th>Model</th>
<th>Idle Quality</th>
<th>Power Range</th>
<th>Axle Ratio</th>
<th>Exhaust</th>
<th>Carburetion</th>
<th>Compression</th>
<th>Transmission</th>
<th>Application</th>
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<tbody>
<tr>
<td><strong>Pro-1500</strong></td>
<td>Stock</td>
<td>1000-3500 rpm (cruise @ 1600-2200 rpm)</td>
<td>Stock up to 3.60</td>
<td>Headers and/or Dual Exhaust Optional</td>
<td>Small 4 bbl. Optional</td>
<td>9.0:1 or less</td>
<td>Stock Automatic or Manual</td>
<td>Computer OK, Good for Towing, “One Step Up” from Most Stock Cams</td>
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<tr>
<td><strong>Pro-2000</strong></td>
<td>Good</td>
<td>1500-4000 rpm (cruise @ 1800-2600 rpm)</td>
<td>3.00 to 4.00</td>
<td>Small Tube Headers and Dual Exhaust Recommended</td>
<td>Larger 2 bbl. or Small 4 bbl. Recommended</td>
<td>9.5:1 or less</td>
<td>Stock Automatic or Manual</td>
<td>Computer OK, May Require Aftermarket “Chip” 2-4 in, Vacuum Loss, Good Street Performance</td>
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<tr>
<td><strong>Pro-3000</strong></td>
<td>Good to Fair</td>
<td>2000-4800 rpm (cruise @ 2400-3200 rpm)</td>
<td>3.20 to 4.20</td>
<td>Headers and Dual Exhaust Recommended</td>
<td>4 bbl. Recommended</td>
<td>9.0:1 to 10.3:1</td>
<td>Automatic (Aftermarket Converter Optional) or Manual</td>
<td>Computer Will Require Aftermarket Chip” 3-6 in, Vacuum Loss. Good Street/Strip Performance</td>
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<tr>
<td><strong>Pro-4000</strong></td>
<td>Fair to Moderately Rough</td>
<td>2200-6500 rpm (cruise @ 3800-5000 rpm)</td>
<td>3.90 to 4.50</td>
<td>Headers and Dual Exhaust Required</td>
<td>4 bbl. Required</td>
<td>10.0:1 to 11.0:1</td>
<td>Modified Automatic w/2500+ Stall Converter, or Manual</td>
<td>Significant Vacuum Loss, May Not Run Power Accessories, Limited High Performance Street/strip Usage, Bracket Racing</td>
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<tr>
<td><strong>Pro-5000</strong></td>
<td>Rough</td>
<td>3200-6500 rpm (cruise @ 3800-5000 rpm)</td>
<td>4.20 or Higher</td>
<td>Headers and Low Restriction Exhaust Required</td>
<td>Larger CFM 4 bbl. or Two 4bbls. Required</td>
<td>10.5:1 or Higher</td>
<td>Race Automatic w/3500+ Stall Converter, or Manual</td>
<td>Valvetrain and Engine Must Be Modified for High RPM Use Used in Drag Racing, Oval Track</td>
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